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Technical faculty “Mihajlo Pupin”
Zrenjanin, Republic of Serbia**

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ENGINEERING MANAGEMENT AND
COMPETITIVENESS
(EMC 2012)**

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INTRODUCTION

Department for Management and Technical faculty “Mihajlo Pupin” from Zrenjanin have started the organization of International Symposium - Engineering Management and Competitiveness (EMC) in 2011.

The objectives of the Symposium EMC are: presentation of current knowledge and the exchange of experiences from the field of Engineering management, consideration of development tendencies and trends in Serbia and the world as well, gathering researchers from this field with the aim of expanding regional and international cooperation, raising the level of professional and scientific work at Technical faculty “Mihajlo Pupin” from Zrenjanin, expanding cooperation with economic and educational institutions and encouraging young researchers within this field. Taking into account that this Symposium is international, the importance of this event is obvious for the town of Zrenjanin, Banat region, Vojvodina and Serbia. Organization of EMC by Technical faculty “Mihajlo Pupin” from Zrenjanin represents this scientific-educational institution as one of the major representatives of economic and social development in Banat.

Within this Proceedings are presented all accepted papers received for II International Symposium Engineering Management and Competitiveness (EMC 2012). The papers are divided into nine sessions: Plenary session, Session A: Strategic management, Session B: Organizational behavior, Session C: Research and development management, Session D: Marketing management, Session E: Operation management, Session F: Economy, Session G: Ecology and Session H: Students’ papers.

We wish to thank Ministry of Education and Science, Republic of Serbia for supporting the organization of II International Symposium Engineering Management and Competitiveness (EMC 2011) as well as to Technical faculty “Mihajlo Pupin” from Zrenjanin and the dean Prof. Ph.D Milan Pavlović for their active role concerning the organization of the Symposium. We are also expressing our gratitude to all authors who have contributed with their papers to the organization of our second Symposium EMC.

We would like our Symposium to become a traditional meeting of researchers in June, every year. We are open and thankful for all useful suggestions which could contribute that the next, III International Symposium Engineering Management and Competitiveness (EMC 2013) become better in organizational and program sense.

President of the Programming Committee
Professor Milivoj Klarin, Ph.D.

Zrenjanin, June 2012.

Word of Thanks

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CONTENTS

Plenary session	...1
József Poór FOCUS CENTRAL AND EASTERN EUROPE: HUMAN RESOURCE MANAGEMENT AT FOREIGN OWNED COMPANIES	...3
Maša Magzan OVERCOMING MENTAL MODELS: UNLEASHING THE HIDDEN POWER FOR ORGANIZATIONAL DEVELOPMENT AND LEADERSHIP EFFECTIVENESS	...6
Larisa Nikitina ASSESSMENT AND SELF-ASSESSMENT OF CORPORATE SOCIAL RESPONSIBILITY: PROBLEMS AND DECISIONS	...11
Zdenek Dvořák, Eva Sventekova EVALUATION OF THE RESISTANCE CRITICAL INFRASTRUCTURE IN SLOVAK REPUBLIC	...17
Danilo A. Đurović THE QUALITY OF MENTAL AND MORAL SOCIO DISPERSION - THE PRIMARY CONTRIBUTION TO ECO-SYSTEM SUSTAINABILITY	...23
Milivoj Klarin, Vesna Spasojevic Brkić, Sanja Stanisavljev, Zvonko Sajfert, Miroslav P. Radojičić, Milan Nikolić, Jovanovski Bojan A STOCHASTIC MODEL TO DETERMINE THE ELEMENTS OF PRODUCTION CYCLE TIME IN ENTERPRISE	...26
Session A: STRATEGIC MANAGEMENT	...37
Elizabeta Mitreva, Zlatko Jakovlev THE NECESSITY OF REENGINEERING OF THE BUSINESS PROCESSES IN MACEDONIAN COMPANIES	...39
Dejan Jakšić, Kristina Mijić THE METHODOLOGY OF BUSINESS PROCESS MANAGEMENT USING SOFTWARE SOLUTION	...45
Ljubica Kazi, Budimir Nikolić, Dijana Dević, Sebastijan Lukić, Jelica Milanov, Marko Stanačev USING CASE TOOLS FOR VERIFICATION OF BUSINESS PROCESS MODEL	...51
Ljiljana Arsić, Agneš Boljević, Jelena Premović THE NORMATIVE AND EMPIRICAL MODELS OF STRATEGIC DECISION MAKING	...56
Jelena Premović, Agneš Boljević, Ljiljana Arsić, Stojan Drašković MANAGEMENT BY OBJECTIVES	...61
Ljiljana Daković MODIFICATION OF THE BALANCED SCORECARD IN THE MANAGEMENT OF THE MARITIME ECONOMY	...67
Jelena Andrašić REENGINEERING IMPLEMENTATION ON THE EXAMPLE OF A CONSTRUCTION COMPANY	...73
Branislav Tomić, Snežana Omić THE INTEGRAL PROBLEM-SOLVING AND DECISION-MAKING PROCESS	...79
Ljiljana Pecić ANALYSIS OF COMPANY'S INTERNAL FACTORS LIMITING THE PERFORMANCE OF REENGINEERING COMPANY	...85
Ljiljana Dmitrović Šaponja, Sunčica Milutinović, Saša Gravorac, ACCOUNTING INFORMATION SYSTEM AND DECISION SUPPORT SYSTEMS (DSS) IN INCREASING THE QUALITY OF CORPORATE MANAGEMENT'S DECISION MAKING PROCESS	...91

Dagmar Vidriková IMPLEMENTATION OF THE SELECTED METHODES OF THE STRATEGIC MANAGEMENT INTO PRIVATE SECURITY SERVICES	...97
Jelena Vapa Tankosić, Biljana Lazić IMPROVEMENT OF COMPETITIVENESS OF SERBIA – STEP FORWARD IN OVERCOMING THE CRISIS	...102
Vladimir Desnica, Dragana Šarac APPLICATION OF NEW TECHNOLOGIES IN THE POST OF SERBIA IN FUNCTION OF EFFICIENT BUSINESS	...108
Slavica Prvulović, Marija Matić, Dragiša Tolmač BUSINESS ETHICS AND INFORMATION	...113
Milan Nikolić, Dragica Ivin, Biljana Goševski STRATEGIC, OPERATIONAL AND INVESTMENT DECISIONS IN BUSINESS	...119
Session B: ORGANIZATIONAL BEHAVIOR	125
Miloš Trivić ORGANIZATIONAL BEHAVIOR AND DESIGN THROUGH THE FUNCTION OF ORGANIZATION	...127
Ana Bukilica ORGANIZATIONAL BEHAVIOR AND PROCESSES THROUGH MANAGEMENT FUNCTION	...131
Danijela Bogdanić EXPECTATIONS OF PARTICIPATIVE LEADERSHIP BEHAVIOUR IN BOSNIA AND HERZEGOVINA	...136
Miloš Jovičić, Goran Zarić, Danijela Milovanović COMMUNICATION AND ORGANIZATIONAL CULTURE IN THE COMPANY	...141
Milena Popović, Marija Kuzmanović, Bisera Andrić Gušavac CREATING A STIMULATING ENVIRONMENT IN THE COMPANY – EMPLOYEE SATISFACTION FACTOR	...145
Ana Božović, Natalija Kukolj – Prokić, Dragan Cvetković, Mara Šiljak RESEARCH OF INTERPERSONAL RELATIONSHIPS IN THE ORGANIZATION	...151
Nenad Zec KNOWLEDGE MANAGEMENT	...155
Marijana Mišić THE ROLE OF HUMAN RESOURCE MANAGEMENT IN PROFESSIONAL DEVELOPMENT AND PROMOTION OF WOMEN IN ORGANIZATIONS	...158
Bojan Leković, Slobodan Marić BENEFITS AS AN INSTRUMENT OF MOTIVATION	...164
Natalia Kukolj - Prokić, Ana Božović, Ivan Tasić, Jelena Tasić INVESTIGATION OF THE CONFLICT IN THE ORGANIZATION	...169
Suzana M. Savić, Dejan M. Vasović, Stevan M. Mušicki REFLECTION ON THE OCCUPATIONAL HEALTH AND SAFETY ELEMENTS IN CONTEXT OF CORPORATE SOCIAL RESPONSIBILITY	...174
Session C: RESEARCH AND DEVELOPMENT MANAGEMENT	...181
Dmitriy Treshchevskiy RUSSIAN REGIONS' INNOVATIVE DEVELOPMENT IN CRISIS PERIOD	...183
József Poór, Katalin Óhegyi THE CAFETERIA SYSTEM IN HUNGARY: DEVELOPMENT AND NEW DIRECTIONS	...188

Elizabeta Mitreva, Zlatko Jakovlev CREATION OF INNOVATION CLIMATE FOR IMPROVEMENTS AND INNOVATIONS OF THE BUSINESS PROCESSES IN THE MACEDONIAN COMPANIES	...194
Danilo Obradović, Slaviša Trajković, Andrija Babović INFORMATION TECHNOLOGY AS A BASIS E-BUSINESS IN TOURISM	...200
Zlatibor Ljubinković THE BENEFITS OF NEW APPROACH TO ENERGY MANAGEMENT AT THE LOCAL LEVEL IN REPUBLIC SERBIA	...205
Darko Marjanović, Miloš Pjanić, Predrag Radojević THE EFFECTS OF TAX COMPETITION ON THE OPERATIONS OF MULTINATIONAL COMPANIES	...211
Lidija Pulevska-Ivanovska, Kiril Postolov, Stefan Ivanovski, LOGISTICS DEVELOPMENT IN MACEDONIA – OPPORTUNITIES AND PERSPECTIVES	...217
Maja Timovska MANAGING RISK TO REDUCE DISASTERS RISK	...222
Danijel Kokanović RISK MANAGEMENT IN PRACTICE – TECHNOLOGY OF RISK	...228
Miloš Ilić MANAGING THE RISK OF E-BANKING	...234
Milivoje Davidović, Vera Zelenović MANAGEMENT OF INVESTMENT PORTFOLIO IDIOSYNCRATIC RISK	...240
Milena Naumov, Miljan Draganić ENTREPRENEURIAL MANAGEMENT IN SMALL AND MEDIUM ENTERPRISES	...245
Vasilijana Mirković TECHNICAL AND DATA SECURITY RISKS IN ELECTRONIC BUSINESS	251
Dragiša Radojković, Zvonko Sajfert, Janko Cvijanović, Predrag Atanasković, Zoran Škrinjarić ANALYSIS OF NEEDS FOR CERTAIN PROFILES AND VOCATIONS NEEDED FOR LABOUR MARKET	...257
Dejan M. Vasović, Stevan M. Mušicki, Miomir B. Stanković STRATEGIC ROLE OF SMALL, DECENTRALIZED HYDRO GENERATION SYSTEMS IN SERBIAN ENERGY POLICY DEVELOPMENT	...263
Ivan Tasić, Jelena Tasić, Teodora Mitić, Dajana Tubić TEACHERS' ATTITUDES ABOUT DEMOCRATIC RELATIONS IN THE SCHOOL	...268
Ivan Tasić, Jelena Tasić, Teodora Mitic, Dajana Tubić POSSIBILITIES FOR INCLUSIVE EDUCATION IN EDUCATIONAL INSTITUTIONS	...273
Dejan Đorđević, Dragan Čočkalov, Srđan Bogetić, Sanja Stanisavljev, Dragica Ivin ENTREPRENEURSHIP AMONG STUDENTS: THE POTENTIAL IN SERBIA	...279
Session D: MARKETING MANAGEMENT	...285
Srđan Bogetić, Snežana Lekić, Dragiša Randić THE ROLE OF INNOVATION IN IMPROVING ENTERPRISE COMPETITIVENESS	...287
Mila Zibak STRATEGIES AND E-MARKETING TOOLS FOR CREATING BRANDS	...293
Vesna Rodić, Nemanja Lukić, Jelena Rodić CUSTOMER RELATIONSHIP MANAGEMENT IN INSTITUTIONS OF HIGHER EDUCATION	...299
Nikola Milićević THE IMPLEMENTATION OF EFFICIENT CONSUMER RESPONSE CONCEPT	...304
Jelena Rodić, Deniz Ahmetagić, Vesna Rodić LOYALTY CARDS AS INNOVATIVE MARKETING TREND IN CREATING CUSTOMER LOYALTY	...310

Igor Nikodijević, Vitomir Bošković, Dragan Miletić SURVEYING AND EVALUATING CUSTOMER SATISFACTION USING A PRODUCTION COMPANY - INDUSTRIJA PRECIZNE MEHANIKE AD BEOGRAD - AS A MODEL	...316
Mirjana Rikalo, Marija Lazarević, Dragoljub Novaković VISUAL IDENTITY AS AN INSTRUMENT OF TOURIST DESTINATION BRANDING CASE STUDY: THE VINČA ARCHEOLOGICAL LOCALITY	...322
Marina Dobrota, Ana Nikodijević, Dobrivoje Mihailović INFLUENCE OF CUSTOMER EXPERIENCE ON SATISFACTION WITH MOBILE PHONES	... 328
Edit Terek, Biljana Goševski, Višnja Istrat, Savina Đurin SOCIAL NETWORK MARKETING	...334
Branka Jajić, Jelena Jajić ZRENJANIN - CREATIVE CITY	...340
Session E: OPERATION MANAGEMENT	...347
Zdeněk Říha, Marek Honců EXTERNALITIES OF TRANSPORT AND THEIR RELATION TO ECONOMIC OUTPUT	...349
Eva Sventekova, Zdenek Dvorak PERFORMANCE TESTING OF CRITICAL TRANSPORT INFRASTRUCTURE ELEMENTS	...354
Branislav Tomić, Vesna Spasojević Brkić, Milivoj Klarin INTEGRATED SIX SIGMA METHODOLOGY	...359
Vyara Pozhidaeva, Dragan Živković INFORMATION SYSTEM AND TQM AS A MEASURE OF MAINTENANCE OF UNIVERSAL LATHES QUALITY	...365
Kristian Bereš, Paun Bereš IT AND NEW MODELS OF EDUCATION IN MANAGEMENT OF EDUCATIONAL PROCESS BASED ON ALTERNATIVE ENERGY SOURCES	...371
Jasmina Vesić Vasović, Miroslav Radojičić, Zoran Nešić STABILITY INTERVALS OF THE CRITERIA IN MULTI-CRITERIA DECISION MAKING	...377
Dejan Stojković, Ratko Đuričić REVIEW OF THE E-CRM CONCEPT IN THE ADVANCED TELECOMMUNICATIONS COMPANIES	...383
Dejan Stojković, Ratko Đuričić MOBILE CRM CONCEPT IN THE TELECOMMUNICATIONS INDUSTRY	...389
Slavoljub Milovanović SOFTWARE SUPPORT TO SUPPLY CHAIN MANAGEMENT	...395
Ljiljana Tanasić TOTAL PRODUCTIVE MAINTENANCE – A SOLUTION FOR OPTIMIZING THE PRODUCTIVITY OF MANUFACTURING EQUIPMENT	...401
Milan Pasula, Branislav Nerandžić, Milan Radošević INTERNAL AUDIT OF THE SUPPLY CHAIN MANAGEMENT IN FUNCTION OF COST REDUCTION OF THE COMPANY	...407
Nataša Aleksić INFORMATION MANAGEMENT IN LOGISTICS	...413
Miroslava Marić, Violeta Jovanović APLICCAION OF ISO 14000 SERIES STANDARDS IN MANUFACTURING COMPANIES – THE ROLE AND IMPORTANCE	...419
Sanja Stanisavljev, Sajfert Vjekoslav, Đorđević Dejan, Čočkalo Dragan, Vesna Spasojevic Brkić, Jovanovski Bojan A STOCHASTIC MODEL TO DETERMINE THE ELEMENTS OF PRODUCTION CYCLE TIME IN TEXTILE INDUSTRY	...425

Session F: ECONOMY**...433**

Dejan Ječmenica, Lidija Barjaktarović NEW APPROACHES IN THE MANNER OF HUMAN RESOURCES IN TERMS OF ECONOMIC AND FINANCIAL CRISIS	...435
Marko Ivaniš FACTORING AS A CONTEMPORARY FORM OF ENTERPRISE FINANCING	...440
Nada Milenković, Jelena Đurasinović FACTORS AFFECTING THE BALANCE OF INVESTMENTS IN SERBIA	...446
Miloš Pjanić, Darko Marjanović, Danilo Lučić STRATEGIES CREDIT POLICIES OF COMMERCIAL BANKS IN SERBIA	...451
Romana Petrović, Jovana Ivančević MANAGEMENT STRATEGY OF PROBLEMATIC LOANS OF THE BANK	...456
Vera Zelenović, Milivoje Davidović QUALITY SYSTEM IN THE BANKING BUSINESS IN ORDER TO IMPROVE PROVIDED SERVICES	...462
Dragana Ikonić, Snežana Milošević, Nada Milenković CAPITAL ADEQUACY ANALYSIS AS A CONTEMPORARY CONCEPT AND MEASUREMENT OF PROFITABILITY OF INSURANCE COMPANIES IN THE REPUBLIC OF SERBIA	...468
Nataša Papić-Blagojević, Maja Ilić-Pupovac THE INFLUENCE OF THE BAYESIAN'S BETA ON THE CAPM METHOD IN CALCULATING THE COST OF EQUITY	...474
Nemanja Berber, Milan Pasula, Milan Radošević ECONOMIC VALUE ADDED IN FUNCTION OF DETERMINING INCENTIVE COMPENSATION SYSTEMS	...480
Husein Mehmedović CREDIT RISK MANAGEMENT TECHNOLOGY	...486
Savina Đurin, Jelena Stanković, Edit Terek HEDGE FUNDS IN CONTEMPORARY ECONOMY	...492

Session G: MARITIME AND ECOLOGY**497**

Marija M. Janović THE IMPORTANCE OF ENVIRONMENTAL DETERMINANTS IN THE WORKS TO PRESERVE URBO DYNAMIC SYSTEMS – SHIP	...499
Darko Ž. Đurović THE IMPORTANCE OF THE INTERNATIONAL CONVENTION FOR THE PROTECTION OF AQUATIC AREAS FROM DISCHARGES OF BALLAST WATER FROM SHIPS AT SEA	...502
Nenad M. Griner THE IMPORTANCE OF SOPEP-PLAN IN THE EVENT OF OIL SPILLS IN THE SEA	...505
Danilo A. Đurović, Ljiljana V. Daković BEHAVIOUR OF SHIP'S CREW IN CASE OF AVERAGE IN ACCORDANCE WITH MARITIME ERGOSOFLOGY	...508
Baldo Saulačić MARINE BIODIVERSITY THREATENED BY MARITIME DISASTERS	...514
Dijana G. Pean SPECIFICATION FOR THE EQUIPMENT FOR CLEANING POLLUTION MATERIALS IN COASTAL AQUATIC AREA	...518
Tanja D. Ivanišević SIGNIFICANCE OF THE DEPTH OF AQUATORIUM OF THE PORT OF BAR	...522

Maja Siljanovski , Dorotea Bešić CORPORATE SOCIAL RESPONSIBILITY AND COMPETITIVENESS DOMESTIC COMPANY	...527
David Novak, Maja Siljanovski THE ROLE OF LEADERSHIP AND MANAGEMENT SKILLS IN CREATING COMPETITIVE ADVANTAGE	...533
Danka Rus, Sanja Ristić, Snežana Radosavljević, Željko Stojanović SERBIAN NATIONAL BRAND	...539
Andrea Ivetić, Katarina Zorić, Slađana Isakov THE IMPROTANCE OF LEADERSHIP WITHIN MANAGEMENT SYSTEMS IN HEALTH CARE ESTABLISHMENTS	...544
Mila Zakin, Jovana Pećanac IMPACT OF THE QUALITY ON LEVEL OF COMPETITIVENESS OF COMPANIES IN SERBIA	...550
Jovana Pećanac, Jovanka Rkman MARKETING COMMUNICATION IMPACTS ON SALE OF PRODUCTS AND SERVICES	...556
Sanja Pantić MARKETING INFORMATION SYSTEM	...562
Ivana Petkanić, Ljiljana Litričin, Mila Zakin THE INFLUENCE OF FMEA METHOD ON QUALITY COSTS	567
Dragana Ćurčić DECISIVE KNOWLEDGE MANAGEMENT FACTOR IN MODERN BUSINESS	573
Bojana Gligorović THE INFLUENCE OF WORK ENVIRONMENT AND THE ROLE OF LEADERSHIP IN ENHANCING EMPLOYEE CREATIVITY	579

Plenary session

Papers (pp. 3-35):

József Poór FOCUS CENTRAL AND EASTERN EUROPE: HUMAN RESOURCE MANAGEMENT AT FOREIGN OWNED COMPANIES	...3
Maša Magzan OVERCOMING MENTAL MODELS: UNLEASHING THE HIDDEN POWER FOR ORGANIZATIONAL DEVELOPMENT AND LEADERSHIP EFFECTIVENESS	...6
Larisa Nikitina ASSESSMENT AND SELF-ASSESSMENT OF CORPORATE SOCIAL RESPONSIBILITY: PROBLEMS AND DECISIONS	...11
Zdenek Dvořák, Eva Sventekova EVALUATION OF THE RESISTANCE CRITICAL INFRASTRUCTURE IN SLOVAK REPUBLIC	...17
Danilo A. Đurović THE QUALITY OF MENTAL AND MORAL SOCIO DISPERSION - THE PRIMARY CONTRIBUTION TO ECO-SYSTEM SUSTAINABILITY	...23
Milivoj Klarin, Vesna Spasojevic Brkić, Sanja Stanisavljev, Zvonko Sajfert, Miroslav P. Radojičić, Milan Nikolić, Jovanovski Bojan A STOCHASTIC MODEL TO DETERMINE THE ELEMENTS OF PRODUCTION CYCLE TIME IN ENTERPRISE	...26

FOCUS CENTRAL AND EASTERN EUROPE: HUMAN RESOURCE MANAGEMENT AT FOREIGN OWNED COMPANIES

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ABSTRACT

Today you can read from a wide variety of sources about multinational companies in transitional economies. Often the opinions reported are not flattering. Several sources of literature state that international companies often apply far more efficient and modern Human Resource (HR) methods in comparison with their local counterparts (Hiltrop, 1991 and Horowitz, 2011). These methods have recently been not only efficient, but also begin to contribute significantly to the development of the host-country's workers' competencies (Kuddo, 2009). This integrated collection of research articles will describe our collective experience over the past years related to changes in the HR practices of foreign owned firms in the Central and Eastern European (CEE) region. For each country we will first review the socio-economic situation of the country surveyed and evolution of foreign direct investments in this region. Second, we outline our research model. And last but not least we present the empirical experiences, which we received on the subject from eleven CEE countries – Bulgaria, Croatia, Czech Republic, Estonia, Lithuania, Hungary, Poland, Romania, Serbia, Slovakia and Slovenia.

Key words: Multinational subsidiaries, Human Resources Management, Central and Eastern Europe

INTRODUCTION

Before 1989, hardly any foreign direct investment had been injected by the companies of the developed West in the former socialist countries. Even the former socialist countries urged carrying out foreign direct investment within the economic association of former socialist COMECON (Council for Mutual Economic Assistance) nations. But with few exceptions, these forms of investment were not typical. Rather, each country has invested at home. This situation changed radically after the regime changes of the late 1980s. Of course, this process took place in different intensity in the examined countries. Usually the introduction of foreign capital was very closely tied to the privatization process.

Let's see what the numbers show. Several times global peaks of foreign capital investment have occurred. The historical record over the last twenty years in the world occurred in 2000. The next major peak was in 2007. In the past three years, the volume of FDI was a shadow of previous volumes. A recent positive trend has been started again in this regard. The countries surveyed have progressively increased the amount of FDI during the years examined. Initially, Hungary was leading the list. Later, Poland took over as regional leader in foreign direct investment. In recent years, the Southern-European countries are catching up in this regard.

INSTITUTIONAL ENVIRONMENT

It's worth to take a brief look at the most important economic indicators of the countries studied.. Analyzed before the crisis, most countries – with the possible exception of Hungary - have grown at a pace exceeding the developed countries. Moreover, these countries have kept up with the pace

of emerging countries. The crisis has also drastically impacted these countries. Everywhere except in Poland an overall economic downturn has occurred. Most of the countries are heavily export-oriented and closely linked to the German economy. This strong economic connection has helped. The economic growth in these countries started increasing again.

The institutional system of the countries examined here have much in common, but because the historical and national traditions there are several institutional differences. The shared tradition of socialism, as well as the fact that the majority of them (except Croatia and Serbia) recently acquired EU full membership (2004: Estonia, Hungary, Poland, while in 2007, Romania) have resulted in many of the same institutional solutions in HR-related areas. Differences exist in the areas of unemployment or tripartite interest reconciliation systems. There are significant differences in the field of pension, personal and corporate taxation policies as well.

The Western public for some time has treated and considered the former socialist countries as a homogeneous block. The Czech-Slovak peaceful split, the secession of the Baltic States from the former Soviet Union and last but not least the disintegration of the former Yugoslavia after the Balkan civil wars, all show that this oversimplification is not appropriate.

Beginnings in the 1980s years of ongoing cultural studies have reached this region. Both Hofstede (2001) and the GLOBE research (House, 2004 and Bakacsi, 2010) provide empirical evidences of the complex and multifaceted nature of cultures within and across regional and national boundaries. The impact of “the culture factor” in determining the investment potential of the region, in the eyes of multinational firms, is a critical question.

All countries surveyed want to modernize, and this modernization will require a great deal of capital. Besides the EU community funds, the other potential logical source is foreign capital. Of course, many of these countries have also been worried about the strong influence of foreign capital in the economy – the “sovereignty” question. Many political parties and interest groups are explicitly campaigning against FDI, but the more dominant political forces in the region has always sent clear or consistent signals neither totally for nor against foreign capital. Rather, they have given legal benefits to foreign investors. Hungary in the past few years he tried to give significant tax incentives to lure foreign capital into the country. Governments have tried to support job creation programs associated with foreign investors. The former Slovak government offered tax incentive programs and infrastructural facilities (e.g. employee homes, roads etc.) to the biggest foreign investors in the car industry.

OUR MODEL

Our model is built on three components. First, we relied on the widespread perception of international management, besides the external influencing factors the HR activities of a subsidiary, factors related to firm size, maturity, country of origin and strategic orientation. Given the context provided by these dimensions we secondarily examined how different HR variables (e.g. presence and size of HR professionals, the importance of HR functions, HR skills and the employment of external service providers), vary systematically across nations in our regional sample. The third component of our study consisted of a comparison of the similarities and differences of the HR practices of foreign owned companies in the countries surveyed.

OVERVIEW

My presentation consists of three major parts. The first section gives a brief overview of the basic features of our research. The second section describes the theory of the four most important elements of our model (FDI and Employment, Strategic issues of the local subsidiaries, HR in CEE region and Socio-economic and cultural dimensions of Countries Survey). The third section summarizes the main results of our research and provides a series of conclusions (Farkas et al., 2011 and Poór Farkas, 2012).

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OVERCOMING MENTAL MODELS: UNLEASHING THE HIDDEN POWER FOR ORGANIZATIONAL DEVELOPMENT AND LEADERSHIP EFFECTIVENESS

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ABSTRACT

This paper describes the meaning and the role of mental models for effective leadership and organizational development. Representing the images, assumptions, and stories we carry in our heads that impede our ability to communicate effectively and think innovatively, mental models are a relevant management issue because they determine both how and what we see as well as how we think and act. As such, mental models have much more influence over the outcomes than the actions or decisions being made. Reporting from different examples, the paper emphasizes the fact that mental models are both subtle and powerful. Subtle, because we are typically unaware of their effect and powerful because they determine what we see and how we act. Within descriptive mode of analysis, the study investigates how mental models affect organizational success through mechanisms such as defensive routines and skilled incompetence. The study also examines how and why the difference between successful leaders and those that are not successful is hidden in their mental models or meaning structures and not their knowledge, experience, information or training. The goal of the paper is to demonstrate the need to shift leadership paradigm from gaining skills to acquisition of new mental models because they offer more valid and useful ways to effectively deal with the complex challenges of leadership today. Since mental models are ingrained in past experiences and beliefs, they are thus insufficient in ensuring that the organizations keep up with an accelerating pace of change in an increasingly competitive business environment.

Key words: mental models, defensive routines, skilled incompetence, leadership effectiveness, organizational development

INTRODUCTION: THE ROLE AND MEANING OF MENTAL MODELS

Our theories determine what we measure.
Albert Einstein

“Mental models are deeply held internal images of how the world works, images that limit us to familiar ways of thinking and acting. Very often, we are not consciously aware of our mental models or the effects they have on our behavior (Senge, 1990:8). They are developed overtime through the proces of socialization, including education, experience and interaction with others. Once these models

are created, they become fixed and reinforced in the mind, becoming difficult to change. The function of mental models is to mediate reality for our minds and help us categorize and organize an endless stream of information we take every day. (DeBono, 1991).

Mental models can also be defined as ‘frameworks’ or meaning structures for “describing the interrelationship between activities, objects and abstract items of knowledge in a person’s mind, and can also involve prediction of future events” (Johnson-Laird, 1983). Since they are deeply held beliefs, images, assumptions we hold about ourselves, our world and our organizations, and how we fit in them, mental models are frequently called ‘cognitive maps’, ‘schemas’ or ‘mental

constructs.’ They have been studied by cognitive scientists in their attempt to better understand how humans know, perceive, make decisions, and construct behavior in different environments.

This process is physiological, it starts from birth and it is an intrinsic part of being human. Mental models can be simple generalizations or complex theories about our worlds, but the bottom line is that they both affect our perspective and influence our behavior. They have been used in many contexts and for many purposes because the idea of mental models is very practical and as such it has numerous implications for our lives, schools, businesses and different aspects of social life. This is simply because we always need to interact with people that see things differently than ourselves. In other words, how we act on the world, our decisions and rules, are all based on our mental models.

Although the term ‘mental model’ was first mentioned in 1940’s, in the book „The nature of explanations” by Scottish psychologist Kenneth Craik who believed that the mind constructs “small-scale models” of reality that it uses to anticipate events, to reason, and to underlie explanation, the idea of mental model is not new. Much earlier in history, in his well-known dialogue The Republic, Greek philosopher Plato tells a Parable of the Cave in which he concludes that we are all misguided cave dwellers, operating under incomplete or distorted perceptions of reality. The point of the story is that humans are very resistant to challenge and change their own perceptions of reality. In other words, what Plato is pointing out is that due to our mental models, we refuse to change.

MENTAL MODELS IN MANAGEMENT PERSPECTIVE: MANAGERS AS PARADIGM-BUSTERS

*To be a successful manager in the 21st century...
calls for a new mental model of manager, one suited to a world of chaos.*
Toby Tetenbaum

Due to our social conditioning that provides us with a stable environment, mental models function as ‘filters’ in our brain that allow only certain limited portion of the external stimuli to actually enter our brain. This is useful in terms of filtering information for our sanity and risk reasons, but the problem is that humans generally have a tendency to reject data that does not support an already existing assumption. In other words, the trouble begins when we begin to comprehend everything through categories that worked for us in the past.

The same principle holds in organizations as well. The way our organizations are structured, lead or people motivated in them, is based on our beliefs what organizational structure should be like, how should we run our organizations or what generally motivates people. Therefore, from a management point of view, mental models are extremely important because they determine both how and what we see as well as how we think and act. Since they are ingrained in past experiences and beliefs, they thus carry out the problem with transformation and change. Peter Senge pointed this out placing mental models as one of the five disciplines in his influential book “The Fifth Discipline” about learning organizations (Senge, 1990).

Organizational studies increasingly show how mental models limit our organizations every day. Most time and resources in modern organizations and institutions are spent on reorganizing structures and procedures and reacting on issues. According to some studies, around 70% of reengineering undertaken in 1990ties failed (Scharmer, 2009). The reason is that people involved did not really rethink or ‘reframe’ the problem so that the underlying pattern of thought remained unchanged. One of the famous examples about how mental models erect barriers in organizational success is a story about Swiss watch industry. Being dominant in the world market for watches for many years, when quartz technology was introduced, Swiss manufacturers rejected it. It did not match their mental models and belief that watches should be mechanical, not high technology devices. When Seiko accepted this new technology, Japanese took over a big portion of the world watch market simply because they did not have dependence on the mental model about what makes watches desirable.

For the same reasons, many good ideas in organization never go through because they simply do not match prevailing ideology or assumptions and beliefs. The examples of successful companies are those that are not afraid to introduce new models of thinking. Such examples are Apple's innovation strategy and design thinking or Dell Computer that completely changed the idea of computer selling and distribution. In this sense, mental models are "equivalent to the concept of paradigm because both paradigm and mental models represent an integrative set of ideas and practices that shape the ways people view and interact with the world." (P. Senge, *online resource*).

Since managers often get locked into a mindset because of which they tend to filter out information that does not fit their current paradigm, in order to avoid this, managers have to become "paradigm-busters" (P. Senge, *online resource*). What this means is that managers need to step outside their preconceived mental models and constantly challenge and rebuild them in order to imagine „new ways to understand the world that do not logically follow from past beliefs (De Wit & Meyer, 2004).

ORGANIZATIONAL DEVELOPMENT BARRIERS: SKILLED INCOMPETENCE AND DEFENSIVE ROUTINES

It's not differences that divide us. It's our judgments about each other that do.
Margaret Wheatley

As Margaret Wheatley (1992) suggests, up to this time, all our organizations have been constructed on notions derived from 17th century Newtonian physics and on assumptions that our world is a world of things, mechanics, hierarchies, and rigid organizations. We have learned to believe that fixed structures provide clarity and order, but the fact is that they typically function only within the finite contexts for which they were designed. When new conditions arise, such as highly complex challenge of globalization or global financial crisis, they can easily fail because they fail to adapt to the rapidly changing and complex external environment.

Here are two mechanisms that provide solid foundations for resistance to change. They are coined by Chris Argyris in his seminal book *Overcoming Organizational Defences* explaining how many innovative ideas fail to be translated into meaningful strategic organizational actions simply because these ideas do not match dominant mental models. Chris Argyris stated that we often trap ourselves in so-called defensive routines. They safeguard our mental models from examination and at the same time prevent ourselves and our organizations from learning and investigating or eliminating underlying problems. Such routines can be defined as „any action or policy designed to avoid surprise, embarrassment or threat.“ (Argyris, 1986) and their unintended consequence in organizations is creation of "anti-learning and overprotective" environment.

Besides defensive routines that keep our mental models locked, Argyris claims that we also develop "skilled incompetence." Skilled because one does it without thinking (like riding a bike), and incompetence because it creates results that are not intended (like falling from a bike). In practice, this occurs when environment changes and a person continues on behaving according to the same mental model. Basically, "managers use practised routine behaviour (skill) to produce what they do not intend (incompetence)" (Argyris, 1990). An organization may suffer disastrous consequences of products of skilled incompetence. The only remedy is to find out how deeply ingrained are one's incompetencies and to unlearn them. This is because, as Argyris concludes, "although people do not always behave congruently with their espoused theories (what they say), they do behave congruently with their theories-in-use (their mental models)" (Argyris, 1993).

For example, what many organizations call "planning" is simply a projection of their current mental models into the future. In this case, planning becomes projecting the status quo with a new date. The underlying reason are mental models which limit us to familiar ways of thinking and acting. For this reason, our projections of the future suffer from basic assumptions that are not generally valid.

In order to avoid these limitations, every planning procedure must, to some extent, *expose and challenge the organization's mental models*. This does not mean that all mental models should be

changed in a planning procedure, but some of our mental models will have to change in order to prepare the ground floor for changing our future.

Mental model thinking is an antidote from restrictive, subject silos. If left unchallenged, our mental models will cause us to see what we have always seen: the same results, the same needs and the same opportunities. Simply because we see what our mental models permit us to see, we can only do what our mental models permit us to do. For this reason, we must first discover what our internal assumptions are. And then unlearn what we think we know. According to Senge, managing mental models involves identifying, clarifying, and changing one's mental model and its component assumptions (Senge:1990). It is only through such a process of deconstruction our mental models are challenged and we become able to identify new ways of looking at an old problem.

FINDING THE NEW IN THE OLD: MENTAL MODELS AND LEADERSHIP EFFECTIVENES

What separates successful leaders from unsuccessful ones is their mental models or meaning structures, not their knowledge, information, training, or experience per se. Thus the development of leaders should focus on acquisition of new mental models, models that offer more valid and useful ways for effectively dealing with the complex challenges of leadership.

Homer H. Johnson

Since mental models provide a framework for the interpretation of ideas and activities, assist in restructuring existing information and aid in the inculcation of new information, (Stevenson, Mr Eric J., James R. Warn, *online resource*), there is a direct link between leadership effectiveness and mental models. Research by Ford & Kraiger (1995:6) suggests that effective leaders have more efficient thought process and use appropriate mental models because their decision behaviours, ‘...contain more diagnostic clues for detecting meaningful patterns in the learning or transfer environment.’

Nonetheless, the vast majority of leadership development opportunities still focus on individuals supporting them to “develop critical skills that make them more effective leaders in their organizations.” (Meehan, D., Reinelt, C., 2010) This is because leaders are generally held responsible for providing results, and as Thinking-Action-Outcomes Model below suggests, results are determined by actions that leaders take. For this reason, most leadership and organizational development courses or trainings focus on activities such as goals setting, motivating and inspiring people, coping with conflicts etc. Although possessing these skills is necessary, it is certainly not sufficient for leadership effectiveness. Great leadership requires that leaders challenge their own mental models, and that is the assumptions, beliefs, values and perceptions because both, our decision making and actions are determined and guided by our mental models. Great leaders understand that their mental models have much more influence over the outcomes than their actions or decisions being made.



Figure 1: Model adopted from “Leaders Challenge Their Own Mental Models,” available at <http://whitewatercg.com/2011/04/leadership-models/>, accessed March 2012.

Increasingly, there is an understanding that leadership is a process grounded in relationships that are fluid dynamics, non-directive, and non-unilateral. This is a fundamental shift away from a paradigm only advocating leadership as the skills, qualities and behavior of an individual who exerts influence over others to take action or achieves a goal using their position and authority. (Meehan, D., Reinelt, C., 2010).

In other words, using the Thinking-Action-Outcomes Model to explain the importance of mental models for leadership effectiveness: the way we see our world (mental models) affects our thinking and experience of the world and therefore determines our actions. When the way we see our world changes (our mental models are challenged and changed), we can then change our actions and get

very different results. Unlike reacting which occurs when we respond to a new condition by doing what we have always done, Senge and other thought leaders (Argyris:1990,1993, Scharmer:2009, Wheatley 1992,2005) suggest that we should respond to change by questioning our mental models. In this process called Reframing (Scharmer, 2009), our deeply held assumptions and governing variables are examined. Only after the underlying assumptions are known and questioned, we can open ourselves to new ways of seeing.

CONCLUSION

Insanity is continuing to do the same thing over and over and expecting different results.
Albert Einstein

Current socio-political and economic climate requires ‘a new approach that necessitates leaders thinking differently about how change occurs and how professionals develop themselves and work with each other’ (Meehan, D., Reinelt, C. (2010). For example, how can a manager deal effectively with an interpersonal problem in his unit if he has certain opinions about an individual? To be an effective leader requires the discipline of mental models which means being able to modify assumptions in order to show the true causes of problems. The fact is that leaders today frequently face challenges and opportunities that cannot be adequately addressed by reflecting on the past. Leaders must be able to overcome the limitations of their own mental models to develop ‘a new understanding that will ensure the development of innovative, but feasible strategies to deal with an unfolding reality.’ (De Wit & Meyer, 2004).

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ASSESSMENT AND SELF-ASSESSMENT OF CORPORATE SOCIAL RESPONSIBILITY: PROBLEMS AND DECISIONS

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ABSTRACT

Currently, the requirements for the social side of the enterprise are increasingly growing. It applies to businesses of all types of ownership, size, organizational and legal forms, regardless of their geographical location, type of activity, cultural and national traditions. In Russia, after extensive discussion of CSR essence in the last decade, the situation has stabilized. Further extension of CSR is largely hindered by the lack of clear and accessible teaching approaches to organizing and implementing social activities in the enterprises of the region, based on certain rules and requirements. One of the attributes of socially responsible behavior of companies is to follow certain standards, since they are the main tool to assess the stakeholders and also allows the company to objectively present their own level to achieve socially important parameters of development. In 2011, the author participated in the development of the "Standard of Corporate Social Responsibility of Enterprises of Voronezh Region", which laid the evaluation indicators of the regional specificity. In this paper, the technique of self-assessment of corporate social responsibility based on the construction of the results matrix in the spheres of responsibility and stakeholder engagement is represented.

Key words: Corporate Social Responsibility, Indicator, Social Accountability, Results Matrix, Standard

INTRODUCTION

In Russia, for the moment the number of companies that systematically carries out activities in all areas of CSR is very small. Even fewer companies are able to formalize the management of CSR and social reporting which are provided on a regular basis. We believe that this is a manifestation of such institutional feature of Russian society as dominance of the informal part organization, which in turn has led to some skepticism of Russian businessmen on the need for formal documents, regulating the social and economic activities. Therefore, one of the major problems faced by researchers and practitioners is the measurement of corporate social performance and interpretation of results obtained in accordance with the values of society and companies.

Large Russian companies which actively cooperate with foreign companies commonly use international standards. However, for the evaluation of most small and medium-sized enterprises these standards are not suitable enough precisely because of the orientation of the transnational and large national businesses. In addition, the appreciation of these standards is very limited: the results of the regional empirical studies showed that only a few of the respondents are familiar in general terms with international accounting standards in the field of CSR, knowing the details of these standards was not among the respondents (Nikitina, 2009). Tables 1,2,3 presents data on the use of social reporting in the formation of CSR.

As one can see, social reports are compiled by only 6-10% of Voronezh enterprises. In the period of favourable business conditions, 23.3% of managers planned start the process, but during the worsening economic situation only 2% of respondents kept the desire. In other words, Russian managers do not consider the CSR reports as important statements of their economic well-being.

Table 1: The annual social reports preparation (% of respondents)

Compilation of reports of social	Years	
	2007	2009
Yes	10,0	6,0
No, but plan	23,3	2,0
No	66,7	92,0

Table 2: Forms of social reporting (% of companies that make up social reports)

The form of social reporting	Years	
	2007	2009
A separate report in accordance with international non-standard	0,0	0,0
Appendix to the Annual Report	100,0	66,7
Report to the board	0,0	0,0
Speech in the Media	0,0	33,3
Other	0,0	0,0

It should be noted that the surveyed managers did not make separate social reports. In 2007, 100% of the respondents indicated the appendix to the annual report as a form of social reporting, in 2009 a third of managers made statements in the media.

Table 3: Reasons for not making social reports (% of companies that do not make up social reports)

Reasons	Years	
	2007	2009
Other tasks	48,1	29,8
The company is not ready for dialogue with the public	14,8	4,3
Lack of financial resources	11,1	10,6
Necessity absence	26,0	46,8
Other	0,0	2,1
Do not call the cause of	0,0	6,4

In 2007 “other tasks” and “the absence of the necessity” were named as the most important reasons for not drawing on the CSR reports. In 2009 the same reasons were named, but their rankings are reversed. It is noteworthy that only 26.0% of managers saw no need for social reporting in 2007 and in 2009 there were 46.8%. We can assume that the worsening economic situation in the country affected the views of managers. But in general, this situation is because the level of businesses management relationship to corporate social responsibility is very unstable. Socially responsible behavior is seen as an attribute of a good life, which can be neglected for the deterioration of the situation. That indicates that the level of understanding of CSR as a strategy is not achieved.

In this regard, from the Russian federal and regional government authorities are taking steps to enhance socially responsible behavior of Russian enterprises.

METHOD OF "STANDARD OF CORPORATE SOCIAL RESPONSIBILITY OF ENTERPRISES OF VORONEZH REGION"

It should be noted that at the present time in Russia the unified social standard does not exist. So companies could not make up standardized and comparable reporting. All national standards for corporate social responsibility are developed based on the documents of authoritative international organizations: OECD Guidelines for Multinational Enterprises; UN Human Rights Norms for Business; Global Compact; ILO Conventions; Global Sullivan Principles. At their base the separate documents, which are advisory in nature, and the fulfillment of their demands is voluntary were formed: Standard "Social responsibility of the organization. Requirements"- CSR/2008 developed

by Russian Organization for Quality; Standard "Social reporting by enterprises and organizations registered in the Russian Federation. Guidelines", proposed by Russian Chamber of Commerce; "Basic performance indicators. Recommendations for use in the practice of management and corporate non-financial reporting", prepared by Russian Union of Industrialists and Entrepreneurs in order to promote the ideas of the Social Charter of Russian business.

The lack of clear quantitative indicators of CSR and methodological basis for the interpretation of the results are the main problems of the majority of standards. The use of the standards GRI and "Basic performance indicators. Recommendations for use in the practice of management and corporate non-financial reporting" (Russian adaptation of the GRI) can help to overcome these problems (Prokopov, F., Feoktistova E., 2008). But first of all they do not allow to evaluate the results of social activity without the involvement of experts, as they do not have specific guidelines for the indicators. Secondly the composition of the proposed indicators of activity fits only to a large industrial enterprise. And thirdly, they give rise to only a formalization of the reporting process in the management of CSR. Also, the general purpose of each standard is not reduced to the common goal: one can assess the quality of the preparation of social reports, while others are designed to improve the quality of reporting on sustainable development, third are made for stakeholders.

In the last 2-3 years in the Russian regions some steps to enhance socially responsible behavior of regional companies have been taken. This process developed by such tools as organization of the various competitions, building a rating of socially responsible businesses, and developing their own CSR standards and codes. In the Voronezh region the initiative in the introduction and development of CSR has also been taken. We have developed "Standard of corporate social responsibility of enterprises of Voronezh Region". It covers the general theoretical position associated with the terminology, goals, principles of corporate social responsibility, and includes minimum required of indicators to assess the level of social responsibility. The standard can be used by organizations of all sizes and types, regardless of affiliation to a particular industry, the level of knowledge of the requirements of international standards for self-assessment and provide information to key stakeholders (public authorities and management bodies of local self-government, community organizations, made available to the public through media, etc.).

The Standard provides the use of both quantitative and qualitative indicators. The use of quantitative variables ensures comparability of data. The principal feature of this standard is that the CSR indicators are grouped in three spheres of responsibility - the technical-technological, organizational-economic and non-productive. This allows to describe three areas of socio-economic relations:

- State of the productive forces, from which all other components of socially responsible behavior of the enterprise depend on;
- The degree of organizational and economic relations, which mediate the productive forces;
- The nature and intensity of the interaction of companies with governments, local governments, civil society organizations in decision of a wide range of socially significant issues of non-productive activities.

For example, the composition of the indicators in the organizational-economic sphere is presented in Table 4.

The structure of the indicators in the Standard shows not only content elements of the specific areas of CSR, but also evaluates the level of achievement in this area.

Table 4: Indicators of corporate social responsibility in the organizational-economic sphere

№	Name of indicator	The minimum value of the indicator not reached (0 points)	The minimum value of the indicator (1 point)	The recommended value of the indicator (2 points)
1	Collective agreement	The collective agreement is not concluded	The collective agreement is concluded	The collective agreement is tailored to a tripartite agreement between the Government of the Voronezh region, trade unions and employers' associations
2	Average monthly wage (rubles per 1 employee)	Below the average value in the region by activity	Average value in the region by activity and higher	Average value in Russia by activity and higher
3	The minimum wage in the organization (rubles per month)	Below the living-wage established in the region	The living-wage established in the region and higher	Double living-wage established in the region and higher
4	The coefficient of wage differentiation in the organization (the ratio of average wages 10% of the highest paid and the average wage of 10% of the lowest paid employees (how many times))	>10	5 – 10	< 5
5	Payment and adjustment of wages	With arrears of wage during the year	Without arrears of wages	Indexation of wages in accordance with the consumer price index in the region
6	The coefficient of staff turnover (%)	> 20	10–20	< 10
7	Number of employees, passed vocational training, retraining and advanced training at the expense of the employer during the year (% of average number of employees)	< 10	10- 20	> 20
8	Saving workplaces (% of workplaces at the beginning of the year)	Reduction (more than 5%)	On last year's level (+ / - 5%)	Increase (more than 5%)
9	Violations of tax laws	Tax penalties have been applied	Tax payments are paid in full value at the request of the tax authority within the period when the duty on the application of penalties by the tax authority has not yet begun	Tax payments made promptly and in full value
10	Violations of Charter and contractual obligations to suppliers of material and financial resources (including owners)	Violations were not resolved or resolved in the courts	Violations resolved out of court	No violations
11	Cases of unreasonable overpricing	Cases of unreasonable overpricing were officially registered	No violations	Socially oriented pricing policy (discounts, benefits for disadvantaged groups, etc.)

INTERPRETATION OF THE RESULTS OF CORPORATE SOCIAL RESPONSIBILITY FOR THE COMPANY AND ITS STAKEHOLDERS

Standard's indicators rank the activities of the company's corporate social responsibility at three levels. Ranking done on the basis of the implementation obligatoriness of socially responsible activities: mandatory and voluntary. The minimum value of the indicator sets a limit of mandatory level.

Failure to comply with mandatory actions automatically precludes the company from a number of responsible, no matter what voluntary socially important transactions it may produce. In the presence of at least one indicator with a value of "zero", the enterprise can not be considered socially responsible. This is due to the fact that in prescribing regulations the values that society considers unconditionally are reflected. The company may not share this value system, but has no right (either legal or moral) to consider their own values more significant than that prescribed by society. This does not exclude the possibility to initiate the introduction of changes to regulations aimed at improving the social responsibility of all society that can be considered as an element of socially responsible behavior on a higher - a voluntary level.

The Standard takes into account that the conditions in which businesses operate are specific to each region. Achievement of at least average level indicates that the enterprise-specific parameter of its activities is working "better than others." Therefore, the averages over spheres of activity in Voronezh region were taken as the first level of CSR.

The first level is primary. It represents that the company's activities aimed at the assimilation of the CSR provisions which are already developed, the obtaining a sufficiently common for companies in the region results and the adaptation to the generated rules. So it can be treated as a voluntary adaptive.

The second level of CSR in the standard is recognized not only voluntary, but the initiative in its distribution. Therefore, companies' own initiatives and results in the field of CSR, which are mark out a particular company of their total population, are especially highlighted. The excess of the actual values of indicators established in the region and the best business practice results are assigned as the parameters of the second level of CSR. Naturally, the adoption of the second level involves the achievement of the first. If the first level of corporate social responsibility is not reached by the values of a particular indicator, then the company cannot claim to second level on the same indicator.

Indicators laid down in the Standard, provide a methodological basis for self-assessment company in CSR issues. For example, to this end, we propose the use of "traffic light corporate social responsibility", which is a matrix in which the results of activities in spheres of responsibility and stakeholder engaged. The value of the resulting indicator in a certain sphere of corporate social responsibility (technical-technological, organizational-economic, non-production) is determined for each stakeholder. The values range from 0 to 2 and is calculated in two steps:

1. The value of the indicator R_i^j (i - element of the Sphere of corporate social responsibility, j – Stakeholder) is determined by comparing the actual value for the reporting period with the established standards (the minimum allowed value of the indicator, which determines a level of responsibility, and recommended the indicator value corresponding to the two level responsibility):

$$R_i^j = \begin{cases} 0, & \text{if the actual value} < \text{the norm of the first level} \\ 1, & \text{if the actual value} \geq \text{the norm of the first level} \\ 2, & \text{if the actual value} \geq \text{the norm of second level} \end{cases} \quad (1)$$

2. The resulting indicator R^j reflects the status of certain Sphere of corporate social responsibility for the j -th Stakeholder:

$$R^j = \begin{cases} \frac{\sum_{i=1}^n R_i^j}{n}, & R_i^j \neq 0 \\ 0, & R_i^j = 0 \end{cases} \quad (2)$$

The resulting indicator gives three types of signals:

- Exit from the zone of responsibility ($R^j=0$) - "red";
- Being in the middle zone of responsibility ($R^j \in [1;2)$) - "yellow";
- Leadership responsibility ($R^j=2$) - "green."

As a result, the company can create a results matrix for spheres of responsibility and stakeholders, presented in Table 5. In each cell of the matrix the resulting calculated value is stored in a specific indicator for each CSR stakeholders, showing three types of signal: output from the zone of responsibility, being in the middle zone of responsibility and leadership responsibility.

Table 5: The results matrix of corporate social responsibility

Stakeholders	Stakeholder 1	Stakeholder 2	Stakeholder 3	Stakeholder j
Sphere of CSR				
Technical-Technological	R_{TT}^1	R_{TT}^2	R_{TT}^3	R_{TT}^j
Organizational-Economic	R_{OE}^1	R_{OE}^2	R_{OE}^3	R_{OE}^j
Non-Productive	R_{NP}^1	R_{NP}^2	R_{NP}^3	R_{NP}^j

Bear in mind that the content of corporate social responsibility reflect the expectations of society at a particular time and is constantly changing along with the problems of society and its expectations. Therefore, the provisions of the Standard, the composition and the quantitative values of the indicators of corporate social responsibility are subject to periodic review.

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EVALUATION OF THE RESISTANCE CRITICAL INFRASTRUCTURE IN SLOVAK REPUBLIC

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ABSTRACT

Evaluation of resilience of critical infrastructure is designed in Slovakia so far only act on critical infrastructure, which was approved by the National Council 08/02/2011. So far, not in the legal system defined ways of assessing the resistance of KI. The following sections are created by the authors based on their knowledge and consultations of the Ministries of Interior and Transport, Construction and Regional Development.

Key words: critical infrastructure, evaluation, resistance, criticality

INTRODUCTION

Field evaluation of critical infrastructure is the subject of debate in recent years, policy decisions and the content of the research tasks. The Slovak Republic ranks among the states with a developed economy, this creates the requirements associated with its technical and technological strength of sophistication. An important part of the functionality of the systems is to ensure the availability of energy and raw materials necessary for the operation of the production, the supply of goods and services. These conditions of the existence of economic, but also social system of the state have some links that may be critical. The extent of criticality of certain infrastructure creates its impact in terms of consequences to own functionality of service, product or functionality to other systems or infrastructure. Article presents the results of scientific research at the Faculty of Special Engineering, University of Zilina.

INTERNATIONAL FRAME OF CRITICAL INFRASTRUCTURE ASSESSMENT

International calls and experiences give wide range of methods for risk assessment. Next information is modifying by source – “Report of Institute for the protection and security of the citizen”. The most important methods and expert information systems include:

- The US-Canadian expert system CARVER (Criticality, Accessibility, Recoverability, Vulnerability, Effect, Redundancy)
- American system MSHARPP (Mission, Symbolism, History, Accessibility, Recognizability, Population, Proximity)
- Concept - PSRAT (Port Security Risk Assessment Tool)
- Concept - VI (Vulnerability Index)
- Concept - PMI (Protective Measures Index)
- Concept - RI (Resilience Index)

Examination of the criticality of critical infrastructure is a very actual issue. Many countries around the world create a variety of methods and expert systems for assessing criticality. The remote model states the methodology and expert information tool available at <http://www.ni2cie.org/>

CARVER2.asp. The fragment of it is on fig. 1. In Czech Republic was created a tool for risk assessment marked CRITINFO. This expert information system occurs at the Technical University in Liberec and its fragment is presented on fig. 2

SLOVAK APPROACH TO EVALUATION OF CRITICAL INFRASTRUCTURE

Critical Infrastructure (next CI), an inherently complex field associated with the existence of each state. In view of the complexity of the system of internal self-sectors, but also the external links on each other more or less connected with other sectors of CI. This interaction is the result of direct or indirect links to other single industry sector. Due to the diversity of these links (direct or indirect), there is a wide range of risks that may arise as a chain reaction for activities in sectors as well as the entire CI. Breakdown of critical infrastructure is the sectoral structure defined by the Slovak Act č.45/2011 "of critical infrastructure." More is presented in Table 1

Critical infrastructure is made up of individual sectors and elements. Summary of the elements of critical infrastructure sectors: "CI is designed according to the sectoral criteria and cross-cutting criteria", the element is: "in particular, the engineering construction of the CI, the service in the public interest and the information system in the sector critical infrastructure whose disruption or destruction would have a serious adverse effect criteria according to the sectoral and cross-cutting criteria for the implementation of economic and social functions of the Slovak Republic, and thereby the quality of life of the inhabitants from the point of view of protection of their life, health, safety, property and the environment ". (Act No. 45/2011 ECR, p. 1)

For the definition of criticism infrastructure is necessary to take into account the cross-cutting criteria, which are designed in particular to:

- economic loss,
- the seriousness of the failure of the supply of goods,
- the seriousness of the failure of the provision of services in the public interest
- (Law No 45/2011 ECR, p. 3)

For the calculation of the rates of criticism it is possible to be based on objective elements obtained from relevant sources (official statistics). As a supporting structure, it is appropriate to use quantitative methods in order to:

- obtain an average value of services provided,
- express the consequences of loss of the CI service sectors and sub sectors.

ASSESSMENT OF SLOVAK CRITICAL TRANSPORT SUB SECTORS

Each service provided by the user may be limited or interrupted, which may result in its purported. The calculations are based on the assumption that the service will be delivered in full and for the entire territory of the state within the sector. This assumption gives the possibility of finding the total volume and proportion of supplied services, as the basic unit of calculation. By Jasenovce, 2011) individual calculations will be aimed at:

Expression of the average loss of supply, service users,

Ru (t) - is the average number of persons, users of the services, supplies for the day

Σ Ru - is the total average number of persons, users of Ru-service = 864,438,000

T - is delivery time unit (365 days)

$$Ru(t) = \frac{\Sigma Ru}{t} \quad (1)$$

Real result is:

$$Ru(t) = 864,438,000/365 = 2,368,323 \text{ persons per day}$$

Criticality

Ni² Center for Infrastructure Expertise **CARVER2web™** Form Map

Table View Database Reports Help Logout

Inspector: administrator
Org: administration
Asset ID #: 6 Date: 2006-04-03

**A
D
M
I
N
I
S
T
R
A
T
O
R**

Asset Name: Town of Belchertown
Address: City Hall
Address2: Jabish Street
City / St / Zip: Belchertown MA 00000

County:
Phone#: 0
GPS (x,y): -72.3636 42.2769

Owner: Town of Belchertown
Owner Type: Local/Municipal
Sector: Government Facility
Sub-sector: Local
Facility Operation: Full Time

Notes: Contact Police Department (911) in the event of an emergency

CRITICALITY
Impact of Loss of Asset
Users Affected:

- N/A
- Less than 1000 People
- More than 1,000 People
- More than 10,000 People
- More than 25,000 People
- More than 50,000 People
- More than 100,000 People
- More than 500,000 People
- More than 1 million People
- More than 2.5 million People
- More than 5 Million People

VULNERABILITY
Susceptibility of asset to damage or destruction
Choose Option: Structural Chem/Bio
Select Value: N/A

ESPYABILITY
Is the asset an "icon" - representing more than a physical structure, i.e. national monument
Select Value (Notoriety): N/A

RECOVERABILITY
Time needed to replace asset, if possible
Select Value: N/A

REDUNDANCY
Percentage of "back-up" facilities or equipment that will offset asset loss
Select Value: 100%

INTERDEPENDENCY Additional CI Sectors Affected by Loss of Asset

<input type="checkbox"/> Agriculture & Food	<input type="checkbox"/> Dams	<input type="checkbox"/> Government Facility	<input type="checkbox"/> Postal and Shipping	<input type="checkbox"/> Water
<input type="checkbox"/> Banking and Finance	<input type="checkbox"/> Defense Industrial Base	<input type="checkbox"/> Information Technology	<input type="checkbox"/> Public Health	<input type="checkbox"/> Telecommunications
<input type="checkbox"/> Chemicals	<input type="checkbox"/> Emergency Services	<input type="checkbox"/> National Monuments and Icons	<input type="checkbox"/> Transportation	
<input type="checkbox"/> Commercial Facilities	<input type="checkbox"/> Energy	<input type="checkbox"/> Nuclear Sector		

New Save Delete Go to record number: Go Refresh Record 3 of 38

Picture 1: The window from CARVER2 – tools for defining criticism in critical infrastructure in Canada and the USA.

Source http://www.ni2cie.org/downloads/CARVER2web_demo.pdf

Calculate Risk Event

CalculateRiskEvent

Prováděné hodnocení

Typ infrastruktury: Silniční infrastruktura Typ události: Povodeň

Intenzita výskytu události

Nová hodnota
zanedbatelná (cca 1x za 100 let a více)
malá (cca 1x za 10 let)
střední (cca 1x za rok)
vysoká (cca 1x za měsíc)
extrémní (cca 1x za týden a častěji)

Původní hodnota: nehodnoceno OK

Navržená hodnota: není k dispozici OK

Náklady na obnovu

Nová hodnota
zanedbatelná (cca 1 000 Kč a méně)
malá (cca 10 000 Kč)
střední (cca 100 000 Kč)
vysoká (cca 1 000 000 Kč)
extrémní (cca 10 000 000 Kč a více)

Původní hodnota: nehodnoceno OK

Navržená hodnota: není k dispozici OK

Délka objíždky

Nová hodnota
zanedbatelná (cca 5 km a méně)
malá (cca 10 km)
střední (cca 25 km)
vysoká (cca 50 km)
extrémní (cca 100 km a více)

Původní hodnota: nehodnoceno OK

Navržená hodnota: není k dispozici OK

Intenzita dopravy

Nová hodnota
zanedbatelná (cca 500 / 24 h a méně)
malá (cca 2 000 / 24 h)
střední (cca 6 000 / 24 h)
vysoká (cca 12 000 / 24 h)
extrémní (cca 30 000 / 24 h a více)

Původní hodnota: nehodnoceno OK

Navržená hodnota: není k dispozici OK

Doba do obnovy

Nová hodnota
zanedbatelná (cca 8 hodin a méně)
malá (cca 1 den)
střední (cca 1 týden)
vysoká (cca 1 měsíc)
extrémní (cca 1 rok a více)

Původní hodnota: nehodnoceno OK

Navržená hodnota: není k dispozici OK

Vliv na zdraví a bezpečnost

Nová hodnota
zanedbatelný (poškození zdraví bez trvalého následku)
malý (poškození zdraví s trvalými následky)
střední (poškození zdraví s trvalými následky více osob)
vysoký (úmrtí osob)
extrémní (úmrtí více osob)

Původní hodnota: nehodnoceno OK

Navržená hodnota: není k dispozici OK

0% Nápověda Zavřít OK

Picture 2: The window from CRITINFO – part calculate risk event (Havlíček,2012)

Table 1: Sectoral breakdown of Slovakian critical infrastructure (Source: Act No 45/ECR 2011, 2011)

No	Sector	Sub sector
1.	Transport	Road transport Aviation Water transport Railway transport
2.	Electronic communication	Satellite communication Network and service fixed and mobile electronic communications
3.	Energetic	Mining Electricity Gas Industry Petroleum and Petroleum Products
4.	Information and Communication Technologies	Information systems and networks Internet
5.	Postal	The provision of postal, service, postal payment and procurement activity
6.	Industry	Pharmaceutical, metallurgical and chemical industry
7.	Water and atmosphere	Meteorological Service Water works, provision of drinking water
8.	Health service	

The aim is to find out the average number of users, the calculation, who may be affected by the non delivering of the service such as: electricity, water, gas supply, electronic and voice services, the services associated with the transport of persons, goods, etc. Basis of calculation of the form the data obtained on numbers of users which are calculated from the average of the total numbers in those years. By calculation, we can get an overview of how many users, on average, uses the service for the time period of 24 hours.

Expression of the average financial loss of the supplies, services,

Rf(t) - is the average volume of sales for the supply, services per day

ΣRf - is the total average volume of sales for the supply, services in euros = 1,500,784,250 eur

t - is a unit of time eur (365 days)

$$Rf(t) = \frac{\Sigma Rf}{t} \quad (2)$$

Real result is:

$$Rf(t) = 1,500,784,250/365 = 4,111,738 \text{ euros per day}$$

The calculation is intended for obtaining the average value of the financial losses (revenue), which may be caused by the non delivering of the service such as: water, electricity, gas supply, electronic and voice services, the services associated with the transport of persons and goods, etc.

Express delivery services sector, sub-sector of the average loss of

Rds(t) - is the average volume of transport, supplies, gas, electricity, etc. per day

ΣRds - is average volume of transport, the total supply of goods in the sector,
e.g. goods = 183,697,800 t

t - is the time unit (365 days)

$$Rds(t) = \frac{\Sigma Rds}{t} \quad (3)$$

Real result is:

$$Rds(t) = 183,697,800/365 = 503,281.64 \text{ tons per day}$$

The average loss of the supply of services constitutes the expression of a value of the service sector in the delivery of goods, electricity, gas, etc. Underlying the calculation of the data is obtained from the average of the values in those years of supply. The result of these values is calculated for the time period of one day.

Summary of example

The above calculations show that the failure of the road transport sub-sector would result in potential loss of passenger traffic in the number of 2,368,323 persons in 24 hours. The consequence of this loss would be a weighting factor 0.944 to transport people across the transport sector. In financial terms, this loss would represent the value of 4,111,738 euros for 24 hours, with a weighting factor of 0.53 to the volume of the entire financial sector. The transport of goods would mean an average loss of volume 503 281.64 tons, the weight, the transport of goods to the whole sector at 0.787. (Jasenovec, 2011, p. 62-65)

An example of the average financial loss of expression of selected services sectors

First expression of the average financial loss for the carriage of passengers and goods by road

$$Rf(t) = 1,500,784,250/365 = 4,111,738 \text{ euros per day}$$

Second expression of the average financial loss for the carriage of passengers and goods by rail

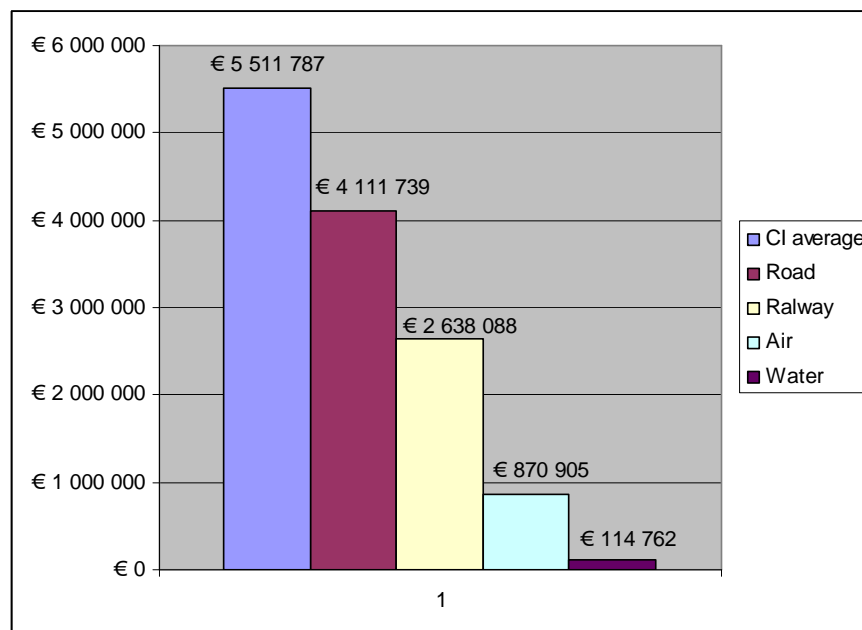
$$Rf(t) = 962,902,250/365 = 2,638,088 \text{ euros per day}$$

Third expression of the average financial loss per passenger and cargo air transport

$$Rf(t) = 317,880,500/365 = 870,905 \text{ euros per day}$$

4th expression of the average financial loss per passenger and goods by water transport

$$Rf(t) = 41,888,000/365 = 114,762 \text{ euros per day.}$$



Graph 1: Average financial loss in Slovak critical transportation infrastructure sub sectors

The financial limit can also be used as a basis for calculation of time needed to reach the average loss. As an example, take the road transport sector, which was at 4,111,738 euros. Substituting this sum together with the average financial loss of 5,511,787/4,111,738, we find that the financial loss of road transport = 1.34 which means that this sector has reached the limit of 1.3 per day. For comparison, the railway sector is similar 5,511,787/2,638,088, financial loss for railway compared with the average loss was achieved by 2.09 day.

CONCLUSION

Examination of the criticality of critical infrastructures in the world is in its infancy. There are a number of methods and procedures, the authors are their own contribution tried to add a mosaic of knowledge. The impact severity is reflected in the loss of service sector examined. This solution is possible when considering the various elements in the derived relations element to this indicator. This means that if the overall scale sector supplying a service, there is a relationship of individual elements of the supply or provision. At the same time account must be taken into account the importance of the element from the perspective of service delivery, and thus affects the sector such as the service:

- will be delivered to a limited extent in terms of time - short - long term,
- will be delivered in limited - region or throughout the state,
- not delivered at all,
- there is compensation for services.

Using this procedure, combined with measurable indicators represents a possible way of defining criticality of infrastructure.

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THE QUALITY OF MENTAL AND MORAL SOCIO DISPERSION- THE PRIMARY CONTRIBUTION TO ECO-SYSTEM SUSTAINABILITY

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ABSTRACT

Witnesses unfortunate events that are in the domain of different social activity strongly distort eco-system values. A large number of scholars from a variety of technical and social health security patterns are constantly working towards the elimination of current environmental issues, which aggressively and wins the day of the young population, disrupting the natural legacy and traditional values socio-personal. Disturbance of eco-systems primarily observes the current route subject - Conditions and tangent processes with managed or served. Elaboration, said this could be concluded that in this domain is definitely signify the urge to "ad hoc" introduced, applied and disseminated principles of modern cybernetics impose. Cybernetics can, and provide strong developmental effects that contribute to the rise of life and its sustainability, unless the context observes impartially, consistently applied elaborate and accept the adopted standards. Observed causes of work-life problems of modern life among other things signify microcosmic deviation as not only a very dangerous phenomenon, but unfortunately, as desired dispersion acceptability. Discrepancy between the microcosmic and the macrocosmic postulate contributions to jazz, which strongly influences the moral violate mental vitality as a result creates sociopathological miles. For this reason it is necessary to urgently work all possible moral and mental models and practical educational methods of prevention and preservation of the eco-system values.

Key Words: sociomentalne moral, eco-system values, practical educational methods of prevention

INTRODUCTION

It is indisputable that modern scientific knowledge about the distribution of ecological knowledge and values in various ways to promote substantive physical concepts of conservation and sustainability of the environment. Also, governmental and nongovernmental organizations in their programs seek to preserve and improve the environment by doing some similar patterns of collaborating in the organization of current promotions.

Their programs are based on preserving forests, greenery, planting saplings, clearing channels, riverbeds, squares, lawns, beaches, backyards, and the like, all in order to keep it clean, and that aesthetics is the one really expected and desired level. Be sure to have good activity, but it raises a serious question, what they bring and what they do, when we svijedoci to be always in the same period from one year to repeat the same or similar action?

Before the planned environmental action, and during the campaign, many media are very active. They very well informed about the activities of all the committed, but after the time for such activity, as if an unwritten rule, followed by lunch or a snack and socializing with the involvement of a vocal ensemble. That's it!

Nature and after being ignored, and its resources are ruthlessly destroyed. Such events have led us to several decades of survey work and opservativno to obtain parameters that unfortunately favor our previous hypothesis.

The environment can be preserved, and its habit in the concept of sustainable development to promote a healthy, if only in the works to be awakened doing microcosmic sense, consistent macrocosmic formation.

It is therefore necessary to offer valuable training through continuous vital models and methods, which will have a starting point in the distribution of the oikos (family). This important building blocks can only be conceived in a healthy family, where the moral perceptions of mental signifikovane as basic and very important nutrient family.

MODERN FAMILY (OIKOS) IN THE OEUVRE OF REGILAR DISPERSION SOCIOPERSONALNIH

The family as the basic unit of society is nothing but an atom in a molecule called a nation, or planet earth. Its members represent a microcosmic living energy, as oblikat spanning macro-and supra cosmic macro applications. Such families should be defined based on the knowledge and know where it belongs and that its role and purpose of existence, not only within its immediate sociotangentnih relations, more in the works is very broad and diverse social backgrounds.

In modern families is evident in a kind of chaos which completely loses the traditional hierarchical codifiers. Today it often, not to say regularly, record-pathological effects of trauma, diagnosed in the works of violence, neurotic, psychotic or depressive manik-dispersion.

Unfortunately, the main significator of modern family is reflected in the external manifestations and building material and financial desirability of uselessness, all at the expense of domestic prices, namely the lack of moral mental capital. These developments are evident in the very large number of planetary population.

There are knowing as they do not want, or do not or will not devote part of their earthly time and passing them exactly what they need to make happy, useful and meaningful existence. It is noted that a man wants to contemporary external "living for others" but not with others and their needs, but to live in the other of which is expected undeserved favor, flattery, praise and applauding.

In this knowledge, it is realistic to expect that modern families because of the behavior of its members losing a sense of authenticity, while society falls deeper and deeper into crisis. Race for quicker and higher-deserved undeserved "profits" undermines harmony, health and sensation your spirits. Looking at today's situation in a large number of the planetary population, it seems that the more a man can not be discussed as a physical spiritual being, but of a man as a material creature who only thinks about money.

MODERN SOCIETY IN THE WORKS OF NATIONAL CRISIS

Today, because of "some" of the crisis which we are daily and constantly inform the media, it seems as if the crisis what it brings the "Martians" and that they occur without the participation of the man and.

Crisis (grč.krisis) interpreted the occurrence of an absent moment, (fig.) preokretnica the worse, disorder, confusion, and in terms of national crisis usually thinks of the economic crisis that is economic disorder in terms of production or consumption.

Perceiving the causes and conditions of the crisis, one must start with the fact that for every crisis and the national economic crisis to blame a man. Thus at least tell us many theorists. But in the context Ergosofologi and Ekosofologi and elaboration, consideration of problems of the crisis in the works of its creator, it is necessary to go into much more fundamental, as the spiritual and moral perceptive collusion.

As war and war crimes do not begin on the battlefield but in the interior of the man and contaminated, and a crisis occurs, or is conditioned by the moral inharmonies mental harmony. Disharmony in the moral and intellectual resources certainly strongly influences the creation sociopersonalne deviation, which is recognized in the context of the crisis. Personal crisis, family crisis and the general crisis of society occurring because of the dysfunction between morality (behavior) - the mentality and the spiritual reflection of overall structure of the man and his behavior.

THE ECOLOGICAL CRISIS

The ecological crisis as a side event is not only a distortion or destruction of a harmony in nature, but it represents a return many different cause dysfunction within and outside the microcosmic, macrocosmic, and thus the supra cosmic harmony.

Ecological crisis, except those on the natural "phenomena", and if their formation and scientifically questionable, belonging to the patho-personal selfishness that manifests itself in an enormous array patho-gourmets.

People at all cost more difficult target to meet their needs or wants, ignoring the fact that others are entitled to live and enjoy the natural gifts, must be placed under the condemnation of the moral law and the scrutiny of patho-hospitalization.

CONCLUSION

To the evident environmental destruction were eliminated or isolated promptly, it is necessary to introduce the families and to all the compositional educational institutions, educational material in the field of moral and mental ecology, which aims at a reasonable and civilized way of implementing available knowledge about the real values of life, earth passing both the man and that of all other types of biocenoses.

But it is high time that Homo sapien realizes that his life and his existence is actually a moment that is no longer repeated, and that all resources that the world has to offer, not only him but also others who have lived before him, and those who now living with them, or those who would later, after his death to be born and live, the same value for the benefit and advantage.

The ecological crisis is a reflection of the moral mental contamination, which is unfortunately every day more and more present, forming a new concept of value which is based on immorality, deception, and uncontrolled aggressive extermination of natural resources,...

Said justified by the fact that "the eclipse of consciousness" promoted contaminants that are present in the daily life of the overall community relations and their place of residence.

The daily inflow of contaminated seed actualize "artificial field" where all sorts of useless, senseless, immoral and contagious nutrition.

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A STOCHASTIC MODEL TO DETERMINE THE ELEMENTS OF PRODUCTION CYCLE TIME IN ENTERPRISE

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ABSTRACT

A model for the stochastic determination of the elements of production cycle time is proposed and experimentally verified in this survey. The originality of the model is reflected in the idea of using a work sampling model to monitor the production cycle, as one of the most significant indicators of production effectiveness and efficiency, instead of applying classical methods. It has been experimentally proved that for a corresponding representative set the elements of working time range according to normal distribution law and that, dynamically viewed, it is possible using mean value calculations to establish control limits on 3 standard deviations for the individual elements of working time and thus to master the process.

Key words: production cycle, work sampling, stochastic model.

INTRODUCTION

The most important organizational-technical indicators of production successfulness are the level of capacity utilization and the production cycle. These indicators are actually influenced by a series of organizational-technical, mutually interconnected, factors which impact on the elements of working time related to the machine capacity utilization and production cycle of a certain product. The goal is, in general, to reduce the total production cycle time, especially that associated with different types of stoppage and the optimization of lead time and machine time within the sphere of machine capacity utilization. Additionally, the optimization of time for transport, control, and packing is also of importance for the production cycle. Reduced cycle time can be translated into increased customer satisfaction. Quick response companies are able to launch new products earlier, penetrate new markets faster, meet changing demand, and make rapid and timely deliveries. They can also offer their customers lower costs because quick response companies have streamlined processes with low inventory and less obsolete stock.

Consequently, the aim of this paper is to set up a model for the stochastic determination of the elements of production cycle time. Using a modified work sampling method, it has been experimentally proved in this paper that for a corresponding representative set the elements of working time range according to normal distribution law. Also, dynamically viewed, it is possible using mean value calculations to establish control limits on 3 standard deviations for some individual elements of working time and thus to master the process.

LITERATURE REVIEW

In the past, in both theory and practice, increased attention was focused on the level of machine capacity utilization because machines were more costly and thereby had a greater impact on production effectiveness. A special contribution here was made by L. H. C. Tippett (1902-1985) who first applied his method of work sampling in the textile industry [1]. Nevertheless, the classical work sampling method established by Tippett [1, 2, 3] is not appropriate for contemporary production systems, because in his research the main stoppage was due to poor material quality. Despite its shortcomings, this method is still used in production practice and is found in all industrial engineering text-books [4]. The indispensable modification of the method presented in [5] aims to explain and justify both the necessity and importance of using the shift level of the utilization of capacity as the stochastic variable in determining the total level of capacity utilization in the production process by using the method of work sampling on a sample comprising 74 Serbian companies. The conclusion drawn is that the shift level of capacity utilization as the stochastic variable in work sampling is the model which solves the problem of determining the total level of capacity utilization in a convenient way with accurate results. On the other hand, on the basis of [5], Elnekave & Gilad [6] propose a digital video-based approach to enhance work measurement and analysis by facilitating the generation of rapid time standards, which serves as a computerized tool for remote work measurement with the ability to derive the rapid generation of time standards. The application of the modified work sampling method in the processing industry indicates that the methods of monitoring capacity utilization applied in the processing industry such as cement production may also be used in the metalworking industry which has a high level of capacity utilization. Hence, the results of the analysis indicate that when the level of capacity utilization is high, this variable may be observed per day as stochastic, while, per machine, it may be a random variable [7]. It is evident that today the more significant problem of monitoring and influencing the production cycle (the period from the item's entry into the production process to the receipt of a finished product and its packing) is by far less present in the literature.

In [8] an experimental example illustrates the determination of the elements of production cycle time, showing that production cycle C is divided into only three elements of cycle time, $C = T_1 + T_2 + T_3$

T_1 = running time to produce one unit of output,

T_2 = normal time to service a stopped machine,

T_3 = time lost by normal operator working because of machine interference.

In paper [15] an approach to improve MRP-based production planning by means of targeting minimal product cycle times is presented. A number of works [9, 10] consider the impact of machine breakdown on production cycle time, while Barbiroli & Raggi [11] studied technical and economic performances related to innovations in the production cycle environment. An inventory model is linked with production cycle optimization in [12], whereas paper [13] gives an optimal algorithm for minimizing production cycle time for assembly lines, using linear mathematical programming which requires extensive calculations.

Models based on stochastic functions, or instantaneous observation methods (work sampling), have not been encountered in literature despite their ability to offer a simpler but accurate enough solution to the problem.

A STOCHASTIC MODEL TO DETERMINE THE ELEMENTS OF PRODUCTION CYCLE TIME - The basics of a stochastic model to determine the elements of production cycle time

For the purpose of analysis, the production cycle is essentially divided into production time – t_p and non-production time t_{np} [14]. Non-production time involves diverse stoppage factors related directly or indirectly to man's positive or negative attitude towards production. These stoppages, characteristic of small and medium-sized enterprises in the metalworking industry, are, as a rule, longer than the necessary production times and are more difficult to shorten. The optimal production cycle is that which is the shortest for the same product quality and price. The most common division of production cycle time in literature is production time – t_p divided into technological time – t_t , with machine t_{tm} and lead time t_{pf} , non-technological time – t_{nt} with time of control – t_c , transportation – t_{tr} and packaging – t_{pk} . Non-production time is classified according to various causes of stoppages in production, and we have made the screening of the most general and common ones caused by the lack of raw materials – t_{mr} , tools – t_{tl} , organization – t_o , machine breakdown – t_b and other troubles – t_{ot} [14].

The representativeness of a screening sample per number and time of screening was established by mathematical parameters, SD and control limits, where the elements of PC time are observed as the elements of the process function [1, 2, 3, 4, 7, 8 and 14].

THE APPLICATION OF A STOCHASTIC MODEL TO DETERMINE THE ELEMENTS OF PRODUCTION CYCLE TIME

The model was applied in 2011 and involved a larger number of Serbian enterprises. The results obtained for three characteristic enterprises will be presented here.

The first most extensive experiment concerns an enterprise owned by a big German firm engaged in manufacturing car components. Screenings were performed from September 19, 2011 to November 4, 2011. Monitoring included 47 cycles of different series sizes (4 – 10 pieces) and the time duration ranged from the shortest (240 min) to the longest (420 min), with 10 - 30 instantaneous observations. The results of screening, according to the next scheme, are shown in Table 1, where only the first 5 cycles of 47 are given as well as the total result for all 47 cycles. The results are displayed per number of instantaneous observations of working time elements, the percentage of their participation in their total duration and per element of working time, as well as the total average values and standard deviations – SD.

It is evident from the table 1 that there were 932 observations in total, while the total time for all cycles amounts to 15,293 min. The average production cycle time - t_{pc} is 325 min and the average production cycle time per piece t_{pc} is 56.2 min. The results are also presented by diagrams in Figures 1, 2 and 3. The diagram in Fig. 1 shows that the mean level is $\mu_{tpt} = t_p / (t_{pt} + t_m + t_c + t_{tr} + t_{pk}) = 0.7435$, while the control limits amount to $CC = \mu_{tpt} \pm 3 \cdot SD \cdot \mu_{tpt} = 0.7435 \pm 3 \cdot 0.09735$, $AC = 0.9606$, $BC = 0.5264$. The mean levels of working time elements μ_{tpt} , μ_{tm} , μ_{tc} , μ_{tr} , μ_{pk} have relatively stable rates per individual cycle, i.e. when their sum total is higher, the individual levels are higher. The control time level is never higher on account of the machine time level. If we observe μ_{tm} within μ_{tp} we see that μ_{tm} has the highest values compared to the other elements and that its level behaved within the range of normal distribution law, with an approximate mean of $\mu_{tm} = 0.244$. However, the control limits for this level cut too large a number of the μ_{tmi} points of this level in Fig. 2. From the results shown it is evident that the process thus presented has not been mastered, but for relatively narrow limits ($AC = 0.306$; $BC = 0.182$) only five points (values of μ_{tm}) have larger deviations. The cumulative value of μ_{tm} approaches the mean value very quickly, which also indicates the stability of this level rate (Fig. 3). Levels of cycle time have normal distribution, since $\chi^2 = 3.070404$ and $\chi_1^2 = 55.76$, e.g. $\chi^2 < \chi_1^2$.

Scheme with the results of screening

Date	No	Time		Production time tp					Non-productive tnp					Number of items
		Start	End	tpt	tm	tc	ttr	tpk	tmr	ttr	to	tb	tto	
19.09.'11.	26	8:30	13:00	3	9	3	1	2	2		2	1	2	7
26.09. '11.	18	8:05	13:30	2	5	2	4	3	1				1	10
23.09. '11.	21								21					CANCELLED SHIFT
19.09. '11.	31	8:30	13:00	2	9	3	3	3	2	1	2	1	4	7
19.09. '11.	22	8:20	13:10	2	7	4	1	3	1		2		2	8
12.10. '11.	20	8:45	12:45	2	7	1	3	2		1	1		3	3
30.09. '11.	23	8:20	14:33	5	10	1	2	3					2	7
03.10. '11.	19	0:00	13:00	1	7	2	3	2					4	5
03.10. '11.	12	8:50	13:38	2	2	1	4	2					1	3
07.10. '11.	21	7:52	13:40	3	5	1	2	3					6	5
26.09. '11.	17	8:05	13:30	2	3	3	2	3		1			3	10
03.10.'11.	20	8:50	14:10	3	4	2	5	3					3	4
03.10.'11.	23	7:41	12:50	3	4	3	4	3			1		5	6
21.09.'11.	17	8:00	13:15	3	3	1	3	1	2				4	6
07.10.'11.	19	8:00	13:10	3	6	3	2	3					2	3
30.09.'11.	21	8:32	13:40	3	7	3	3	2					3	5
21.09.'11.	21	8:00	13:50	3	6	3	4	2	2				4	5
10.10.'11.	19	7:33	13:00	2	4	3	4	2			1		3	5
17.10.'11.	14	4:54	11:00	1	4	1	3	3				1	1	8
17.10.'11.	12	4:54	11:00	1	2	1	2	3				2	1	8
19.10.'11.	20	7:42	12:35	4	6	2	1	1			1	1	4	4
19.10.'11.	17	7:50	12:35	1	4	2	4	2				1	3	4
21.09.'11.	19	8:00	14:18	2	5	2	3	2	1				4	8
14.10.'11.	22	7:24	13:15	2	2	5	2	2	2		1		6	6
14.10.'11.	22	7:24	13:15	3	4	2	4	1	2		1		5	6
28.09.'11.	21	7:39	13:15	4	7	4	4	1					1	5
14.10.'11.	18	7:24	13:15	1	3	2	2	2			1		6	6
07.10.'11.	13	7:34	11:40	1	2	2	1	2					5	5
28.09.'11.	21	7:39	13:15	3	8	1	4	1					4	5
03.10.'11.	20	7:41	13:00	2	5	1	4	2					6	5
28.09.'11.	18	9:23	14:00	1	5	2	3	1	1				5	5
12.10.'11.	16	8:45	14:20	2	3	2	4	2	1				2	8
12.10.'11.	14	6:33	12:40	1	5	2	2	2			1		1	6
12.10.'11.	22	6:33	12:40	1	7	3	6	2			1		2	6
10.10.'11.	17	7:33	12:50	2	3	4	3	1			1		3	5
26.09.'11.	23	8:00	15:00	1	4	5	4	3					6	10
10.10.'11.	19	7:33	13:00	2	4	3	4	2			1		3	5
24.10.'11.	16	8:15	12:38	2	5	4	2	2					1	4
28.10.'11.	22	9:00	14:45	2	5	4	4	2	1				4	5
28.10.'11.	21	8:20	14:10	1	4	3	3	3	2		1		3	5
04.11.'11.	20	7:40	13:00	2	5	2	3	2			2		4	5
SUMA	797			86	186	93	122	86	41	3	20	7	132	

It is inferred that to master the process in metalworking industry conditions with a cycle designed for one shift duration and a corresponding series, it is necessary to make approximately 50 daily screenings and 1000 instantaneous observations, and the production cycle time is a stochastic variable that ranges along normal distance. This example shows that the hypothesis that it is possible to apply a work sampling method in monitoring the production cycle has been proved, which represents an original approach to solving this problem.

Table 1.a: Production cycle's elements by frequency of occurrence,

Date	N _o of observations	Time		Production time					Non-production time					N _o of pieces
		Start	End	t _{pt}	t _{tn}	t _c	t _{tr}	t _{pk}	t _{mr}	t _{tl}	t _o	t _b	t _{ot}	
19.09.2011.	26	8:30	13:00	3	9	3	1	2	2		2	1	2	7
26.09.2011.	18	8:05	13:30	2	5	2	4	3	1				1	10
23.09.2011.	21									21				canceled
19.09.2011.	31	8:30	13:00	2	9	3	3	3	2	1	2	1	4	7
19.09.2011.	22	8:20	13:10	2	7	4	1	3	1		2		2	8
....														
N														
Σ	932			100	229	118	142	99	47	3	25	15	154	

Table 1.b: Production cycle's elements percentages of elements

Date	T _{pc}	Time		Production time					Non-production time					N _o of pieces	T _{pc} (min/ piece)
		Start	End	t _{pt}	t _{tn}	t _c	t _{tr}	t _{pk}	t _{mr}	t _{tl}	t _o	t _b	t _{ot}		
19.09.2011.	270	8:30	13:00	12	36	12	4	8	8		8	4	8	7	38.6
26.09.2011.	325	8:05	13:30	11.11	27.78	11.11	22.22	16.67	5.56					10	32.5
23.09.2011.	310					10			100					canceled	0
19.09.2011.	270	8:30	13:00	6.7	30	18.18	10	10	6.7	3.3	6.7	3.3	13.3	7	38.6
19.09.2011.	290	8:20	13:10	9.09	31.82	31.82	4.55	13.64	4.55					8	36.3
....															
H	100			0.107	0.246	0.127	0.152	0.106	0.05	0.003	0.27	0.016	0.165		

Table 1.c: Production cycle's elements by time duration

Date	T _{pc}	Time		Production time					Non-production time					N _o of pieces	T _{pc} (min/ piece)
		Start	End	t _{pt}	t _{tn}	t _c	t _{tr}	t _{pk}	t _{mr}	t _{tl}	t _o	t _b	t _{ot}		
19.09.2011.	270	8:30	13:00	32	97	32	11	22	22		22	11	22	7	38.6
26.09.2011.	325	8:05	13:30	36	90	36	72	54	18				18	10	32.5
23.09.2011.	310					18			310					canceled	0
19.09.2011.	270	8:30	13:00	18	81	26	27	27	18	9	18	9	36	7	38.6
19.09.2011.	290	8:20	13:10	26	92	53	13	40	13		26		26	8	36.3
....															
Σ	15293			1632	3762	1939	2413	1709	704	40	376	271	2465		

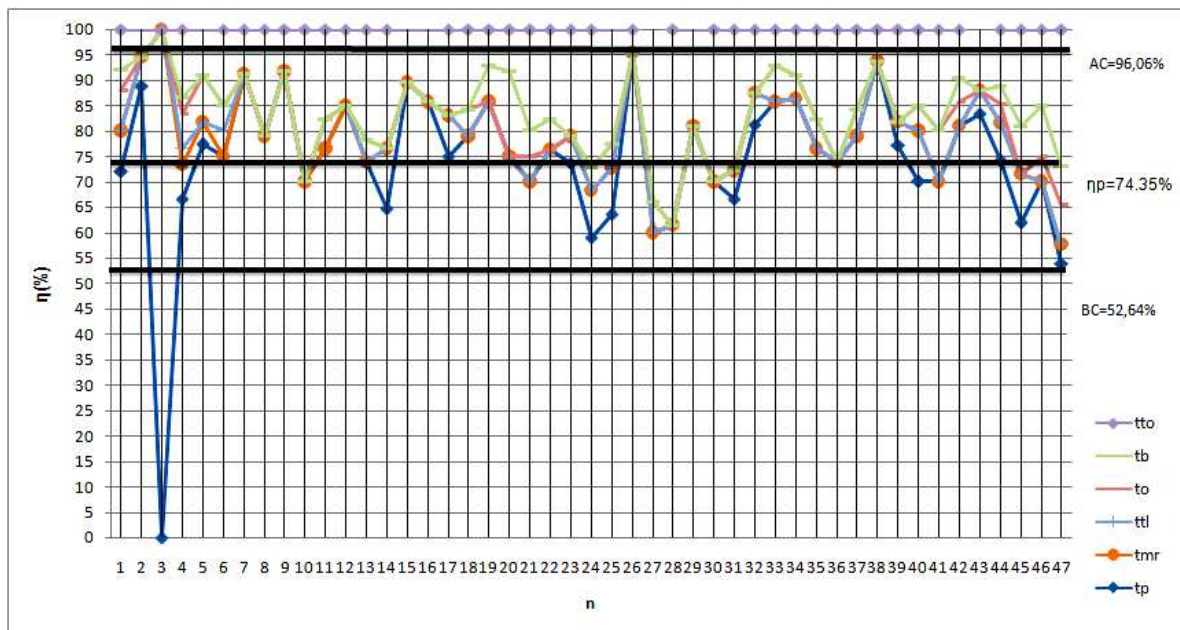


Figure 1: Diagram showing the levels of cycle time elements

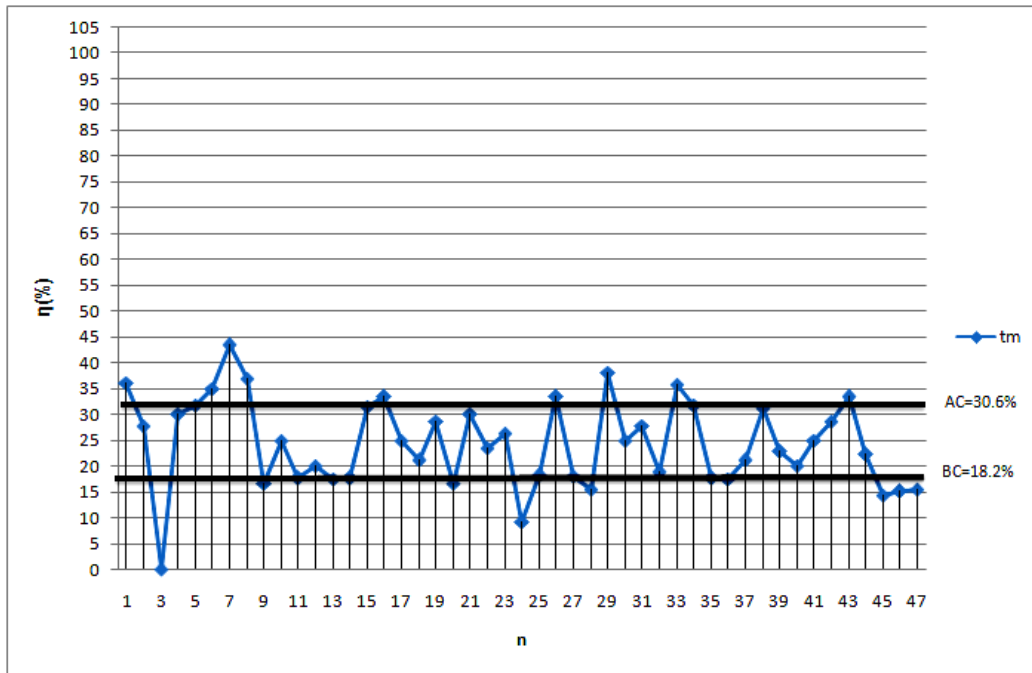


Figure 2: Machine time level

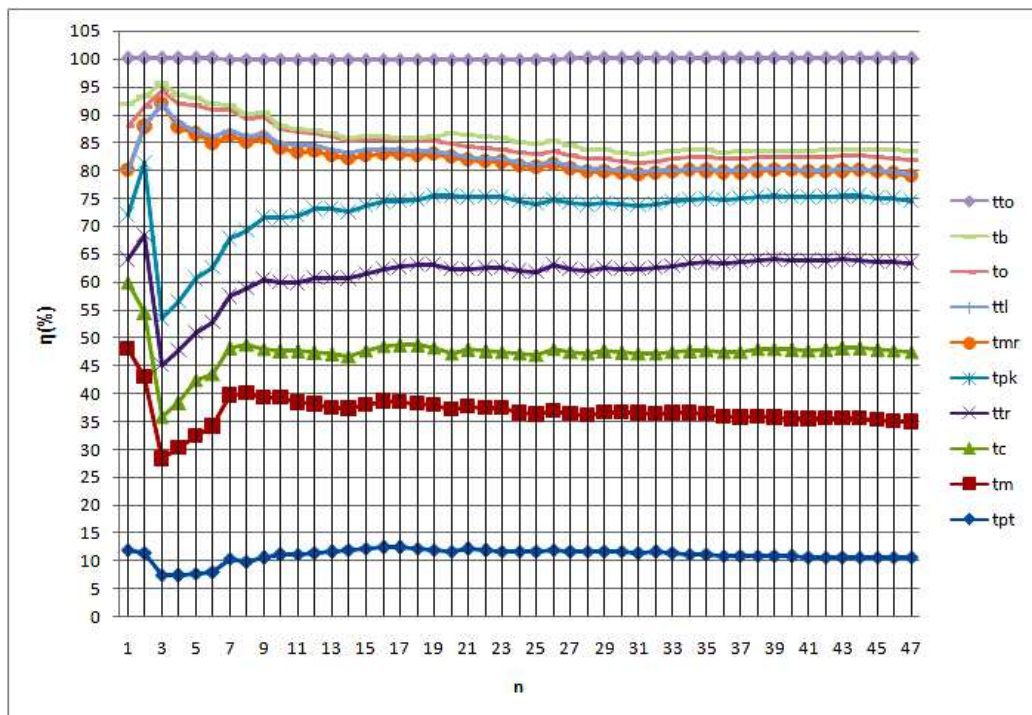


Figure 3: Cumulative production time level

The second experiment is related to a plant that produces military and firemen clothing. Screenings were carried out from September 27, 2011 to November 13, 2011. Monitoring comprised 26 production cycles of different types there were 932 observations in total, while the total time for all cycles amounts to 15,293 min. The average production cycle time - t_{pc} is 325 min and the average production cycle time per unit t_{pc} is 56.2 min.

Investigations related to the coefficient of running time as a function of the series size and where PC was analytically monitored from the plant's records did not include in-depth analysis of relationships between the series.

Table 2: Cycle time per piece in the series, and production time as a percentage

Number of items (n)	t_{pcu} (min)/kom	t_p (%)	SD %
3	80	75	7.42
3	96	91.77	
3	103.3	89.47	
\bar{x}	93.1	85.41	
4	80	85	16.14
4	73.25	70	
4	71.25	76.47	
4	65.4	93.75	
\bar{x}	72.48	81.31	
5	60	78.95	28.04
5	69.6	70	
5	61.6	85.71	
5	70	75	
5	65.4	78.95	
5	67.2	95.24	
5	49.2	61.54	
5	67.2	80.95	
5	63.8	70	
5	55.4	66.67	
5	63.4	76.47	
5	65.4	78.95	
5	69	77.27	
5	70	70	
5	64	70	
5	54	81.82	
5	66	61.91	
5	71	70	
\bar{x}	63.29	74.97	
6	51.5	73.91	29.64
6	52.5	64.71	
6	58.5	58.09	
6	58.5	63.63	
6	58.5	59	
6	61.2	85.72	
6	61.2	86.43	
6	53.3	80.96	
6	53.3	74.08	
6	61.7	61.91	
\bar{x}	57.02	70.84	
7	38.6	72	16.91
7	38.6	66.7	
7	53.3	91.3	
\bar{x}	43.5	76.67	
8	36.3	73.27	10.07
8	51	85.7	
8	51	75	
8	47.3	73.69	
8	41.9	81.25	
\bar{x}	45.5	77.78	
10	32.5	88.88	10.53
10	32.5	76.47	
10	42	73.91	
\bar{x}	35.67	79.75	

Our investigations will present the analysis of PC time observed per group determined by the size of the series. Tab. 2 shows data for groups and PC mean values per unit in a series \bar{t}_{pcu} (min/unit) and PC time – \bar{t}_p for the same groups in % and SD_p %. Tab. 3 displays the same data without groups but with the number of screening cycles and number of units in those cycles' series, with total mean value of the PC time – $\bar{\bar{t}}_p$ % that amounts to 76%.

Table 3: Number of cycles and number of units in a series for enterprise I

No	No of cycle	unit/ser	\bar{t}_{pcu} (unit / series)	$\bar{\bar{t}}_p$ (%)	SDtp
1	3	3	93.10	85.41	7.42
2	4	4	72.48	81.31	16.14
3	18	5	63.29	74.97	28.04
4	10	6	57.02	70.84	29.64
5	3	7	43.50	76.67	16.91
6	5	8	45.50	77.78	10.07
7	3	10	35.67	79.75	10.53
$\bar{\bar{t}}_p$ (%)				76	

The trends of PC time mean values \bar{t}_p by cycles (groups) with identical number of units in a series in % and PC mean values per unit in a series \bar{t}_{pcu} are given by a diagram in Figure 4. Mean value for all groups is obtained using the formula:

$$\bar{\bar{t}}_p = \sum \frac{\bar{t}_{pi} \cdot f_i}{N} \quad (1)$$

where f_i is the number of PCs with identical number of units in a series

$$\bar{\bar{t}}_p = \frac{85,41 \cdot 3}{46} + \dots + \frac{79,75 \cdot 3}{46} = 76\%$$

for a non-stratified set of data from Table 1, using the formula 2

$$SD_p^2 = \frac{\sum_{j=1}^l (\bar{t}_{pi} - \bar{\bar{t}}_p)^2 n_j}{n} \quad (2)$$

where n_j is the number of cycles in a group and n is the total number of cycles

$$SD_p = 4.46\%$$

$$CC = \bar{\bar{t}}_p \pm 3\bar{\bar{t}}_p SD_p \quad (3)$$

$$CC = 76 \pm 3 \cdot 0.0446 \cdot 76 = 76 \pm 10.17$$

$$AC = 86.17\%$$

$$BC = 65.83 \%$$

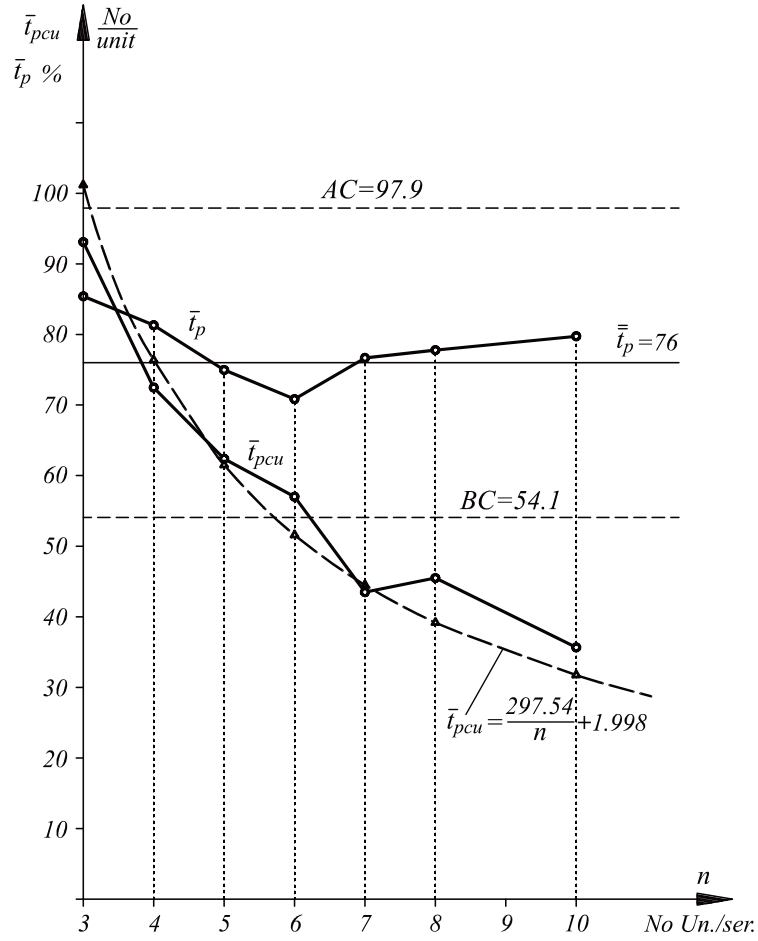


Figure 4: Trends of production time \bar{t}_p mean values and PC mean values per unit in a series \bar{t}_{pcu} for enterprise

It is obvious from the diagram in Figure 4 that mathematically viewed the process is mastered, because all points of \bar{t}_{pi} are within control limits $BC < \bar{t}_{pi} < AC$, ($65.83 < 76 < 86.17$). The trend of \bar{t}_{pcui} can be approximated by the function

$$\bar{t}_{pcu} = c + \frac{b}{n} \quad (4)$$

where n is the number of units.

A statistical set stratification has not been successful because SD of a stratified set is:

$$\sigma' = \sqrt{\bar{\sigma}^2 + \sigma^2} \quad (5)$$

$\sigma' = 4.584$, and earlier (see table 1) calculated non-stratified $SD = 3.126$, according to the formula

$$SD = \sqrt{(t_{pi} - \bar{t}_p)^2} \quad (6)$$

$$\bar{\sigma}^2 = \frac{\sum_{j=1}^l \sigma_j^2 n_j}{n} \quad (7)$$

$$\sigma^2 = \frac{\sum_{j=1}^l (\bar{t}_p - \bar{t}_p)^2 n_j}{n} \quad (8)$$

Since $SD < \sigma$ the stratification was unsuccessful, which means that in this enterprise there is no feature distinguishing PC with different number of units in a series, but the reduction of time per unit is exclusively the result of technological time, i.e., the elements of working time and number of units.

CONCLUSION

Based on the theoretical postulates of the stochastic model for determining the elements of PC time and experimental evidence of the assumed model we infer that: PC is the most significant technical-technological indicator in production and it is necessary to steadily monitor and reduce it. Instead of a demanding continuous screening and monitoring of working time elements in an analytical manner, monitoring is much simpler to perform by the original stochastic modified work sampling model. PC reduction is possible by influencing the factors related to duration of individual working time elements. Time elements trend can be mathematically monitored by establishing control limits with $\pm SD$ from mean value; PC mean value for groups formed according to the number of units in a series \bar{t}_{pcu} moves along the hyperbolic function that has asymptote c , $\bar{t}_{pcu} = c + \frac{b}{n}$, and, mathematically, these groups do not behave as strata, which means they are not linked to deterministic factors of technology and number of units/series.

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Session A: STRATEGIC MANAGEMENT

Papers (pp. 39-123):

Elizabeta Mitreva, Zlatko Jakovlev THE NECESSITY OF REENGINEERING OF THE BUSINESS PROCESSES IN MACEDONIAN COMPANIES	...39
Dejan Jakšić, Kristina Mijić THE METHODOLOGY OF BUSINESS PROCESS MANAGEMENT USING SOFTWARE SOLUTION	...45
Ljubica Kazi, Budimir Nikolić, Dijana Dević, Sebastijan Lukić, Jelica Milanov, Marko Stanačev USING CASE TOOLS FOR VERIFICATION OF BUSINESS PROCESS MODEL	...51
Ljiljana Arsić, Agneš Boljević, Jelena Premović THE NORMATIVE AND EMPIRICAL MODELS OF STRATEGIC DECISION MAKING	...56
Jelena Premović, Agneš Boljević, Ljiljana Arsić, Stojan Drašković MANAGEMENT BY OBJECTIVES	...61
Ljiljana Daković MODIFICATION OF THE BALANCED SCORECARD IN THE MANAGEMENT OF THE MARITIME ECONOMY	...67
Jelena Andrašić REENGINEERING IMPLEMENTATION ON THE EXAMPLE OF A CONSTRUCTION COMPANY	...73
Branislav Tomić, Snežana Omić THE INTEGRAL PROBLEM-SOLVING AND DECISION-MAKING PROCESS	...79
Ljiljana Pecić ANALYSIS OF COMPANY'S INTERNAL FACTORS LIMITING THE PERFORMANCE OF REENGINEERING COMPANY	...85
Ljiljana Dmitrović Šaponja, Sunčica Milutinović, Saša Gravorac, ACCOUNTING INFORMATION SYSTEM AND DECISION SUPPORT SYSTEMS (DSS) IN INCREASING THE QUALITY OF CORPORATE MANAGEMENT'S DECISION MAKING PROCESS	...91
Dagmar Vidriková IMPLEMENTATION OF THE SELECTED METHODES OF THE STRATEGIC MANAGEMENT INTO PRIVATE SECURITY SERVICES	...97
Jelena Vapa Tankosić, Biljana Lazić IMPROVEMENT OF COMPETITIVENESS OF SERBIA – STEP FORWARD IN OVERCOMING THE CRISIS	...102
Vladimir Desnica, Dragana Šarac APPLICATION OF NEW TECHNOLOGIES IN THE POST OF SERBIA IN FUNCTION OF EFFICIENT BUSINESS	...108
Slavica Prvulović, Marija Matić, Dragiša Tolmač BUSINESS ETHICS AND INFORMATION	...113
Milan Nikolić, Dragica Ivin, Biljana Goševski STRATEGIC, OPERATIONAL AND INVESTMENT DECISIONS IN BUSINESS	...119

THE NECESSITY OF REENGINEERING OF THE BUSINESS PROCESSES IN MACEDONIAN COMPANIES

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ABSTRACT

In order to fulfill the world's and European's claims in Macedonian companies, we should make radical changes in the way of which problems are resolved and that is actually the so called reengineering, a new way of thinking about the causes and not about the consequences as it is nowadays. The essential thing in the usage of the TQM strategy in Macedonian companies is the reengineering of the business process on which the integration of informatics technology is made. This integration is done with internal standardization, methods and techniques about not defective production, system about analyses of the charges, and with continued education and motivating the employees in order to get competitive lead. After that the new phase of the business work will start with continuous progress, or with the Plan-Do-Check-Act. In this way we can guarantee that the view-points (which consist the quality politics) of the upper management will be conveyed, and a climate and information base will emerge on which the team work will be able to develop. At the same time it means that there will be dramatic changes in the behavior of the employees, radical changes in organization, clear definition of the rights, obligations and the duties of each individual.

Key words: TQM strategy, Plan-Do-Check-Act, reengineering of the business process.

INTRODUCTION

The companies reengineer business processes in order to improve the quality, productivity and efficiency. When the vital parts are being reengineered, we look for new ways of managing and controlling. The reengineering in the quality providing is a management strategy, which is based on principles, concepts and rules, and its essence lies in reducing the losses, straightening the effectiveness of the designed processes, better communication, information and usage of the team work.

According to Hammer and Champy, 2001, reengineering of the business processes means: fundamental change in the way of thinking, radical redesign of the business processes in order to achieve dramatic progress in the modern, measured performances such as quality, charges and the period of delivery.

THE NECESSITY OF REENGINEERING OF THE BUSINESS PROCESSES IN MACEDONIAN COMPANIES

In the competitive environment companies are obligated constantly to change their-selves and to re-evaluate the business processes. The changes in technology and in culture are the things that give even more pressure. The necessity of reengineering can appear in companies which are in major crises, or feel that the crises will be over soon. The reengineering is used in companies which are well situated and have a potential for development and expansion, but also want to be in trend with the needs of the global market.

The changes mostly concern (Chepujnoska, 2009):

- the new way of grouping the organizational parts (units);
- delegation of obligations and responsibility;
- coordination;
- communication.

The usage and the projecting of the quality system in Macedonian companies is not a classic quality control of the products, but means projecting and usage of the adequate standard operative procedures (SOP), and instructions and usage of the organizational structure in which the quality is integrated as a function (Mitreva, 2010). In order to use the TQM strategy it is essential to redesign the organizational structure.

According to the deep analyses of the present condition of Macedonian companies, it was found that they have (Mitreva, 2010):

- trivial care of the quality;
- insufficient attention is paid to the continuous education;
- little investment in originality;
- a system of quality was built only in few companies;
- trivial care of the employees, customers, providers and the environment;
- insufficient application/usage of the statistic process control (SPC);
- working with big charges;
- working in a team is considered as old-fashioned;
- deficiency of macro climate for quality development in Macedonia;
- no motivation for quality development in the companies;
- no usage of informatics technology in the production;
- to get a certificate for any cost;
- no strategy planning and effective managing (usually one person does many function).

These conditions are a result from the universal level of development of the economy in our country. There is no methodology for reengineering of the business processes that will be used to improve these conditions (Mitreva, 2010).

METHODOLOGY FOR REENGINEERING THE BUSINESS PROCESSES IN MACEDONIAN COMPANIES - THE STEPS THAT NEED TO BE TAKEN FOR REALIZATION OF THE REENGINEERING OF THE BUSINESS PROCESSES

During the phase of projecting and implementing of the TQM system based on the strategy and the plan of the upper management, the reengineering is projected (or the radical redesigning of the business processes) in order to achieve integral conducting of the quality during times of lowest working charges. The success of the projecting and the implementing of the TQM system can be achieved only if the business processes are projected and realized with optimal usage of the resources, in order things to be done properly during the first try and without defects, without time loss and for the contentment of all customers.

1. If the upper management makes a decision for radical reengineering, then the existing structure is being ignored and the business processes are defined all over again.

With the reengineering the customer/user is above all, and users can be even the employees of the company (from other departments). With the reengineering we can achieve a tight specialization of the work and a big autonomy in the working.

2. Designing the organizational structure.

Designing the organizational structure is a job of the strategy management. It is done as a result of the leading activities with which the elements and the structure of the company are determined, the tasks are delegated, and the elements are connected in one unit. With the leading activities a certain balance is made between the wanted aims and the real capacities of the company. The division defines and integrates the number of the parts – the organizational units.

If we want the organizational structure to have the function of implementation of the quality system, it is necessary to make complete analyses and to find out:

- is there an adequate connection between the organizational factors (the size and the age of the organization, technically-technological system, the environment, the property and the culture) and the organizational parameters (specialization, distribution, grouping of the organizational units and coordination)?
- is the needed consistency between the parameters of the organization structure made?
- is the structure based on the organizational instructions: order, responsibility, discipline, collaboration, motivation?
- how many documents circulate and which is their content?
- which are the economical performances of the company?

Beside this, the following steps have to be taken:

- to reconcile the organizational structure with the existing acts;
- to transact all organizational changes (which are being done or need to be done) and to standardize them during a shortest period. That also applies to the status changes;
- documents, schemes and previews should be updated harmoniously with the changes that are made;
- to freeze some of the organizational changes, while the quality system is being introduced.

If we want to describe the business process, we must answer the following questions:

- is the given process supported with documents and how much if it is?
- is it in any interaction with other processes and in which kind of interaction?
- how can be the made document valorized?

Describing the informational courses, we answer the question (Deming, 1996): Which information is needed to continue the process and which information is made from the process?

Describing the executive, we answer the question: Who is responsible for the process, which is described in the document?

Describing the authority, we answer the question: Who is responsible for the content of the document, which are the other standards and procedures, and who else is interested in the process and in the document?

Also with the control we answer the question: In which circumstances and limits is the document applicable?

During the construction of the standard operative procedure (SOP) which is the base of the quality system, it is necessary to foresee the conception's elements of the organizational structure and the management on the very beginning. Describing the universal conception, it is essential to make a connection among the directives, procedures, working instructions and the obligation's matrix, and the responsibilities in the defined hierarchy (Feigenbaum, 2009).

The structure of the company, the number and the expansion of separate management levels influence the number of SOP and of the instructions. There are difficulties with the usage of the quality system which appear as a result of the difference between the structure of the organization and the structure of the processes realized in that organization. The structure and the number of documents (SOP and instructions) should resemble the true need of the company and their actual connection. In case differences appear, it's needed to ensure suitable instructions for their usage.

Documents and information should give an answer to the questions:

Who should know? What to know? Why to know? Where is it taking place? When is it happening? To whom should be the information delivered and so on? (Mitreva, and Prodanovska, (2009)

The application of the separate documents of the quality system (guide-book, procedures or instructions) depends on the business culture and maturity of the upper management and the employees, from the working standards and values, the attitude towards the quality and the consciousness of the employees.

So, we can see that it is of essential importance to make preparations (before the start of the process of introducing the quality system), which will concern the reducing of organizational momentum and repulse and the creation of suitable climate for accepting the changes.

The educational program of the employees is the first step towards achieved aim.

The system which provides quality, according to the international standards must orientate towards the aims that are set and the business philosophy of the strategy management of the companies. The quality system, especially the quality of the processes shouldn't be built "in the air" without deep and well-balanced attitude in the basic aims of the upper management.

The competing advantages are often crucial in the development and the usage of the system for quality supply. The danger can appear when in the system implementation or in any business process, the business philosophy of the companies is not represented.

The decision for the quality system development can be in step with the growth of the company and with the mature conception of the TQM. From that we can conclude that it is impossible to realize the TQM without formal system for quality supply (Ishikawa, 1985).

Our practice² shows that the quality is part of the company's politics, but mainly refers to the formal and legalistic quality supply.

It can be concluded that the creation of SOP during the acceptance of the TQM strategy, requires a lot of engagement and devotion of the managers, and the entire company needs to help itself and to identify the problems, because the if the managers are not engaged enough with the TQM implementation it would result with loss of the market positions.

Each organizational unit and each employee must think systematically and learn permanently. Only the companies with employees that possess a lot of knowledge and with analysis and diagnosis of the weak parts make a continuous improvement in the quality of the business processes, an enormous improvement of the effect and the reduction of the total charges.

3. In the following phase of the TQM system projecting, the key business processes and their units are established.

The strategy is reduced to recognized and everyday activities, and the functional approach is replaced with a processed approach.

Therefore, it is necessary to choose projection teams for each subsystem from the quality house (internal standardization, methods and techniques for non-defective working, charges for quality, education and motivation).

Building manager teams is fulfilled through:

- implication, giving warranty and encouraging the managers in projection of each subsystem in the TQM system;
- making an effective dialog with the employees and building an effective communication system.

The implication of the managers from tactical level is a process in which the same managers are given warranty and are encouraged by the upper management to project the subsystems of the TQM (internal standardization, methods and techniques for non-defective working, charges for quality, education and motivation, as well as an analysis of the quality charges), to solve the problems and to make decisions that will suite the company's business politics.

In order to build effective subsystems, the upper management must create business climate of cooperation and communications because every idea is not just a potential for improvements and innovations, but also it generates new ideas.

The plan for projection and implementation of the subsystems needs to be the simplest way of dividing the tasks during a certain period of time and in turns, in order to complete the job successfully and on time, and the most used tool is the Gantt chart.

The projection of the TQM subsystems is a team work and in environments where the rules of the team work are not respected, can be marked as unacceptable. The team mustn't be a place where the individual initiatives will be held down or will be annexed by the leader.

At the same time the projection of the subsystems from the quality house must provide certainty that the process of decision making won't be blocked by the exaggerated individualism, exaggerated expectations, lack of flexibility and making consensus in the viewpoint, because the modern interpretation of the TQM's value and the value of the employee's in achieving the aims of the total quality management is: coordination between the system and people.

4. The following phase consists of the success assessment of the projected and implemented system after TQM (Audit).

The self-assessment as a basic approach in the usage of integral methodology for the TQM system is from fatal importance for its own regular usage. The self-assessment is accomplished through many documented actions for comparison of the realized model in regard to the planned one. The monitoring does not concern only the quality of the products/services, but also the adequate of the entire TQM system in realization of the quality functions.

CONCLUSIONS

The benefits of the companies which will do the reengineering are (Mitreva, 2010):

- Changed working units – from functional units into processed teams. Processed teams are groups of employees that work together on one project. This way of organizing showed to be logical.
- Changed role of the employees – from controller to accredit individuals. The employees who work in reengineered processes are accredited and emancipated.
- The preparations for working are changed – from training into education. In companies with reengineering the emphasis moves from training in the workplace toward the continuous education.

- The assessment parameter is changed – from assessment of the activities to assessment of the results.
- The value is changed – from protecting into productive. The reengineering request from the employees to believe that they work for the buyers and not for the bosses.
- The organizational structure is changed – from hierarchy into flat structure. In companies which have reengineering, the work revolves around the processes and the teams that do it.
- The upper management is changed – from gatherers of point to true leaders.

With the application of the system for the total quality management and with well build informational quality system, the following benefits are achieved:

- provided quality products/services that suit the buyer's/user's needs;
- provided quality of the business processes, with which is provided a greater efficiency for the companies;
- optimization of the business processes;
- balance between the strategy and the operative management of the company;
- provided base for permanent promotion of the quality.

Companies that formally get a certificate for the ISO 9001 standard, without previously to project and implement the quality system of the products/services, just create unnecessary charges and legalism, do not provide the necessary advantages of the market and of its internal working.

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THE METHODOLOGY OF BUSINESS PROCESS MANAGEMENT USING SOFTWARE SOLUTION

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ABSTRACT

Business process management (BPM) is a continual process of creating and performing business process, as and improving of the business process performances. Business processes can be managed in the traditional manual method or by application of software solutions. Implementation of software solutions for the purpose of business process management provides advantages over the traditional manual method such as securing a higher degree of standardization of business processes, increasing efficiency, automatization of certain activities etc. The positive aspects of modern BPM methods can be achieved only if organization makes adequate choice of software solution according to organization's needs and providing BPM according to methodological steps. The aim of this paper is to review the methodology of BPM based on using of software solution and point to the critical factors of successful business process management in environment of software solutions.

Key words: Business Process Management, Business Process Management Software, Methodology.

INTRODUCTION

During the nineties of the XX century, the need for growth and development of organization in the environment of tough competition and the demands of customers caused the orientation of the organizational structure from functional to process organization, as and creation of the concept of business process management (BPM) as a new philosophy of management. In relation to the functional organization, the process organization is characterized by providing business process more economically, time to perform tasks is shorten, as well as greater flexibility of organization and the ability to respond to the customer demands. The key to success in process organizations are business process, rather than products and services. Business process are structured by a set of activities with clearly defined start and end, with which performing the value for customers is created (zur Muhlen, 2002). In order to achieve good performance of business process, organization has to properly manage business processes by applying the concept of BPM. According to Jeston and Nelis (2008) Business Process Management is the achievement of an organization's objectives through the improvement, management and control of essential business processes.

Business processes can be managed in a traditional way or in a modern way which involves the use of software solutions. Traditionally, business process management is done manually, where a key role in the efficient and effective management processes have knowledge of participants in the process, as well as regulations and procedures of performing the activities of the process. Organization of business activities within and outside the organization over time became more complicated, which led to the implementation of software solutions to manage business processes. Software solutions for business process management (BPMS – Business Process Management

Software) are supporting the entire lifecycle of business process enabling modeling, performing business activities, control and execution of business process analysis. By applying software solutions to manage business processes, organization can achieve advantages over traditional management processes such as:

- ensuring standardization of business processes,
- changing the way of performing tasks from manual into electronic tasks,
- ensuring effective business processes, with the exclusion of delays, bottlenecks and loss of time,
- integration of different software applications,
- monitoring execution of business processes in real time etc. (Bosilj Vuksic et al., 2008)

Although business process management based on software solutions provide significant advantages over traditional method, it is not enough to implement BPMS in order to achieve these advantages. First of all, the organization needs to application of appropriate software for business process management according to its needs. In addition, as a necessary precondition for the realization of these benefits of using BPMS is the respect of all steps of the methodological process of BPM based on software solution.

FUNCTIONAL CHARACTERISTICS OF BUSINESS PROCESS MANAGEMENT SOFTWARE

The functional capabilities of Business Process Management Software are developed during the time. The original software for BPM enabled the automatization of business tasks, and then the range of their functions were expanded with functions for business process management, document management, integration with the various information systems and platforms. On the market there are many developers of BPMS, which products are vary according to functional characteristics, reliability and compliance with IT standards, but at a price also. Looking at the technological aspects, there are ready software solutions and software solutions which include a programming language. Software solutions that include the use of a programming language provides the ability to customize software solution to the client`s requirements. These software solutions are generally more expensive than ready software solutions and their development and implementation last a long time. Acquisition of ready software solutions for business process management is the cheaper option, but such solutions do not allow flexibility of customization to the specific requirements or the ability of this are minimized. Furthermore, developers of BPMS apply different strategies to increase market share. On the one hand there are the manufacturers of software for BPM for the specifics of certain activities, while other manufacturers are developing software based on the universality of application.

Although the functional characteristics are different, according to Bosilj Vuksic et al. (2008) the key functions of each BPMS are:

Modeling of business processes - is used for visualization of structure and flow of the activities of business process. Also, this function is used to defined relationships between business activities of process such as sequential activities, depended activities etc.

Performing of business processes - provides ability of performing activities of business process with software solutions rather than manually. The performing of business process are defined by business process model and business process rules.

Server platform and integration - provides connectivity and integration of software solution with other systems and software within and outside of the organization (e.g. integration with ERP or CRM)

Control and analysis of business process – this function enables the control and analysis of business process during their performing. Furthermore, this function provides information about performances of business process that are necessary for the continuous improvement process.

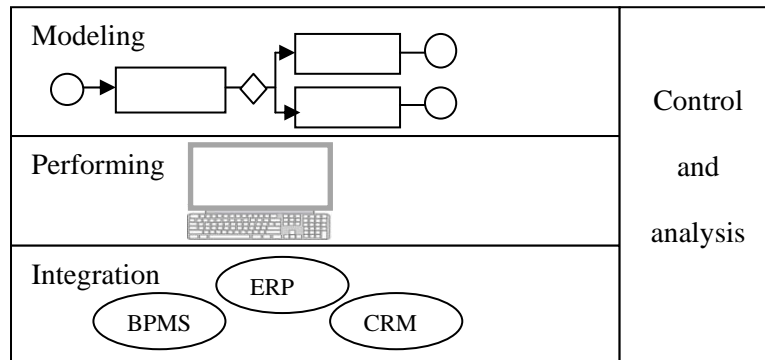


Figure 1: The Main Function of BPMS

THE METHODOLOGICAL STEPS OF BUSINESS PROCESS MANAGEMENT BASED ON USING OF SOFTWARE SOLUTION

The methodology of business process management based on using of software solutions include a range of activities that can be grouped into five key steps (see more in: Weske, 2007):

1. Study
2. Development of business processes in the environment of software solution for BPM
3. Performing of business process
4. Control and monitoring
5. Optimization and improvement of business processes

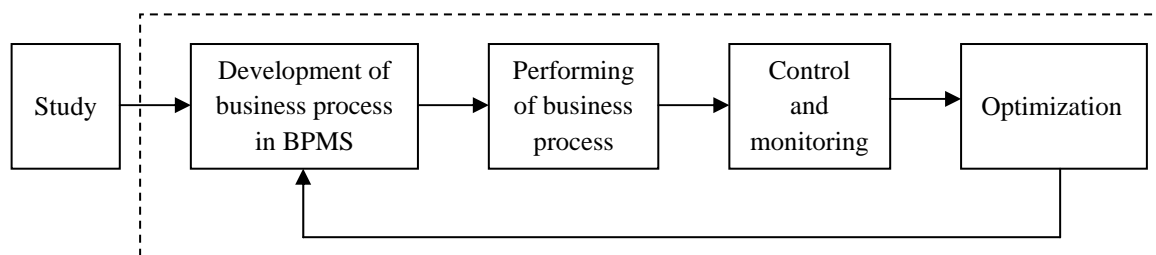


Figure 2: The Steps of Business Process Management

The methodology of business process management can be viewed in the narrow sense excluding the study phase only in conditions where the organization has already established software for business process management.

Study phase

Study phase begins by establishing a project team which consist of IT professionals, employees of the organization and professionals for analysis of business processes. The first task of project team is to identify all the business processes in the organization and the main business processes, as the potencial process which will be managed by the software solution (see more in: van der Aalst and van Hee, 2002). The identification of the main business processes is based on matrix selection in which the ranking is done according to priority of business processes. The project team should draw up a list of main business processes and define the criteria for ranking such as the ability to reduce costs, duration, employee dissatisfaction, customer complaints, the ability to adapt to changes etc. Then, in the matrix for each main business process the grade from 1 to 5 should be put according to each criterion (table 1). Business processes with the highest grade are those business processes that will be managed by the BPMS.

Table 1: The Matrix for the Selection of Business Process

Business Process	Reduce Cost	Duration	Dissatisfaction of workers	Complaints of customers	Total
A	3	4	1	3	11
B	5	5	3	4	17
C	3	1	4	4	12
D	3	3	1	1	8

After identification of the main business processes, the next step is analysis in order to gain understanding of the nature of the processes. According to Bosilj Vuksic et al. (2008) analysis of business process involves modeling, graphical presentation of the flow of activities and understanding of the process characteristics from different perspectives:

- Functional - determines the process activities and steps.
- Organizational - presented participants in the business process and the owner of the process.
- Information perspective - determines the flow of information and documentation in the process.

After gaining understanding of the process characteristics, the next activity is the selection of software solution for business process management. As the software solutions are different according to the functional characteristics and price, it is necessary to choose a software solution that meets the requirements of specific business processes. Also, in terms of the price, selected BPMS has to correspond to the possibilities of organization. The process of selecting an appropriate BPMS is based on the following criteria:

- Integration - business process specification indicates if there is a need for integration with different software solutions and information for the purpose of successful implementation process.
- Interaction - involves the adequacy of the user interface and how the software is easy to use.
- Design process – choice of software for BPM depend of possibility function for process design for satisfying all of requirements of process.
- Simulation and testing criteria - the BPMS that supports the simulation and testing of business processes provide possibility of the validation process before the actual use of software solutions.
- General criteria - include consideration of compatibility with existing software solutions organization's information system and the issues such as the price of software, the reputation of the developers, providing services, consulting services and training to employees. (Weske, 2007)

Development phase

When a software solution for BPM is selected according to characteristics of business process, the following activities is its implementation or installation of software as an integral part of information system of organization and development of business process management model. The biggest role and responsibility in the stage of development are belong to IT professionals. IT professionals are creating business process in software solution according to the specification of business process. Creation of business process begins by applying the appropriate graphical modeling notation which is supported by software solution (e.g. BPMN – Business Process Modeling Notation). Then, it is necessary to create rules of realization of business activities, defined relationships among business activities, defined participants and their authorizations, documents and to provide integration with other applications.

When a process is created it is necessary to conduct testing to assess the reliability of the performances of business process. Testing is usually based on a simulation test that involves using of test data. If the results of the simulation is in line with the expected and thus do not indicate any

problems regarding the functionality of software solutions, that mean that the organization may start with performing business process with BPMS.

Performing phase

Realization of business process involves the implementation of real activity in the organization using the software solution for BPM. Participants of the business process access into software solution in order to realize their tasks. Access to the software solution is done through username and password, and thus are also defined authorization of usage of software solution. An essential element in the development and realizing of business process with BPMS represents training of personnel in the organization to implement their activities using new technologies. Employee dissatisfaction and resistance can be occurred in this stages and therefore management should paid a lot of attention to training of employees to accept new working environment.

Control and Monitoring

The main purpose of the monitoring and control is an insight into the performance and realization of business process for possible changes in order to improve the performance of existing processes. Business process management software serves as the performance monitor for the processes. Application of software solutions in the phase of monitoring and control is very important because based on defined parameters for measurement of the process performances, creation of reports about the performance of business process is automatically. Also, reports about the performances of the process is automatically distributed to persons responsible for control and analysis of business processes within the organization. Some participants in the process as the controllers or process owners can obtain statistics such as average cycle time per transaction, the wait time before a process task is performed by human participants, cost data etc (see more in: Chang, 2006). This significantly shortens the time required to measure the performance of the process, compiling reports, and more time is left to management to analyze the results.

The Phase of Optimization

The analysis of the performances of business processes should provide the answer to the questions such as if there are redundant activities, whether there are bottlenecks, delays in implementing activities. The purpose of the analysis is to point out if there is a need for organization to make optimization of business process and improve performances of process. If there is a need for changes of business processes, business process administrator should return to the stage of development and implement the necessary changes. After making changes, administrator should test the new process and validate its performance. If the results of testing show that new process is working appropriate, than the new business process can be realized.

CONCLUSION

Management of business processes using BPMS is a very complex process and involving a large number activities from modeling to control and improvement business processes. Implementation of BPMS provides advantages over the manual system of conducting business activities, primarily in terms of increased efficiency, reduced of errors etc. In order to achieve the positive aspects of BPMS it is necessary to fulfill two conditions. First organization need to implement the appropriate software solution according to the characteristics of business process and capabilities of the organization. Then, it is necessary to manage the realization of business process according to the methodology which consist of the next activities: development of business process model in BPMS, performance of the activities of business process, control and improving the business process. According to the nature of methodological procedures of business process management it can be conclude that business process management is set of activities that have a cyclic character.

Efficiency and effectiveness of business process management according to the complex methodological steps can be affected by the several factors. First, some organization do not manage the main business processes in an organization that create value and enable the achievement of organizational goals and strategies. Instead, organizations implement software solutions for the management of secondary processes or try to manage all business processes which also is not a rational solution. Secondly, at the stage of modeling and development it is necessary to ensure teamwork among participants in the process and IT professionals. Development of software solutions for process management only by IT professionals carries the risk of incorrect procedures of the process because they are not familiar to the business process.

Furthermore, the choice of software solutions for business process management should be primarily based on the needs of the organization, not on the trends and the model of software solutions that use competing organizations. Purchase of inadequate software solutions for managing business processes represent only the cost for the organization, and benefit from its implementation will not be achieved. Implementation of adequate software solution for BPM provides automation of certain activities of the process and that can results with reducing the number of employees or change their previous role in the process. If the participants in the process are losing their role or do not adapt to the changes, there is the risk of an unsuccessful implementation of business process.

At the end, the continuous improvement process caused expenses for organization of changing and testing business process. Because of that, organizations usually avoid this stage. If the organizations do not conduct continuous analysis and optimization of business process, the performances of business process will decline and survival of organization will be questioned.

If organization succeed in avoid this common critical factors of successful business process management in environment of software solution, organization increasing chances of success.

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USING CASE TOOLS FOR VERIFICATION OF BUSINESS PROCESS MODEL

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ABSTRACT

Business process modeling is one of most important processes in information system development. This process is supported by CASE tools. They are developed to support variety of methods. Most commonly used method for business process modeling is structured system analysis with data flow diagrams, activity diagrams of UML and business process model. During creation of models generally, certain formal rules are to be applied. These formal rules are mostly related to syntax, while semantic aspect of model is defined by heuristic approaches. CASE tools enable checking syntax, while semantic evaluation is not supported. In this paper we show how CASE tools could be used for verification of business process models.

Key words: business process model, verification, errors, CASE tools

INTRODUCTION

Most commonly used models in presenting business processes are business process model, UML activity diagram and data flow diagram. These models are different by methodology concepts and elements. While business process model and activity diagrams show chronology of activities, data flow diagrams show hierarchical order and decomposition of processes. Still, the fundamental concepts of all approaches are the same. These are: activities, data flows, workflows and data stores.

Using CASE tools enable automated creation, uniformity, efficiency, integration with other types of model in information system development, as well as verification of models. In agile approach, according to Agile Adoption Rate Survey Results: March 2007 (Ambler S, 2007), CASE tools are least using tool (more used are whiteboard and paper sketching). Ambler (Ambler S, 2009) discusses using pros-and-cons of using CASE tools or any tools in software development in agile approach. He argues that in agile approach CASE tools are not necessarily to be used in agile approach, since there are many cons: costs of training, evaluation and maintenance of these tools, time spent on using these tools, migration to another tool, synchronization and integration with

other tools and artifacts. Still, he describes potential CASE tools benefits: forward engineering (code generation), reverse engineering of existing code, support for changing levels of abstraction (e.g. from requirements to analysis to design to code), testing of the consistency and validity of your models, synchronization of models with delivered code, support for different views and/or potential solutions to a problem, generation of documentation.

Evaluation of models could be from syntax, semantic and pragmatic aspect (Van Belle J-P, 2006). Errors in models could be syntax and semantic. During the process of model creation, many rules must be applied for correct result. Rules could be classified as: formal and heuristic rules, as well as syntax and semantic rules (Kazi et al 2011).

In the field of information systems education at Technical faculty “Mihajlo Pupin” Zrenjanin, the educational content covers all phases of information system development (Radulovic B et al 2006, Kazi Lj & Radulovic B 2008): business process modeling, client requirements specification, project planning, data modeling, software design, software implementation, testing and documentation. Practical laboratory work includes using CASE tools for business process modeling, data modeling and software design. CASE tools that are used are Powersoft Power Designer 6 (for data flow diagrams) and Sybase Power Designer 10 (for business process model diagrams), which is considered to be one of the most frequently used CASE tools in software industry (CASE vendor list). In this paper we present how CASE tool Power Designer could be used for business process model verification and which errors could be detected.

VERIFICATION OF BUSINESS PROCESS MODEL IN CASE TOOL

CASE tool Power Designer 6 enable creation of data flow diagrams, which present business processes and their data exchange by data flows, recording data in data stores. Figure 1. shows how data flow diagrams could be checked in Power designer 6.

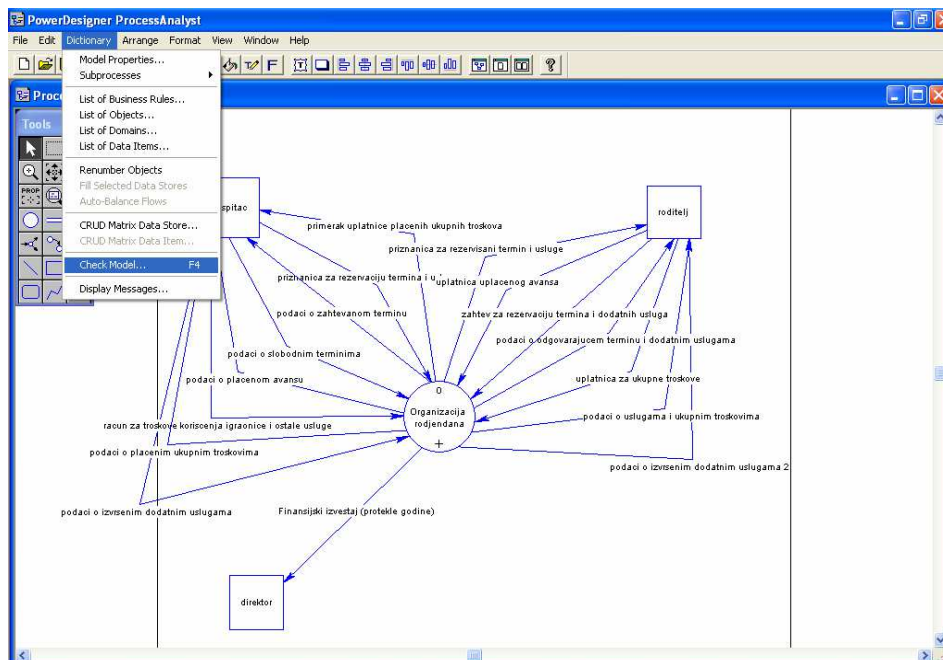


Figure 1: Verification of data flow diagram in Power designer 6

Figure 2. shows report on errors and suggestions for each error how could be fixed.

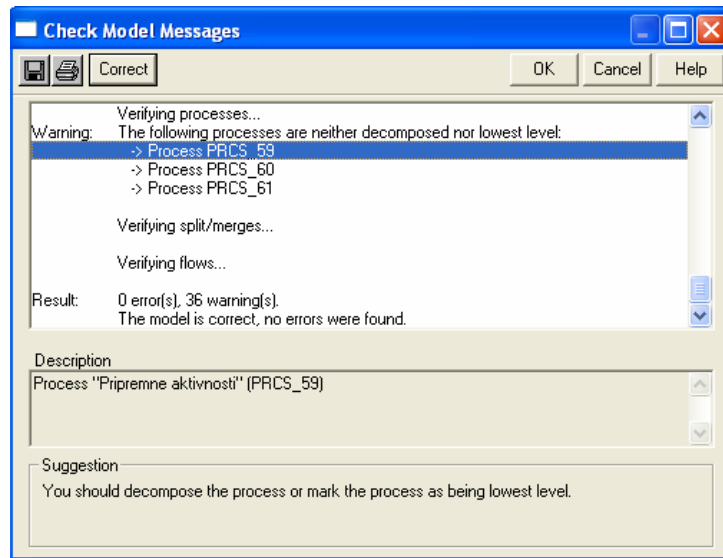


Figure 2: Report on errors and suggestions for corrections in Power designer 6

Figure 3. shows how business process model in Power Designer 10 could be verified.

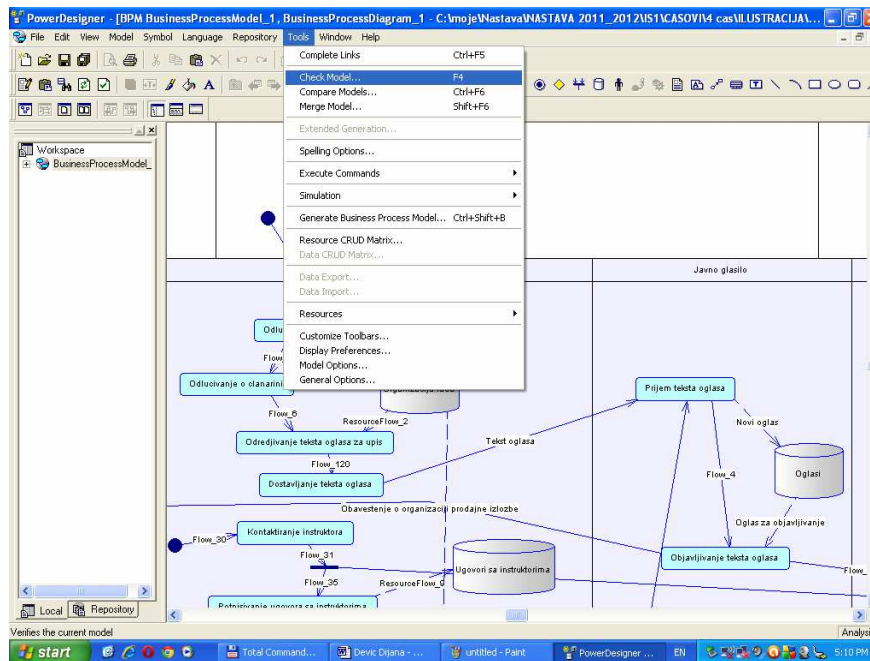


Figure 3: Verification of business process model in Power designer 10

Figure 4. shows report on errors for business process model in Power designer 10.

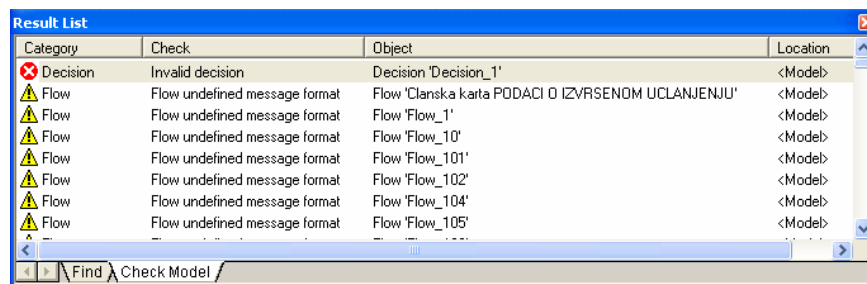


Figure 4: Report on errors of business process model in Power designer 10

ERROR DETECTION SUPPORTED BY CASE TOOL

Power Designer 6 supports verification of a model, but doesn't allow a user to see list of rules incorporated in automated checking of correctness of model. Power designer 10 gives a list of rules that are used in verification process. Figure 5. and Figure 6. show list of items to be checked for business process model correctness in Power designer 10.

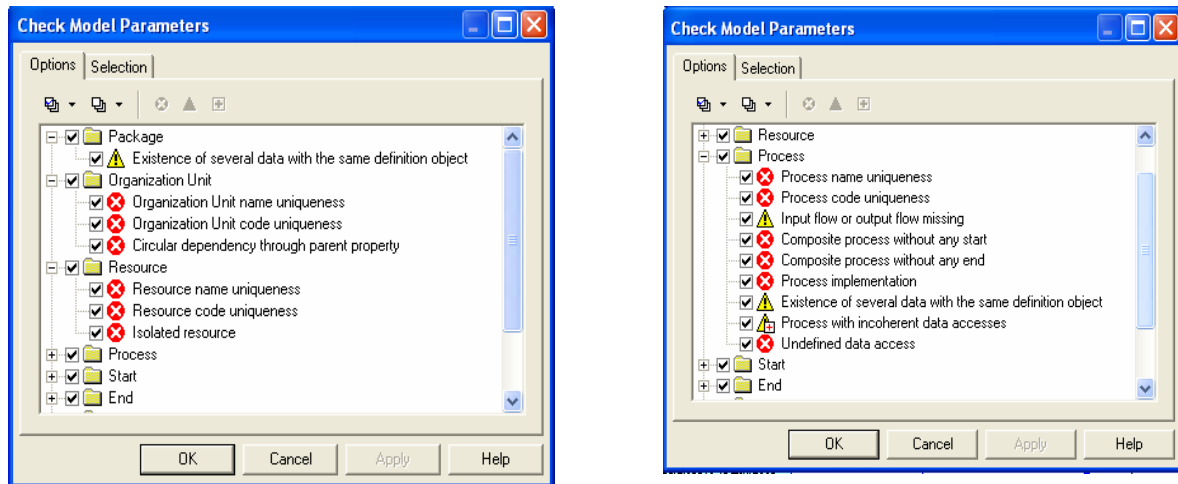


Figure 5: List of items for verification of business process model in Power designer 10

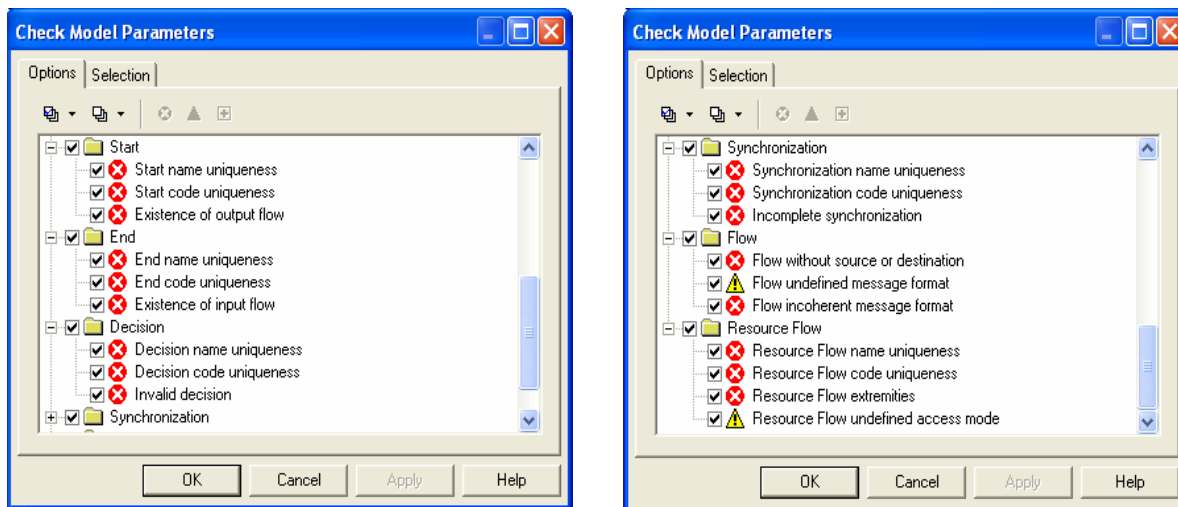


Figure 6: List of items for verification of business process model in Power designer 10

Analysis of presented list of items to be checked in business model process shows that CASE tool could detect and report errors categories such as:

- element name uniqueness
- existence of an element
- completeness of connection of elements
- existence of definition and specification of element
- type of elements' connections.

Including semantics, i.e. meanings at diagrams, is task that require knowledge of business domain. This knowledge is captured by texts, interviews or empirical informations. Diagrams are then used as formalization of that knowledge, that present real-world business process of an organization. Due to non-formality of knowledge sources needed for creation of models, semantic errors could

not be detected automatically in CASE tools. Semantic errors present errors that are mostly related to:

- names of elements
- completeness of diagrams
- connections among elements of diagrams
- order of organization of diagram elements
- level of details at diagram
- level of abstraction of elements at diagram

Semantic errors could be minimized by following heuristics rules applied to models for particular business domain.

CONCLUSION

Business process modeling is one of the hardest phases in information system development, since it requires ability of transforming knowledge about real-world organization functionality to formal visual presentation at diagrams. Most used diagrams are business process diagram and data flow diagram.

In this process, some formal and heuristic rules are to be applied, in aim to avoid syntax and semantic errors. By using CASE tools, the process has qualities such as uniformity and reliability particularly in the field of syntax errors verification.

In this paper we presented how CASE tools could be used for business process model verification. We examined CASE tools Power Designer 6 and Power Designer 10, since they are used at practical laboratory classes at Information systems education at Technical faculty "Mihajlo Pupin" in Zrenjanin, Serbia.

We show that these tools support syntax checking of models. CASE tools Power Designer 10 enable user to see which rules are to be applied in the process of verification. These rules are related mostly on name uniqueness, existence of elements and their connections. We also pointed out that there are semantic errors that could not be detected, due to non-formal knowledge about business domain that presents source for creation of business process models.

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THE NORMATIVE AND EMPIRICAL MODELS OF STRATEGIC DECISION MAKING

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ABSTRACT

The process of decision making represents driving force of the company, because the quality of this process directly affects the operational results of the firm. From validity of decisions depends the efficiency of enterprise management, and therefore still functioning of it - the survival and development of company. Therefore, the process of decision making is said to be the core of the entire management process. Taking care of operational problem encompasses making great deal of decisions, like management team building, price setting, product mix, level of service, technology implementation, choosing on the organizational structure, etc. All models of strategic decision making can be divided into two main groups: the normative and empirical. Normative models are aimed at researching the possibilities for the realization of rational choice by defining the steps that decision maker should follow in the decision making process, while the empirical models aimed at determining the real conditions and to determine how decisions are actually made. Both models have some validity from the standpoint of studying decision making process, depending on the goals that are set in the study.

Keywords: Uncertainty, strategic decisions, decision-making, normative & empirical models.

INTRODUCTION

The decision process is a complex human activity that sets goals and objectives and determines the development and course of action to achieve the objectives. It is a conscious, pre-prepared action which they wish to achieve certain effects (Todosijević). Corporate governance can not be successfully performed without a prior decision-making process. From validity of decisions depends the efficiency of enterprise management, and therefore still functioning of it - the survival and development of company. Therefore, the process of decision making is said to be the core of the entire management process.

The necessity of making decisions is conditioned by the need to maintain continuity of operations in all the systems formed by man. The commitment to undertake certain actions and its implementation, determines the entire future behavior and the functioning of the company, future connections and relationships with internal and external environment. "Decisions are made in situations characterized by the need for action and the existence of several possible courses of action" (Dale). Therefore, managers, as holders of management functions, forced to constantly make decisions about activities and actions that will take their organizations and that from the set of possible actions choose one, which they consider best to achieve the desired goal of the.

Basic determinants of business decision making are considered: multiplicity, speed and the quality of decisions. The dynamic and complex conditions of business and high interdependence of work

and development of business systems and their subsystems, are the necessity for many decision making. On the other hand, the dynamic functioning of the rapid development necessarily requires that decisions are made very quickly. Business decisions necessary to make very quickly, because most up to speed of decision making depends on whether they are generally implemented and whether the business decision-making will achieve the desired goal. However, the demand market and competition for the shortest possible time for decision making is inconsistent with the requirement for quality decision making, faster decision making often brings lower quality decisions, and the need for higher quality reduces the speed of their decision making (Premović, et. al, 2011).

THE NORMATIVE AND EMPIRICAL MODELS OF DECISION MAKING

All models of strategic decision making can be divided into two main groups: the normative and empirical. Both models have some validity from the standpoint of studying decision making process, depending on the goals that are set in the study.

Normative models develop a useful conceptual framework for describing the process of decision making what is the basis for empirical research and the creation of realistic models. Namely, if we want to look at how decisions are actually made it is necessary to set the hypothetical model that provides the ability to determine and define the differences.

One of the earliest normative models for non-programmed decision making (ill-structured) decisions was offered by H. Simon in year 1965, speaking about the identification, formulation and selection, as the basic stages of decision-making process.

According to Henry Mintzberg (1973) all the processes for strategic decisions making in the enterprise can be classified into three groups: entrepreneurial, adaptive and planning model.

Table 1: Characteristics and terms of implementation of Strategic decision making model (Babić, 1994).

Characteristics	ENTERPRENEURIAL MODEL	ADAPTIVE MODEL	PLANNING MODEL
Motives for			
Decision making	Proactive	Reactive	Proactive and Reactive
Goals	Growth	Unidetified	Efficiency and growth
Mark	Convention	Convention	Analysis
Choice by	Entrepreneuer	Guessing	Manager
Horizon of decision	Long-term	Long-term	Short-term
Noticed enviromental conditions	Uncertainty	Certainty	Risk
Relations of decisions	Weak relation	Not related	Integrated
Flexibility	Flexible	Adaptive	Limited
Vision	General	Not existing	Specific
Condition of usage			
Power	Centrilized	Empowered	Managers
Goals of enterp.	Operational	Non-operational	Operational
Enviroment	Controled	Komplex and dinamic	Predictable and stable

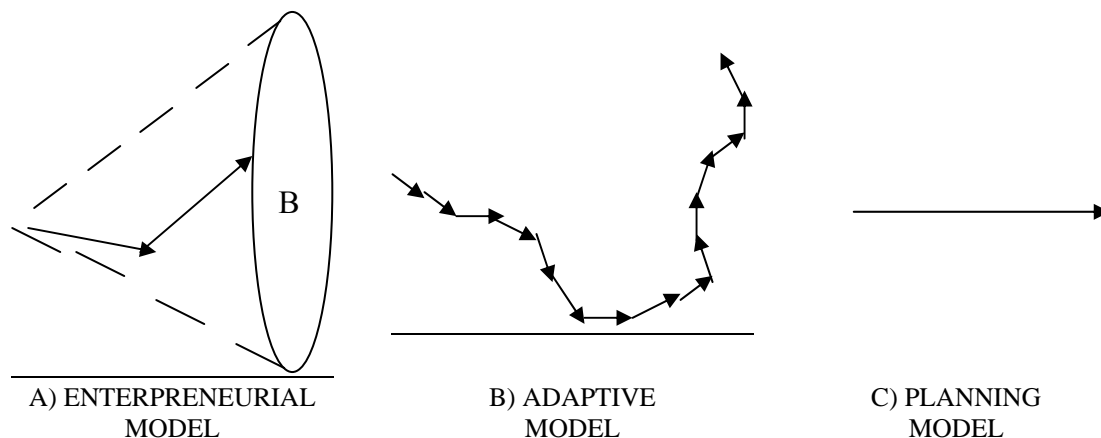


Figure 1: Characteristics and conditions for strategic models of decision-making implementing (Ibidem)

Paul Nutt introduced the assumption that the optimal choice of model depends on the level at which decisions are made and a number of factors that are relevant for each level. Based on this assumption, Nutt represents the following models: the bureaucratic, normative, behavioral, group decision making model, conflict-ekvililibrium model and open systems model.

Anna Grandori in the focus of her research puts the determination of the basic regularities in the process of business decision making under conditions of conflict of interest, the increased risk and uncertainty, distinguishing five models: optimal, satisfactory, incremental, cyber, and stochastic.

When it comes to **empirical research** in the field of strategic decisions, they started in late 60s and early 70s of the twentieth century with the works of Cyert and March year 1963, Aharon year 1966, Soelberg year 1967, Ackerman and Allison year 1970 year.

For empirical research is particularly important the choice of problems needed to be solved by making an appropriate decision, because it appears as a crucial activity during decision making. Properly defining of the problem domain to be solved, conditioning number of considered alternatives, which consequently affects the quality of elections. In determining the optimal scope of the problem it is suggested the use of so-called. double test - by controlling and the degree of importance. Mintzberg, Raisinghami and Theores were in year 1976 developed empirical model of strategic decision making based on the study of unstructured decisions of 25 different strategic processes. In this study the authors analyzed the decision making process by separate it towards: initial stimulus, how to resolve the problem and the nature of the process. Taking into account these criteria, it is determined the existence of three phases: identification phase, development phase and election phase, and within them are still recognize the key elements for each of the phases, namely:

1. Identification phase identifikacije
 - 1.1. problem notification;
 - 1.2. diagnoses;
2. Development phase
 - 2.1. research;
 - 2.2. shaping;
3. Election phase
 - 3.1. control;
 - 3.2. evaluation/choice;
 - 3.3. autheorization. (Babić, 1994).

Nutt has made the research with the intention to find the nature of decision making process in 78 organizations in the service industry. Starting from the assumption that the process is taken in five fazes: formulation, idea generation, elaboration, evaluation and implementation, on the base of

their representation and completeness, on the base of the data, five different model of decision making can be identified:

Table 2: Models of decision-making

MODELS	Representation	Active Fazes	Characteristics
Historical	41%	1,2,3	Accommodate to others
Off-the-shelf	30%	1,3,4,5	Aggressive research
Estimate	7%	1,4,5	Rational seeking
Research	7%	1,5	Passive and defensive research
New	15%	1,2,3,4,5	Seeking of new ideas
Numbers 1,2,3,4 i 5 represent fazes: Formulating, development, elaboration, evaluation and implementation			

Nutt concluded that normative methods are not included in making decisions, based on the empirical research. Moreover, the most of the decision making processes is taken in a non-direct fashion, which confines innovation and creativity, decrease the number of alternatives considered and leads to implementing unsound tactics.

In evaluation of the previous empirical research and their contribution, it can be said that the limitation comes from the fact that Nutt has directed his research towards the business decision-making, which cannot be threaded like general knowledge. However, it is unquestionable that Nutt's research is superior to the previous researches in the fact that his research covers period of 6 years.

Shrivastava and Grant have conducted a research about strategic decision making on a sample of 32 firms. It has been observed how each of the firms behaves when presented with the same task of implementing computer based informational systems. The goal was to identify the process of strategic decision making, identifying the modality of the process and to decide on the interaction between the process of decision making and the system of organizational culture. The characteristics of the process of decision making have been observed based on the problem recognition and problem solving. Based on these two elements four models have been formed: autocratic model, bureaucratic model, adaptive planning and political model.

The following table presents to what extent each of the above mentioned models is represented in different organizational structures (entrepreneurial, functional, divisional, and conglomerate)

Table 3: Interaction between the process of decision making and the system of organizational culture

MODELS	Organizational Structures				
	Entrepreneurial	Functional	Divisional	Conglomerate	Total
Autocratic	8	2	-	-	10
Bureaucratic	-	1	2	3	6
Adaptive	-	6	2	4	12
Political	-	-	1	3	4
Total	8	9	5	10	32

It can be observed that each of the models is represented, and therefore more suitable, in different organizational structure. The search conducted by Shrivastava and Grant complements the other research before that, with a difference that the models presented here are larger in scope. In spite the fact that the models does not encompass many of the processes of decision making, the characteristics of this model can serve as a base for development of more encompassing model. Moreover, on the base of this study it can be seen that many of the models lap over one another, and more than one model is present in a single company. It is very important to note that the authors of the research point to the fact that based on the organizational structure, a strategic

decision model can be seen as representative; however they don't go into details and do not acknowledge that it can be also the other way around. Finally, it is very important the process of defining the system of learning and founding relation with the model of decision making, and more specifically the conclusion of the author that managers must model and develop systems of organizational learning that will support the system of strategically decision making.

Taking into perspective the empirical models it can be concluded: "That in the process of making strategic decisions, firms does not follow the logic prescribed by defined models"

The critical phase, that guarantees the competition of the whole process, is the identification of problem phase.

In practice, very small numbers of companies are employing a model of decision making that promotes finding of new solutions, which means that the processes are not very creative.

Systems of organizational learning are supporting the process of strategic decision making, if they are made to give the right information of the needed quality and quantity.

It is needed to make further empirical research in the area of strategic decision making, and more precisely from the standpoint of its connection with structure and content.

CONCLUSION

The process of decision making represents driving force of the company, because the quality of this process directly affects the operational results of the firm. Taking care of operational problem encompasses making great deal of decisions, like management team building, price setting, product mix, level of service, technology implementation, choosing on the organizational structure, etc. In the process of decision making, it is necessary to analyze great number of alternatives and eliminate most of them so to make a suitable pool of choices which can solve the problem. In modern management, the great amount of information and data, and the limited time to process all that information, it is highly advisable to adopt on an adaptive process of decision making that enables one to be feasible in business decision and gives a greater chance of success. Managers which strive to boost the efficiency of their actions must be aware of the fact that efficiency is conditional on the system of decision making.

Normative models are aimed at researching the possibilities for the realization of rational choice by defining the steps that decision maker should follow in the decision making process, while the empirical models aimed at determining the real conditions and to determine how decisions are actually made.

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MANAGEMENT BY OBJECTIVES

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ABSTRACT

Realistically evaluation and scoring of own position – own strengths, and weaknesses in relation to the environment in which it exists and to which is adapting, is the necessity for any enterprise, which represents base on which create appropriate conditions for establishing and defining the vision and mission of business, the basic business goals and the ways in which they will be achieved. The goal determines the direction which will in the future serve to the firm as a reference for the behavior. Management by objectives is an important technique of strategic management which uses objectives as the primary means by which manage the organization starting form the fact that the objectives as planning decisions are so important and fundamental to this approach that is based solely on them. Management has a duty to direct the vision and efforts of all employees to achieve defined organizational objectives. Applying the technique of MBO, managers are able to identify targets, the main directions of action, and to establish basic criteria for assessing the contribution of each employee in achieving the tasks.

Keywords: Responsibility, goals, plans, supervision, success.

INTRODUCTION

Successful business enterprise in today's market conditions is determined by the rate of recognizing the main tendencies of changes in the industry and the ability of companies to adapt quickly to these changes. Research and strategic analysis of factors internal and external environment, provide the basis for understanding the real market position of companies. In conducting this analysis, it is especially important to mark the critical factors so called opportunities and threats in the environment. First of all, the analysis of environmental factors should include analysis of: the market, technological progress occurred due to frequent technological changes, financial market analysis, socio-economic system and economic policy analysis, analysis of socio-cultural and ecological environment. Realistically evaluation and scoring of own position - own strengths, and weaknesses in relation to the environment in which it exists and to which is adapting, is the necessity for any enterprise, which represents base on which create appropriate conditions for establishing and defining the vision and mission of business, the basic business goals and the ways in which they will be achieved.

The basis for the choice of mission and defining the business goals of a company is analysis of business environment. In relation to the environment, company should always be seen as dynamic, open system consisting of subsystems as interdependent parts, but we should not forgetthat that the company, on the other hand, sub-system of wider economic system. System approach emphasizes the relationship of the company and its external environment, and management of this relationship requires the identification of key inputs, processes, outputs and feedback. Materials, energy and

information are included as input into the system, which transforms them into products and services. Openness of the enterprise as a system implies its exchange of information, energy, materials and people with the environment.

DEFINING OF ORGANIZATIONAL GOALS

Adaptability represents critical organizational capability for success, and goal of manager is to manage with changes and to use planning of changes in order to help organizational adaptation to different circumstances and factors from environment. If the company aspires to success in times of great change, "it must fundamentally change. It means changing our own relations: mission, policies, goals, strategies, structures, systems accountability, control and rewards (Adižes, 2007).

The organization is generally established to accomplish a specific mission. Missions, as pointed out by Professor Todosijević, pointing to the target or targets - the identity of the mission are the goals that had long been engaged by organization.... When members of the organization know the identity of the mission, they participate in its formulation and planning, by defining the direction of the company and establishing guidelines for initiating activities (Source: Milanović, et. al, 2000).

The mission is a set of basic beliefs and intentions of an organization in which is briefly explained what the organization intends to do in the future to fulfill the purpose of its existence, while conforming to the requirements, conditions, restrictions and interests of the environment with respect for their own interests, desires and potentials (Adižes, 2007). The purpose of the mission is to direct the most important changes and create the basis for most adequate organizational structure. It should reflect the distinctiveness or even uniqueness of the company.

Defining the objectives of the business entity is one of the most important tasks of strategic management. Furthermore, the starting point of management consists in target-oriented activities of the company. The selection and definition of objectives usually starts analysis of the environment and enterprise-oriented analysis of mutual harmony. The results of these analyzes usually determine the objectives and goals pursued (Milanović, et. al, 2000). And what exactly are the organizational goals?

We can observe goals as the expectations which need to be realized on new markets using combination of different strategies...These are the anticipated conditions, events, promotion of participants or training which are planned and we expect to happen (Ibidem). In contrast to that business efficiency is measurement between the current output and current input, while a professor Todosijević believes that goals are emerging as the ultimate results achieved for a certain period of time, and that in terms of objectives can be drawn three implications arising from the identity of the mission:

1. How to improve them;
2. How to remove difficulties and problems;
3. How to implement innovations (Todosijević, 2009).

These three implications are impacting on decision making, because as John Gardner says: "Ove tri implikacije utiču na odlučna delovanja, jer kao što Džon Gardner kaže: „Distinction means much more than enough. That means fight for highest standards in every fase of life". Improvements, solving problem of innovation becomes major directives in the setting of goals in the area of mission and identity of mission for the enterprise (Milanović, et. al, 2000).

With environmental analysis enterprise discover character and importance of effect individual factor influences in it, relations between factors and possible ways of influencing those factors, which is starting point for making planning decisions. Forecast and environmental analysis "provides reference for enterprises reaction, i.e. basis for defining the mission, goals and strategy" (Drašković, et. al., 2004).

MANAGEMENT BY OBJECTIVITIES – MBO

The goal determines the direction which will in the future serve to the firm as a reference for the behavior (Todosijević, 2009). Evaluating the importance of the target orientation of members of each business system for its successful operation in the economic theory of 80s last century, is introduced new management techniques: MBO.

The term of the new management techniques introduced by P. Drucker, starting from the fact that it is important individual business activities directed towards the unique goals of the company. Management by objectives is an important technique of strategic management which uses objectives as the primary means by which manage the organization starting form the fact that the objectives as planning decisions are so important and fundamental to this approach that is based solely on them (Milicevic, 2004). Therefore, achieved results of each manager must be evaluated according to its contribution to overall business results of companies. Every manager needs to know specifically what action from him was expected, to achieve the settled business goals, and his superior manager must bear in mind the concrete result that is asked from him.

George S. Odiorne management by objectives describes as a process in which the superior and subordinate managers of an organization identify together goals of the organization by defining the main areas of responsibility of each individual expressed through expected results and benefits on the basis of certain criteria as a landmark for the functioning of each organizational unit and evaluating of the contribution of each member of the achieved results. Odiorne was developed and popularized this technique of management by presenting the most important premise of MBO:

- ✓ MBO assumes that the first step in management is identification of goals organization. All other management methods and subsystems follow this preliminary step.
- ✓ When goals are formulating, it aproaches to the allocation of responsibilities between various managers on that way that their united efforts are directed towards achieving goals of organization.
- ✓ MBO assumes that behavior of managers is more important than their personality and that it can be determined better over the results measured towards concrete settled goals.
- ✓ MBO is based on the fact that successful manager of situation, that behavior of manager is connected with specific goals and that it is changing under the influence of economic system in which operates. (Source: Todosijević, 2009).

Professor Todosijević has dynamic performance of management by objectives system introduced with picture no.1, noting that MBO is a specific process that requires support, but necessary supervision of top management. The MBO process is performed in phases, including the five basic steps, namely: Supervision and support of managers from high level; Establishing long-term goals and plans; Determing of specific short-term goals of organization; Establishing goals and standards – planning activities; Measurement and calculation of current values based on progress of peformance goals.

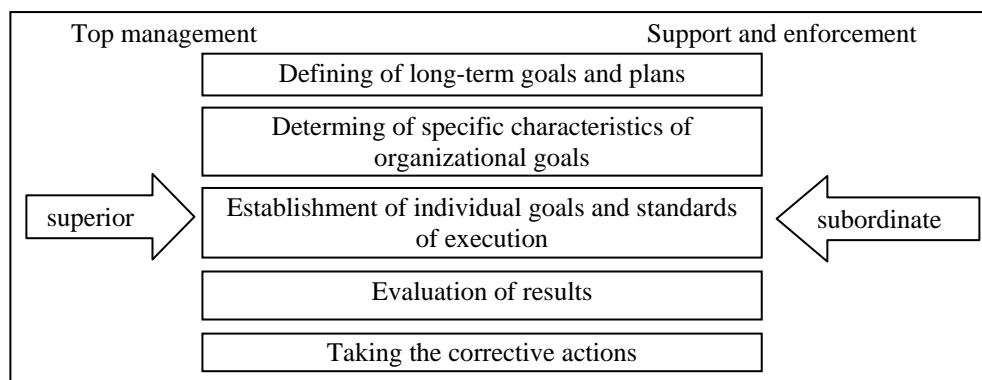


Figure 1. Dinimics of Management by Objectives (Todosijević, 2009)

In his view, although management by objectives provides a good network management, it is left the room for managers to predict corrective actions, in terms of improving the performance of managers and employees, changing personnel, organization, or even defined goals, in situations where the results achieved do not match with the plan.

An analysis of company management learns about the current problems in business activities and opportunities of business improvement and development, based on what defines the operational goals that are directed towards the solving the current problems of organization. Operational objectives define objectives of specific organizational units as striving to achieve the specific operational input which is set as determined and measurable, but realistic and achievable over the period for which the objectives are set (Milanović, et. al., 2000). Only definition of these goals is the constraints posed by top management. By the way, the operational objectives serve as a means to remedy of the observed deficiencies in a shorter period of time and they must be in accordance with the strategic goals of the company. "The strategic goals relating to the wants and conditions under which the company will find a very long time ... creating a company image in the

market and in society" (Milicević, 2004). By them is defined the way in which organization will operate and how the organization will prevail in a competitive market by exercising the most characteristic global goal that does not deal with the operational definition except in form of policy coordination, but trying to define and to answer the question "do the right thing" and not to respond to operational issue "whether we do things on the right way?" (Milanović, et. al., 2000).

Whole process MBO includes: Formulation of goals; Identification and confrontation of resources and needs; Control of individual actions; Rewarding of success. Formulating goals requires defining obligations in relation to targets, as well as precise thinking, forecasting and labor dimension which is usually not included in the planning process. Managers are usually not accustomed to such procedures. In many companies target determinants appear as intricate collection of obligations that result in misunderstanding and misinterpretation. Goals should not be ambiguous, because then typically invent ways to avoid obligations. The selection of words carries different meanings for different people, depending on where and when they are used and who uses them. Process of formulation goals in basis consists of four steps, and these are: Establishment of mission or identity of mission; Establishment of area results for improvement, innovation or cost cutting; Determination of key measures or indicators which represents basis for evaluation; Defining goals such as they are measurable and that can be controlled.

The first question to be answered in defining the strategic objective is: Where are we now? (Ibidem) The first task of top management is to determine the direction of the company through careful formulation of organizational goals. Top management ensures that managers of different levels in the organization generally look ahead, reveal what is required and planned activities in order to get the result set. P. Drucker says that "the objectives are required in every area where performance and results directly and significantly affect the survival and development of the business." It is very important that top-level managers in the organization formulate the suitable organizational goals. All individual goals within the set system of targets in the enterprise are based on these unique goals. If you have inappropriate unique organizational goals, such as the individual goals, that will bring less productive and/or non-productive activities of employees. Therefore, senior and junior managers or employees and the manager must put together any special goal, and to agree on it. Setting strategic organizational goals occurs as delegated responsibility of employees, but also the main responsibility of the executive management for which the planning and setting strategic goals main task... and decision is usually associated with the best possible solutions (Todosijević, 2009).

Each goal which we place at some future time as a reference to which we aspire has the character of forecasts. To achieve the forecast it is necessary to set the conditions, resources and activities through the sets of decisions in the function of achieving the goal. When these predictions or expectations allocate with responsibilities of members of the organization for analysis, modification, validation and acceptance, the management team appears with a sense of direction and pace of compiling all the activities of the organization (Ibidem).

By analyzing the practical solutions leading companies in strategic goal setting, G.S. Odiorne noted some similarities in approach and specific behavior. First of all, strategic organizational goals setting of is based on information and analysis, the real perception of the situation in the enterprise and industry, and not on intuitions, intuitions and assumptions about the mistakes of the competition. It is assumed that the risks of mismanagement will be higher but both the number and the type of risk environment, which guarantees the extent possible through human reasoning and hard work. Strategic goal setting assumes that the life and future are not predetermined nor just a product of fate, but can be determined by choice, good decisions and anticipation of consequences of current decisions (Ibidem).

Each strategic objective individually contains the essential elements of the system as a whole. These essential elements that characterize the strategic objectives would be the following: Strategic goals targets of the system for long-term period; Strategic goals define restrictions under which system will operate perhaps in the ongoing period; Strategic goals define major components of business if organization; Strategic goals define resources of company that will be available to it; Strategic goals define interrelations of previous elements and ways to manage and operate organization (Milanović, et. al, 2000).

It is important to stress out needed characteristics of goals that makes MBO different from other management techniques:

1. Operational goals should be specified in highly specific statement and to be measurable. Their quantification will allow you to determine whether they are realized. Thus, when formulating goals in

written form, it is necessary to perform quantification expressed in category of time, certain amount of cost, using quantitative relationships, degrees or percentages.

2. Goals should be focused rather on the output than on the activities. Output refers to measurable things, activities are related to the outputs.
3. Goals for one job should be coordinated with goals which they are connected.
4. Goals need to be given in written form.

To make the process of management by objectives in one business system to be successful, you need to satisfy certain conditions or specific requirements of a successful MBO, so called by Professor Vesna Milicevic. The basic assumptions of successful MBO, in its opinion are: rewards, participation in the formulation of goals, formalizing the process of feedback, training manager skills related to interpersonal relationships, and commitment of top managers for this system (Milićević, 2004).

It should also bear in mind that the definition of basic organizational goals, whether it is the operational or strategic, is not an end in itself, that should bear in mind that the very act of selecting a target has no purpose if he does not realize the performance of certain activities. In order to defined organizational goals have their own sense of expediency, it is necessary to meet certain criteria. They must be:

- **Measurable.** It has to exist at least one parameter which can use for measuring the progress towards the meeting of goal.
- **Specific.** By this criterion is given a clear message about what is necessary to achieve
- **Adequate.** Goals should be in accordance with vision and mission of company.
- **Realistic.** Goals should be reachable and in accordance with capacities of the organization and opportunities that are within the environment. Long story short, goals need to be challenging but reachable.
- **Timely determined.** It has to exist time period for achieving the goal. At the end, economist John Maynard Keynes once said: 'In the long run, we are all dead!'

If defined goals meet these criteria, the benefits for the company are numerous. They help managers of the company to direct employees at all levels towards the realization of common objectives, allowing management to keep certain assets, because employees work in a positive working climate and along much faster. Challenging goals are increasing the motivation of employees to more efficient and dedicated work, a common, meaningful purpose prevent potential conflicts that may arise when each organizational unit of the company has its own specific objectives to be realized. Also, goals provide adequate parameters based on which measures initiative and rewards, increasing the sense of equality and fairness in reward, as well as the level of motivation of the employees.

MBO is a kind of self-control, because this technique allows the manager to control himself and directs their actions. Self-control in this context means a higher level of motivation and desire to achieve defined organizational goals, which at the same time, proper and timely use of MBO technique, are perceived as personal and their own goals. In this way, implemented, MBO techniques enables synchronized and unified direction of all employees in the company, the united efforts of managers at all levels of leadership and management through the existence of self-control (Milicevic, 2004). MBO is a technique which in practice has shown its positive effect on the management of many organizations in the world. So in terms of the 500 largest industrial companies in the United States nearly half of 403 companies that have made his reply pointed out that are using MBO. These management techniques are applied to all continents in over 100 countries. An empirical study indicated that the well-known companies Tenneco, Black & Decker, General Motors, General Foods and Alcoa implemented a successful MBO. In any case, MBO technique is one of the most studied concepts of management. J. Kondrasuk during research into the effectiveness of MBO in 185 studies in management showed that in most cases the MBO was really effective. Since, from questioned organizations 83% of organizations surveyed had positive results. Practical implementation of MBO has shown that managers who have long experience with the management by objectives usually stress out two advantages of this approach: MBO programs continuously stressing out what would be done in one organization in order to achieve goals; MBO process ensure dedication of employees to the organizational goals.

Since by applying technique MBO managers and employees jointly participate in the determination and formulation of key organizational objectives, both sides are much more motivated that they, as much as possible, and practically reach.

On the other hand, despite numerous advantages, the technique MBO has certain shortcomings. In order to practically apply komunikacija and coordination of activities between employees and managers at various levels, formulate organizational objectives and main achievements of the evaluation criteria, there are necessary financial resources. Therefore, this management technique can be complex and expensive for practical use. Despite these potential downsides, management by objectives seeks to maximize results. Because of this performer's goals for each individual should be carefully developed. Essentially, management by objectives means to clarify the purposes and objectives so as to bring consensus on them before there are approved resources, invest the effort and do the job. This increases the efficiency of the organization since its focused intentions and not jagged, a single definition of success was rounded off before it comes to hiring people on a mission, that had if it would not been designed, was futile and useless (Todosijević, 2009).

The management of company that aspires to be successful has the task to guide the vision and efforts of all managers to achieve a unified organizational goal, which assumes that each manager must have clearly defined goals. In addition to lower-level managers should have not only a detailed statement and the formulation of their goals, also objectives for the company as a whole and its organizational units. The manager is responsible for its contribution to the organizational unit gives the company as a whole. Therefore, its activity is directed upwards rather than downwards, because the goals of every managerial job must be defined by its contribution to the success of major organizational unit of which he is a part. This approach to managing up requires all managers to lower level management and decision-makers to independently develop and set goals of their organizational units and the understanding of end enterprise business goals. Only in case when are involved in this way lower managers, senior manager can know what to realistically expect from them and can place their full requirements.

CONCLUSION

In order to achieve successful business in the modern, global business environment, the company needs to conduct a detailed strategic analysis of key factors of its internal and external environment, which forms the basis for defining the vision and mission operations, the main organizational objectives and way in which they will achieve them. The commitment to undertake certain actions and their implementation, determine future behavior and overall functioning of the company, future connections and relationships with the environment.

Management has a duty to direct the vision and efforts of all employees to achieve defined organizational objectives. Applying the technique of MBO, managers are able to identify targets, the main directions of action, and to establish basic criteria for assessing the contribution of each employee in achieving the tasks.

Starting from the numerous advantages that use of MBO technique allows businesses, we can conclude that this technique should be applied and by management our, especially large enterprises, which are in the process of organizational and operational restructuring to market conditions.

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MODIFICATION OF THE BALANCED SCORECARD IN THE MANAGEMENT OF THE MARITIME ECONOMY

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ABSTRACT

The paper is devoted to the importance and use of model "balanced scorecard" (BSC) in the performance of strategic business management of the maritime economy. The purpose of the use of BSC in the maritime economy will contribute to improving the overall business, whether it are observed in the context of shipbuilding, ports and port terminals, ship as a dynamic system of transport-service or ship repair. With the balanced scorecard model in the maritime economy we want to attain the quality of the relationship between "production-services-claim" or "claim-service-production." Both are not only national or regional significance, but the strategy of the maritime economy dominated in the scale of the international market. The modified BSC model which should contribute to quality maritime transport -service strategy, is based on the following "perspectives": 1. demand compliance perspective; 2. perspective of harmonizing supply-production; 3. perspective of harmonization of transport-service offering; 4. perspective of professional educational concept. Using the modified BSC model which will be applied in the maritime services, will achieve not only quality of services but also shorten time in the shipment of cargo and passengers and shorten time of the provision transport services.

Keywords: Modification BCS method, maritime industry, ship, transport service activity

"Building a scorecard can help managers link today's actions with tomorrow's goals."

Rober. S. Kaplan and David P. Norton

INTRODUCTION

Modern business environment of today demands the need for continuous improvement in the work, acting in terms of well-designed strategy, and puts emphasis on the implementation of management decisions and actions that determine the long-term business impact.

90 - of the last century, a professor at Harvard University, Robert Kaplan and consultant David Norton published a method for measuring business performance and called it the Balanced Scorecard, which means "balance sheet benchmarks" or "balanced list of criteria." BSC method is to establish a balance between financial and nonfinancial indicators.

Balanced scorecard allows translating strategic objectives into what is measurable, encourages employees to continuous learning and development and allows better monitoring and management of the organization. Implementation of the BSC model is possible in every branch of economy, and since maritime has a strategic importance for overall economic development, its implementation must be approached seriously.

The maritime economy is sector that focuses on service activity, and the emphasis on the quality execution of maritime strategy puts the satisfaction of transport services. Therefore, the strategy of application of modified BSC model will significantly influence the improvement of the overall

organization of service activities and the outcome will result in confidence and conditioning the demand for re-service transportation requirements.

Application of the modified BCS method in the maritime economy will contribute to the harmonization of performance that are imposed in the implementation of strategic programs at the international exchange market.

The information will be obtained using modified BSC managers in shipping methods will improve the planning and implementation of both business operations and its sustainable development. Let us first of all to the notion of strategic management and Balanced Scorecard model importance in contemporary business.

CORE CONTENT OF STRATEGIC MANAGEMENT

In today's turbulent conditions increase, the complexity of the environment in which organizations operate, it is necessary to complete the management team and in particular those top managers possess leadership qualities and entrepreneurial spirit. With the intention of keeping the organization's contemporary, managers need to possess skills such as: communication skills, planning, people management, decision making, self-initiative, knowledge of finance, marketing, then the ability to continually learn, and etc. Therefore, we can say that these are qualities of a good strategist and strategic management framework.

Due to the simplification of the term strategy, recall the meaning of the word widely available in today's world of management. The word strategy comes from the Greek word meaning *Strategos* general or military leader. Although this strategy was primarily the most recognizable in military terminology, the time is used in economics, marketing, management.

In military terminology, strategy means a branch of the military war skills of using the armed forces on the battlefield to achieve a war aim. Translated, the economic environment, said: "The business enterprise is conducted in a " war "in the middle of the conditions that are similar to a state of war, and that requires a constant struggle to achieve some goal. War represents the middle market where there is a constant struggle for survival and competitive advantage in order to gain the trust of consumers."

The strategy is a general plan of action designed to exercise specific, clearly defined goals. (retrieved www.wikipedia.org).

The process of strategic management includes strategic planning, implementation and evaluation of results, ie. six-speed process that includes:

- Step I: Identifying the mission, goals and strategies of the organization;
- Step II: External analysis;
- Step III: Internal analysis;
- Step IV: Strategy formulation;
- Step V: Implementation strategies and
- Step VI: Evaluation ie. evaluate the results.

Schematic view of strategic management process clearly shows the step by step that allows the performance of the cycle strategy.

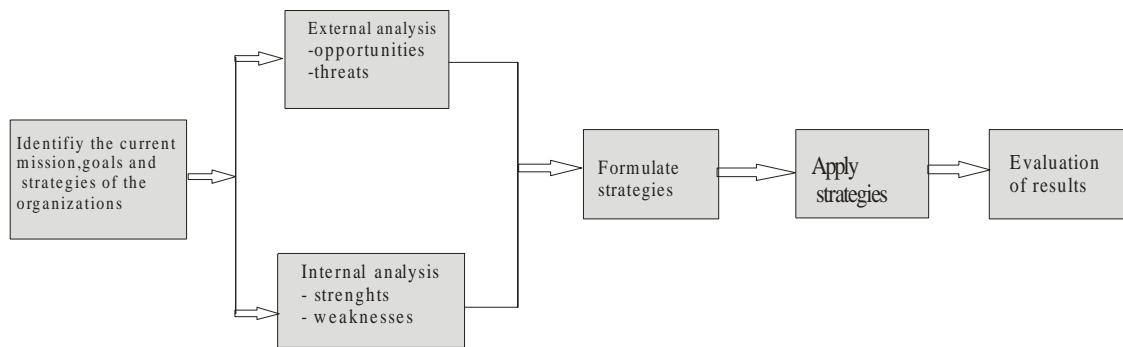


Figure 1: The process of strategic management

Step I: Identifying the mission, goals and strategies of the organization

To set up a successful strategic management it is essential to develop good *vision*, mission and strategy of the organization. "The vision of the business world means a profound new way to view and respond to significant problems. The leader observes the present and sees a different path to the future by rejecting the way that things are resolved by then and imaginatively examines all areas of business. "

The *mission* of the business goal of an organization and is a component of strategic management, which gives the identity of the organization, ie. defines its purpose. The purpose of the organization shall constitute something that is feasible given the potential of the organization and its environment. Managers must determine the actual goals and strategies that apply. Objectives are the foundation of planning and provide measurable results that impact employees strive to achieve..*Strategy* can be explained as a way or path that achieves the vision.

Step II: External analysis

For business organizations is of great importance examine the external environment, ie. perform an external analysis of the interrogation of competition (what competition is doing, what are the plans for further development?, etc..). After an analysis of external environment, managers need to assess what are the chances of threat, ie. you can positively utilize their own purposes, or what it should stand up.

Step III: Internal analysis

External analysis of the investigative findings may be achieved by research outside the organization, while the internal analysis, monitoring turned into its organization. Internal analysis is achieved by assessment of the very organization of resources: financial capital, human resources, technical support, marketing, etc.. Thus, actions that an organization performs well is the strength of the organization, while the weaknesses are those activities that the organization does not perform well. The combination of external and internal analysis is called a SWOT analysis and the analysis indicates the strengths, weaknesses, opportunities and threats the organization. "TOWS or SWOT is an acronym from the initial letters of English words strengths (S), Weakness (W), Opportunities (O) and Threats (T)." This analysis managers can identify current and future opportunities and threats (external factors) on one side and the strength and weaknesses (internal factors) on the other.

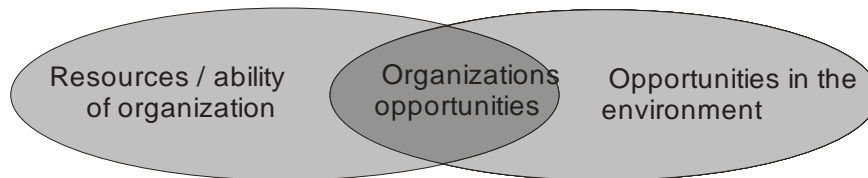


Figure 2: Identifying organizational opportunities

Step IV: Formulation of Strategy

Upon completion of the SWOT analysis, managers make up the strategic options, choosing the strategy of the organization which used the chances environments, rely on their strength in the resource, correct the weaknesses within the organization and oppose the threats.

Step V: Implementing the strategy

After the formulation of strategies, it is then applied and which can often be affected by the change in staffing levels within the organization. It is often required to convert one group of officers from the existing to new jobs or, inclusion in the work of new employees. The purpose is to apply the strategy in the right way so that the same was successfully carried.

Step VI: Evaluation of results

At the end of the process of strategic management is the assessment of results, which answers the questions: What strategies are successful? What are the adjustments were necessary to carry out?

In the sea of methods used in the strategic management occupied a significant place or method of Balanced Scorecard in the translation of balance sheet measures.

BASIS BALANCED SCORECARD

Authors balanced scorecard method, the eminent professor Robert Kaplan and consultant David Norton noted that the allegations in today's changing business environment are not sufficient just financial performance (efficiency), but the final results of operations can be seen through the perspective: consumer, internal business processes and learning – growth. Managers can create the BSC method in organization by translating vision, mission and strategy in to goals and measures. The goals must be clearly defined, measurable, attainable. Based on the mission, each organization defines its vision, from which the strategy become. Therefore, the purpose of the BSC method is to translate the mission, vision and strategy into a system for measuring performance. The strategy is translated into a system of targets for each perspective, which defines the measures and target values and actions to achieve those goals.

The mentioned authors suggest that the majority of control systems in organizations are based on financial measures and short-term goals, which have little or no exercise associated with long-term, strategic goals. This creates a gap between strategy development and implementation. "Using the BSC concept - based on the use of four perspectives - improving the relationship between long-term development (vision and strategy) and the current action."

In the maritime economy, a modified BSC method focuses on balancing: demand compliance perspective, balancing supply-production service, compliance transport offer and educational and professional perspective.

BSC STRATEGIC MAP WITH REFERENCE TO THE MARITIME ECONOMY

Essentially, the strategic maps BSC are the goals that the organization wants to achieve and placing in all four perspectives in order to implement the strategic plan. This case report shows the summary statements of what is necessary to be done in each perspective in order to implement the strategy, then we can say that the strategy map creates a reliable tool for all employees within an organization to manage what is decisive for the quality and success business performance.

The basic foundation of the modified BSC strategic map of the maritime economy is to provide professional - educational concepts employed in the maritime industry, primarily seamen (employees who are employed on the ship). Strategically plan continues the holders of transport services (ports, shipping companies, shipping agencies, etc.), Then builds on the shipbuilding industry as a distinct perspective of harmonization of supply and production.

The modified BSC strategic map of the maritime economy in its four perspectives would involve:
The perspective of harmonizing demand: Emphasis is placed on the development, purchase, sales, human resources, maritime - a transport function of the maritime economy and its symbiosis with the aim of efficient and economical utilization and employment of vessels. Their quality organization determine the tasks and duties of crew for some time. Meet the needs of the international maritime market means to dispose of modern ferry fleet and qualified labor structure.

The perspective of harmonizing supply – production: This perspective implies permanent monitoring of the supply of world trade for the construction of ships. Shipbuilding is the base component necessary for the development of shipping and ship the final product is very complex production process. Orders ship size is closely related to the size of world trade. If the need for increased orders ship is justified, then delivered - the newly built ships will be involved in maritime transport with high freight rates, and if not, then their employment is not complete. The strategic objective of which is placed in relation to this perspective is that the gap between the demand for new products and offers shipbuilding capacity may not be present, it is necessary to adapt the requirements of the shipbuilding industry contracting. Thus, the production (shipbuilding) must be prepared to respond to market demands in relation which types of ships it is necessary to produce (for example: container ships, ships for offshore exploration, etc.), in terms of time or period of construction and construction quality. In the shipbuilding industry, an important position has shipyard with goals: achieving a successful recovery of the vessels and respecting the agreed time for repair work between client and shipyard.

The perspective of harmonizing service - transport offer: This perspective implies a transport maritime function. Maritime - transport functions is reflected in the business of receiving goods and passengers in the port of loading, transporting cargo and passengers from the port of disembarkation to the port of loading and delivery of cargo and passengers to the port of disembarkation.

So, this function determines all those tasks that are performed on ships as a dynamic means of transport, port terminals and shipping companies on the mainland. In this perspective we can include all those organizations providing a service - transportation jobs. These are: ports, shipping, maritime shipping, shipping agency, freight and passenger insurance, nautical tourism and many others. The strategic objectives that are set in this perspective are coordinated activities between these factors that will only result in quality service.

Professional – educational perspectives: This perspective is based on the strategic map, it defines the ability, skills, motivation sailors boarded the ship (as well as key staff for the successful performance of assigned naval operations) and the entire team of employees who perform other tasks in the maritime industry. It is crucial that the tasks performed proven professionals that will further educate the permanent work. In the area of international maritime regulations, innovations in technology, each individual employed in the maritime industry must be aware of the need for

continuous education of good quality in order to perform the tasks. Emphasis is placed on learning and motivation through a significant profit, social programs and working conditions.

This can set the general appearance of the strategic map in the maritime economy. It is further cascade develops, and within each perspective would define the objectives pursued and the measures that affect the achievement of goals, which is a topic of some future work.

CONCLUSION

The tendency in the implementation of strategic management within the business of maritime economy requires the application of the BSC methodology, which is achieved by improving the strategic management, information, communication, and improving reporting and monitoring performance.

By setting the strategic map based on the indicators in all four perspectives, and information support will create conditions for a new, hopefully more useful, more detailed and faster method of work in terms of strategic management in the maritime industry.

BSC success is based on a synthesis of the indicators which contribute to the success of an organization. BSC method of contributing to connecting short and long term goals resulting from the mission and vision of the organization and measuring previously unmeasured indicators creates a more complete and clearer picture value is determined by direction of the organization in line with the strategy.

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REENGINEERING IMPLEMENTATION ON THE EXAMPLE OF A CONSTRUCTION COMPANY

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ABSTRACT

Business remodelling of construction business organizations can be achieved by using modern theories of organizations such as the re-engineering. The paper presents an empirical view of the application of re-engineering in order to improve organization of business, reduce excessive administration, improve communication and shorten the time of processes execution. The current problems and possible solutions in Technical Operations sector, the most important sector within the construction company, will be displayed and analyzed in the framework of this paper. The result of applying re-engineering should contribute to linking participants in the unique business processes. The advantages of the unique business processes would be: the time and cost performance of construction projects would be reduced to the minimum required, participants would have the opportunity for constant and timely communication and access to all project information and documents according to their needs.

Key words: re-engineering, process, Construction Company, Technical Operations Sector.

INTRODUCTION

Successful business transformation of today's construction companies in market-competitive companies depends on directing attention to the needs of clients, developing partnerships and applying new technologies. First, if they want to succeed in this, they must introduce significant changes within the company, which will apply to the introduction of new ways of doing business through a completely different organization of company's business.

It involves modeling a new flexible organizational structure around key business processes, supported by a capable and motivated employees. Modeling of such an organization and its adoption depends directly on the management of company. Managers need to replace the old with the new and completely different way of managing. Business remodeling of construction organizations has to be regarded and organized using modern theories of organization. Re-engineering is a possible application of modern theories of organizations in building enterprise modeling.

RECORDING CURRENT SITUATION IN THE TECHNICAL OPERATIONS SECTOR

Technical Operations sector is engaged in carrying out construction and building trades work, and on that basis it represents the most important sector in this company. The sector employs the following staff: executive site manager, site bosses and supervisors (who run sites of smaller size and complexity, such as maintenance and repair of external water supply, sewage and electrical connections, in the field of construction works), construction and support worker.

Based on the record of current state of activity flows in company's operating sector, there is a need for reviewing and reorganizing of: (1) existing classification of jobs; (2) existing communication between business units and the corporate sectors and (3) degree of capacity utilization.

Inadequate job classification

The first problem exists because in this particular company there are four sectors with no manager. Inadequate job classification leads to duplication of effort, given that certain employees, from various sectors, perform the same activities, and in most cases that leads to errors due to different record keeping.

As a result, there is a problem for the management of the company, because at the right moment there is not realistic i.e. exact insight in material consumption. Due to the simultaneous recording of fuel, oil and lubricants from the machinery and transport manager and storekeeper, there are some errors in quantities, and errors in the records of vehicles and machines.

Under the job classification, it is not exactly and clearly stated and described who conducts which work and documentation. Due to inadequate job classification, documentation control and register is carried out by the persons (employees) of the sector to whom such jobs are unfamiliar (which results in duplication of activities and unnecessary or excessive paperwork).

The result of inadequate job classification is a great loss of time (which is reflected in duplication of activities and comparing different reports of these activities in order to find out the real results of the same) which leads to unnecessary costs for company.

Another problem of inadequate job classification is expressed in engaging external consultants and agencies, due to the company's need for certified elaborates on security and safety at work, drafting, analysis, investment and enterprise development and legal affairs. However, one of the executive site managers, who would be further specialized and trained, may perform most of these operations. The costs of his training, specialization and increased earnings would be lower than the costs of engaging external consultants and agencies. In this way, in a short period (up to 2 years) specific company would reduce its costs, because there would be no needs for hiring external staff and agencies. Thus, executive site manager needs to have more obligations which must be defined with new, optimized job classification.

Lack of communication between business units and departments

The essence and objectives of the communication process are reflected in the achievement of mutual understanding between people and the realization of joint actions of the members and groups of company in order to achieve high performance and competitiveness of enterprise (Adamović and Sajfert, 2009, 133-134). Communication cannot be effective if everyone or groups involved in communication do not receive and send information, and if everyone does not fully and clearly understand what the information means.

Based on the presented examples of communication between business units and the enterprise sectors (see Figure 1), there is a problem, because each executive site manager, site boss and supervisor, in the daily organization of the site, requisite machinery and transport equipment according to the needs of their site without being aware of the needs of other sites. Also, there is no department manager who would determine which sites are primary and which are not for the current day. Therefore, it happens that each individual interacts with the machinery and transport manager who undertakes the organization and the sending of machinery and transport equipment to the site. Similar examples occur between technical operations and procurement sector members (in case of insufficient amount of material, a storekeeper does not know which site is a priority and he distributes material to every site whose manager, boss or supervisor at that moment appears with requisition).

Lack of communication is the consequence of inadequate job classification. There is no manager of the sector, who would receive requisitions of machinery and transport equipment from the previous day from the executive manager, site boss and supervisor, and the safety report from the machinery

and transport manager. Since no one knows the priority of operations, this problem can be considered as one of the largest, because it results in a huge waste of time in performing operations on different sites, which are subsequently expressed in huge unnecessary costs. Due to the lack of adequate communication, jobs from one set of site are completed much later (last unnecessarily long) than planned. Due to the overrun period of works on site, the company is obliged to pay penalty.

Lack of communication brings to confusion and a huge waste of time for daily preparation and execution of works on construction sites, and consequently affects the efficiency and capacity utilization. The effective working time on the site is very low, sometimes below 50% of the total daily working hours, which results in increased costs for the company.

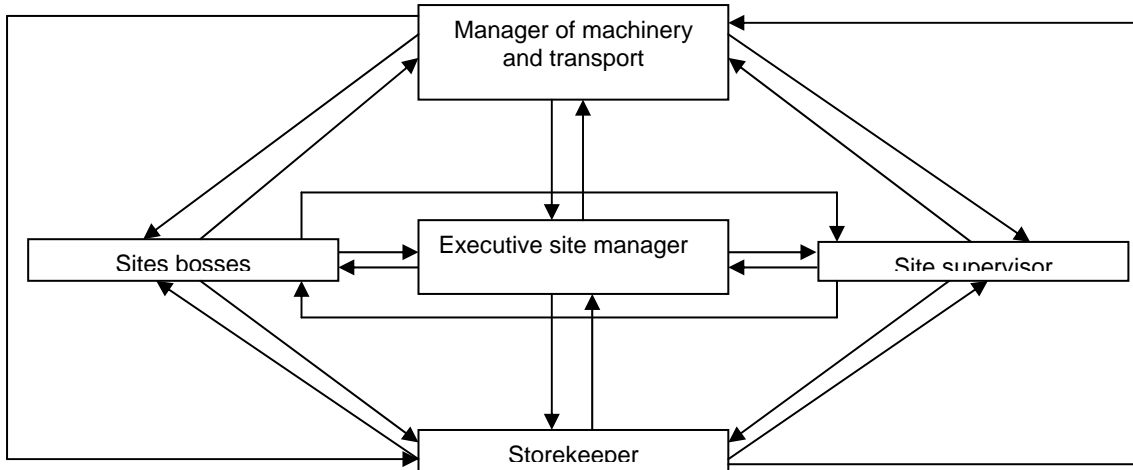


Figure 1: Communication in company

Incorrect use of capacity

This problem exists due to improper organization and management of construction sites and a common cause is lack of communication. In addition, the problem may be further accentuated with the lack of understanding of the executive managers, bosses and supervisors, because each of them believes his site has priority and acts according to that.

The problem of machinery or transport standstill at one site is very common, while the same could have had larger and more productive effect on another site. For example, at the first construction site machinery has a several hours delay, and therefore an operation on another site has been overran. For the next day the same number of workers is hired to complete operation which could have been finished the previous day. Also, hired workers are transferred to another site or engaged in the next operations of the same site. All of this leads to duplication of costs.

IMPLEMENTATION OF REENGINEERING IN THE OPERATIONS SECTOR

Following the identification of existing problems in technical operations sector of the specific construction company, a conclusion could be drawn that it is necessary to re-engineer business processes in order to establish a modern way of doing business. Re-engineering plan is to establish:

1. a new and optimal job classification,
2. effective communication between business units and departments,
3. optimal use of capacity.

In order to implement new ideas, the company should (1) create a new and optimal job classification and (2) introduce an information system.

Development of a new and optimum job classification

Given that this is a small business, there is a possibility that one person performs various activities, i.e. employees in managerial positions will have a higher level of duties and responsibilities in relation to earlier. Company introduces new jobs (managers of sectors) to individuals who possess the appropriate skill and level of education.

In relation to the current organizational structure, which comprised four sectors, the new job classification will affect the new organizational structure that will have three sectors:

1. Sector of investment and general business (created by merging administrative and procurement sector), which will not have its manager, but the obligation will be shared to the technical director and to the manager of technical operations in accordance to their empowerment.
2. Sector of technical operations, which will have its manager. Its main task is to coordinate construction sites and, in consultation with the technical director, decide about priorities. Given that he is familiar with the complete problem and the organization of the company and sites, also, he is assigned the coordination between sectors.
3. Machinery and transport sector. With additional training, the supervisor of this sector will be transformed into the manager who is directly responsible to the manager of technical operations and technical director.

Changed organizational structure of enterprises, due to new job classification, is shown in next figure.

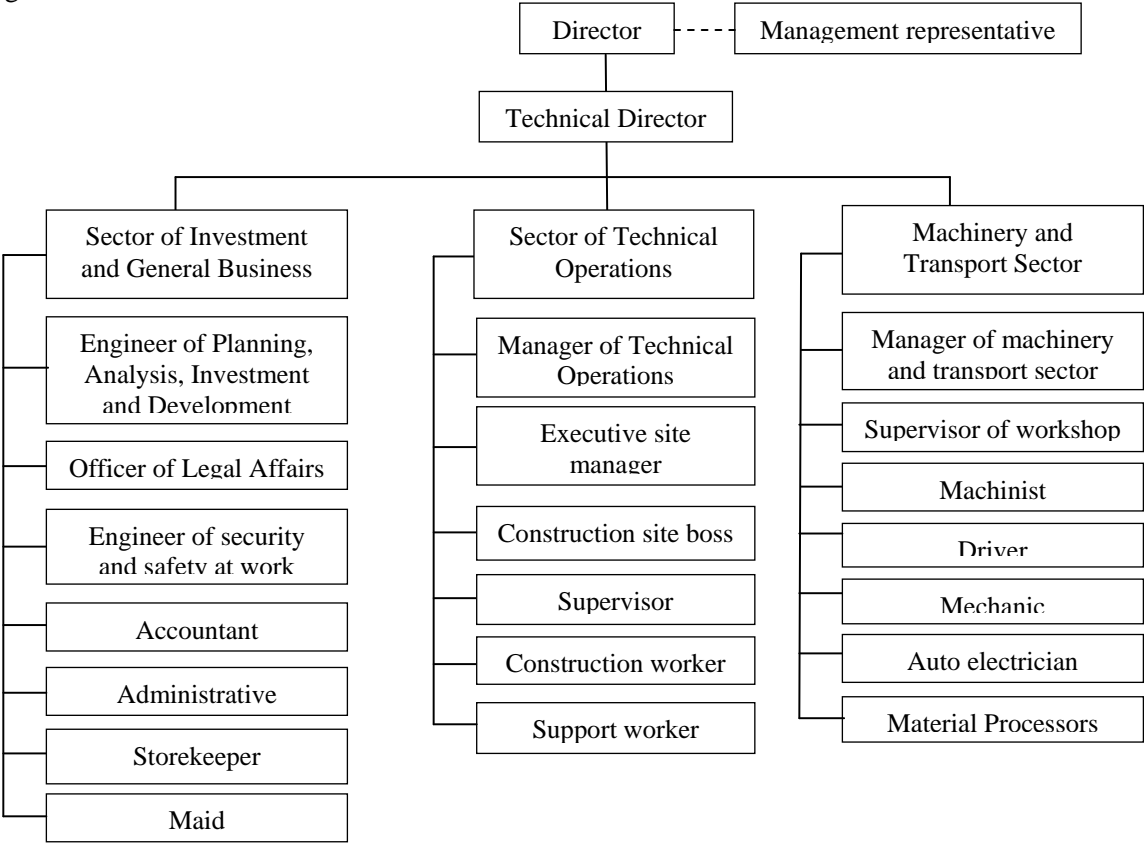


Figure 2: Organizational structures after reengineering.

The introduction of information system

In order to avoid unnecessary communication between sectors it is necessary to expand and modernize the information and telecommunication technologies in the enterprise. This would be achieved by introducing more computers for the sector of technical operations, as well as one computer for a storekeeper and for the sector of machinery and transport. All computers must be networked to the internal network (intranet) and streamlined software for data processing should be provided.

The advantages of introducing an information system in technical operations sector are:

- networking users,
- access to data (about: construction sites, condition of materials in the warehouse) and daily work orders for each construction site,
- faster involving of users in execution of the site,
- timely response to the possibility of occurrence of critical processes in the execution of site,
- a clearer insight to the available resources of company,
- the possibility of a multi-day planning and organization of site.

The introduction of information technology in the sector of technical operations would create a communications network, where all information would be merged to the Manager of Technical Operations. This would contribute to the establishment of adequate communication between the manager of technical operations and other participants in its sector (executive site managers, bosses and supervisors of construction sites), as well as storekeeper and manager of machinery and transport.

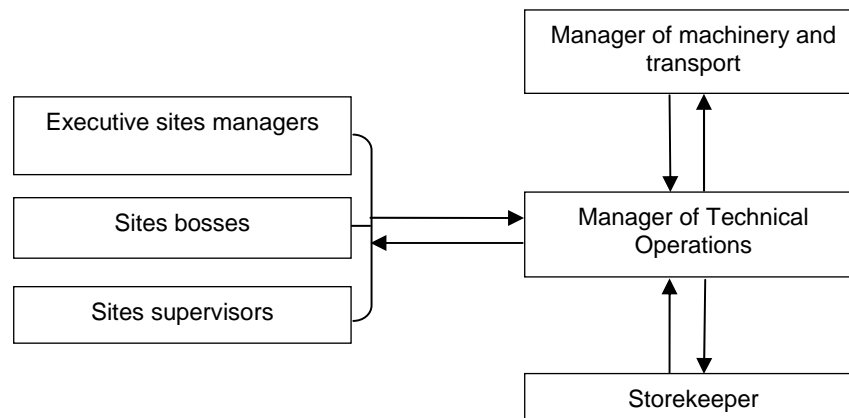


Figure 3: The scheme of communication after the re-engineering.

Establishing a new systematization of jobs and the introduction of Information Technology can solve the third problem in the sector of technical operations related to the incorrect use of capacity. The application of these solutions, incorrect capacity utilization should be minimized.

CONCLUSION

Increasing competitiveness is the main goal of development policy of each company. Under conditions of frequent changes and highly developed competition, companies need to apply different methods of business process management, which ensure the improvement of the overall business. Effective implementation of organizational change is implemented by business process reengineering. Re-engineering is one way of increasing organizations efficiency and improving overall business.

Currently, re-engineering in the world is relatively rarely used in the construction industry. Reengineering may suit to companies that want radical changes in a short period. It can be concluded that the reengineering is a powerful tool to increase competitiveness, but also a good way to meet internal and external customers, and a step towards a virtual organization.

In the specific construction company, business process modeling is done within the sector of technical operations in which it is necessary to introduce radical restructuring, to improve overall business operations supported by information technology.

However, in the process of implementing radical changes, the most important and the most difficult to change during the re-engineering are employees, rather than technology and processes. Changing them or the organizational culture is the foundation upon which the business transformation of the company is reposed and built. If construction companies want to remark their businesses into market-oriented they need to change their way of work and to accept new methods, techniques and technologies in the work of all people, which will consequently result in the new organizational structure. To ensure this, it is necessary to prepare people to change, in terms of influencing their culture and value system.

Finally, the effects of reengineering are: increase of the quality, reduction of costs, shortening time of process execution, elimination of non-productive activities, improvement of communication, creating a pleasant atmosphere to work with a broad responsibility, obligations and rights of employees, raising the company culture, etc.

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THE INTEGRAL PROBLEM-SOLVING AND DECISION-MAKING PROCESS

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ABSTRACT

Whether it is Six Sigma, Total Quality Management, ISO 9000, or some other quality improvement program, it requires an effective integral problem-solving and decision-making process. Integral problem-solving and decision-making processes are absolutely essential for the improvement of the quality management system and increasing the quality of the final product or service. In this article the structured methodology for problem-solving and decision-making process is presented. The intent is to briefly provide and highlight the major steps that should be taken in the right sequence in order to successfully and effectively perform any problem-solving and decision-making activity. It wouldn't be mistake, if it's said that brief guidelines for both processes have been given. The goal of this structured methodology is to empower anybody involved in these processes to execute them more effectively and therefore improve quality, which is the ultimate goal of any company.

Key words: Problem-Solving, Decision-Making, Effectiveness, Improvement, Quality

INTRODUCTION

Problem-solving and decision-making are closely linked processes. Whether making ordinary day-to-day decisions or critical, time-sensitive decisions using a standard problem-solving model will help ensure that decisions are rational and logical. Problem-solving is a set of activities designed to analyze a situation systematically and generate, implement, and evaluate solutions. Decision-making is a mechanism for making choices at each step of the problem-solving process. Decision-making is part of problem-solving, and decision-making occurs at every step of the problem-solving process.

The relationship between decision-making and problem-solving is strong. Both are attempts to make the organization work more effectively, both utilize similar models and in either case getting the wrong results can prove costly. While it is understood that decision-making usually involves making a choice between one of several options, the involved subjects often fail to see that problem solving also has this characteristic. An additional similarity between decision-making and problem-solving is that any decision made or problem solved must enhance the company's ability to meet its business objectives.

PROBLEM-SOLVING PROCESS

Problem-Solving process is a methodology used to resolve problems in quality field. Its purpose is to identify, correct and eliminate recurring problems; therefore it is useful in product and process improvement. It establishes a permanent corrective action based on analysis of the problem and focuses on the origin of the problem by determining its root causes.

Although all professionals in quality field believe that problem-solving methodology should be structured, many organizations still use ad hoc methods for addressing their problems. In other words, they latch on to the most obvious explanation for a problem and pray that they've addressed its root cause. An effective problem-solving method is simply a step-by-step road map for developing solutions. The numerous reasons for using a formal method are very convincing. First of all it prevents problem solvers from jumping to conclusions. It's always tempting to propose solutions before a problem is properly defined and its root cause identified. A structured problem-solving method prevents the process from short-circuiting and ensures the critical, preliminary step of truly understanding the problem and its variables. Secondly, it ensures root cause analysis. An inability—or unwillingness—to identify the root cause is probably the single biggest obstacle to problem solving. However, when one of the explicit steps of a structured problem-solving method is identifying the root cause, it's much harder to ignore. Thirdly, it demystifies the problem-solving process. When each step of the problem-solving method is understood and agreed upon by all participants, the process gives everyone an opportunity to contribute and drives a team-oriented style of problem solving. It prescribes which analytical tools to use and when. The sheer number of analytical tools available to problem solvers is mind-boggling, and it's not always clear when the use of a certain one is appropriate. A structured problem-solving method offers guidance on when and how to use the proper tools. The following problem-solving methodology (often called 8D) is common and accepted by leading industries (Hawker Beechcraft, 2008):

1. Defining the Problem
2. Selecting the Team
3. Identifying, Implementing and Verifying Containment Actions
4. Identifying Potential Root Cause
5. Identifying, Implementing and Verifying Corrective Actions
6. Implementing Permanent Corrective Actions
7. Preventing Reoccurrence
8. Recognition to all Participants

Graphically:

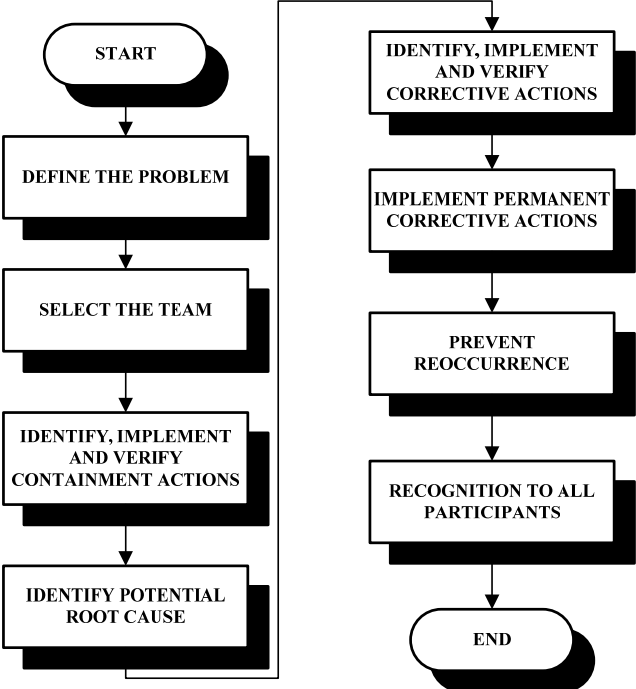


Figure 1: Problem-Solving Process

Defining the Problem

Defining the problem could look meaningless but is very important step in problem-solving methodology. Problem should be described in measurable terms. Defining the problem should be a short, simple and concise definition. In the clearest and most succinct terms possible, it should be defined - what exactly is the problem? The details should be provided of who, what, where when, how and how many. It is very important that carefully defining the problem will provide the raw material for successfully identifying its root cause.

Selecting the Team

It is essential to establish a small group of people with the knowledge, time, authority and skill to solve the problem and implement corrective actions. The group must select a team leader who will be responsible for managing the team's performance toward objectives.

Identifying, Implementing and Verifying Containment Actions

Identifying, implementing and verifying containment actions that will protect the customer from the problem until permanent corrective action is implemented are must. The effectiveness of these actions should be verified through day-to-day activities. These measures should be enabled until permanent corrective actions have taken place.

Identifying Potential Root Cause

Identifying all potential causes which could explain why the problem occurred is essential part of this structured methodology. Each potential root cause should be tested against the problem description and data. Alternative corrective actions to eliminate root cause should also be identified. Identification of the root cause comes directly from defining the problem itself. The typical obstacle at this step is mistaking a symptom for the root cause. Often the so-called "root cause" is nothing more than a restatement of the problem definition. It is important to distinguish symptoms from root causes (MacDuffie, 1997).

Identifying, Implementing and Verifying Corrective Actions

After the root cause has been identified, the corrective actions should be identified to permanently remove the root cause from the process. These actions should directly attack the root cause of the problem. However, it should be verified that selected corrective actions will resolve the problem for the customer and will not cause undesirable side effects.

Implementing Permanent Corrective Actions

All required permanent corrective actions should be implemented to sustain achieved gains and to on-going controls to insure the root cause is completely and permanently eliminated. Once in production, the long-term effects should be monitored and additional controls as necessary should be implemented.

Preventing Reoccurrence

To prevent reoccurrence, sometimes it is necessary to modify specifications, update training, review work flow, and improve practices and procedures to prevent recurrence of this and all similar problems.

Recognition to all Participants

On the end of this process, it's mandatory to recognize the collective efforts of the team. The achievement should be communicated and publicized. The gained knowledge and experience should be standardized and shared.

DECISION-MAKING PROCESS

Humans are creative thinkers, and without specific information, people fill in the gaps with assumptions or other unreliable ideas. Pressures involving time, a lack of data, or an absence of process lead to decisions based on faulty reasoning. Decisions based on hunches, the way things have always been done, or whatever the person with the loudest voice says can be completely off-target. Although intuition has its place, gathering data helps avoid misguided influences so that people can make more effective changes in systems and processes.

Frameworks, models, and outlined steps facilitate information gathering and, ultimately, wise decision making. Incorporating models into decisions mitigates the likelihood that initiatives and plans will go astray. Starting off without a model often produces unexpected (and sometimes disastrous or costly) results. Using a systematic model helps avoid pitfalls. Taking advantage of quality tools and a step-by-step process to support decision making process is essential.

The following presented model is fairly simple and pared down to reflect the critical steps in ensuring high-quality decision-making process (Haviland, 2007):

1. Stating the problem
2. Getting the facts
3. Developing the alternatives
4. Evaluating the alternatives
5. Making the decision
6. Implementing and evaluating the decision

Graphically:

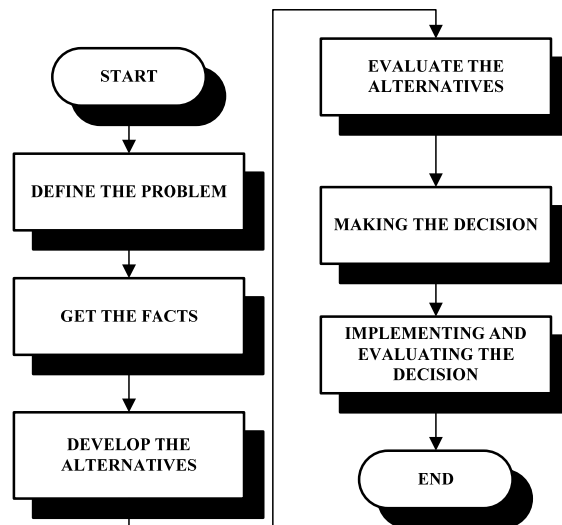


Figure 2: Decision-Making Process

Stating the Problem

The first and arguably the most important step in the decision making model is to identifying the problem. Until there is a clear understanding of the problem or decision to be made, it is meaningless to proceed. If the problem is stated incorrectly or unclearly then decisions will be wrong.

First, it is necessary to determine the scope and the measures that will define the decision. Leaders must think through what the decision actually encompasses and affects. In addition to the scope of the decision, goals must be clarified. The possible causes of issues or potential solutions during this exercise must not be implied; instead the process should be focused on verbalizing the goals. Those making the decision should be able to clearly and concisely express the goal in a few simple statements. Before putting time and effort into resolving the issue, the individual or preferably team

working on the issue needs to be able to verbalize the problem and prove that it is important enough to resolve by setting the goals. The ultimate vision/goals can guide the rest of the decision making process and make the case for the need to make a decision at all. The goal should have target completion dates and be measurable. Progress toward the goal needs to be tracked as the problem is solved. Leaders need to see that they are reaching the points in the process that they need to by the dates they set forth at the beginning. This makes it easier to evaluate the effectiveness of the solution and determine if any changes need to be made along the way.

Getting the Facts

The necessary facts must be gathered but it is impossible to obtain every piece of applicable information. It isn't realistic or cost effective to collect everything. Instead, it's desirable to obtain as many facts as possible about a decision within the imposed time limit and ability to process them, but with precaution that not every piece of information is equally important. It's necessary to place appropriate weight on factors that warrant it. Which factors are important differs with every decision. Cost is not always primary; sometimes external market factors or the status of relationships with other organizations take more or less precedence.

Virtually every decision must be made in partial ignorance, so a lack of complete information must not paralyze decision making. A decision based on partial knowledge is usually better than making no decision. According to Hackman and Wageman (1995) systematically collected data at every point in a problem-solving cycle is crucial.

To eliminate that uncertainty for decision makers as well as those affected by the decision, fact gathering involves consulting people who will be impacted by and who will have to implement the decision. Input from all stakeholders not only provides additional information and help in making the decision, but it fosters acceptance of the decision because implementers feel they are part of the decision-making process.

To generate ideas and prioritize causes, it is mandatory to use tools such as cause-and-effect diagrams, brainstorming, and force field analysis. Cause-and-effect diagrams categorize potential causes of a problem or issue. The visual nature of this method is especially effective in revealing the patterns and relationships among causes. Force field analysis identifies restraining and driving forces that either prevent an organization from or enable it to reach a goal.

Continuously examine the most likely causes of the issues being faced by asking "Why?" several times. Pareto charts can help determine the most likely causes that need to be looked into. A Pareto chart is a bar graph that interprets the relative frequency or importance of causes and ranks them in terms of significance. Another technique is to construct a flow chart of the work process behind the identified causes.

Developing the Alternatives

This step involves making a list of all the possible choices available, including the choice of doing nothing. Sometimes the decision to do nothing is useful or at least better than the alternatives, so it should always be consciously included in the decision-making process.

There are a number of possible tools for generating alternatives: brainstorming, affinity diagrams, focus groups, and surveys. The most time-consuming tools are focus groups and surveys. Brainstorming sessions and affinity diagrams are less time consuming but may not include the voice of the customer as focus groups and surveys do.

Evaluating the Alternatives

The evaluation of each alternative must be performed. The alternative that is most liked or seems to be an obvious choice might not be functional in the real world because of high costs or lack of time or acceptance by others.

Direct factors that contribute to the decision often include cost-benefit analysis. Elements that directly impact the bottom line often get the most attention when making a choice. However, many indirect factors may also contribute to the ranking of alternatives.

Making the Decision

In light of the alternatives and the option to do nothing, it is necessary to choose the path to follow. The key is examining the information when making a decision to remove the potential for bias to influence decisions. If a few decisions appear equally sound and are coming from different sources, a criteria matrix can facilitate the voicing of unspoken factors or hidden criteria influencing other individuals' decisions and allow for the comparison of the various solutions against the requirements that have been laid out. Once all underlying biases are revealed, the final decision can be made.

Implementing and evaluating the decision

Finally, fully empowered by relevant information, the decision should be implemented. It is necessary to always explain the decision to those involved in carrying it out and to those affected by it and not only the projected benefits should be specifically outlined. The risks should be also frankly explained and the drawbacks involved and state why it is believed the proposed benefits outweigh the negatives. Implementers are much more willing to support decisions when they understand the risks and believe that they are being treated with honesty.

It is important to keep in mind that few decisions are irrevocable. When evaluating the outcome of the decision, time should be allowed for positive results, but leaders shouldn't hesitate to change direction if a particular decision is clearly not working out or is somehow harmful. A decision to change course and do something else can always be made. During the decision-making process, you can also identify a few contingency plans that can be put into action if the initial decision doesn't work.

CONCLUSION

Much of what continual improvement leaders in companies do is solving problems and making decisions. Therefore, it's often useful to get used to an organized approach to problem-solving and decision-making. Not all problems can be solved and decisions made by the following, rather rational approach. However, the provided basic guidelines are good starting point.

Problem solving and decision-making are important skills for business and life. Problem-solving often involves decision-making, and decision-making is especially important for management and leadership. This article has highlighted the major important steps in both processes – problem-solving and decision-making. It's believed that provided methodologies will benefit involved personnel in these processes, especially to effectively execute them and therefore improve final quality of the product or service which is the pinnacle of every business entity.

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ANALYSIS OF COMPANY'S INTERNAL FACTORS LIMITING THE PERFORMANCE OF RE-ENGINEERING COMPANY

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ABSTRACT

When the leadership of the company, that has appropriate successfully implemented TQM or is on track to implement it, after conducting a situational analysis, conclude that the company has to do something radically to avoid falling into the crisis, or, if it is already plunged into crisis, to avoid catastrophic consequences, then it must address the elimination of objectively present the internal factors that hinder the implementation of reengineering the company. These factors can be classified into three groups, and each of them deserves special attention and should be the subject of analysis. The better you do the analysis before starting the re-engineering of company, the greater the likelihood of successful implementation of the reengineering is going to be.

Keywords: situation analysis, re-engineering companies, limited factors, TQM.

INTRODUCTION

Situational approach to organization of the enterprise has originated as an answer to the existence of universalist approach and theory of situational approach is based on the word „contingency“, which in philosophy and logics denotes something whose logical fulfilment is not mandatory, something that could not have happened. Big systems are criticized because they do not plan contingent events, for whose prediction the creative thinking outside the usual patterns is required. According to Murphy's law, it is certain that: " If allowed, the situation will follow the undesired direction." [1]

Situational approach has somewhat different meaning than the term of contingency. It assumes determination of impacts that internal and external factors of enterprise have on it. This concept is, basically, based on the standpoint that each organization is unique by its structure and dynamics. In accordance with this, organizational solutions cannot be looked for through the development of general patterns and models that only need to be applied on specific cases. Change of the postulate of such an approach implies the application of situation's characteristics in the first step, then performances of relational structure, and then dissonant points between them, where the directing of specific project undertaking is them performed.

The essence of situational analysis of enterprise is that its situational factors are treated as independent and that factors of organizing are treated as dependent variables that can be changed. For that reason, each situation of enterprise that is analyzed is characterized by the existence of the following two groups of factors:

- Internal factors and
- External factors.

In this paper, we will especially deal with internal factors of enterprise.

STARTING BASIS FOR DEFINING INTERNAL FACTORS OF ENTERPRISE

Defining the statements on which internal factors are based

Internal factors are based on the existence of the following statements:

- As the enterprise grows older, its behaviour is increasingly formalized,
- Structure of the enterprise follows the age of economic branch it belongs to,
- The bigger the enterprise, the more in detail developed is its structure,
- The bigger the enterprise, the higher is the average size of its integral organizational units,
- The bigger the enterprise, its behaviour is also bigger,
- The more regulated is the technical system of enterprise, the work of its operating core is more formalized.
- The more sophisticated is the technical system of enterprise (difficult to understand), the more developed is its non-operating substructure.
- Automation of operating core of enterprise directs previously bureaucratic administrative structure towards organic (less bureaucratic, flexible, open for changes) structure.

Most frequent typology of situational organization of enterprise

When changing the old form of enterprise's organization into a new, completely different one, with entirely new configuration of valid parameters, sometimes we narrow the possibilities of structural choice. For that reason, bigger changes of configuration can be carried out only during a longer period of time and in a few steps.

In the context of changes in organizational structure, above-mentioned conclusions say that there is a rational sequence of structure model, which does not create an excess of opportunity to organizational changes and through which it is possible to, in a longer time period, reach a model that is compatible with formulated mission, vision, general goal and strategies of enterprise. Rationality of the sequence of models in structure development is reflected in as smaller as possible number of different parameters of repeated configurations of structure.

Basically, enterprises can have a dual relationship towards the changes: *reactive and proactive*. Reactive relationship is characterized by certain delay in the changes of strategy and structure with the change of situation in environment. Proactive relationship exists in case of enterprises that tend to cause changes themselves by their developmental and other engagements and thus acquire competitive advantage. Based on the interpretation of such behaviour on performances of organizational structure, the following typology of enterprise is stressed (14, pp. 100):

- Defenders,
- Researchers,
- Analyzers and
- Reactors.

In this paper, we will not pay any special attention to characteristics of these types of enterprises, but we will exclusively deal with factors that appear within an organization and that interfere with smooth implementation of continual constant changes.

IDENTIFICATION OF FACTORS WITHIN ENTERPRISE THAT INTERFERE WITH RADICAL CHANGES

As enterprise's leadership that owns appropriate successfully realized TQM or it is close to its realization, after the specific situational analysis carried out, concludes that it needs to achieve appropriate radical change in relation to the existing situation in order to prevent the crisis that threatens it or to lessen the effects of crisis that has already affected it, then it previously needs to deal with the need of eliminating the factors that objectively interfere with realization of ideas. We will set aside three present and rather stressed factors:

- a) Self-satisfaction in the achieved TQM,
- b) Fear of non-achieving TQM or
- c) Disappointment due to the developed or developing crisis, even it is worked on achieving TQM in their collective.

Self-satisfaction in collective with owned TQM

Presence of the expressed self-satisfaction in enterprises with successfully achieved TQM is normal following phenomenon, for the reason that in the past time it had a continuous gradual improvement in its business, by which in case of collective members the following attitude was professionally established „the way in which we work and live is quite all right and it shouldn't be especially changed“. For operative and

tactical management of enterprise, such expressed mood of employees means „if what is currently done in enterprise seems quite all right to the employees, then it should still remain thus“. Thus it is clearly confirmed that in enterprise there is a stressed self-satisfaction with the present situation and that there will be great resistance if something should be changed radically.

Figure 1 shows general graphic interpretation of the content of characteristics of present self-satisfaction in enterprise with successful application of TQM. From the overview it is seen that presence of such self-satisfaction is manifested with nine accompanying characteristics, which are shown in Figure 1.

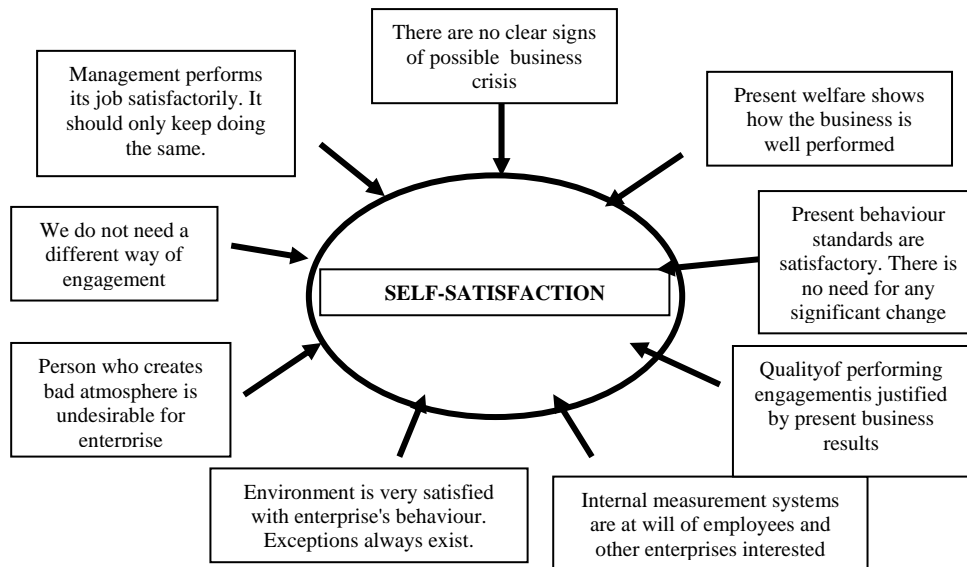


Figure 1: Overview of characteristics of present self-satisfaction in enterprise with successfully realized TQM

It is obvious that such overall attitude of enterprise is based on achieved business successes in the period from when TQM is established. Such business successes were embedded in resources available, satisfaction of employees, beliefs of management and satisfaction of others interested for the company, so it is not even reflected on the appearance of possible negativity in the future of enterprise. Gradual creation of overemphasized ego and appearance of arrogance in behaviour culture of enterprise make its general awareness on proper behaviour and need of constant wakefulness to drop to unsatisfactory level, even in case of those to whom one of the main tasks is precisely not to allow it. They, i.e. managers, seem as they have completely forgotten about very important rule for their field of work and especially in today's economic conditions, and that is „never allow for forces to develop in enterprise in any kind of forms that will interfere with the need for any kind of changes in it, even if they are radical, unless there is an objective necessity for them“.

In certain sense, the following two fact reasons somehow influence the phenomenon of obscuring the importance of emphasized rule. The first is that enterprises with successful TQM in their behaviour have a process of constant improvement, which provides one form of constant growth and development of enterprise. This is specific for Japanese enterprises, which because of that have more favourable business in relation to American, which compensate their lagging in business by performing radical changes. However, such changes are rather painful, they are performed with great investment engagement and have a big risk for successful implementation. For that reason, they are not popular for performance.

And the second reason refers to the fact that today's radical changes in the form of reengineering business processes with enterprises with the application of TQM are rarely performed today (conditions of Japanese economy), so that generally we obtain the impression that they shouldn't be performed at all. Besides, due to rare performance of reengineering of TQM and due to great uncertainty that generally rules in case of performing classical reengineering of business processes (reengineering in enterprises of American economy) in science and even in practice on organization of enterprise today, there still isn't unambiguous and operatively precise methodological development of this problem, which by itself creates the fear and appearance of general rejection towards the need for its performance.

However, all of the above-mentioned shouldn't be an obstacle for achieving necessary radical improvement of enterprise with established TQM. For that reason, leadership of enterprise, prior to making a decision on entering the performance of necessary reengineering, should make appropriate effort to eliminate it.

Fear of the possibility of not achieving TQM

Implementation of TQM in any enterprise, particularly undeveloped and even more in economies that are in transition is tedious and uncertain effort. This is especially if you enter such a job with inadequate approach and without adequate preparation, which in practice is a case of high probability. Then the accompanying problems are particularly complicated, so the achievement of tangible positive results becomes increasingly desirable. For that reason, the syndrome of increasing satisfaction grows in collective, which starts to cause general concern regarding the certainty for achieving desired tendencies, if for some reasons there appears a sign of some crisis. Collective even begins to fear the possibility of not achieving success in undertaken tendency which began to give tangible results. Appearance of such fear is objective reality and it requires special attention if we want to assume radical transformations in order to prevent the crisis that is to arrive.

Figure 2 shows the content of characteristics of the situation of present fear in enterprise without realization of TQM if undertaking of some new radical change would be necessary. Overview by visual appearance is similar to the one shown in Figure 1, but its operative content is rather different.

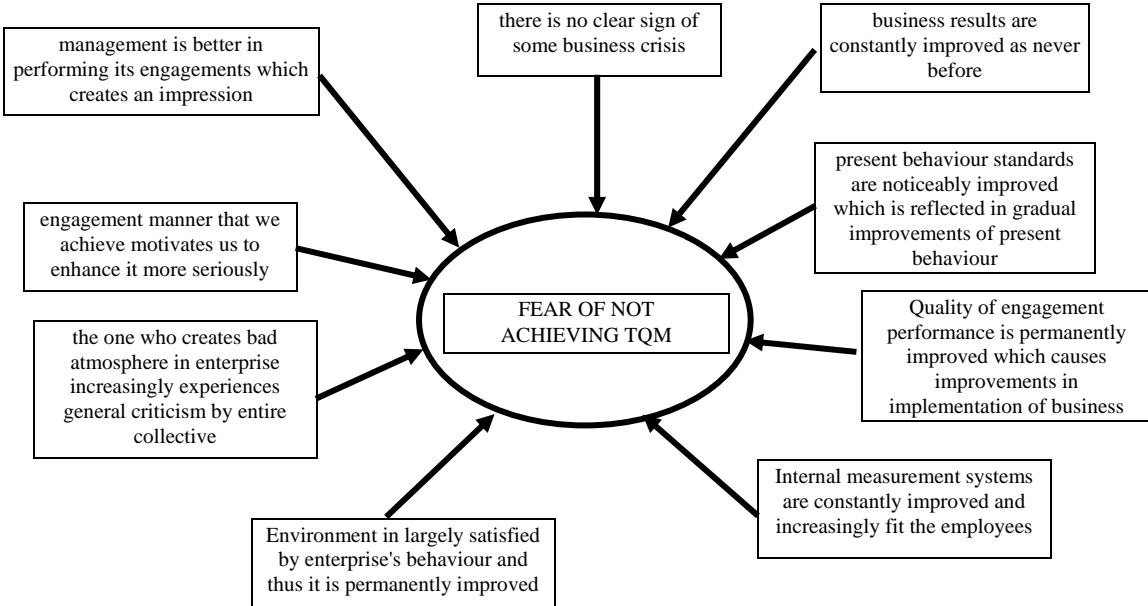


Figure 2: Overview of the form of fear present in enterprise from the possibility that initiated implementation of TQM might not be achieved with success

By careful analysis of characteristics mentioned, we can conclude that tendency of enterprise to achieve TQM has reached such state that everyone in it have committed to this obligation and that every tendency to stop such engagement and redirect will cause fear for further destiny of enterprise. Collective will fear of what will happen with it if it has to stop this improvement in behaviour and accept some unnecessary suspicious adventures.

Disappointment due to appearance of crisis even it is worked on achievement of TQM

When enterprise starts the implementation of process organization with the aim to achieve TQM than it expects for the quality of its business to be improved as well. However, if that does not happen or even worse, if the enterprise begins to feel business crisis, then there is disappointment, even destructive actions on implementation of undertaken tendency. Such condition will be even more deteriorated if the initiative for achieving more radical undertaking with the same tendency would be started.

Figure 3 shows that model of general content of the characteristics of general state of present uncertainty and disappointment in enterprise's collective that is in process organization with a desire to achieve TQM, and which has already fallen into crisis from which it is to be rescued by new radical undertaking. That overview

is similar to the model of fear presence i enterprise that tends to achieve TQM, but its operative content is rather different.

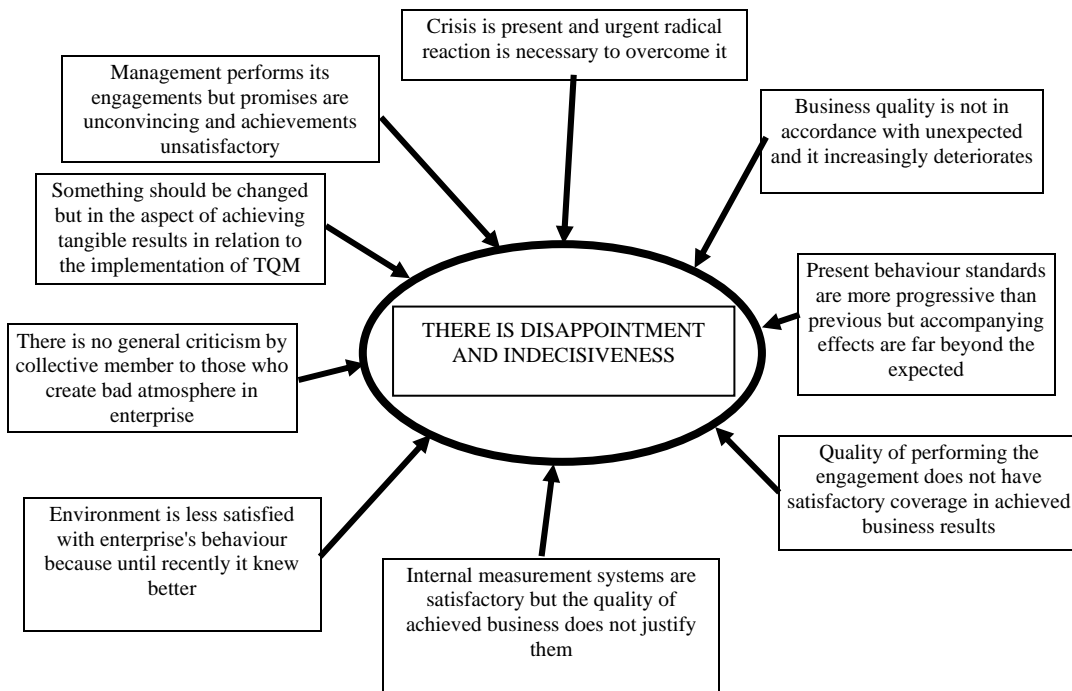


Figure 3: Overview of characteristics of present distrust and indecisiveness, i.e. concern in enterprise that has come to the present business crisis during the TQM development

Due to the presence of above described reasons, enterprise's leadership now has to invest particularly significant effort in order for the collective to be led to the position to avoid shakes and understand the need for achieving its reengineering. That effort is by the content a lot similar to the effort for elimination of present self-satisfaction or present fear for failure in TQM achievement, only that they are more complex now.

SUGGESTIONS FOR THE ELIMINATION OF ABOVE MENTIONED FACTORS

In order to initiate the process of reengineering of an enterprise, it is necessary to previously prepare the enterprise for such an act. Therefore, procedure of performing specific preparation depends primarily on the psychological status condition the enterprise is found in. In the following paragraphs, having in mind the limited length of work, we will attempt to briefly mention the recommendations for overcoming the obstacles mentioned.

Procedure of eliminating present self-satisfaction in enterprise with achieved TQM

Elimination of present self-satisfaction in enterprise as limiting factor for the initiation of necessary radical change, i.e. reengineering, basically implies awakening of attitudes in enterprise regarding the need of its implementation. In order for that to happen, enterprise's leadership, firstly, needs to appropriately formulate the image of the appearance of possible crisis and then to gradually present it to the collective. Formulated image should be based on the results of published situational analysis and to be based on facts. It is necessary to determine the evaluation on the trend of its appearance and what should be done in order to prevent it.

Presentation of collective with formulated image on possible appearance of crisis should begin with tactical and then operative management. Once that is done, it is moved onto the other members of collective. Manner of communicating with different levels is not the same and we will not speak about it here.

All the above presented engagement will be successfully published if in the end it is concluded that the idea on reengineering of enterprise has become generally accepted and that each present self-satisfaction is repressed with arguments. And only when such a tendency is achieved, enterprise's leadership can enter the procedure of making a decision on initiation of the procedure of radical change in enterprise, i.e. its reengineering.

Releasing the collective from the fear of not achieving TQM if the reengineering is initiated

Elimination of the present fear that implementation of TQM will not be achieved, which is in progress and whose positive effects are significantly felt, is a significant problem for enterprise's leadership if it is concluded that enterprise should enter the reengineering because of crisis that threatens it. Collective is satisfied for being engaged on implementation of TQM, having in mind that effects that are achieved are important to such an extent that it is looked forward for the statement that the desired is achieved. And if now, for some reason, it is necessary to abandon the achieved with the aim to start the implementation of some more radical TQM, it can be expected that the collective will be worried because little is left until the goal is achieved and if it is not achieved now, the question is whether it will be achieved ever.

Enterprise's leadership needs to be aware of the appearance of such situation in collective if it evaluates that enterprise needs to carry out its radical change in order to prevent crisis that threatens and thus the collective must be led into the position to objectively understand such a need regardless of the presence of emotional state towards current implementation of TQM. For that purpose, enterprise's leadership previously needs to perform the formulation of constructive explanation of its view and then to present it to other management of company – tactical and operative, and then to the other members of collective. Presentation of formulated need for radical change of enterprise in form of its reengineering is almost of the same content as in case of eliminating present self-satisfaction in enterprise with implemented TQM, only the present situation is much more serious. Reason for this is in the fact that in enterprise with implemented TQM, in some aspect there already exists the habit for constant changes in enterprise, while in the enterprise that is still in the phase of implementing TQM there is not such a habit.

Releasing the collective of enterprise from the disappointment in TQM implementation caused by the crisis in which the enterprise is found

For present disappointment of enterprise's collective in TQM implementation caused by concrete business crisis, the most complex situation in specific for enterprise's leadership in order to initiate the implementation of appropriate radical changes of enterprise, i.e. its reengineering. Reason for this is, primarily, in the fact that achievement of implementation of TQM philosophy in enterprise usually lasts from 3 to 5 years and enterprise has fallen into crisis in much shorter period that leadership didn't even predict, not to mention do something about it. It is obvious that this is a practical demonstration of its inability in leading the enterprise and that for that reason it should leave its position. The question is how should it be done?

The most favourable variant for departure of existing leadership from its position in enterprise is to submit a collective resignation. New leader should thus suggest the composition of new leadership of enterprise. Of course, this new leader should be a personality with essential characteristics of a leader. It is not easy to find such a person, especially in conditions of underdeveloped and particularly in economies in transition. In order for such a person to be found, it is not necessary only to announce competition with listing required characteristics, but it is necessary to search for concrete advice or appropriate recommendation through consulting specific institutions, for example, agencies for achieving business excellence of enterprise.

CONCLUSION

In this paper, we have tried to draw attention to the internal factors which exist in organization and are very important for making any changes in organization which is in any faze of implementing TQM. Internal factors should also be a very important segment of any situation analysis which company makes. In order to keep a position on the market, or improve it, company should improve every segment of its working and business structure, including process of making analysis itself and changing management.

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ACCOUNTING INFORMATION SYSTEM AND DECISION SUPPORT SYSTEMS (DSS) IN INCREASING THE QUALITY OF CORPORATE MANAGEMENT'S DECISION MAKING PROCESS

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ABSTRACT: Accounting information features as the basis for business decision making in modern-day business environment. This information is produced by business entities' accounting information systems. To meet all the qualitative and quantitative characteristics of accounting information, the demand for the application of the modern information technologies is set before the accounting information system. These modern information technologies significantly improve the operation of the entire accounting function. One of the modern information systems that have found significant extent of application in business practices is the Decision Support System (DSS). This article will attempt to shed light on the interdependence of business decision making quality and the appropriate accounting information system, laid on solid foundations. The effects of including decision support systems in raising the quality of accounting information systems will be examined, as well as the implications of including DSS in improving the quality of decisions made by corporate entity management. The aim of this study is to prove the indispensability of DSS in the implementation of strategic business decision making, as a decision making process typical of corporate top management.

Keywords: accounting information, accounting information system, decision support systems, business decisions, strategic business decision making

INTRODUCTION

The modern-day business setting is characterised by a high degree of turbulence, which is primarily reflected in incessant market change, accelerated technological advance and increased demands set before modern business entities, and appropriate response to such market trends necessitates their rapid response. This response, first of all, entails making appropriate business decisions providing the right response to such market trends. These business decisions should, first of all, enable eliminating growing market risk, and appropriate adaptation to modern-day market setting. Such response implies, first of all, availability of adequate information, which, first of all, stem from the accounting information system. Appropriately set up accounting information system is a good springboard for providing relevant information, necessary for making appropriate business decisions and eliminating threats entailed by increasingly intensive market change.

The expansion of modern information technologies has given rise to the development of numerous systems facilitating the process of making an increasing number of business decisions. The key role of these systems is to enable managers to see all the benefits or shortcomings of given business alternatives by means of strategic business decision making, and based on this information, select the one that will yield highest benefits. One of these systems include decision support systems (DSS), elaborated in this article.

THE IMPORTANCE OF ACCOUNTING INFORMATION SYSTEMS

Functioning of any business entity will be successful only as much as its organisation structure is based in interdependence and mutual feedback between its segments and the whole. Thus set, the system will enable performing business activities with maximised achieved results, and minimised costs. This is achieved by implementing information systems in business entities.

Various information systems exist in each business entity. According to some authors, each business entity must contain the following information systems (O'Brien, 1990):

- (a) Production information system;
- (b) Marketing information system;
- (c) Accounting information system; and
- (d) HR management information system.

Depending on each individual business entity's organisational structure, each of these information systems may exist either as an independent information system, or as a segment of the integral information system. As the pivotal point of this article is the accounting information system, our attention will be focussed on it. There are numerous definitions of accounting information system, depending on authors and criteria they took in their defining. For the purpose of this article, we have opted for the following definition of the accounting information system: An accounting information system is a set of all techniques, technologies and methods for gathering, processing, distributing and archiving data. It is a constituent part of the business information system providing substantial support in all stages of system management.

The accounting information system is the oldest information system in an enterprise, containing and providing information required for conducting business transactions, decision-making, evaluating resources and performance, and reporting. To perform its role, it must cooperate with all other information systems in the enterprise. This cooperation must be a two-way-one; on the one hand, the accounting information system provides other information systems with relevant information, while on the other, these information systems provide relevant information to the accounting information system required for its seamless functioning. HR management information system provides the accounting information system with data required for payroll calculations; production subsystem provides data required for accounting coverage of production, etc.

The purpose of the accounting information system is to provide information of set quality and quantity tailored to the needs of various users. On the one hand, this system produces information of synthetic character, intended primarily for preparing and compiling annual financial reports, which is a part of financial accounting as a constituent element of the accounting information system. On the other hand, managerial accounting produces information tailored predominantly for manager to enable them to make business decisions, and it is always future-oriented.

Accounting information produced by the accounting information system are tailored for making appropriate business decisions, both by the management and all other users, both internal and external. The most important external users of accounting information include: capital owners, investors, creditors, national agencies, buyers and suppliers, whereas the dominant positions among internal users are taken up by employees, trade unions, corporate auxiliary and expert services, etc.

How the accounting information system meets the information needs of numerous users is illustrated by the following diagram:

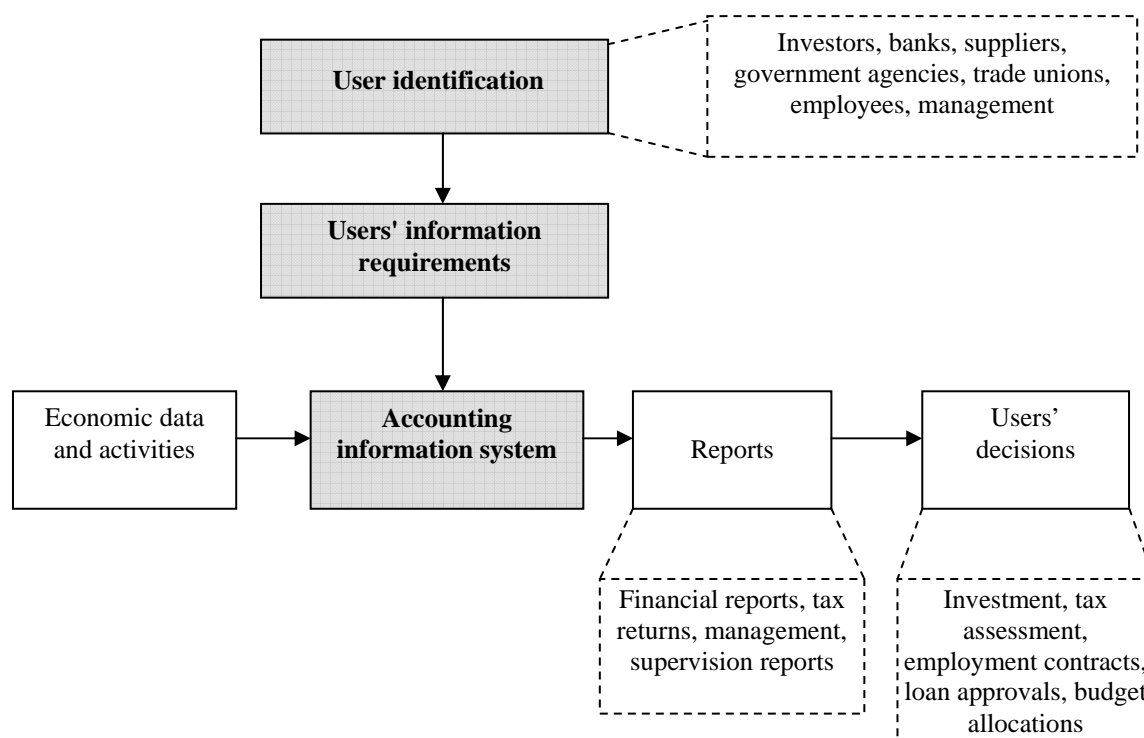


Figure 1. Accounting information system for providing users with relevant information (Source: Teaching materials for the course in Financial Reporting and International Accounting Regulations from the 5th year of studies at the Faculty of Economics Subotica)

The diagram shows that accounting information systems produce information tailored to the users' requirements. If the information is intended for top management, it must be synthesised, whereas if it is intended for lower management levels, it must be more analytical by nature. The figure above also shows that accounting information system produces numerous reports, such as financial reports, tax returns etc.

DECISION SUPPORT SYSTEMS

The increasingly intensive technological advances have resulted in numerous technological solutions whose action facilitates management processes in business entities. One group in the range of such systems are the Decision Support Systems (DSS).

Decision support systems are, in fact, model-based sets of procedures for processing and interpreting information supporting managers in their decision-making. They are, actually, an interactive computer information system intended for supporting structured, semi-structured and unstructured decision-making. They are a product of extensive theoretical research conducted in the 1960s aimed at facilitating an extremely complex process like decision-making and simplifying it as much as possible.

The above mentioned definition of decision support systems leads to the conclusion that their purpose is to resolve three groups of problems: structured, semi-structured and unstructured. Structured problems have all their resolving phases defined. This means that their resolving procedures, phases etc. are known. Structured problems do not have all their resolving phases defined and resolving them is based on intuition, whereas semi-structured problem have some of the phases or procedures defined. Resolving semi-structured and structured problems requires the use of individual decision support systems whereas resolving unstructured problems, encompassing a major number of alternatives, requires group decision support systems (GDSS).

Decision support systems have the following basic features (www.dssresources.com): They:

- are intended for resolving unstructured and semi-structured problems;
- support to decision-making of various levels of managers;
- support group-based and individual decision-making;
- are easy to use and construct;
- are adaptable and flexible; and
- significantly improve the effectiveness and efficiency of decision-making.

To clarify and enable better understanding of decision support systems, we shall use the following scheme, showing the structure of decision support systems:

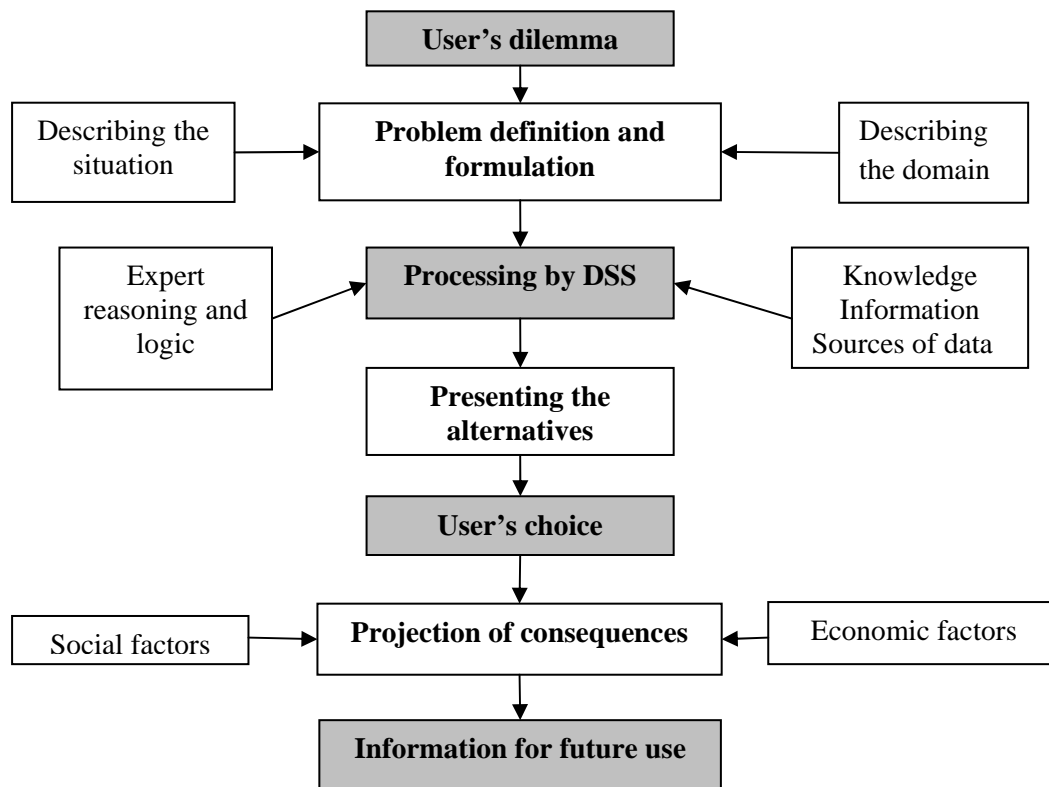


Figure 2: Structure of decision support systems (Source: Teaching materials for the course in Financial Reporting and International Accounting Regulations from the 5th year of studies at the Faculty of Economics Subotica)

The diagram above shows that decision support systems require the user to provide precise definitions of problems or situation to be solved. After this, the system processes the presented data, and offers a certain number of alternatives to the user, with the consequences of each of the chosen alternatives. This enables users to make business decisions for which they can foresee the consequences (benefits or harms). This system cannot replace the decision-maker, i.e. the human; it can only facilitate the number between several alternatives and enable making the right business decision.

Depending on the level, there are several types of decision support systems (www.ef.uns.ac.rs):

- decision support systems for strategic decision making – intended for supporting decisions made by top managers, predominantly in semi-structured decision-making about problems related to setting goals,
- choosing business strategies, defining business corporate mission and vision, making plans etc.,
- decision support systems for management control – predominantly intended for middle managers, responsible for effective and efficient use of resources and managing individual functional areas,

- decision support systems for operative planning and supervision are predominantly intended for lowest-level management, responsible for executing decisions delegated by higher management levels.

The use of computer technologies provides insight into numerous advantages that they provide in corporate decision making:

- speed, i.e. a large number of fast calculations at low prices;
- overcoming limitations in data processing and storage, as the latter may reduce the problem-solving ability (i.e. bad memory);
- cost-cutting in decision making
- technical support in storing, searching and transferring data, at higher speed and lower prices;
- high-quality decision making through better decisions, processing more alternatives, risk analysis, expert support; and
- agility of support

As pointed out earlier, different management levels require information of different character. Higher-level managers are interested in information required for making decisions of strategic character, whereas this information, like market oscillations, price fluctuations, foreign currency exchange levels etc., is less interesting for managers of lower levels.

MANAGERIAL DECISION MAKING AND QUALITY OF BUSINESS DECISIONS

Corporate decision-making process is a highly complex and demanding activity. The complexity of this process is notably manifest in the conditions of increasing uncertainty and a large number of alternatives that managers must take into account when making business decisions. This is primarily caused by the increasingly dynamic character of the business setting and the growing turbulence of business events.

Corporate decision making is primarily in the hands of administrators and managers of all levels. The administrative level determines the significance of business decisions made, and the importance of the made business decision also results in responsibility for future business and corporate survival. Thus, top management makes decisions of strategic character, whereas the lower management levels are mostly focussed on operative decisions.

There are numerous definitions of the decision making process, depending on the criteria and factors taken into consideration in classification. In this article, we opted for the definition of two prominent authors in the management area, Koontz and Weihrick, who view the decision-making process as choosing the direction, i.e. manner of action, where it features as choice between two alternatives. Decision making is the central activity of a corporate entity's management.

The managerial decision making process itself consists of several typical steps, as follows (Certo and Certo, 2008):

1. recognising the existing problem
2. listing the possible alternatives for problem solving
3. choosing the most useful alternative;
4. implementing the selected alternative; and
5. gathering feedback to establish whether the chosen alternative contributes to resolving the problem.

Viewing the given decision-making phases, we come to a conclusion that they were made based on the diagram above. When managers view which alternatives can be taken into consideration when solving the problem, they must bear in mind that there are certain limitations acting outside the corporate entity itself, but also those. Actually, we can highlight that there are limitations existing

not only within the corporate entity, but also limitations of external nature, such as social norms, legal provisions and other types of limitations.

The development of decision support systems has resulted in facilitated business decision making process. These systems are a symbiosis of a whole range of functional knowledge and information systems, whose fundamental function is to support corporate decision making processes. Actually, it can be concluded that decision support systems support all decision making process phases, starting from problem formulation through design, choice, down to implementing the chosen alternative.

CONCLUSION

The decision making process in the modern-day market setting is gaining complexity, which is predominantly caused by powerful and constant change in the business setting. When making business decisions, managers face a large number of business alternatives, which must be taken into account so that the real business decision is made. This is where development and advancement of decision support systems gains prominence.

Decision support systems are to assist the corporate decision-making process in terms of encompassing a large number of available alternatives, analysing each of them, and point to the possible consequences of their implementation. Modern-day managerial decision-making is characterised by a large number of possible alternatives, but successful business operation forces corporate entities to choose the one that will yield maximum benefit against at minimum cost. This is what is enabled by decision support systems.

An oft-cited opinion is that high-quality business decisions only require IT support, and many people regard it as sufficient. Such a position is unacceptable, for decisions can only be made by humans, whereas the system's role is only to support business decision making. The decision cannot be made by the system itself; this is the prerogative of the manager. Responsibility for decisions made cannot be taken over by the system; it is the decision maker that is responsible.

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IMPLEMENTATION OF THE SELECTED METHODES OF THE STRATEGIC MANAGEMENT INTO PRIVATE SECURITY SERVICES

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ABSTRACT

When the Slovak system of government was changed in 1993, the space to make use of business activities providing for protection of persons and property on commercial basis emerged. The conditions to establish private security services which provide protection of persons and property as their business activity were defined. Business activities within this sphere have their own specific features imposing higher demands on both operative and executive management. Therefore it differs from business activities within other spheres. One of the tools to gain a competitive advantage for the managers is the strategic management. The Balanced Scorecard Methodology as one of the basic tools of the strategic management helps to define the vision, mission and strategic goals. The goals and indicators of the Balanced Scorecard are more than a list of financial and nonfinancial indicators of the performance; they are deduced from the mission and strategy of the private security services. The mentioned methodology shall bring forward the mission and strategy of the society and put them into realistic goals and indicators.

Key words: strategy, strategy management, balanced scorecard, private security services

INTRODUCTION

The Act No. 473/2005 Coll. of Law on Service Provision within Private Security and on amendments of some acts (act on Private Security System), which came into force on 1st January 2006, regulate the private security services in the Slovak Republic. The private security service shall be understood as one of the security system tool to guarantee security for the natural and legal entities, and all subjects living and working in Slovak Republic. It is a set of specific measurements carried out by the private security providers.

The private security service is a subsystem to provide protection for the persons, property, also supporting the public monitoring of the state machinery. The citizens do not depend only on the public police institutions but they can decide whether their own protection should be provided by the private security sector. It is the social necessity to have the citizens who dispose of certain values to pay for the protection of such values which shall be protected against unlawful offence. At the same time, it is the form to apply the basic law; the property both to own and protect. Therefore private security services are here. SR together with other democratic countries record dynamic increase in private security services what also mean that the private sector enters the sphere of protection of the persons and their property. Quantity increase in private security services emphasises their importance, place and position within the society. Regarding continuous change in business environment the issue of the strategic management is more than justified.

STRATEGIC MANAGEMENT

Strategic management is understood as the complex and permanent management process of gradual steps monitoring the environment, formulating the strategy, its implementation and evaluation together with verifying the reached results. It deals with the strategy and tactics.

Tactics answers the question what method shall be used in given particular situation. The tactics shall currently react to the arising issues. The tactics is based on the detailed and particular information which reliability is almost undoubted. The strategic decisions are usually made under uncertain condition; they are risky and generally long-term and irreversible.

No line can be drawn between the strategy and tactics since these terms very often interfere. What the lower management level would consider the strategy, the higher management level might take for the tactics. What today seems to be the tactics may appear as the strategy in the future.

The process of the strategic management includes:

- vision formulation,
- mission and the goals of the company,
- analyses of the external and internal company's environs,
- formulation of the strategy alternatives,
- selection of the suitable strategy (on business and company levels),
- proposal for organisation changes,
- administrative measurements,
- control of the system for strategy execution.

The company needs the strategy to know how to achieve its set goals. The basic question of the strategy formulation is: "How?" – how to achieve the required results, how to make and maintain the competitive advantage, how to strengthen the company's position on the market.

BALANCED SCORECARD – STRATEGIC MANAGEMENT SYSTEM IN THE PRIVATE SECURITY AGENCY

Other serious questions may arise when working on the strategy issues: where to search for the information on probable future company's development? Which factors are responsible for future company's success? How can we find out whether our company receives and carries out the right measurements?

The answer to these questions is the set characteristics (scorecard) which should form balanced system of the evaluating criterions - Balanced Scorecard (hereinafter referred to as "BSC").

BSC Method is the controlling tool aiming at the correct strategic goal formulation. The stress is put on their measurability. Besides the financial goals it recommends to use also other goals and determine the measurable success indicators. It puts stress on appropriate communication where all control and executive organization links should be familiar with company's intentions and partial tasks.

The fundamental element of the approach is continuous, regular evaluation of meeting the strategic intentions using the performance indicators. BSC helps to convert the strategies into operationally oriented measurements. The method counts on the feedback such as learning from the failures and employing the experience in the next cycle of the strategic management.

BSC method applies four dimensions (perspectives) of the evaluation (Fig.1):

- a) financial (economic) dimension,
- b) customer dimension (orientation on the provided benefit),
- c) dimension of the production processes (marketing–development–production–sale–service),
- d) dimension of learning and growth (managers, employees, used procedures).

The BSC strength comes from the casual connections. The condition for financial success is the sale which depends on the utility value of the production which depends on human and procedural company's potential. The connections of the causal orientation of the BSC dimensions are pictured on the Fig.2.



Figure 1: Four dimensions (perspectives) of Balanced Scorecard system;
Source: <http://www.measurebusiness.com/>

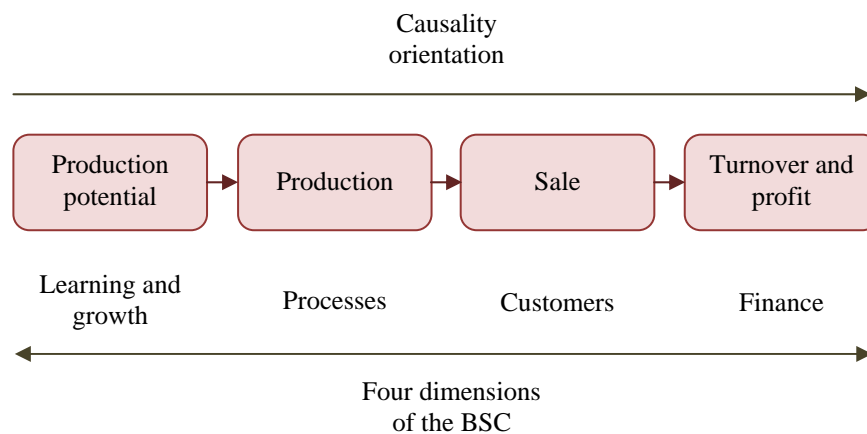


Figure 2: The connections of the causal orientation of the BSC (Štofková and Kinzlová, 2006)

The company's management must be familiar with the fundamental connections in the given business sphere and based on them they have to stipulate and carry out the right goals. The BSC Method allows to set goals in the right areas and measure their execution but it does not give the direct answer to the question what particular goals they should be. Therefore BSC must be related to the strategic planning and the plans specified within strategic plans of individual departments. So it needs business experience and intuitive estimation, and BSC as a tool to measure the success of the set procedure.

The BSC Method takes into consideration both the company's future and present situation. It aims at balancing these two points of view. If the managers want to find out the efficiency of BSC and how to achieve the company's ambitions they need to understand what the company creates, since the company does not consist only of tangible assets. It is important to know what makes the company different comparing to other companies and where the competitive advantage might be looked for. Then what makes the companies different? They have various management methods, trade marks, information systems and databases, different approach towards their customers, different relationships with the suppliers, variously loyal employees as well as their specific skills and know-how. It is the human potential which forms massive strength to be different and a significant tool to increase the company's performance. The people are the greatest richness of the company and make it unique. However, the human quality must be supported through the company processes oriented towards the customers. The financial outputs stand on the top of this structure.

Applying the BSC Methods it is clear that if the managers want to control these financial outputs first they must control the mentioned motions within the company's performance thus influencing its future.

Balanced Scorecard Implementation in the Private Security Services

Similarly to the "classic companies", private security services applies that all areas though of the specific kind of the company, must be controlled in certain direction and this direction is given by the company's vision and mission. To meet such big goals, the security management must define the strategy and then correctly implement, manage and revise this strategy since the business environ even in private security services sphere becomes more demanding. Regarding this fact, private security services should deal with implementation matters and introduction of the BSC Method.

Similarly as implementation in 1990s around the world, the BSC Method is commonly used for the controlling processes in the large holding companies as well as middle and small enterprises not only abroad. It gradually becomes popular in Slovakia too (for example, Slovak Telekom, a. s. uses BSC).

Introduction of BSC is not a single activity. Certain time period is needed to test developed and applied systems due to different company's condition. Usually some defects are revealed, e.g. missing indicators. Therefore it is necessary to modify and complement e.g. company's information system. It is possible that when developing BSC, the other defaults may appear which, while trying to develop a perfect system, can mean delay, dynamics loss or even loosing trust of the security management.

BSC Method stresses communicating the company's vision to lower levels. Common goals, development and inspection lead to more open communication and mutual cooperation. BSC Methodology supports unification of ideas of the security management and company employees over the vision, strategy and strategic goals.

Balanced Scorecard in Practice

BSC application serves to support the strategic processes and managerial control. BSC Method is at present the most favourable and eventually the only complex methodology to launch company's strategy.

Application includes four mutually integrated modules:

- *analysis of the conditions* – module serves to record and register conditions describing objective reality which consequently help to formulate the strategic and tactic goals,
- *company's indicators* – module serves to launch its own strategy,
- *company's initiative* – module simply supports management of the developing projects connecting the goals and values,
- *setting* – module as the only one is not determined by the user but the system administrator.

Correctly introduced and adequately automated BSC procedures mean massive benefit for the company. The principal critical factors for company development then are: failure to have a meaningful strategy or get feedback, or education of the employees. The given methodology and its automated support may only help to eliminate all mentioned critical factors.

Principal benefits of the own application solution are as follows:

- increase in efficiency in the managerial processes and related communication,
- increase in the information contribution within actual content of the company's intranet in company management and reached results,

- improvement in security of the strategic electronic information since the system provides higher data protection level using its above standard security system comparing to the personal computer file systems of the security managers.

The most common obstacles for BSC introduction:

- no sources allocated for strategy execution (financial, human, time...),
- no opportunities to develop and evaluate success of the present company's strategy and its departments,
- security managers do not react to the casual connections, do not use logics but act and make decision according to the wishes, relationships and more or less do not believe that actions may be realistically affected,
- the strategy is not connected with the principal goals of the departments, particularly with the criterions to judge the individuals.

CONCLUSION

The future of the service provision within private protection is perspective. Solution of the security protection creates necessary conditions for business plans. BSC Method is a sophisticated approach how to integrate company's "know – how" into the complex management system. As well as this method is important for the whole society, it may also be used to manage individual organisation units within national economy. Its principles are generally applied and then it depends on each organisation what particular way it uses to introduce its own BSC methodology and how it enters into already existing strategy. Nevertheless, it must be taken into consideration that unreasonable optimism no matter of reality may in many cases lead to failure. On the contrary, successful introduction means the significant competitive advantage and the direction to fulfil company's ambitions and the future prosperity within the private security services aiming at the highest profits.

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IMPROVEMENT OF COMPETITIVENESS OF SERBIA – STEP FORWARD IN OVERCOMING THE CRISIS

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ABSTRACT

In many world countries, the crisis has caused unimaginable devastation and its' economic and financial consequences will be felt for a long time. General economic instability, constant political turmoil and financial hardships have become part of everyday life of Serbian citizen who are patiently waiting at least a hint of future economic certainty. The fact is that the Western Balkan region has very favourable predispositions to become a developed and attractive location, interesting to many foreign investors. One of the priority aims for the region countries is the ending of economy transformation and enhancing national competitiveness. The main aim of this paper is to emphasize one of possible measures in process of solving the economic and financial problems in Serbia that are caused by influence of global crises in the light of the enhancing its' competitiveness. As a main source of data we use the Global Competitiveness Report as a base in our research of actual and previous values of global index and sub-indexes of competitiveness in Serbia. By detailed analysis of twelve key pillars of competitiveness we will define an actual competitive position of Serbia and note its change compare with the previous years. Purpose of our work is to point out the main factors that distort competitiveness of our country and propos the measures which will reduce or even eliminate effects of mentioned factors in order to improve the competitive position of Serbia.

Key words: Competitiveness, Index, Subindexes, Pillars of Competitiveness, Crisis

INTRODUCTION

Taking into consideration that improvement of competitiveness of a certain country is the primary driver of its economic recovery and future economic prosperity, we all note that during the period of overcoming the consequences of the first wave of crisis and expecting new instabilities, it is highly desirable to analyze the competitive position of Serbia. In recent years, global economic crisis has been an area of interest and actions of economic policy makers, professional organizations and institutions, researchers and scientists, and it has certainly been a hot topic in various media, so that it indirectly affects the population as well. We are constantly exposed to numerous effects of the crisis, so that reviewing and analyzing this problem cannot be avoided nor its importance can be denied. The aforementioned economic and financial crisis began as a source of instability in the most powerful countries of the world, where it was considered not likely to cause extensive economic damages. That at the outset had seemed different, that real causes of observed problems had determined and prevent their spillover to other economies, perhaps this phenomenon would not have grown into a worldwide crisis. Precisely at a time when developing countries have made some progress in the way of their own transformation and started hoping for a better future, they came across a huge disappointment and became quite discouraged in the struggle to improve their economies. Serbia is also among the mentioned countries, which is economically and financially very weak and it has huge difficulties to overcome one of the largest global recessions. Huge contractions in consumer demand, sharp rise of unemployment, reduction of foreign investments, and decline in demand for export products are just some of very serious problems that our country had to face. The influence of global economic crisis on Serbia is manifested primarily in two ways: in terms of money getting more expensive and the

difficulties in export. More expensive money leads to increases in prices of servicing existing debts and new loans, while the difficulties in export are a result of falls of economic activities and lower demand for Serbian economy on main export markets (Knjiga preporuka Nacionalnog konventa o EU u Srbiji, 2009). In a difficult global economic environment, it is very important for Serbia to realistically examine its own economic situation and realize its competitive position, so that it could be able to act towards its improvement on time. The overwhelming consequence of globalization is such that competition is no longer observed only within national borders (Jenkins et al., 1999). If it uses and analyzes the reports of the World Economic Forum, it will become able to perceive competitive strengths and weaknesses, improve its competitive position, create better conditions for the promotion of its own economic growth and development, and thus leave the whirlwind of the global crisis as soon as possible. In addition to explaining the research methodology applied by the Forum, and processing all the elements that constitute a complex competitiveness concept, in this work we will put special emphasis on the analysis and possible measures to improve the competitive position of Serbia. Using gradual deduction of the Global Competitiveness Index, into individual subindexes and pillars of competitiveness as their parts, we will create a realistic picture of Serbian economy and catch sight of its current competitive advantages and disadvantages.

RESEARCH METHODOLOGY IN THE GLOBAL COMPETITIVENESS REPORT

Certainly, one of the most significant research publications of the Forum is the Global Competitiveness Report which presents the calculated values of global competitiveness index and individual subindexes, in addition to many useful data on achieved levels of economic development of most world countries. Each analyzed national economy is first ranked according to the achieved result of global index, and then according to results of all three subindexes and twelve pillars of competitiveness. The value of the index provides a better understanding of key factors that determine economic growth of each country, and it also provides the answer to one of the fundamental economic questions: Why are some economies more successful than the others in implementing the process of raising the population's standard of living? The Global Competitive Index records microeconomic and macroeconomic foundations of national competitiveness (The Global Competitiveness Report, 2009). In the current period of overcoming the consequences of economic and financial crisis, a very important role of this index in measuring the impact of global recession to sustaining long-term competitive advantage of a certain country is strongly emphasized. We can extract three subindexes of competitiveness from the abovementioned index which consist of twelve pillars of competitiveness that are not independent but mutually connected, with the tendency of impact of one pillar on strengthening another and vice versa. Individually speaking, each pillar has different importance and unequal level of impact in the process of forming competitiveness of an individual country, primarily because of obvious differences in the level of development of countries.

While calculating the Index, it is very important to adjust individual measurements to the degree of development of a specific country, and to take into account the contribution of each pillar of competitiveness to the final result. According to the Global Competitiveness Report (2010) the methodology is as follows:

$$GCI_{ij} = W_{j1}Basic_i + W_{j2}Efficiency_i + (1 - W_{j1} - W_{j2})Innovation$$

$k = 1, 2, 3; i$ – Index of a country; j – Stage of country development; W – Ponder

We note that the final result actually represents a weighted average of several different components, each of which represents only one part of the complex concept of competitiveness. All three subindexes of competitiveness are directly involved in the calculating of the global index, and therefore also basic pillars as their constituent elements that mutually influence each other in order to create a better final result.

ANALYSIS OF COMPETITIVE POSITION OF SERBIA

Global Competitiveness Index of Serbia

According to the last year Global Competitiveness Report, the research included 139 countries, whereas the current report includes 142 countries. Serbia has changed its competitive position, so from its best place, 85th in 2008 and the achieved result of 3.9, it dropped all the way to 96th place in 2010 (see Figure 1). It is interesting that the same global index value of 3.9 in 2011 provided Serbia with 95th place that year, since the list of competitors was expanded by adding new countries.

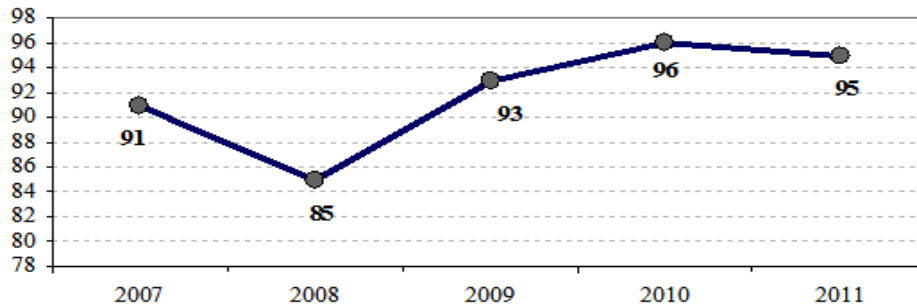


Figure 1: Changes in competitive position of Serbia in the period between 2007 and 2011

Source: Extrapolation of data from "The Global Competitiveness Report 2011-2012", "The Global Competitiveness Report 2010-2011", "The Global Competitiveness Report 2009-2010" and "The Global Competitiveness Report 2008-2009"

The apparent drop in the positioning of Serbia in this case refers to overall competitiveness, which in turn does not necessarily mean an identical fall within individual fields as well. However, it is still, compared to many countries of the world, at a low level of general economic development, whereas hindered conditions of functioning of Serbian economy in the period of crisis have certainly boosted the adverse results.

Subindexes of competitiveness of Serbia (*Basic – Efficiency – Innovation*)

We have mentioned that the Global Competitiveness Index contains three subindexes that indicate the achieved positioning of a country depending on the developmental phase to which it currently belongs. It is obvious that the subindexes are mutually conditioned and that only a highly competitive economy achieves good results in all three fields. The basic resources that a country possesses are its key source of competitiveness and the base for further development and conquering higher competitive positions. Improving efficiency and market expansion, high quality education and adoption of new technologies are characteristic for countries in development such as Serbia. Serbia will remain in this phase for a long time since it is still very far from the possibility of building high quality, sophisticated business systems and undertaking innovative business ventures as contemporary sources of competitive power.

According to Figure 2 we could note that Serbia is very poorly positioned in the field of achieved innovativeness and business culture, and that there is evident deterioration from one year to another (91→94→107→118). We can freely conclude that the lack of financial resources is a crucial factor in neglecting this area; that will undoubtedly lead to low rankings of Serbia even in comparison to some transition countries and put it at the bottom of the competitiveness list. It takes many years to reach a satisfactory level of economic development, provide financial resources and especially to change the consciousness of Serbian citizens about the importance of researches, patenting and scientific achievements.

If we take a look at the second subindex, we will note that Serbia achieved slightly better results compared to the previous, but yet again there is deterioration in position in the observed years. Satisfactory health care, especially in the field of prevention of infectious diseases and the obtained level of primary education of the population had the largest effect on the better result of the second subindex. It is also important to point out that investors interested in Serbia come across flexible wages, suitable employment policy and low cost of layoffs, which represents a significant competitive advantage. However, these privileges for the investors sometimes can be extremely disastrous for the country that is invested in, i.e. the host country. The dismissal of workers by foreign investors stipulates that unemployment may be a huge social cost which is manifested in its worst forms – urban violence,

rising crime and social and political unrests. But even if there are no such problems, there are high costs of unemployment (Stiglitz, 2002)

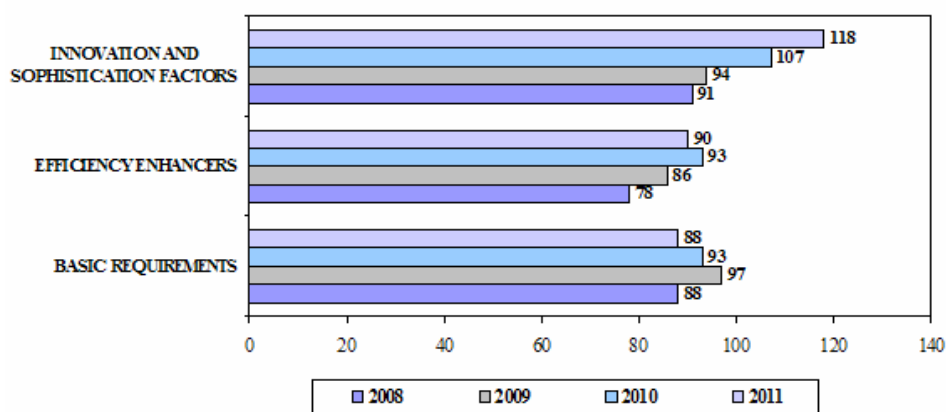


Figure 2: Changes in competitive position of Serbia from the aspect of competitiveness subindexes in the period between 2008 and 2011

Source: Extrapolation of data from "The Global Competitiveness Report 2011-2012", "The Global Competitiveness Report 2010-2011", "The Global Competitiveness Report 2009-2010" and "The Global Competitiveness Report 2008-2009"

The work of public institutions and infrastructure development in Serbia represent very problematic areas, which is confirmed by its poor positioning in the case of first subindex of competitiveness. The abovementioned was also contributed to by uncontrolled spending of funds from state budget, citizens' discontent with the government, the rigidity of state measures and lack of judicial independence and efficiency.

Pillars of Competitiveness of Serbia

We strongly support the above mentioned facts by breaking down each subindex in detail and analyzing all of twelve individual pillars of competitiveness in 2011 as it shown at Figure 3. We are aware of the fact that Serbia has a very poor infrastructure network, and we are also witnesses that, in this sector, the process of liberalization has not yet started, and that the reforms are being carried out very slowly. Transition in the sector of economic infrastructure of Serbia demands progress in key areas such as tariff reforms, commercialization, competitiveness, privatization and legal institutional development (Bajec and Jakopin, 2006). Serbia constantly achieves its best position in the field of health care and elementary education. It gains its competitiveness through adequate ways and means of prevention of infectious diseases, extending the life expectancy of its residents and establishing a cost-effective and yet high quality system of elementary education. The institutional sector of Serbia and especially the government that takes care of macroeconomic stability deserves most severe criticism since it constantly lowers Serbia to the bottom of the competitiveness list. Governments often spend too much energy doing things they should not do. It distracts them from what they should really be concerned about. The problem is not only in the enormous size of the government, but also in not doing the right thing (Stiglitz, 2010). Lack of effectiveness of the goods market and extremely low level of business culture are particularly critical areas that we can clearly see in the analysis of the current position of Serbia from the aspect of individual pillars of competitiveness.

It might seem impossible, but according to the current data on the goods market efficiency, our country is ranked similarly to undeveloped African countries. Such placement is primarily caused by inefficient anti-monopoly policy, high degree of market control and constant interference with its free functioning. Competition in the national market is at an unenviable level, whereas the entry of new, foreign competitors is rather difficult due to very unfavourable and inflexible conditions offered to foreign investors. Consumers in Serbia are not sufficiently informed about all aspects of purchasing, are unprotected from possible risks that arise from the act of purchasing and subsequent usage of the product, and they certainly lack the manners of modern consumers. The 130th place rank in the area of business sophistication seems very daunting, especially to foreign investors wishing to invest their capital in Serbian companies. It is very difficult to change previous habits and established, rigid norms

of behaviour of workers and employers in the Serbian market. They are primarily not interest enough for developing a positive business culture as well as to creating a pleasant working environment. Employers often consider investments in education and training of their employees as irrecoverable costs and unnecessary waste of capital.

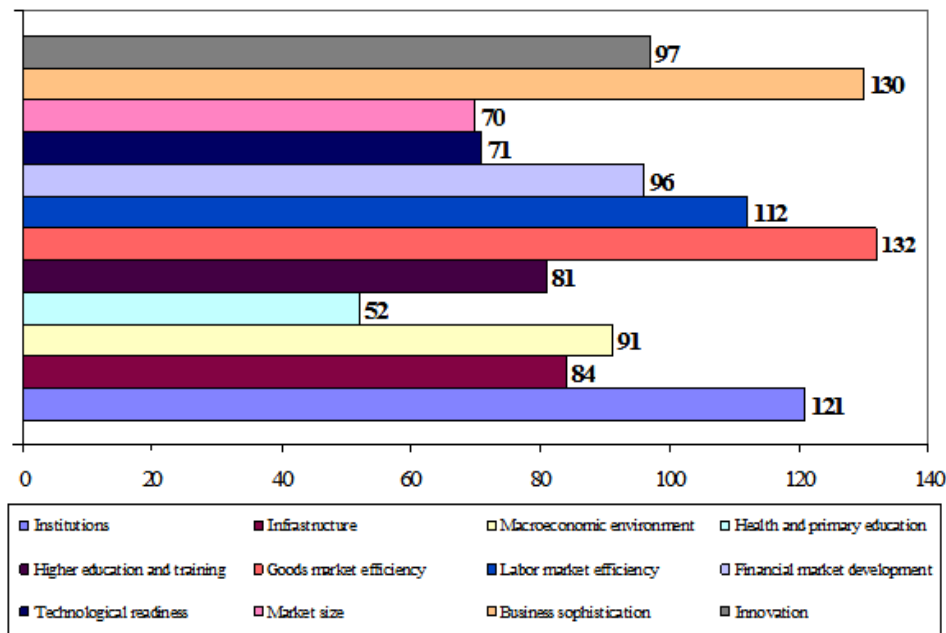


Figure 3: Competitive position of Serbia in 2011 from the aspect of pillars of competitiveness
Source: Extrapolation of data from "The Global Competitiveness Report 2011-2012"

Actual competitive advantages and disadvantages of Serbia

By breaking down the presented pillars of competitiveness into constituent elements, we can obtain data on over a hundred variables that are manifested in the form of competitive advantages or disadvantages of Serbia. The implementation of this process is not performed according to the same methodology for all countries, but depends on the ranking of a certain country on the overall list and the realized value of the Global Competitiveness Index. Advantages and disadvantages of the countries that occupy the top 10 places on the abovementioned list are also differently determined compared to those in places from 11th to 50th, as well as countries that are ranked in the second half of the list, i.e. below the 50th place. We have concluded that in 2011 Serbia takes 95th place; the value of its Competitiveness Index is 3.9, in which case we apply the following rule:

- If a certain variable enables ranking of Serbia onto any place above the 50th, it represents a competitive advantage.
- If a certain variable enables ranking of Serbia onto any place below the 50th, it represents a competitive disadvantage.

Taking into account the abovementioned rule, we come to a very discouraging conclusion. According to current measurements of the World Economic Forum, Serbia has only 14 competitive advantages, while nearly a hundred remaining variables represent competitive weaknesses. The advantages themselves are quite modest, since they are manifested in the form of widespread telephone and Internet networks, mass usage of mobile phones, low costs of workers' severance pay and established legal regulation of the financial market. Serbia also has advantages in the field of successful prevention of infectious diseases such as tuberculosis, malaria and AIDS, whereas a satisfactory level of elementary, secondary and higher education of citizens and high quality math and science education could become potential competitive advantages.

CONCLUSION

In the period of overcoming the consequences of the crisis and continuing economic transition, Serbia has to pay more attention to improving its own competitive position in order to create real opportunities

for attracting foreign investors and to start economic growth. This goal is very ambitious and requires a lot of time, resources and sacrifices in order to begin its implementation. One of the obstacles is the institutional sector of Serbia that is at a very low level of development, especially due to inadequate functioning of the government, presence of organized crime, anti-competitive behaviour of companies and lack of interest in providing more convenient conditions to foreign investors. Dilapidated and unmaintained roads and railways hinder both usual and business movement of people, and slow down and often prevent normal functioning of trade flows. The most important problems in the energy sector are insufficient capacities for generating electricity and the dependence of the country on energy imports. A critical issue every winter is the insufficient capacity for storing natural gas used by households and industry for heating (Bela knjiga, 2009). The constant threats of inflation, unfavourable interest rates and government budget deficit are constant problems whose solution is very uncertain at the moment. Serbia can be praised for the rapid development of telephone and internet network that in the future may become its significant competitive advantage. In recent years, there has been significant progress in the prevention of infectious and other diseases, protection of human health and prolongation of its life expectancy. If we add to the aforementioned the improvement of elementary, secondary and higher education system by introducing more modern principles of operating, we can note that the competitive potential of Serbia definitely lies in capable, professional and qualified labour force. However, young professionals are rarely provided with adequate treatment after completing their education, which contributes to further continuation of the phenomenon of “brain drain” from Serbia in the future. The dominance of individual over global goals, as well as the aspiration of the governing coalition to meet their own interests has led to rapid impoverishment of Serbian population. One of the key competitive weaknesses that make Serbia a very unattractive for foreign investors is underdeveloped business culture, lack of work professionalism and disrespect of ethical values.

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APPLICATION OF NEW TECHNOLOGIES IN THE POST OF SERBIA IN FUNCTION OF EFFICIENT BUSINESS

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ABSTRACT

Transformation of the Post of Serbia into a modern, efficient and market-oriented company, capable to provide high-quality universal postal service and to deal effectively with competition in the postal services, includes business process re-engineering and investment in new knowledge, changes in the management and use of modern technology. The paper is focused on the application of Geographic Information System (GIS) in the Post of Serbia. Described how to the data and thematic maps in GIS leads to better analysis, and thus to better decisions. The paper is designed to show the possibilities of new technologies to highlight their importance and significance in postal traffic.

Key words: new technologies, geographic information system (GIS), indicators of quality

INTRODUCTION

Efficiency of a company depends on its sensitivity to intensive flows of changes in its surroundings. If a company timely responds to changes in its surroundings, it will survive and keep growing (Nikolić, 2007). In this regard, reengineering of business processes should contribute to productivity growth, more efficient time usage and rise in quality of products, services and overall business of an organization. The aim of reengineering is to satisfy the customers needs for products and services with proper quality and price, to reduce delivery time of products and services on the one hand, and the profit growth on the other hand (Adamović & Sajfert, 2009).

Changes are a remarkable feature of the time in which we act and of fast progress in almost all spheres of life and work. These fast and considerable changes which occur in the surroundings develop under the impact of a modern scientific and technological program above all. Results of scientific and technological progress in information science, researches in the field of energy, new materials, new technologies, communications and other, bring forth changes which directly affect every company (Nikolić et al., 2009).

The Public Enterprise of PTT Communications "Srbija" is the oldest, the most powerful and the most accessible infrastructural communication system in the country. By innovations in the currently offered services and by introduction of new commercial services the Post of Serbia should take the position it deserves in a growing market competition, i.e. the position of a national leader and one of the regional leaders in the contemporary postal services market. The replacement of outdated technology and introduction of high technology (automation, mechanization and especially information and communication technology and Geographical Information System) in the work process creates conditions for advancement in assortment of services. The future development trends of the Post of Serbia should rely on expansion, modernization and introduction of new technologies (Desnica & Šarac, 2004).

TECHNOLOGICAL INNOVATION IN THE POST OF SERBIA

The Public Enterprise of PTT Communications "Srbija" is an enterprise which provides postal services which encompass various mail transport, from the addresser to the addressee, hence a very important place which delivery service occupies in the system. It is essential that the delivery of mail pieces be fast, accurate and safe. To achieve this goal, it is necessary to organize the delivery service in a way that it satisfies market requirements and users needs on the one hand, and to operate cost-effectively by using a qualitative manner of work on the other hand (Desnica and Šarac, 2004).

Many analysts have considered the development of new technologies as a threat to the Post of Serbia; however, the practice has proved quite the opposite: new technologies create grounds for advancement of currently provided services and development of the new ones. Regardless of the competitive aspects of new technologies, they have brought forth numerous advances in the sense of improvement in operation and quality of currently provided services. Above all, this implies to automated processing of mail pieces, automated vehicle tracking system, introduction of personal locators and mobile terminals, IT projects, hybrid mail, Barcode and Track and Trace System for tracing mail pieces and particularly to Geographical Information System.

INDICATORS FOCUSED ON TIME AND QUALITY

The most important indicators of technological development are indicators focused on time and quality. *Indicators focused on time* are related to the time needed for sortation of mail and preparation for delivery as well as to delivery itself. *Indicators focused on quality* are related to reception, transportation and delivery of mail.

Application of Geographic Information System (GIS)

In reception, transportation and delivery stages, as well as in delivery organization itself, the Geographical Information System (GIS) is more and more used. Development of GIS and introduction of Postal Address Code gave way for GIS technology application in organization of delivery. Based on the information about addresses where the postmen deliver the mail, the Post of Serbia has positioned on the map (geo-referenced) about 1 million of house numbers in all major cities in Serbia. Based on the data from Geographic information system, the Post of Serbia is able to conduct the following analyses:

- analysis of territorial access to facilities and users,
- planning the distribution of advertising material,
- route planning,
- generation of address lists by zones,
- analysis of population density in order to plan the capacity of infrastructure or
- selection of the best locations for opening new facilities and others (www.posta.rs).

The first occurrence of GIS in postal services was within the project "Analysis of Locations". This project provided precise determination of a location for opening a new Post Office subsidiary with exact assessment of cost-effectiveness of the investment and operation. Example of territorial accessibility analysis of post offices in Novi Sad (figure 1):

- 98.2% of households in the city are less than 1km away from the nearest post office;
- 99.2% of households are less than 1.5km away from the nearest post office.

The advantage of application of GIS in *mail reception stage* and automated vehicle tracking is especially important with Post Express services since the Post of Serbia has introduced a pickup on demand i.e. at customers address. When a customer calls the Call Center and requires pickup of shipment at his/her address, a dispatch operator can quickly send the nearest vehicle-carrier to the indicated address. A faster and more qualitative pickup is thus provided at customers satisfaction, which is particularly important. The benefits of GIS and automated vehicle tracking are also

important in *mail transport stage* too, because they assure improvement of transportation lines and optimization of transportation or time for exchange of collected mail with other Postal Centers (Desnica, 2011).

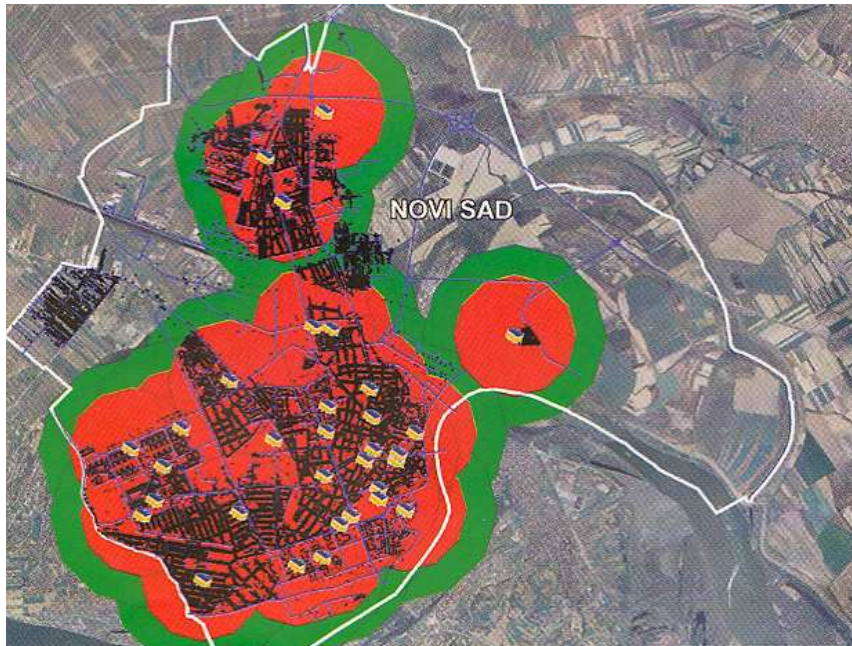


Figure 1: Intensity of population in ideal location of units within the post office network

GIS application in organization of delivery – on the basis of thematic maps it is possible to have an overview of delivery capacity for the whole enterprise (Nedeljković, 2005). A thematic map which is created contains the datum about delivery post office pertaining to each area, as well as all relevant data such as population number, number of households, number of telephone bills, number of Electrical power distribution bills, number of people who receive their pensions at their home addresses, number of legal entities, etc. The requested data are quickly obtained when a particular area is selected, which is shown in figure 2. The option which enables thematic maps creation by means of GIS provide a quickly obtained datum about the manner of delivery organization within the territory of a city or the whole area covered by the Post of Serbia.

In the past period a large number of working hours were needed to collect these data due to physical counting of households, legal entities and mail pieces in one region. The requested data are quickly obtained by selecting specified segments (regions or postal address codes) which provides determination of segments which are to be replaced from one (more productive) region to the next (less productive) region. This is how productivities of regions are balanced (in number of households and of legal entities by the distance travelled by a postman in a region). Moreover, only to measure the distance travelled by a postman in a region required at least 5 measurements (by bicycle or motorbike) just to establish the average distance travelled by a postman (Desnica, 2011).

Automated vehicle tracking system

The automated vehicle tracking system is used as an extra tool to contribute to a more qualitative organization and exploitation of the vehicle fleet. Monitoring of parts of operating processes is carried out in the following technological phases of mail transport: reception of mail, transport of mail and delivery of mail. Beside the said tracking, monitoring of vehicle moving within transport network is provided as well as monitoring of vehicle parking in defined places and time intervals, analysis of traffic safety and analysis of vehicle exploitation.

Automated processing of mail

The problem which occurs in manual dispatch of mail to delivery post offices and regions is that certain number of mail pieces is dispatched to other delivery post offices by mistake. Mistakes may occur due to irregularly written or illegible addresses or due to mistakes done by workers while sorting the mail. This leads to delayed delivery and dissatisfaction of users. *Automated mail processing prevents problems with wrong sortation of mail!*

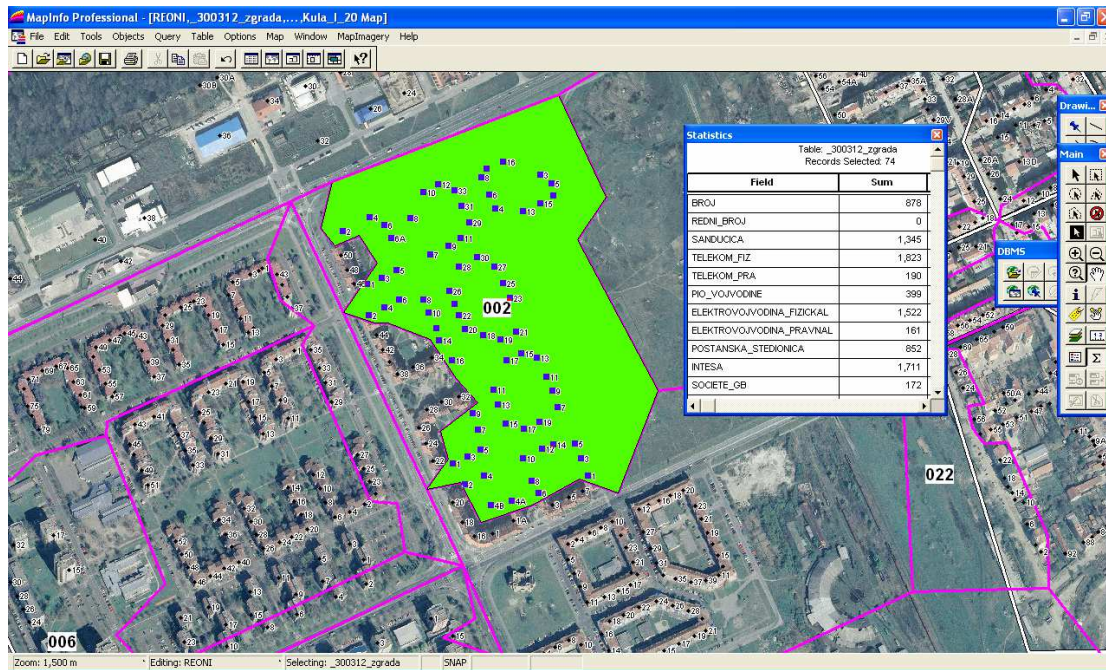


Figure 2. Thematic map with the following data: delivery post office (21137), region (002), number of households (1345), number of telephone bills for physical and legal persons (1826+192), number of pensioners (405), number of Electrical power distribution bills for physical and legal persons (1524+162), number of bank statements (184+1721)

Application of Postal Address Code (PAC)

Postal address code (PAC) is a new way of addressing mail and is made of six digits written before the name of a city or town. Implementation of postal address code in address data provides formation of standardized address which results in regular addressing of mail.

Writing the postal address code enables unmistakable dispatch and delivery of mail to a recipient's address. Therefore, using the postal address code provides safer delivery of mail because the following problems are avoided: street names written illegibly, incomplete addresses (mail sent without written address or house number) or the fact that the street does not exist, etc. *Postal address code enables greater number of mail pieces delivered!*

Application of systems for tracking mail - Track&Trace

It is important for the users to be able to track registered mail from the moment of its sending until the moment of its delivery and to ascertain the quality of delivery. They can use Track&Trace system of mail tracking to see when a mail piece was delivered and who signed the reception. Therefore, it is especially important that the information on every mail piece be adjusted to automated reading by machines in processing centers. It means that every letterpost must have clearly written address code of the recipient in the proper place and for registered mail pieces, a unique code in the system, i.e. barcode, in order to provide reading of other data in relation to the mail (reception post office, worker at reception, date and time of reception, value, price, etc) (Desnica, 2011).

Application of personal locators

Using personal locators placed in every postman's bag provides safety of a postman above all, but also a better quality of delivery since his/ her moving within the region is monitored. Apparently, it can be established whether the moving is correct or whether some corrections are necessary if a postman's moving is monitored by using GIS technology in the past and real time. This enables reducing the unproductive working time of a postman in a region to the minimum.

Postal technological and information system – PostTIS (www.posta.rs)

This modern information system provides applicative support to basic activity of public postal operator in the following segments: mail (reception, handover, delivery, track&trace, web express), money transactions, electronic communication (telegrams, money order, cash express), commerce (supply, distribution, sales), business service (catalogue sales, supplementary postal services, web shop), complaints and claims, centralized administration and monitoring. Advantages of PostTIS are increased quality and level of control of mail reception phase, faster and more qualitative work in Postal Logistic Centers and faster integration of equipment for automated sortation of mail, and in the phase of mail delivery, determination of mail for delivery is done automatically by scanning while the mail addressed to recipients with post office box are automatically redirected to delivered mail.

CONCLUSION

The Post of Serbia is at the turning point in its operating, so in order to improve its position at the market it must advance its business and apply modern technical and technological solutions. The main goal is to create a profitable enterprise. Development of the Post of Serbia should rely on its modernization, introduction of new services and new technologies. Achieving more efficient postal services provides uninterrupted flow of goods and services and thus economic growth and employment are assured, because permanent advancement of business processes is one of main prerequisites for advancement of processes and improvement of quality in all phases of production, from reception of mail, dispatch, transport, arrival, to delivery of mail. The Post of Serbia must respond quickly to challenge of its competition and accelerate introduction of GIS not only in the system of organization of operating, but also in the system of strategic decision-making in general.

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BUSINESS ETHICS AND INFORMATION

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ABSTRACT

Application of business ethics in journalism was considered in the paper. The analysis of the extent of application and following of ethic codes, company privacy and personal privacy was completed. The results of a survey are presented. The survey was conducted and it referred to: the time that respondents spend watching TV, whether they regularly read daily newspapers, what is their opinion about the journalists, how much they trust the journalists, whether the journalists are corrupt and to what extent, whether the journalists are politicized and to what extent, etc. Based on theoretical considerations and the gained results of the research the conclusions about the ethical conduct of the journalists and media in Serbia were established.

Key words: business ethics, ethical codes, journalism, media.

INTRODUCTION

In the modern world, we often witness the destruction of basic ethical principles. Our ethical behavior depends on the situation, because the moral boundary, which will guide through decision-making is vanishing. Core values and ethical principles are often neglected as well as the norms, which have been respected since the beginning of the world. If in this kind of thinking we include the media, confusion becomes even greater (Guilmot, 2008). The media had moved long time ago from the field of information into the field of scandals, where the ethical codes mean nothing, they are irrelevant and disrespected (Calabrese, 2007).

Ethics in media and journalism really is a set of rules regulating what is, what is not allowed in the media, what is on the borderline, and what is a potential threat to some political and social values. Ethics in media is not a set of laws and legislative rules that the state directs and encourages through its actions. Ethics belongs to the assessment of profession, i.e. what in the profession is allowed, acceptable and what is not (Dej, 2004). There is no doubt that there are some global standards that do not depend only on the nature of a society or conditions in a country. Nothing, not even a reference to ethical principles must not undermine the freedom of expression, nor anyone has a monopolistic position in society to determine what is and is not ethical, thereby to prevent saying something in public (McLuhan, 1964).

MATERIAL AND METHOD

The concept of business ethics and basic ethical principles

Business ethics is a branch of general ethics. Under the business ethics social responsibility is implied, which includes the good and bad behavior towards other people, in the form of a set of rights and duties that people apply during the decision making process. There is also an obligation to perform the job properly and the responsibility for its (non) performance. Morally responsible person

is obliged to do the job and is ready to accept the responsibility for a failure or a possible error. Business ethics can be defined as a set of moral standards on the behavior towards the sociocultural and business environment, towards other individuals with whom one enters into a business relationship and towards duties, obligations, rights, responsibilities and decision-making in all aspects and areas of operation (Prvulovic, 2006).

Business people, economists, analysts and researchers, have constant arguments whether a certain dose of "cheating" and "lies" in business is necessary. Is that kind of game inevitable, and whether it is present consciously or unconsciously in every market game and every business communication? The desire for profit, for business success, for gaining the advantage on the market, as well as for personal gain, wealth, represents a challenge for individuals and groups to leave sometimes the established rules of the game in order to gain advantage in competition with others.

All this may lead to the thesis that business success and ethics cannot go together. The main issue that arises in such situations is: Where is the boundary that determines whether something in business is moral or not? It is justified from a moral point of view as long as you stay within the unwritten rules of business and market game, this is called "business bluffing" (Carr, 2001).

Bearing in mind the importance of boundaries in business, business relations and business communication, business ethics may be determined as a set of personal and collective moral practices that are used in all types of business activities, and which determine the extent to which one can go, and that those activities, procedures and decisions do not result in a negative attitude within the company and its environment, and not to create unnecessary costs and damage to the company and the environment (Michael and Jamie, 2007). The boundaries can be within the legal norms and rules, then within good business relations and habits in the economic and social surrounding, and within the personal position and situation in relation to others with which one comes into business contact.

Ethics in journalism

The journalists have reason to be suspicious when it comes to ethics in the media and journalism, even when it is stated that under the ethics a set of norms is understood, the principles or rules of trade that are prescribed by the journalists themselves and their organizations (White, 1996,). That term will, apparently, first associate to a kind of hypocrisy, or a call to self-censorship: to involve themselves in prescribing and limiting of the free action field, to define for themselves the criteria of their profession and professionalism in journalism, and then publicly warn their colleagues who violate the rules and exceed the specified limits.

In the modern democratic society everyone can, under equal and determined by the law conditions establish their own media; to start one's own newspaper, or to apply for a license for radio or television station. As one can - under the same conditions stipulated by the law - begin to do any other business: to establish a private school, to open a factory, a farm ... But, in order to do the intended one must be able to meet all necessary requirements and standards that such activity entails. In the case of the media, those relating to human rights to be properly informed, the right to protect one's privacy and the protection of all other basic human rights that might be related to the information. (www.kultura.koledzprijedor.org)

In contrast to traditional media regulations, which rest on the belief that all problems in this area can be solved by disciplining non-professional journalists, real ethical codes of professional journalists, which will be shaped by the journalists themselves, begin, basically, from from the protection of significantly different values and interests. Primarily protecting their professional interests, journalists are, by nature, most interested in the recognition and protection of a basic human right of every man to be truthfully, timely and properly informed about everything that could be of one's concern (Himmelboim and Limor 2008).

The problem, however, is that many journalists are often not aware of that fact, that despite a long, rich and turbulent history of journalism in Serbia, local professional journalists often lack the specific

knowledge and experience necessary to act in a truly democratic environment. They lack the awareness of the importance of a professional organization, the awareness of the true meaning and importance of basic values on which the journalistic profession should be established, the awareness of the true sense of ethical journalism, about the necessity of determining the true and valid ethical codes, the meaning and scope of the principle of regulations in this area (Guilmot, 2008). After all, in a society, which during its modern history - for good two hundred years - is in a kind of "transition", not one system of values was long lasting and well set.

Code of ethics for journalists and other media professionals is just another name for the "rules of the game" that are determined by the journalistic profession itself and which they are ready to respect (Marjanovic, 2008). And, those rules make sense only if they are derived from a broader social context that is characterized by the acceptance of a certain system of universal values. The full and true meaning of ethical journalism can come into play only if it serves the fulfillment of fundamental human right and freedom of every person to have all the information of interest for the realization of all other freedoms and rights, to expand the field of freedom and enjoyment in liberty, and to vigorously resist any unlawful usurpation of such information.

In other words, the ethical journalism can only be the completely free journalism. And, a journalist with ethics is just a good professional, fully aware of the rules of the profession, and aware of the consequences when those rules are abused or violated (Prvulovic, et.al. 2009).

Journalism ethics is important for the credibility, and it lies in personal fostering of humanity and truth.

Dennis McQuail, one of the most famous theorists of mass communications, defined journalism ethics using the following guidelines:

- truth and accuracy
- impartiality and fairness
- respect of personality and privacy
- independence from specific interests
- responsibility towards society and social goods
- respect of the law
- morality, decency and good taste

Observing the above-mentioned guidelines, we can say with certainty that many of them were breached by journalists. Conscious concealment of information, inventing of events, not using at least two independent sources to verify the information, inaccurate and distorted passing of information received from the source, distortion of truth are just some of their unethical procedures.

Such claims are proved by the research of Strategic Marketing, conducted for the needs of NUNS (Independent Association of Journalists of Serbia) on a sample of 1000 respondents. The respondents, largely recognize the importance of the journalist profession in the society, but they have described the state of the profession as very poor.

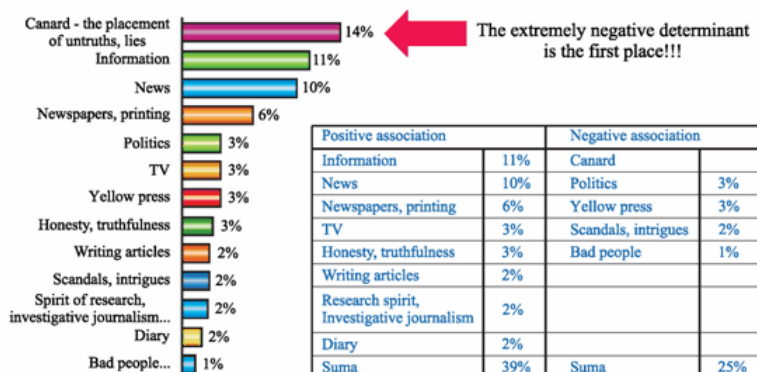


Figure 1: When you hear the word Journalist, what first comes to mind – first noted (base total population)

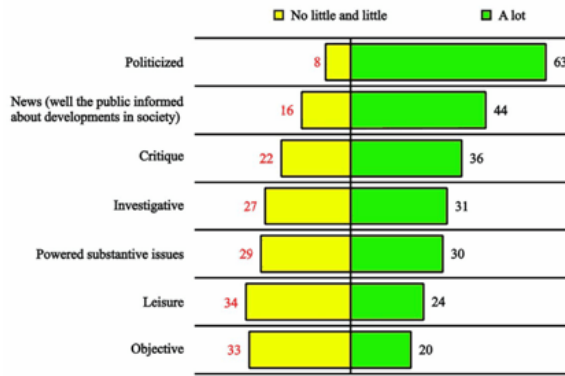


Figure 2: What is generally journalism in our society (base: total population)

According to the results of this extensive research conducted on a sample of 1,000 respondents living on the territory of Central Serbia, Vojvodina and Belgrade, the journalist profession in our country could not bear a description of being ethical and moral, because most of the citizens think that it is heavily politicized and insufficiently informative.

RESULTS AND DISCUSSION

For the purposes of this paper a survey was conducted, which included 300 respondents ranging from 20 to 50 years of age. All respondents received identical questionnaires with the help of which we were supposed to check what their statement about the basic ethical principles would be and the principles they consider important, define how much time they spend with media content, answer questions about journalism ethics, and give their opinion on the state of ethics in media today. Questions were ranked from 1 to 5, where 1 – means I completely disagree, 2 - I disagree, 3 – I am indecisive, 4 - I agree, and 5 - means I fully agree. The answers were provided by circling the corresponding number that is described as:

- 1- I completely disagree
- 2- I disagree
- 3- I am indecisive
- 4- I agree
- 5- I fully agree

A certain group of questions aimed to determine how much time the respondents in Serbia spend with the media content and their relation towards that content, and especially towards advertisements. For this, 181 respondents (60%) said they regularly read daily newspapers (grades 4 and 5), while 119 respondents (40%) said they did not read or read irregularly daily newspapers (grades 2 and 3). Unlike the results regarding the newspapers, 207 respondents (69%) said they regularly watch news broadcasts, 66 of them (22%) said they do not watch regular news program on television, and 27 respondents or 9% were indecisive on this issue.

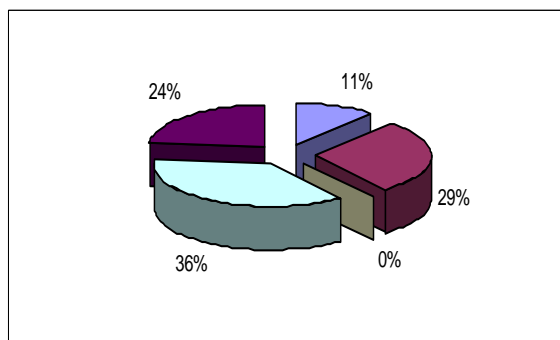


Figure 3: I regularly read daily newspapers

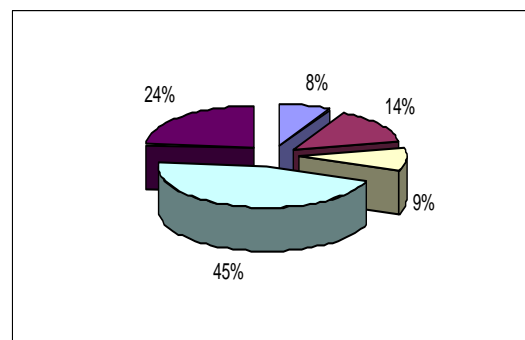


Figure 4: I regularly watch news program on TV

The second group of questions was related to their views regarding journalism ethics. According to results of the carried out survey, 239 respondents (79%) has high respect for having ethics as a characteristic in journalism profession, 41 respondents (14%) has no specific position on this issue and 20 respondents or 7% disagreed with this statement. With the statement: I believe that journalists are corrupt in our country 283 or even 95% respondents agreed, 10 or 3% of the respondents disagreed, while 7 or 2% respondents were indecisive.

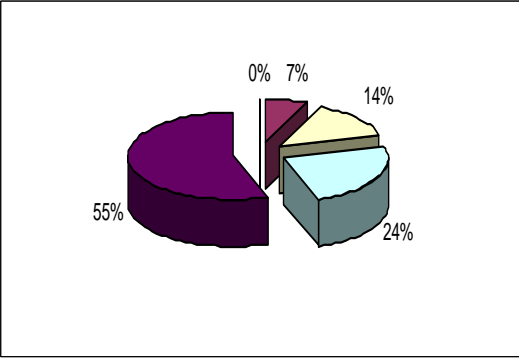


Figure 5: I highly respect journalism ethics

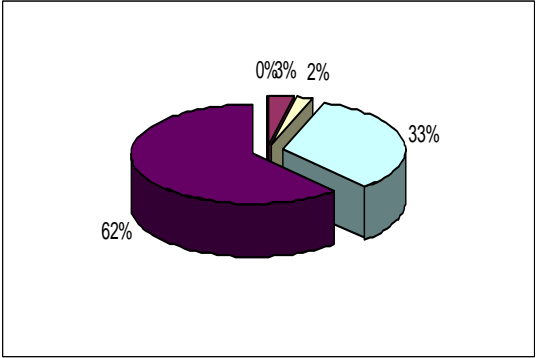


Figure 6: I believe that the journalists in our country are corrupt

With the statement that the journalism ethics can easily be controlled by ethical codes 176 or 58% respondents agreed, 29 or 10% indecisive respondents, while 95 or 32% respondents disagreed. Another important response obtained by the completion of the survey was related to how much, according to the assessment of the respondents, the ethics of journalists working in the media can be controlled by the rules adopted by various institutions and bodies or the ethics is though a matter of internal assessment of a person. 261 Respondents or 86% disagreed with the statement, while 34 respondents or 12% disagreed. This confirmed the thesis given in the paper that ethics of the journalists cannot be imposed, as well as the fact that the respondents in a greater number believe that the ethics of the profession depends on the ethics of a person, in this case the journalist.

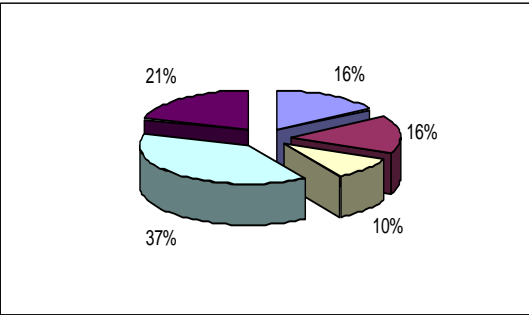


Figure 7 : I believe that journalism ethics can easily be controlled by ethical codes

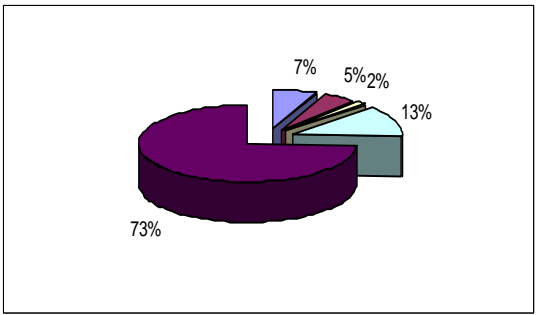


Figure 8 : Journalism ethics primarily depends on ethical standards of the journalists themselves

The next statement obtained from the survey was set in a way to find out in which degree it is believed that the journalist profession in Serbia is independent from politics and influence from the ruling political parties. In relation to this claim, a number of the respondents believe that journalism is often in the function of the ruling political elite - 264 respondents or 87% agreed, while 34 respondents or 12% disagreed, and there were 2 or 1% of the undecided respondents. Such responses to the set statement talk about a very negative image that people have about journalists.

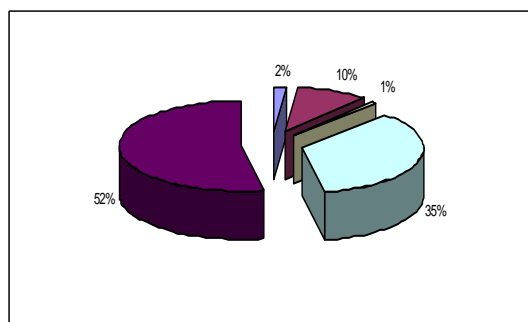


Figure 9: Journalists in our country are very often in the function of the ruling political elite

CONCLUSION

It can be concluded that the truth is essential to the democratic process. Democracy depends on informed citizens who approach the political and economic market with the knowledge that encourages analytical thinking. In a complex democratic society, the media are primary conductors of the flow of information. In the amount of providing untrue, inaccurate and irrelevant information, the media deny its audience the intellectual food necessary for rational decision-making. Of course, there is nothing ethically wrong with the desire of the media to meet the taste of the audience (McLuhan, 1964). The media must share moral responsibility for the decline of democratic values to the extent to which the public has given up on serious content in exchange for banality.

Morality as a virtue, must not be a by-product of memorizing a certain number of rules or abstract principles. Ethical correctness requires commitment, reflection, and persistence. It requires a certain level of moral knowledge and ability of moral reasoning as well. Ethical standards of media professionals are not separated from the rest of the society. Those who work in the media need to resolve their ethical dilemmas through the same process of moral reasoning as well as everyone else. The media are an important transmission of our moral heritage. In this era of information, they are in the whirl of democratic events. This means that media representatives and journalists have a special responsibility towards the culture of which they are a part and they need to be aware that they are given a professional mandate to improve ethical climate within their institutions.

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STRATEGIC, OPERATIONAL AND INVESTMENT DECISIONS IN BUSINESS

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ABSTRACT

In this paper we have presented the basic characteristics of strategic, operative and investment decisions. Theoretic knowledge of this issue is important for better understanding and making quality and prompt decisions. The accent is also put on business decision making. Business decision making represents a significant field in which newest achievements of theory of decision making are applied.

Key words: strategic decisions, operative decisions, investment decisions, business.

INTRODUCTION

Decision making is a part of every day life and it is old as much as our mankind. However, a special scientific discipline which deals with decision making issues has developed in the last several decades. It is a theory of decision making. There are two possible approaches to decision making:

1. *Intuitive decision making* It is an old way of decision making and implies making decisions based on experience, free estimation and beliefs of decision makers. Intuitive decision making still represents the most frequent way of decision making.
2. *Scientific decision making* Within decision making theory as a young science numerous methods and models that serve as a support to decision making have been developed. By applying them we contribute decision making to be more objective and based on scientific principles and not only on intuition of a decision maker.

Decision making issues represent an important contemplative and willing activity that becomes more and more significant in business activities of an enterprise. There are numerous definitions of decision making. According to (Schermerhorn, 1996), a decision is a choice among more alternative possibilities for solving a problem. According to (Bulat, 1997), decision making is a process in which a choice is made among many different possibilities for changing the state of a system in order to achieve the aim. Decision making includes all activities related to choosing one of the given possibilities. (Mora, according to Čupić, Tummala, and Suknović, 2001). Čupić and Suknović (1994) define decision making as a choice among possible alternatives.

Decision making represents a key creative activity of managers in the process of managing a company. All decisions that are made influence essentially the state of a system (company) in the future.

BUSINESS DECISION MAKING

In more and more complex and dynamic business conditions decision making takes a significant place in providing long-lasting and stable development of a company. Successful business policy is based on effective, prompt and coordinated decisions. According to (Baračkai, 1987), business decisions are chosen actions related to determination of a vector product/market.

Decision making has become a consisting part of everyday activities of managers – they can be performed individually or in teams by decision makers. Preparation which involves problem definition and collecting relevant information is prior to decision making. After that, a manager who uses his knowledge, intuition and experience, knows his surroundings and takes care about defined aims, business policy, strategy and development of the company, makes choice among available alternatives and defines this solution as a decision.

Every decision contains a certain responsibility for a decision maker because it more or less influences future business performance of a company. For this reason it is of mutual interest (both a company and a decision maker) that all decisions are made with the help of modern methods that have been developed in recent decades within decision making theory as a new scientific discipline. Quality decisions are based on reliable, prompt and thorough information and decision makers should have knowledge from the relevant field and they should know the technique they use.

Business decisions are mostly interdisciplinary which derives from various problems that managers have to face in their activities directed to managing companies. According to the level of management decisions can be strategic, tactical or operative. Strategic decisions are oriented to increasing effectiveness (do the right things) while operative decisions are related to increasing efficiency (to work properly). Strategic decisions are made at high levels in organizational structure and they are related to improving strategic position of a company in the future. These decisions are related to new technologies, new products, target markets, competitive advantage, etc. Operative decisions are made at lower levels and they are related to working out and realization of strategic decisions. They are less risky than strategic ones and it is easier to measure their efficiency.

Besides, business managers' decisions can be classified according to degree of their importance, frequency and structure. It is natural that all business decisions cannot be equally significant for companies and their business. For all these reasons managers have to be more concentrated to important decisions and spend less time on those decisions of secondary importance.

Considering frequency, we can say that some decisions are made periodically and in usual way. On the other hand, there are decisions which are different and rare and they are made in specific way appropriate to the situation.

According to degree of structure decisions can be classified in the following way:

- *Structured* (they are made on the basis of sufficient information, clear rules and precisely defined criteria),
- *Non-structured* (there is a lack of information and previous experience – they require creativity and intuition) and
- *Semi-structured* (combination of previous two types).

At every management level all three types can appear – structured problems and decisions – (Table1) but it should be emphasized that there are more non-structured problems at strategic level.

Table 1: Examples of decision types according to management level (Parker, Case, 1993)

Level of decision making (management)	Types of decisions		
	Structured	Semi-structured	Non-structured
Strategic	Analysis of company's success	Determination of productive possibilities	Decisions on new products
Tactical	Budget analysis	Short-term predictions	Advertising
Operative	Acceptance of financial account	Inventory management	Job scheduling

From the Table 1t can be noticed that decisions on new products belong to non-structured business decisions which are made at the highest – strategic level of decision making. It can be noticed, on the grounds of this, what new products are significant for company's development and future. In the same time we can notice the problems concerning making decisions about development of new products because of poor structure of these problems which is mostly related to unpredictable markets (changes in demand and needs of customers and supply of competitors).

Decision making, depending on the state, can be:

- *Decision making in conditions of certainty.* In these conditions it is not difficult to make decisions because all facts are known as well as the states related to the phenomenon which represents the matter of decision making. There is not any risk here so these situations are more like statements than decisions.
- *Decision making in conditions of partial certainty (risk).* In these situations the state is known partially so it is possible to give appropriate probabilities of appearances with a certain subjectivity.
- *Decision making in conditions of full uncertainty.* Full uncertainty in decision making implies situations in which the state of the phenomenon and its frequency are fully unknown.

From the standpoint of management and company's business performance decision making in conditions of partial certainty has the greatest practical significance because these problems are most frequent. Besides, in these conditions there is much more room for decision making than in other two cases (full certainty and full uncertainty) where the possibilities and needs for decision making are pretty limited.

STRATEGIC AND OTHER BUSINESS DECISIONS

Strategic and operative decisions

In the process of managing a company managers are basically faced with two basic types of situations: the one which asks for making decisions related to efficient use of internal resources and the other which is oriented to company's relations with its narrow and wider surroundings. The first group of decisions is related to managing the current – operative activities and the second one to strategic and developing issues.

Both types of decisions are important for a company: the lack of quality of any of these decisions endangers the survival of a company. The difference between operative and strategic decisions is not in the importance that they have by themselves but in their characteristics and inner features as well as in their suitability to concrete situations that the company passes through.

It is significant to understand specific features of both groups of decisions in order to develop management abilities (making quality decisions) of the company according to requirements of the surroundings. Essential characteristics of strategic decisions (which differs them from operative decisions) will be presented below (Nikolić, 2007).

Non-routine character and unstructuring. Strategic decisions are made as a reaction and answer of a company to challenges from the surroundings. These challenges represent the consequences of the influence caused by factors which act independently and are mostly out of reach of its influence (some deviations are possible in monopolistic situations) and they vary as a rule from regular business performance. Activation of making strategic decision process cannot be standardized or made a routine. This process is not a repetitive one – strategic situation by itself does not initiate decision making. Making strategic decision is an element of a special management skill which requires an ability of prompt observation of the given situation, initiation of the very process of decision making and because of this it has a character of a creative activity as a rule.

Unlike strategic decisions, operative decisions are structured and concrete situations that companies have to face practically and they impose making operative decisions. These situations are self-repetitive and occur in regular periods so the process of their making becomes a routine by time. In every further situation which is repeated regularly their making requires less effort and engaged resources. By time the possibility of their standardization increases too, so decision making process can be replaced by appropriate rules of behaviour which automatically activates corresponding activities. Decision making is in this way completely replaced by a simple control of respecting the set rules.

Irreversibility. Upon realization of strategic decisions and allocation of resources to certain activities it is usually impossible to give up these decisions without serious consequences, financial or other loss. This situation narrows or even completely eliminates possibilities for making experiments and responsibility of a decision maker is getting greater. Making mistakes related to operative decisions usually does not cause such consequences and if they appear these mistakes can be easily corrected without great expenses. In their making it is frequently used an experience method known as "attempts and mistakes" as the most efficient and cheapest one.

Special importance and long-lasting influence on company's "destiny". This characteristic derives from the previous one: implementation of strategic decisions as a rule imposes the need for engagement of considerable resources, management and work energy, time and other resources. Correct decisions usually bring big profit in a long run but, on the other hand, mistakes can endanger the very existence of the company.

Complexity. Rational decisions of this type require consideration of numerous facts in the narrow and wider surroundings (social and economic conditions, market, technological development, internal resources. etc.), determination of cause and effect relationship among phenomena, positioning of all these elements in the framework of wider time period, etc. Strategic decision making process reflects this characteristic - very complex procedures are developed and their implementation requires engagement of a great number of people and specially trained experts among them as well. Big companies usually have special organizational units for strategic planning.

Certainly, in the practice of some companies strategic decisions are made without implementation of these complex procedures and models but they are made on the basis of simple estimation of a manager. However, even a decision made like this must include all relevant elements of decision making unless it is not the question of hazard.

Operative decisions can also be complex but it does not often happen. Even if they are, their repetitiveness makes them recognizable so it is possible to simplify, standardize and make them transparent (unless they are replaced by standardized rules).

Strategic and investment decisions

The difference between operative management decisions (which are repetitive, routine, short-term and relatively simple) and strategic ones, which mainly have opposite characteristics, are clear and easily noticeable. However, the differences between strategic and other management decisions

which are also long-lasting and are related to company's development are less striking. Here are included investment decisions which are also long-lasting, complex and mainly cause irreversible consequences which makes them similar to strategic management decisions.

Despite their similarity they are qualitatively different types of decisions. Making investment decisions is performed within linear process which is characterized by beforehand set aims and criteria on the grounds of which certain strategic alternatives are formulated in a standardized way. Investment decision making assumes knowing all alternatives and uniformity of aims excludes multiple choice. Jeopardizing any element requires a complete reconstruction of the process – if the project cannot satisfy it is rejected and the procedure is repeated from the beginning.

Unlike this, a significant characteristic of the process of strategic decision making is its openness – it is non-linear and assumes constant questioning of previous phases. It includes aims and criteria of decision making and alternatives as well, whereas both groups of elements are subject to constant questioning and changes. The process is multilevel, non-linear, iterative and with variable direction of activities of cause and effect relationships among individual elements.

CONCLUSION

It is difficult to evaluate the quality of a decision. At the moment of making a decision it seems the best but it can happen later that there were better alternatives. The question is set: if the first decision was really the best. At first sight the best decision seems to be the one which leads to a desired result. However, such an approach has a significant failure: the result of a decision isn't often under control of a decision maker. From the moment of making a decision to the appearance of the first consequences a certain time passes in which the conditions of the surroundings are more or less changed and a decision maker cannot influence them. For all these reasons the final result of a decision is considerably conditioned by good or bad luck.

The solution of this problem is in the following – the quality of a decision should be evaluated by measuring the quality of an applied procedure at its making (Janis, Mann, 1977). In other words, everything possible should be done in order to make the right decision and the very result cannot be exclusively the measure of quality of the decision. The significance of theoretic knowledge of the subject matter presented in this paper is reflected in previous statements.

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Session B: ORGANIZATIONAL BEHAVIOR

Papers (pp. 127-179):

Miloš Trivić ORGANIZATIONAL BEHAVIOR AND DESIGN THROUGH THE FUNCTION OF ORGANIZATION	...127
Ana Bukilica ORGANIZATIONAL BEHAVIOR AND PROCESSES THROUGH MANAGEMENT FUNCTION	...131
Danijela Bogdanić EXPECTATIONS OF PARTICIPATIVE LEADERSHIP BEHAVIOUR IN BOSNIA AND HERZEGOVINA	...136
Miloš Jovičić, Goran Zarić, Danijela Milovanović COMMUNICATION AND ORGANIZATIONAL CULTURE IN THE COMPANY	...141
Milena Popović, Marija Kuzmanović, Bisera Andrić Gušavac CREATING A STIMULATING ENVIRONMENT IN THE COMPANY – EMPLOYEE SATISFACTION FACTOR	...145
Ana Božović, Natalija Kukulj – Prokić, Dragan Cvetković, Mara Šiljak RESEARCH OF INTERPERSONAL RELATIONSHIPS IN THE ORGANIZATION	...151
Nenad Zec KNOWLEDGE MANAGEMENT	...155
Marijana Mišić THE ROLE OF HUMAN RESOURCE MANAGEMENT IN PROFESSIONAL DEVELOPMENT AND PROMOTION OF WOMEN IN ORGANIZATIONS	...158
Bojan Leković, Slobodan Marić BENEFITS AS AN INSTRUMENT OF MOTIVATION	...164
Natalia Kukulj - Prokić, Ana Božović, Ivan Tasić, Jelena Tasić INVESTIGATION OF THE CONFLICT IN THE ORGANIZATION	...169
Suzana M. Savić, Dejan M. Vasović, Stevan M. Mušicki REFLECTION ON THE OCCUPATIONAL HEALTH AND SAFETY ELEMENTS IN CONTEXT OF CORPORATE SOCIAL RESPONSIBILITY	...174

ORGANIZATIONAL BEHAVIOR AND DESIGN THROUGH THE FUNCTION OF ORGANIYATION

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ABSTRACT

Management is planning, organizing, motivating and controlling certain activities in order to achieve a given target company. Management include people in the work process and all its component parts. The management is the allocation and routing behavior of all employees towards achieving defined goals. The levels of the organization exist for the restrictions on range management. In other words, there are organizational levels because the manager can effectively supervise only a limited number of people, although that number varies depending on the situation. The manager must establish, either by personal observation or the use of objective standards, whether it subordinate fulfills plans. Obviously, good objective standards that simply reveal any deviations from plans, allow managers to avoid the many contacts that take time to focus attention on the exceptions in the moments that are crucial for the successful execution of plans. The ability of a clear and concise communication of plans and instructions, also contributes to expanding the manager's span. The subordinate who, after leaving the office or superior after receiving instructions, are still not sure what is required, or what was said, sooner or later will surely look for new appointments.

Keywords: leadership, authorization and accountability, leadership style

INTRODUCTION

Organizational design is one of the most important management activity that results in organizational design - one of the most important management mechanisms for corporate firm. Organizational design is a complex cognitive process that requires understanding and knowledge of both formal and informal parts of the organization, both external and internal organization of the constellations. The key to coming to a successful organizational design is professional and good organizational analysis, which will allow you to set the correct diagnosis of the state organization and understand their health. Organizational diagnosis is an important issue of modern organizational theory and the consulting profession. This activity, which precedes any serious planned organizational change, we need to offer quality and reliable answers to all relevant issues related to the situation in the organization of a particular entity (business, nonbusiness, profit, nonprofit, private, public, etc.). Therefore it is important the choice of methodology to be applied in the process, because it crucially affects the efficiency, results and solutions that will offer an organizational diagnosis.

The second half of the twentieth century was marked by the use of traditional consulting in diagnosis and understanding of organizational problems, and then how to create solutions to overcome them. In this regard, the generally accepted methodology in the analysis of organizational design problem is to make a major analytical tool used by organizations introducing an organizational chart, which is shown by the position of formal organizational units and line connections and relationships are established between the organizational units of the company.

TERM AND ESSENCE OF LEADERSHIP

In his bestseller "How to get rich," Donald Trump gives the top ten tips to bring in business success and wealth.

Learn how to choose the right moment

Choosing the right moment is everything. Once I had a bad day, late working hours I heard a knock on the office door and shouted: "What now?" Young lawyer working for me walked into my office ignoring my cold welcome and asked for a raise. He almost got fired for stupidity.

Be well-informed

Keep up with events, local, state, world manager. I am proud that I am not one of those who think they know everything, and every day I learn something new. In business you can not wear a blindfold. Part of each day, you have to concentrate on expanding horizons, so to speak, listen, read, watch and - think!

Be a professional.

I liked a former employee, but he could not be in one place more than three seconds, he was skipping around, talking something, proposing - I did not have to suffer more because of his over-enthusiasm, I began to avoid him. So, do not overdo it, even if it is a commitment to work.

Prepare for the worst

When the late 80's real estate market faced a meltdown, I owed 9.2 billion dollars. One day I met a beggar, and I thought that he was richer than me, for 9.2 billion dollars. Every career has ups and downs, and the ability to predict problems saved me a lot of energy and nerves.

Always work responsibly

Learn every detail about your job, otherwise you can expect unpleasant surprises. I read about a surgeon who has held the attention to detail and constantly provided during the intervention to what kind of complications can occur with all his further move. If I had to have surgery, I chose the right surgeon (Simić, 2004).

SIMILARITIES AND DIFFERENCES BETWEEN MANAGEMENT AND LEADERSHIP

Organizational processes met the various activities.

Management consists of the following activities:

- Planning
- Organizing
- Command (ordering)
- Co-ordination
- Control

Leadership consists of 4 components (Mašić, 2010):

- acquiring and presenting an objective picture of reality
- providing a vision and defining a development strategy for the company
- recruiting and activating employees for the achievement of projected goals and objectives
- creating a favorable climate and cooperative relations in the company

Leadership is unthinkable without a clear vision and good strategy. Leadership involves activities aimed at providing a favorable environment for the fostering of good neighborly relations in the organization (flexible cooperative principles). Management is a broader concept of leadership and leadership is an integral part of management. The manager is more rational than leader.

MANAGEMENT TECHNIQUES

Leadership techniques involve coordination mechanisms that are combined with a certain style of leadership. The task of these techniques is that the intensity and the moment of intervention in internal manufacturing and management processes are provided in advance. By using this technique every employee can predict in advance the behavior of superiors. He can better define its scope of action and in making decisions and implement them more aware. One of today's very important techniques is a management technique on the basis of agreement on goals (Management by Objectives, MBO). It rests on the principle that a goal is achieved more quickly if it is precisely formulated if workers try harder to identify with him, and what precisely they can prove and verify the expected results. Agreements on objectives as the basis for a modern and effective human resources management, today encountered in all areas of the company, and increasingly in public administrations. New forms of governance through agreed targets make it possible, for example, within the major forest management consistent and far-reaching delegation of tasks associated with effective controlling. Defining the objectives of employees just makes it easier, in case of widespread administrative and territorial structure of production, coordination and successful execution of the tasks subordinates and field service.

Agreements between the responsible managers and employees are primarily related to qualitatively and quantitatively precise objectives to be achieved. Way of achieving goals is left to the employees under their jurisdiction and decision-making activities.

POWERS AND RESPONSIBILITIES

The most serious symptom of poor organization which impacts on the level of management is inadequate and unclear delegation of power. If the manager clearly delegated authority - with a minimum of manager's time and attention. It is useful, rather than we focus on the powers in the organization, to determine the difference between authority and power. The power, the notion much wider than a power, is the ability of individuals or groups to encourage or influence on the beliefs or actions of other individuals or groups. The authority in the organization is entitled to a position that belongs to the discretion of the decisions that affect others.

Of course, this is a kind of power, but power in the organization. Although there are many different basis of power, it is primarily the power, to deal with in this paper, is a legitimate power (Šuković, 1987). It normally occurs with the position and stems from our cultural system of rights, obligations and duties, according to which people accept the "status" as "legitimate." In private enterprise the power position arises primarily from social institutions ("group rights") private property. The activities of the state, this authority is based on the institution of representative government. Traffic cop you deliver an application for an offense has the power to do so because we have a system of representative government in which we choose representatives to make laws and ensure their implementation.

CONCLUSION

Organizational design represents a process of coordination structural elements organization on most favorable way. When the organization is concerned, it is necessary to distinguish these concepts with the aim of efficient organization of work and / or quality recruitment and selection. Late thirties of twentieth century, when it began with the scientific study of leadership, research has primarily focused on the functional aspects of business management.

Then the goal was effectively managing capital and material resources, and leadership is interpreted as a static and stereotyped activity. Thus, according to the functional approach, management represented the relationship between subordinates and superiors in achieving the company's business plan, and the manager was the only mean to achieve that goal.

With a new, behavioral, approach the focus is moved to the behavior of people in the workplace. Leadership is viewed as a form of behavior management people who are considered the most important resource for achieving competitive advantage. Leadership is therefore a process by which one person influences the other group members to achieve the objectives of the organization, becoming a manager and leader - the person who creates the organization's mission and strategy for implementation. So keeping in this new form entails respect, confidence and teamwork.

Leadership, as part of management, includes several activities that are key to the strategy of the organization: interpretation - refers to the ability of managers to properly interpret reality. To make this possible, it is essential that the manager has the relevant information and realistic view of themselves and others. Design - create a vision and strategy, and ability to adapt plans and actions to changes in the environment. Mobilization - directing members of the organization toward a goal. Gaining of employees means the motivation, the indication of confidence, encouraging ideas, involvement in decision making and delegating responsibility. Inspiration - the creation of favorable climate in the organization and maintenance of good interpersonal relations.

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ORGANIZATIONAL BEHAVIOR AND PROCESSES THROUGH MANAGEMENT FUNCTION

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ABSTRACT

Approach to organizational behavior emerged in the early 80's of XX century. Organizational behavior is the scientific field of organization theory and management, which relies on the fundamental science of man, his behavior and relationships (psychology, sociology, anthropology), on the one hand, and empirical research (experience and practice organization and management), on the other hand. This area explores the ways and means of how to help people feel good about life in the organization, and managers to be successful in working with people and the conduct of the organization. A major goal of management is to assist employees to develop their potentials. This is particularly important in managing the diverse and talented employees who can bring new perspectives and ideas in business, but that might offend the work environment is sufficiently favorable as could be acceptance and adoption of these different perspectives. What managers can do as to ensure that their employees have the opportunity to develop their potential? One thing you can do is to ensure the existence of different models in leadership positions in the organization that other people would see that there are opportunities for work progression.

Keywords: organizational behavior, organizational culture, organizational climate, learning organization, goals

INTRODUCTION

Formation of human behavior in organizations is a management activity. Managers shape behavior in the organization by affecting the development and changes in personal characteristics and / or changes in the organizational context.

Organizational behavior is the behavioral approach to the behavior of individuals and groups in the context of the organization, ie. in the workplace. Research based on behavior of people in the organization aims to facilitate understanding, predicting and controlling the behavior of employees.

Organizational behavior is defined as an area that studies the behavior of men, in the organization. The case study analysis and understanding of the attitudes, feelings, perceptions, motives and behavior in organizational context. This study aimed to improve individual and organizational performance and increase customer satisfaction of the participants in the organization.

Concepts of psychological, sociological and anthropological research provides a basis for understanding human nature and human behavior in the organizational environment (company). Thus, organizational behavior in the study of human behavior in organizations builds and uses attitudes, learning and conclusions of these sciences (Adizes, 2004).

Practical aspects of organizational behavior are reflected in the prediction capabilities and the impact on behavior change. Managers may, by mutual understanding and knowledge of human behavior, using different training techniques and persuasion, influence behavior change.

"Organizational culture is the sum of representations of values , rules and norms by which they live and work together bearers executive and control processes.

Culture is an expression of interpersonal communication of a company. Anything for concrete, in the style, forms, furnishing offices, in treatment of employees, shows the extent to which the company became established philosophy and its culture".

THE PROCES OF COMUNICATION

Communication is the transfer of meaning and understanding messages. The emphasis on the transfer of means - if you do not transfer any information and ideas - there is no communication. The speaker whom no one hears or writer which no one reads have no communication. Communication means understanding the meaning. Communication is clearly a two-way process.

Communication is a general phenomenon, without which we can not imagine working of any group or organization. Communication can be verbal or nonverbal. In the process of communication transmission of the information is used as the basis for certain decisions.

Therefore it is important that the communication is quality, so recipient of information have clear message that can make a quality decision.

Communication is the process of transmitting messages between people, and at the same time trying to communicate by including elements of different nature:

- Cognitive – reflected in the ability of perception, interpretation of messages, emotions and reactions;
- Semanitic – the use of spoken and written language, terms and slang;
- Symbolic – using gestures, facial expressions, body movement and style of dress.

Functions of communication in the organization are achieved in the following areas of management (Jovanović i Petković, 2003):

- Control of conduct for employees;
- Motivating employees;
- The development of interpersonal relationships;
- Decision-making.

TYPES OF COMMUNICATION

Communication between people can be achieved in two ways to transfer the sentence and message without using words. This means that we have a kind of verbal and nonverbal communication. Verbal communication is realized in the exchange of information, exchange thoughts and ideas of the participants, through the words. It is provided through the written and spoken word, verbally or in writing. In practice these two types of verbal communication are intertwined. Their choice should be consistent with the type of message. Verbal communication is sometimes ambiguous, and the explanation is given by a written text. Verbal communication is an important part of management activities and must have a sense of media choices. If the organization is in a crisis stage, it is an important decision of a manager how to explain it to the stuff. Transmission of messages without using words, nonverbal symbols such as smiles, looks, body movements, intonation of speech or style of dress, often represents a language that is clearer than words. Gentle and calm tone has a different message that is communicated nervously with a strong emphasis on some words. The facial expression of speakers also conveys meaning. Smiley or frown face indicate different messages. The facial expression with the appropriate intonation can show aggression, arrogance, fear, or shyness. It can not be seen when you read the minutes or notes from the meeting. Managers and other executives combine verbal and nonvrebal communication.

FORMS OF COMMUNICATION

Information transfer can be done in different canals and in different directions. The organization has two main forms of communication, both formal and informal. Formal communications are regulated by formal and normative forms of messages between members of the organization, and monitoring of network configuration we distinguish centralized and decentralized communication. Formal communication is done within the organizational hierarchy, from senior levels to lower, or vice versa in one level. There are vertical and horizontal communication.

Employees of the organization are associated with individuals like yourself and share with each other messages that may be related to work or do not have to be. Informal communication is a dual function:

- Social, which is reflected in the closeness of employees having fun and developing friendships
- The function of spreading rumors that are incorrect, informal and difficult to verify.

Informal information is beyond the model of "vine", to a network that is multiplied, intersecting each other and intersect in several places. Managers are advised to use both formal and informal networks, and often informal information is more effective and useful when it is important to some interesting information spread. By contrast, it is suggested caution that the rumors would disrupt interpersonal relationships and create a climate of distrust.

OBSTACLES TO ORGANIZATIONAL COMMUNICATION

They can appear in all elements of communication process and their presence distorts the message, reduce the efficiency of communication, denies access to information, reduces motivation and satisfaction of employees. Slang is the effective mean of communication between people from the same social group or profession, but it can be an obstacle in communication with people who belong to another profession or group. This problem is overcome by clear communication and language which everybody understands. Overcrowding leads to congestion information to reduce the effect of communication, and practical advice is "be short". Filtering of an information is a form of censure, which only allows the sender to leak parts of the messages for which he knows it will cause a favorable effect. In a highly hierarchical organization the possibility of filtering information is expressed. It is significantly reduced in horizontal organization. Perception, as members of the organization's ability to properly present reality is the result of personal characteristics such as education, upbringing, background, value systems, motivation and aspirations. These features form a personality profile of an individual that makes it different from others. Emotions are feelings that can create the mood of the individual, and this can affect how the message will be received and interpreted. Excessive joy or depression interfere with rational and objective reasoning. This is true for the state of stress and frustration. Managers must choose the right time, form and manner of communication. A good estimation is related to the following order: who, when, what, how and to whom. The ability of listening involves attention, memory and interpretation of acoustic signals. Many people do not have this capability. Training of listening skills has become an important part of training courses for management skills.

PROCESS INFORMATION

The set of all information necessary for the process of service delivery and management of work processes, form the basis of independent existence and achieve positive revenue and income of employees. Not so long ago, search, compare, and sort of information is performed manually. It was often a long and expensive process. Data are usually recorded on paper forms and kept in binders in separate rooms, in the archives. Search and classification often was a big problem. Transfer of the information was difficult.

The development of information technology has enabled major changes in the process of information. Today the process of informing represents the process of creating information, data processing with the help of information technology. The process of changing data into information is based on the "seven steps", which together comprise the information process. This approach involves the analysis process that has inputs (materials, energy, etc.), outputs (the final product, services, etc.) and environmental impact (the customer's requirements, competition, market policy, etc.). Feedback allows the elements to the output channel to the desired results. Feedback provides information about the current state of the output elements by doing so influence on the input elements that are changing the process so that the process occurs in the direction of expected output. Business systems can be divided into a number of subsystems, each subsystem on its subsystems. This is called the decomposition process of the organization. This allows us to analyze the functioning of the organization.

DECISION MAKING PROCESS

The decision is a choice between two or more alternatives. In the literature there are several ways of classifying business decisions. One division is the routine, creative and negotiation. Routine are those that exist for their adoption of technology. Creative are the ones where it is difficult to determine the relationship of cause - result in finding solutions to problems. Negotiating decisions are those in which they regard as the goal and how to achieve it.

There is a split decision on the basis of criteria:

1. whether the decision relates to the goal or the means and
2. whether the decision is relevant to the mission of the company.

We talk about the entrepreneurial, adaptive and planning decisions. Entrepreneurship are the ones that are made in the area with a certain level of assurance and understanding of how growth for the long time. Adaptive decisions are preoccupied with reactive response in the short term. Planning decisions are linked to risk and seek effective solutions to problems.

Theories of decision making

The classic or economic model of decision making is based on the rational behavior of the one who decides and the one whose decisions are based on verified facts and when it is economically motivated. It is not given the importance of value judgments, emotions and personal preferences of decision makers.

The model is based on the concept of complete rationality. Those who decide, perceive all possible alternative solutions to problems and all the possible consequences of each alternative. There is a possibility that the alternatives are considered in the order corresponding to the objectives and to select the alternative that maximizes targets. Based on these assumptions the economic model is more descriptive normative (Pavlović, 2004).

The control model, in contrast to the economic, starts from the assumption of limited rationality of decision-makers. The control model describes a situation in which the one who decides in a situation where the decisions which are non programmed, are uncertain and not clear enough. Bounded rationality means that decision-makers have the time and cognitive ability to process a limited amount of information on which decisions are made. In making decision, proceeding targets are often blurred, conflicted and lacking a consensus on them by those who make decisions. There is no awareness of any problems or opportunities that exist in the company. The ability to seek alternatives is limited because of its human, information and restrictions on sources of business. There is a good tendency of managers to satisfy with planned and do not seek an optimal solution of business problem. On the one hand, they do not have enough information, and the other criteria is what is the optimal solution.

CONCLUSION

Therefore, organizational culture is defined as a set of values, beliefs, attitudes and behavioral norms shared by all or most members of the organization that affect their thinking and behavior in the organization. Organizational climate is a set of perceptions about the characteristics of employees working environment in the organization. Organizational learning is the concept of organizational changes through which organizations develop and use new skills and knowledge to use them to achieve competitive advantage in the market.

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EXPECTATIONS OF PARTICIPATIVE LEADERSHIP BEHAVIOUR IN BOSNIA AND HERZEGOVINA

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ABSTRACT

This paper elaborates on first quantitative results of an empirical study on participative leadership carried out among 158 middle managers from three sectors of industry in Bosnia and Herzegovina. The research builds up on a theoretical framework adapted from the GLOBE II research model, using the methodology and main instruments of the project. The main purpose of this paper is to explore the positions of Bosnian middle managers to what extent subordinates should be involved in the process of making and implementing decisions, as well as the impact of culture on the way managers perceive participation. Findings reveal that Bosnian middle managers are favourable towards participative leadership. Furthermore, significant impact of established cultural values and norms is recorded.

INTRODUCTION

One of the most significant functions performed by leaders is making and executing decisions. Participative leadership involves efforts by a leader to encourage and facilitate participation by others in making important decisions (Yukl, 2010: 137). In organizations, it is often necessary to involve others in the process of decision making in order to get decisions approved and implemented. Participative leaders not only guide group members but also participate actively in the group and acknowledge inputs from group members when making decisions and solving problems. Given that no leader can be a specialist in all fields, decisions reached in this way are more effective and precise. The issue of how much authority others are given to depends on the manager's preferences and attitudes, as well as on the nature of decision being made.

Having in mind insufficient level of knowledge and lack of empirical research in the area of leadership in Bosnia and Herzegovina (from now on Bosnia), I anticipate to contribute to the advancements of this field by providing insight into managers expectations regarding participative leadership. More accurately, the main purpose of this paper is to add to the knowledge of leadership in Bosnia by surveying the expectations of Bosnian middle managers to what extent subordinates should be involved in the process of making and implementing decisions. I will try to depict how leadership in Bosnia has evolved in the post-socialist era; e.g. whether a shift towards participative leadership has occurred in Bosnian society and organizations since the disintegration of Yugoslavia and socio-economic changes undertaken since the beginning of early 90s. Or, even though some changes are noticeable, but because of a cultural and historical heritage, high level of uncertainty on society and organizational levels, employees are still favourable towards more autocratic leadership styles.

RESEARCH FRAMEWORK

In this paper, I am investigating to what extent Bosnian middle managers expect leaders in Bosnia to involve others in the process of making and executing decisions. The research follows a theoretical framework adapted from the GLOBE II research model, using the methodology and

main instruments of the project. In this paper I address to the following research questions: (a) are Bosnian middle managers favourable towards participative or autocratic leadership styles, (b) how similar/ divergent are the managers expectations regarding participative leadership based on several socio-demographic factors, (c) to what extent do norms, rules, patterns, rituals, procedures, and values endorsed within Bosnian society and industry significantly influence the way middle managers perceive participation, and (d) what is the relationship between society and organizational culture and participative leadership in Bosnian society and companies?

The background theory guiding this research is the (culturally endorsed) implicit leadership theory. The main presumption of this theory is that individuals have their own assumptions concerning features and behaviours of effective leaders, which are referred to as individual implicit leadership theories. These assumptions, beliefs, opinions, and convictions held by individuals influence the anticipations individuals have for leaders and their assessment of the leader's performances. It is believed that if the individual's leadership belief system is familiar, one could foresee whether that person would recognize other individual as an effective or ineffective leader, or a moral or evil leader (Lord & Maher, 1991). Basic presumption of this theory is that leadership is in the "eye of the beholder". An individual is perceived as a leader if their personality, attributes, virtues, and behaviours adequately match the observer's beliefs about leaders or if the observer attributes congregate success or failure to the activities of perceived leaders (Lord & Maher, 1991). GLOBE extended implicit leadership theory from the individual to collective (cultural) level of analysis. It is argued that the structure and content of individual belief systems will be shared among individuals in common cultures (House, et. al., 2004). These constructs are labelled as "culturally endorsed implicit leadership theory (CLT)".

Research methodology

The research on participative leadership is a part of a broader empirical research I have conducted in Bosnia with the main aim of exploring the relationship between characteristics of the society culture in Bosnia, the organizational culture of Bosnian enterprises and characteristics of the expected leadership in Bosnian companies. With the intention of implementing the research on participative leadership in Bosnia I used ten questions on leadership attributes from both GLOBE II quantitative survey questionnaires. The respondents were asked to value if the given statements inhibit or contribute to outstanding leadership. The answers were assessed with 7-point Lickert scale from a low of 1="This behaviour or characteristic greatly inhibits a person from being an outstanding leader" to a high 7="This behaviour or characteristic contributes greatly to a person being an outstanding leader". Factor analysis of the single leadership attributes produced first order leadership factors. Following factor analysis of the first order leadership factors generated leadership dimension.

For the purpose of creating participative leadership dimension, initially, ten leadership attributes (bossy, autocratic, domineering, elitist, ruler, dictatorial, non-delegator, micro-manager, non-egalitarian, individually-oriented) were computed into two first order leadership factors (non-autocratic and participative leadership). Leadership attributes defining participative leadership dimension are presented in Table 1. The main remark regarding composition of the participative leadership dimension is the dominantly negative leadership attributes of which this leadership dimension is consisted. The respondents were asked to evaluate negative leader attributes, e.g. bossy, autocratic, ruler, dictatorial, etc. To generate participative leadership dimension, these leadership attributes were reverse-coded into a positive leadership items (e.g. "non-delegator" when reverse coded turns into "delegator", "non-egalitarian" into "egalitarian", etc). This may have a strong impact on the results/answers acquired by factor analysis. More precisely, it does not automatically imply that an answer to a negative leader attribute, when reverse coded, will have the same value as if the respondents were asked directly to answer to positive leader attributes.

Research sample

The quantitative data collection was administrated on the sample of 26 Bosnian companies from telecommunication sector, financial services, and food processing industry. The research was conducted from November 2008 till December 2009. Respondents were all middle level managers¹. Altogether 158 managers answered the questionnaires. Approximately 61.4 % of the respondents were men, and 38.6 % of them were women. The age of the respondents ranged from 25 years to 65 years, with an average age of around 40 years. As for the religious affiliation/ethnic belonging, 45.6 % of respondents were Eastern Christian Orthodox/ Bosnian Serb, 34.2 % Muslim/ Bosniaks, 16.5 % Roman Catholics/ Bosnian Croats, and 3.8 % declared belonging to other religions/ ethnic groups.

EMPIRICAL-FINDINGS

Participative leadership is viewed positively by Bosnian middle managers (see Table 1). On the other hand, autocratic leadership style (3.35) is perceived in a negative way and rejected by middle managers. The score of 5.37 (on a 7-point Lickert scale) positions participative leadership as 3rd among six second order leadership dimensions developed for the project GLOBE. Within Bosnian society, participative leadership is considered to be one of the important dimensions for effective leadership, but not as strongly supported as charismatic/value-based and team oriented leadership. Moreover, empirical findings disclose the desire of Bosnian middle managers for more participation in the process of decision making. Then again, managers in Bosnia who are not delegating and not engaging subordinates in the process of creating and implementing decisions are seen quite negatively. Furthermore, leaders who are unwilling or unable to hand over control of projects or tasks, who insist on making all decisions, who are concentrated on preserving individual goals rather than group needs, and who believe that all individuals are not equal and only some should have equal rights and privileges are seen in the negative way.

Overall findings indicate preferences of Bosnian middle managers regarding participatory leadership styles as a tool towards higher leader effectiveness. On the other hand, if individual leader attributes are analysed, surprisingly, middle managers value quite positively leader attributes ruler (4.56), domineering (5.76), and bossy (4.32). At the same time, they expect effective leaders to place high values on the group needs, to delegate, to be egalitarian, and not to impose his/hers values and opinions on others, which is conflicting to the attributes ruler, domineering, and bossy. Perhaps, it will be a task of future studies on leadership in Bosnia to disclose the factors standing behind these preferences of Bosnian managers.

Statistical analysis did not reveal significant divergences on leadership attributes and factors amongst Bosnian managers based on their age, gender and religion. Nevertheless, Bosnian Croats expect an efficient leader to be less autocratic and more participative than Bosnian Serbs and Bosniaks. Younger managers are more tolerant towards non-participative leadership than old and middle-age managers. Female managers were found to anticipate an outstanding leader to be less autocratic and to encourage and facilitate participation of others in making decisions than male managers. Further analysis disclosed statistically significant divergence on leader attribute “non-delegator/delegator” amongst managers from three sectors of industry ($F = 3.069$, $sig. = .049$). Bosnian managers are expected to delegate the most in financial services, the least in telecommunications, while the scores of middle managers from food processing industry are in-between.

¹ “A middle manager was defined as one who had at least two levels above and two levels below him or her in an organization. In the case of very small organizations, a middle manager was defined as one who reported directly to the CEO of the organization or had at least one level below him or her in their organization.” (Chhokar et al., 2008: 21).

Table 1: Leadership attributes and factors comprising participative leadership dimension

Leadership dimension	Leadership factors	Leadership attributes	Definition of leadership attributes
Participative 5.37 (Definition: Participative leadership is the degree to which managers involve others in making and implementing decisions	Non-autocratic (reverse scored) 4.65	Non-Delegator 3.12	Tells subordinates what to do in a commanding way
		Micro-Manager 3.00	Makes decisions in dictatorial way
		Non-Egalitarian 1.70	Inclined to dominate others
		Individually-Oriented 2.40	Believes that a small number of people with similar backgrounds are superior and should enjoy privileges
	Participative (reverse scored) 5.44	Bossy 4.32	Is in charge and does not tolerate disagreement or questioning, gives orders
		Autocratic 3.35	Forces her/his values and opinions on others
		Domineering 5.75	Unwilling or unable to relinquish control of projects or tasks
		Elitist 2.66	An extremely close supervisor, one who insists on making all decisions
		Ruler 4.56	Believes that all individuals are not equal and only some should have equal rights and privileges
		Dictatorial 2.73	Concerned with and places high value on preserving individual rather than group needs

Correlations between culture and participative leadership

The data reveals that participative leadership is influenced by numerous society and organizational cultural dimensions. Participative leadership is mostly influenced by humane orientation, institutional collectivism, gender egalitarianism, assertiveness, and power distance. The research results point out that the most important cultural dimension predicting this leadership variable on both national (practices and values) and organizational (practices and values) level is humane orientation. The strongest relation was recorded between participative leadership dimension and organizational humane orientation values ($R = 0.349$, $p < 0.01$). Even though this is the strongest correlation it is somewhat modest. Next comes correlations between this leadership variable and organizational uncertainty avoidance values ($R = 0.319$, $p < 0.01$), national assertiveness practices ($R = -0.309$, $p < 0.01$), organizational assertiveness values ($R = -0.241$, $p < 0.01$), and society institutional collectivism practices ($R = -0.217$, $p < 0.01$).

CONCLUSION

Findings presented in this paper clearly reflect preferences of Bosnian middle managers for participation as an important instrument for effective leadership in Bosnia, and, at the same time, rejecting autocratic leadership style. This indicates the move of Bosnian managers from a centrally-planned economy, party appointed supervisors and fake collective contribution to more participative leadership styles.

The research results presented in this paper provide interesting materials for a better understanding of managers' preferences regarding participation in Bosnia. Its application can lead to competitive advantage of Bosnian companies. Managers can utilize these findings in everyday life in order to increase their efficiency and the efficiency of their organizations. However, drawing conclusions from this research, one should be aware that it covered an explicit group of respondents – middle level managers from the three sectors of industry: telecommunication sector, financial services, and

food processing industry. Moreover, the study includes only 158 middle managers, which is hardly representative of the entire Bosnian population. This study presents only a beginning of an understanding of leadership within Bosnian society and industry. The findings presented here are merely a scratch on the surface of a very complex phenomenon. It remains for the future studies to deepen the knowledge on leadership in Bosnia and Herzegovina and factors influencing leadership.

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COMMUNICATION AND ORGANIZATIONAL CULTURE IN THE COMPANY

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ABSTRACT

Organizational culture represents a more competitive edge in the factor market. Companies that have a clearly defined culture, creating a positive image with customers and getting more profit. Companies with significant organizational culture are more willing to tackle the biggest challenges that arise in recent years due to the recession. Good communication between employees and between managers enables easier decision making, delegation of tasks, as well as conflict resolution, and thus contributes to building a positive business. Transfer of Paragraph, beliefs, and rules of the organization is the basis for designing a strong organizational culture. In this paper, we try to emphasize the importance of communication within the organization to motivate workers to achieve better results and to reduce the level of their mutual conflict.

Key words: communication, organizational culture, crisis, linking, image

INTRODUCTION

In times of crisis and recession, when many large companies experienced a decline of state governments are struggling to preserve every job, management must more than ever to work on establishing the organizational culture in companies. Organizational culture should be a means of integration between the capital owners, top and middle management or all employees. But in a number of organizations and especially in those who worked in the safe conditions (monopolies, state enterprises ...) is not developed enough awareness of the need to adopt common: values, attitudes and beliefs that they are not framed in the language, attitudes, symbols, management activities ...

The solution is quick and meaningful communication through vertical and horizontal structure of the organization. This communication will contribute to the feeling of unity and solidarity, will enable the transition of ideas for overcoming the current difficulties, the ability of firms to establish a flexible business and further development in both the technical and technological terms, such personnel and creatively in order to speed action to new challenges. The introduction of IT in business leads to verbal communication is increasingly suppressed and social networks are at the same time can talk with several colleagues, although there is a danger that this communication in working hours is not formal but it is for absenteeism in the workplace and for spreading rumors about colleagues. It is necessary to establish the norms of communication and direct them to raise a culture for the sake of survival in the market and increase profits and satisfaction of all employees.

FACTORS THAT AFFECT THE CORPORATE CULTURE

At the organizational culture of work among the many factors which have an important role in the labor relations group manager leadership style, feature of the organization as a management process that egyistiraju in the organization. (Seifert Z. "Organizacija poslovnih sistema"2006)

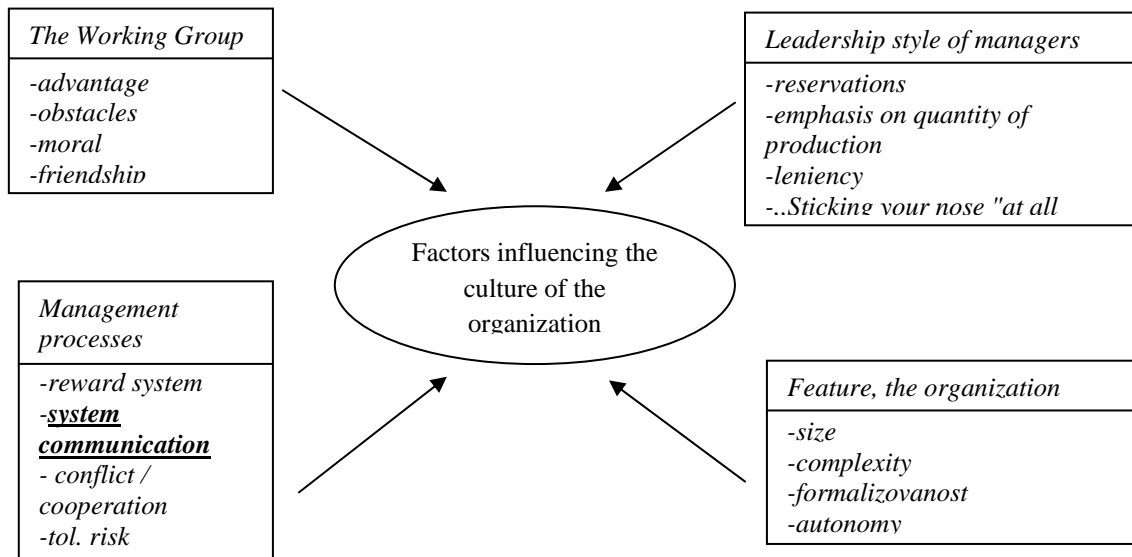


Figure 1: Factors that affect the corporate culture

As you can see a system of communication and communication itself is an important factor in building an organizational culture and goal of our work is to know what constitutes successful communication in the company to integrate it into their culture and are in business. Also from this diagram we can see the kind of communication exist in the organization: communications managers to workers, then communication between groups, the communication processes that take place (and the cooperation and conflicts are a form of communication). We see that as well as the organizational culture and communication affect the size, complexity and autonomy of the organization.

COMMUNICATION MANAGEMENT TO EMPLOYEES

Communication in management actually has two important aspects (Sajfert, 2003):

1. Communication is maintained through personal relationships,
2. Communicate effectively transmit messages.

Successful managers always have the time to listen to colleagues who are in their rank and supervisors and subordinates. To be able to get the truth he must gain the trust of respondents and to let them know they have a common interest. During the conversation should be natural and to put the interviewee know that you respect his views. You do not need to have a fear of humans, or from what you say. It is necessary to speak meaningfully and at his interlocutor that he could not understand us. When communicating you will meet the specific profiles of people (Sajfert Z." Preduzetništvo "2003):

- "thinkers " prefer to deal with facts and figures,
- "intuitive " creative act and the idea,
- "sensual " face action,
- "emotional "driven by emotion.

From this we see that when forming the system of communication must take into account the psychology of personality, a good tip is to first listen to the first part of the talks determine what

type of personality belongs to the respondent and consequently make conversation. Written communication should be avoided in the company and use it only if you want to avoid personal contact, or if you need to make clear that this is an action that should take. Also in this type of communication should have a concise and effective. As for reading also apply the same rules as for writing. Of course, it is said to be a form of communication will depend on the factors discussed above and in particular the style manager.

COMMUNICATION BETWEEN WORKERS

Business is a complex process and people involved in it must be the nature of work to communicate with each other. These people are usually categorized into specific groups to interact. These groups can be classified into a small space, and inevitably must come sometimes to some disagreements. Each group expects loyalty from its members and has developed reward systems or symbolic punishment for those who do not respect the rules of the group. The reaction of certain information may be understood differently by certain groups within the organization. The characteristics of the group (group culture) makes their mentality. Groups can be formed at the workplace, according to years of service, gender, marital status ... Each group has its own system of values, attitudes, interests and communication task is to integrate all these features into a strong organizational culture. Of course the task of managers is that all these groups the most appropriate way to convey the views of management and corporate objectives. It just puts business people in different systems and structures. By the nature of the work staff manages a group of people, others have a certain status and privilege that they have a certain prestige. A good system of communication that everyone here should explain why these people deserve the prestige and so do not let jealousy and unfounded jealousy affects the good climate in the organization which would be collapsed and organizational culture. It should also be mentioned that in modern companies the process of moving and going and going of workers is a common occurrence. There may be a problem that people should be informed about the changes you need to take a narrow or a wide range of people, one must ask whether it will bring i envy so badly affected by the organizational culture.

FEATURES OF ORGANIZATIONAL CULTURE THAT IS TRANSMITTED COMMUNICATIONS

Elements of organizational culture to be transmitted through the entire company are:

- standards,
- philosophy of the company (the dominant values, attitudes, beliefs),
- rules.

Values, attitudes and norms are invisible factors organization culture and visible parts of culture are in fact only their outward manifestations. Here be transferred to employees: the company philosophy, the maximum orientation to the customer, encouraging team spirit and innovation processes, management by objectives, accepting the changes, the benefits of teamwork, joint problem solving, business ethics, which are channels of communication, the status symbols of the company should work and efforts deserve. Also in talks to mention the tradition and history of the organization. Examples from history that are positively or negatively affect the organizational culture to recount and analyze how the errors would not be repeated and positive examples should be emphasized as a desirable model. And in many rituals and ceremonies there is communication among employees. At the ceremonies can always send a message about how to shape the culture of the company. The symbols include organizational culture and language and jargon. Various companies are different on them because they will be different for each activity they perform it. We also determined the jargon can I have a special group within the company. In my opinion, to try out the jargon of the business and negatively impact on the organizational culture, because sometimes if you need to conduct a conversation between multiple groups can lead to difficulties in communicating.

Communication can be achieved in the organizational culture:

- giving its members a sense of belonging,
- establish loyalty among employees,
- social stability of the company,
- action orientation of employees.

Communication is also very important for the maintenance of organizational culture as it should provide a well-developed sense of organizational culture is a beautiful working environment than areas where the tense atmosphere and where it is in fear. Also it develops and spreads a sense of community, the need for members, staff exchanges.

THE IMPORTANCE OF COMMUNICATION IN CHANGING THE ORGANIZATIONAL CULTURE

Turbulent times in which we live, continuous progress of science and technology organization said the constant changes. These changes apply not only to the change machine, human or organizational structures, but also refers to the organizational culture. Sometimes and most improved crops must undergo occasional changes that would become monotonous and boring. Most of the factors influencing cultural change in the external environment, as well as changes to their top people who were symbols of the culture. The role of communication should be the transfer of the reasons for the change in an understandable and acceptable manner. Communication should also neutralize and reduce resistance to change, and to provide management information to the new situation affects the operation of the company.

Changes in organizational culture goes through several stages of determining the need for change through the election method for implementing a change to a new culture. All these activities must be conducted in coordination with a number of people inside and outside the company and is therefore very important to good communication between all stakeholders. As an organization of people and do when and change there must be adequate communication. There are two approaches that the first is the direct replacement of those people and us in this work is not that interesting, and the other is an attempt to change the problem of workers thinking and working. Talk about problems with employees can often lead to improvements in them and it is almost always easier to adapt to the culture of individual companies rather than the opposite which naturally depends on its position in the system.

CONCLUSION

The purpose of good communication in the company is informing employees about the tasks to be done, ikonflikata resolve disagreements between them, coordination, stimulation and intervention. Also good communication provides insight into the results of some decisions and reporting on the actions taken. Communication is important for cross transmission of business objectives throughout the organization. There are two types of first communication for performing operational tasks and those that transmit a political message. For us the important policy of the establishment, development, operation and organizational culture It is formed the image of companies that increasingly determines successful from unsuccessful companies. It is easier to achieve goals if we know that the organization has stable and positive culture of a course kljmu business partners and customers more respected companies that have a clearly defined organizational climate. In order to achieve all the above organizations should be developed and recognized system of communication as a factor affecting the establishment and nurturing of the organizational culture.

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CREATING A STIMULATING ENVIRONMENT IN THE COMPANY – EMPLOYEE SATISFACTION FACTOR

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ABSTRACT

In order to stimulate excellent work engagement of the employees and achievement of their job optimum it is necessary to determine the appropriate ways for their motivation. The motivation may not only be in the form of salary increases or promotion, so it is necessary to determine the real needs of the employee and therefore to choose appropriate measures. The most important need of the employees is the need to reward and highly value their contribution to the company, the other need is to enable them professional development and continuous improvement, and participation in decisions that directly affect them. Creating a positive work atmosphere and rising level of satisfaction among employees will provide the best basis for adequately and effectively implementation of well placed assignments.

Key words: Motivation, rewarding, satisfaction of the employees.

INTRODUCTION

The operating conditions in the global market, where an increasing share of income has been realized in the service sector, and even traditional manufacturing companies tie their customers with quality of service provided with the product more than the product itself, top quality service can only be provided by employees who are really motivated. In order to operate successfully, each company must find the optimal combination of tangible and intangible incentives for their employees, which will depend on many factors: the sector in which it operates, competition in the labor market, the nature of work, the employment structure. To ensure proper quality of employees in the company, it is necessary to provide an adequate level of salaries. Appropriate reward system could be successfully used to influence the behavior and performance of employees, but it is only a necessary condition, usually not sufficient. Much-needed additional motivation of employees is achieved by other, non-material forms of compensation.

To increase motivation and satisfaction of employees, application of scientific achievements in the field of remuneration could be used, which also increases the competitiveness and the value of company. Rewarding employees is consisted of direct financial rewards such as salary, commissions, bonuses, employee expenses. Also, rewards consist of both non-financial compensation as expressed through the recognition, job design, participation, flexible working hours, management by objectives, organizational culture.

THE TERM OF MOTIVATION

Companies achieve their goals by the performance of employees working in them. Realizing performance is the result of three key factors: ability, opportunity and the will or motivation of employees to achieve performance. The company may provide the opportunity for the employee to

realize its performance, the employee may be competent for its tasks, but it might worth nothing if the employee is not motivated to realize it.

Motivation, considered from the aspect of a company's success, is of great importance for achieving these goals. The basic assumption of the success of various concepts, techniques and approaches to motivation is the existence of a motivational environment. An important dimension of motivational climate relates to organizational systems: planning, information systems, system of deployment and promotion, and surplus distribution system (Fitz-enz, 1995).

The fundamental process of motivation is based on three elements: the need, the movement, the reward (Fig. 1). The need represents a state of deficiency, or psychological and physiological imbalance, the movement is an action a person take in order to overcome the deficiency, and the award represents achieving the goal which could remove and neutralize the tensions.



Figure 1. Process of motivation

For the company management, it is essential to know the profile of motivation of its employees. Labour productivity depends directly on the degree of motivation of employees (Vesic, 2009). To maximize the level of motivation of employees, managers must know the needs and motivations of people which work they manage, and the ways to ensure their satisfaction. Employee satisfaction is the only way in which a high level of productivity, and creativity of employees could be achieved, on the long run, with stability.

To understand the impact of motivation on the work performance of employees, three dimensions are of particular importance: the direction, intensity and persistence. For the employee to be motivated the right way, his motivation must have a certain direction. The intensity of motivation is determined by the amount of effort that should be invested in a unit of time to meet his needs. If the intensity of motivation is higher, employee will invest more effort to achieve his/her tasks and his/her performance will be better. Persistence of motivation shows the invested time in certain effort, in a certain direction.

STRATEGIES OF WORK MOTIVATION

Work motivation means the sum of the different methods and processes to cause, maintain and encourage the behavior oriented to achieve specific business goals. Motivation is the force acting on or within a person, that cause people to behave in a specific, target-oriented manner. Because specific work motivation of employees affects their productivity, one of the tasks of management is to control the motivation of employees to achieve organizational goals.

For a company to be effective, it needs to motivate employees in the right way and take their wishes and needs into account, so that they become productive members of the company, and thus achieve the ultimate goal of the company through efficient and high quality product or service.

Managers use different strategies to motivate employees. Each strategy aims to meet the needs of members of the organization, through appropriate organizational behavior. However, it is very hard to say which strategy is the most effective one, because each shows certain effects in different organizational situations. Practice has shown that the combination of the known strategies is the best solution in the process of work motivation, where the dominant role plays the most appropriate strategy for the current organizational situation.

One of the primary motivating strategy is communication. Other motivational strategies include: the management attitudes to employees, job creation and job enrichment, behavior modification.

REWARDING THE EMPLOYEES

Rewarding system is designed to allow increase in productivity, while controlling share of labor costs in total costs. In addition, its goals are related to attracting and retaining quality employees and motivating employee participation in all processes of the organization. The current concepts of motivational systems, motivational techniques and strategies became not flexible enough, so it is necessary to develop and introduce new ones, which will through its flexibility and versatility lead to high motivation and employee satisfaction, and thus help in achieving a successful business, at the same time.

The rewarding system must include differences in the complexity of the work performed, and its relative value to the success of the organization. This implies to differentiate the performance of activities which produce the results directly, from the secondary business activities.

The aim of rewarding employees is precisely to harmonize individual interests of employees and the company's strategic goals. Creation and implementation of the reward system is one of the most complex activities within the tasks of modern management, while staff salaries are one of the main components of total costs. Reward system consists of two types of awards: tangible and intangible. Tangible rewards which employer provides to employees are covered by wage system.

There are three basic criteria for positioning and advancement of individuals within the salary grade: experience and years of service, achieved performance and individual abilities and knowledge. In recent years the traditional approach is subjected to some serious criticism in terms of its adequacy in the modern environment. The main criticism relates to the change in nature of work that occurred as a result of globalization, the development of information technology, quality management system application, etc.

Another important remark relates to the expectation that the modern environment in which organizations must be oriented to consumers and quality, the traditional approach becomes inefficient. Tasks evaluation is aiming at efficiency, and study of conditions in the labor market is essentially based on a comparison with the others and catching up with competitors. Third, critics of traditional approach point to the fact that it encourages incremental thinking among employees and the belief that earnings should only increase.

Many point out that the traditional wage system simply does not have the potential to create a perception among employees of the fairness of rewarding in their organization. Remuneration based on performance focus on the value of contributions of individuals, groups or organizational units to business results. The main objectives to be achieved by the introduction of this component of total earnings are: achieving the strategic goals of the organization, strengthening organizational norms, motivating employees, differentiate good and bad performance.

In introducing performance-based salary structure in the reward system, it is necessary to make the decisions that define the following: scope, type and manner of performance measurement, selection of award types, the choice of aggregation level for the distribution of awards, the frequency of awarding and providing support to employees. Establishing a direct link between actual performance and reward can be achieved in three ways: the traditional method of giving a raise, incentives and risk salaries.

Employees, in addition to regular salaries, have the option of getting a raise, incentives and bonuses based on the effectiveness within the organization. Although the practice has shown that wages based on performance represent one of the most effective instruments in improving the performance of employees, there are numerous limitations that may reduce their potential effectiveness.

One must not forget, if the performance assessment is not done properly, it could lead to worsening of human relations, and on the other hand, accurate evaluation can encourage employees to work harder on realization of goals that are set. The performance assessment methods include: descriptive estimation (judgment) by the Head of department, Ranking within the group, Comparison in pairs, Method of coercive distribution, Method of critical incidents and the Scale measurement. There should be a mutual relationship of performance evaluation and stimulative awarding, i.e. the performance evaluation should be a function of stimulative awarding.

Today, in addition to senior managers, associates and colleagues, the process of evaluating the success is increasingly based on using self-valuation. Every performance evaluation system has its advantages and disadvantages, therefore the most important thing is to choose one that will lead to the achievement of company goals, but also the goals of individuals.

Types of Rewarding

All compensation programs can be divided into three fundamental and interrelated groups: direct financial rewards (salary, commission, bonus, expenses), career advancements (better customers, better sales territories, promotion, training, evening school etc.) and non-financial compensation (bonus trips, days off, club membership, dinners, awards, performance certificates etc.).

Tangible or financial compensation is made up of different forms of remuneration aimed at ensuring and improving the material position of employees and financial compensation for the work. Given the degree of directness of tangible or financial benefits, there are two basic types of financial compensation: direct financial gains and indirect tangible gains that contribute to raising the social standard of employees, which are not received in cash.

Depending on whether the company wants a motivational system that will emphasize and encourage individual or team performance, it should use different types of rewards. In designing the system of motivation, care should be taken to avoid discordance between the loyalty of employees to the task and loyalty to the company. Tangible motivation is one of the fundamental factors on which is based the organizational practice of rewarding work. It is under the direct influence of the organization, its policies and practices. Promotions, symbols of status, recognition, salary and other financial compensation are visible mechanisms of specific awarding and evaluation of work within the policies and practices of each organization.

From the aspect of the company, employees' wages represent the cost of human labor involved. From the point of workers, wages represent compensation for work they performed, where the level of wage and its relation to the wages of other workers is important. If the level of wages is set in the function of work productivity increase gives to the fact that not every increase in wages lead to increased productivity.

Compensations, as total sum that employees receive for their work in a company are related to performance, and some just to belonging to the company itself. Benefits come in three forms, as: salary, awards and benefits. The most significant elements of compensation are those employee claims his/her right to, when he works effectively, and consist of base salary, incentive part of pay of, and bonuses to salary. Incentive (stimulating) part of the pay makes it possible to reduce costs and increase earnings of employees by motivating everyone to contribute to increasing efficiency.

Bonuses (allowances) are paid to employees for work under certain conditions that may have adverse consequences for the individual, which may include: allowance for shift work, night shift allowance, overtime allowance, allowance for occasional difficult working conditions, bonuses for work on holidays, bonuses for work on weekly rest days.

Compensation from the share in profits is primarily used to increase the interest of employees for performance of the company, reduce staff turnover, especially quality staff, improve social

relations in a company for better and more successful business. There are four basic systems of employees share in the profits: an indirect share in the profits, a direct share in the profits, employees shareholding; staff savings systems.

In an indirect share system, employees are encouraged to the achieve savings regardless of income. In particular, Reward System in which the employees belong to a certain percentage of the value of savings stands out, and a system where employees receive a premium in the amount of the percentage of newly created value.

In addition to material rewards that make up the foundation of a motivational system, it is necessary to develop a system of intangible incentives to work, to meet the needs of employees. For most people, higher order needs such as development and validation, recognition, status and more, are becoming more and more important. A number of strategies such as non-design work, management style, participation, management by objectives, flexible working hours, acknowledgment and feedback, organizational culture, training, career development and others, have been developed, which, in addition to financial strategies, form a comprehensive motivational system.

To reward employees, other non-reward strategies are very important, such as flexible working hours, recognition of success, feedback, organizational culture etc. Widespread reward mechanisms also include security and continuity of employment, recognition, promotions, greater informality and social equality, the removal of formal, functional status and barriers in communication, and others.

One of the problems that occurs is the resistance of employees who do not believe that the system of incentive rewarding is objective and honest. Therefore, the prerequisite of success of incentive compensation is primarily to gain the trust of employees, where the necessary assumption is that employees in this system are well informed.

CONTEMPORARY SYSTEM OF REWARDING

The system of employee rewarding by achieved business results have been developed by almost all major companies and most of all do not know the only category of fixed salary. To manage costs, employers tend to reduce fixed costs by introducing the variable part of pay, usually in the form of awards, for better business results achieved. In smaller companies reward systems can certainly help in cost management, motivational techniques and business results. Employee satisfaction and fair wages are among the strongest drivers of job, and today is the tendency to offer employees a good business plan and a fair profit.

Through the business practices of large corporations till today, various forms of remuneration have been established, from the promotion prospects and the takeover of attractive jobs, education and training, traveling, developing contacts, use of the car, sliding working hours, etc. to a purely financial categories, such as incentives, bonuses, fees, business cards, insurance, loans, participation in profit or entering into a partnership with the employer. Although there is no single model of good rewarding, there are different experiences and great opportunities to create diverse systems and models. The structure of management, business objectives and policies vary from company to company so that the employers must make the decision in developing a rewarding system and create their best models.

The system of rewarding employees which will provide quality motivational and business results can be made as follows: first, to determine to whom the system applies, establish a budget and then thirdly, to structure the model, and to define factors of rewarding. Rewarding factors should be measurable, clear and transparent, and simple in application and calculation. Employees should receive their awards and must be able to check the budget. Applying three to four factors will ensure these requirements, while more than this number leads to complexity and inertia of the

system. To assist employers in creating a rewarding model, considering some of the following factors is proposed: effectiveness, quality and knowledge transfer.

Employers are increasingly gaining an awareness of the importance of work and employment, and the winner in the competition will in most cases be those who are capable in human resources, and for retain and attract them, they must be rewarded according to their values.

CONCLUSION

In contemporary society, the motivation of employees is the largest and most important challenge of management. The reason for this is fact that labor productivity depends directly on the degree of motivation of employees. To maximize level of employees motivation, managers must know the needs and motivations of people, and must know how to ensure their satisfaction. The satisfaction of employees is the only way to achieve a high level of productivity of employees, on the long run.

Every man is a separate person and every company is a different story. Apart from standard rules and techniques, rules adjusted to employees, businesses and environment must be made. It must be borne in mind there are significant differences in needs, ambitions and motives of individuals. It is necessary to discontinue the practice of egalitarianism, but to nurture relations and a climate of "equal opportunities" for all and differentiated approach to motivation. An effective rewarding system is a mixture of various forms of rewards and actions aimed at promoting staff to optimize the work in the company.

In time, it could be there is no universal model for increasing the motivation level of employees that could be applied to every employee in every company. However, categorization of employees by various parameters could be performed, for example from national culture, gender, field of employment and occupation, education, work experience and marital status. Based on a combination of categories, the possible direction could be established, that managers throughout the organization could follow, and apply it with some adjustments.

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RESEARCH OF INTERPERSONAL RELATIONSHIPS IN THE ORGANIZATION

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ABSTRACT

This paper analyzes the interpersonal relationships in a particular company which is in the process of the privatization. Consequences of such a situation on efficiency and effectiveness in the work of managers and employees, and than propose techniques to improve interpersonal relationships. This research shows that interpersonal relationships are very important factor in hiring employees. Employee relations are determined by the organizational climate and culture, natural kind of activities that organizations or working groups are dealing with, personal characteristics of employees and wider social context in which the work is done.

INTRODUCTION

The key to the success of some organizations is good communication, interpersonal relations and trust among employees. (Grubić Nesić Leposava 2005). The man in the process of work does not want to satisfy their need for material satisfactory but also the social and personal needs, for which he entered into a series of relationships with partners from which arise interpersonal relationships. They are very diverse in other areas of life, as well as in the organization. (Bojanović Radojica, 2004). Interpersonal relations have great importance in the organization. Every organization operates in various confrontations materially different relationships in which the actors are the owners, managers and other groups of workers.

METHODOLOGICAL HYPOTHESIS

Subject of research are the interpersonal relationships in the manufacturing organization JSC "Tehnika" from Kula, in order to determine the reasons for their emergence and their impact on business within the organization. The study aims to determine whether there are barriers in communication between subordinates and superiors, as well as among the same ranked employees and to determine how interpersonal relationships satisfaction impact on entire company's business.

According to defined objects and purpose of research, the main research hypothesis has been identified: There are bad interpersonal relationships in the manufacturing organization JSC "Tehnika". In order to get a more realistic picture of the current situation, it was necessary to identify different facts, so that on the basic hypothesis we can defined the derived research hypotheses. These are:

- Poor interpersonal relationships have destructive influence on the work of employees.
- Poor communication is a hierarchical conditional.

- In the manufacturing organization JSC "Tehnika" from Kula, there is a sense of community and belonging to the organization.

The study was conducted on a sample of thirty employees of a manufacturing organization JSC "Tehnika" from Kula. Poll contains closed type questions. The respondents chose as their answer one of the alternatives responses, or they rounded one number that best fits to their opinion.

PPRESENTATION OF THE RESEARCH RESULTS

Selected questions and results from the questionnaire

Table 1. It is very important to me that colleagues in the common job are correct, privative part doesn't interest me

		Frequency	Percent	Valid %	Cumulative %
1.	Does not agree	-	0	0	0
2.	Rarely agree	-	0	0	0
3.	Neither agree nor disagree	7	23.33	23.33	23.33
4.	Agree	11	36.67	36.67	60
5.	Totally agree	12	40	40	100
	Total	30	100,0	100,0	100

Table 2. I am satisfied with the relationships between employees

		Frequency	Percent	Valid Percent	Cumulative Percent
1.	Does not agree	1	3.33	3.33	3.33
2.	Rarely agree	5	16.67	16.67	20
3.	Neither agree nor disagree	13	43.33	43.33	63.33
4.	Agree	7	23.33	23.33	86.66
5.	Totally agree	4	13.33	13.33	100
	Total	30	100,0	100,0	100

From 30 respondents, 12 respondents said that they completely agree that is very important to them that their work colleagues are correct when performing common tasks, which is 40%, and 11 confirm that statement which makes 36.67%, 7 of them responded that they neither agree nor disagree, which is 23.33%, no one of respondents said that they rarely agrees or does not agree with the statement.

From 30 respondents, 4 said that they were completely satisfied with the relationships among employees, which is 13.33%, 7 disagreed with the statement, which is 23.33%, 13 neither agree nor disagree, which is 43.33%, 5 of them responded that they rarely agrees, which is 16.67% and there is one employee who doesn't agrees with this statement, which is 3.33%.

Table 3. I think I'd better do my job if the interpersonal relationships were better

		Frequency	Percent	Valid Percent	Cumulative Percent
1.	Does not agree	1	3.33	3.33	3.33
2.	Rarely agree	1	3.33	3.33	6.66
3.	Neither agree nor disagree	5	16.67	16.67	23.33
4.	Agree	10	33.33	33.33	56.66
5.	Totally agree	13	43.33	43.33	100
	Total	30	100,0	100,0	

From 30 respondents, 13 totally agrees that they will better perform their job if the interpersonal relationships were better, which is 43.33%, 10 of them agrees with the statement, which is 33.33%, 5 employees responded that they neither agree nor disagree, which makes 16.67%, one rarely agrees, which makes 3.33% and generally one disagreed with the statement that makes 3.33%.

Tables 4. There are conflicts between managers and employees in our company

		Frequency	Percent	Valid Percent	Cumulative Percent
1.	Does not agree	6	20	20	20
2.	Rarely agree	4	13.33	13.33	33.33
3.	Neither agree nor disagree	5	16.67	16.67	50
4.	Agree	7	23.33	23.33	73.33
5.	Totally agree	8	26.67	26.67	100
	Total	30	100,0	100,0	

Of the 30 respondents, eight totally agrees that there are conflicts between managers and employees, which is 26.67%, 7 agrees, which is 23.33%, 5 neither agree nor disagree, which is 16.67%, 4 rarely agrees which makes 13.33% and 6 does not agrees, which makes 20%.

Table 5. The greatest satisfactions in the job are my colleagues from work and relationships with them

		Frequency	Percent	Valid Percent	Cumulative Percent
1.	Does not agree	4	13.33	13.33	13.33
2.	Rarely agree	3	10	10	23.33
3.	Neither agree nor disagree	9	30	30	53.33
4.	Agree	9	30	30	83.33
5.	Totally agree	5	16.67	16.67	100
	Total	30	100,0	100,0	

From 30 respondents, five said that they are in total agreement that their work colleagues and relationships with them are greatest satisfaction, which is 16.67%, 9 of them agrees with that, which is 30%, 9 neither agree nor disagree, which accounts for 30%, 3 rarely agrees, which is 10% and 4 does not agree with the statement, which is 13.33%.

Table 6. My working group represents a unique and good entity

		Frequency	Percent	Valid Percent	Cumulative Percent
1.	Does not agree	2	6.67	6.67	6.67
2.	Rarely agree	7	23.33	23.33	30
3.	Neither agree nor disagree	13	43.33	43.33	73.33
4.	Agree	7	23.33	23.33	96.66
5.	Totally agree	1	3.33	3.33	100
	Total	30	100,0	100,0	100

From 30 respondents, 1 is totally agree that their working group is a unique and good entity, which is 3.33%, 7 of them agrees with that, which is 23.33%, 13 of them neither agree nor disagree, which is 43.33%, 7 is rarely agrees that makes 23.33% and two of them does not agree with the statement, which is 6.67%.

Table 7. For me it is very important that my work colleagues think well of me

		Frequency	Percent	Valid Percent	Cumulative Percent
1.	Does not agree	2	6.67	6.67	6.67
2.	Rarely agree	2	6.67	6.67	13.34
3.	Neither agree nor disagree	8	26.67	26.67	40.01
4.	Agree	8	26.67	26.67	66.68
5.	Totally agree	10	33.33	33.33	100
	Total	30	100,0	100,0	

From 30 respondents, 10 of them totally agrees that their colleagues have a good opinion about them, which is 33.33%, 8 of them agrees with it, which is 26.67%, 8 of them neither agree or disagree, which is 26.67%, 2 is rarely agrees, which is 6.67% and 2 of them generally not agrees with the statement, which also makes 6.67%.

Table 8 I am satisfied with relationship among employees and managers in my company

		Frequency	Percent	Valid Percent	Cumulative Percent
1.	Does not agree	2	6.67	6.67	6.67
2.	Rarely agree	8	26.67	26.67	33.34
3.	Neither agree nor disagree	10	33.33	33.33	66.67
4.	Agree	4	13.33	13.33	80
5.	Totally agree	6	20	20	100
	Total	30	100,0	100,0	

From 30 respondents, six was completely satisfied with relationship among managers and employees in company, which representing 20%, 4 of them agrees with it, which makes up 13.33%, 10 respondents neither agree nor disagree, which is 33.33%, eight rarely agrees and 2 does not agree with the statement, which makes up 6.67%.

COMPLIANCE THE RESULTS OF RESEARCH WITH STUDY HYPOTHESES

On the fundamentals of these results follows that the the basic hypothesis: There are bad interpersonal relationships in the manufacturing organization JSC "Tehnika" - is accepted considering results of the surveys and judgment of majority (33.33% of them were dissatisfied with the relations + 43.33% of those who are totally satisfied and large number of those who are either satisfied nor dissatisfied) employees are not satisfied with communication and interpersonal relationships. Specific hypotheses:

- Poor interpersonal relationships have destructive influence on the work of employees - is accepted regarding to a large number of employees who consider that they will better do their jobs when the interpersonal relationships were better.
- Poor communication is a hierarchical conditional - is accepted because most employees believe that there are barriers within communication with management, and that there are conflicts between managers and employees in their company because of different attitudes.
- In the manufacturing organization JSC "Tehnika" from Kula, there is a sense of community and belonging to the organization – can not accept, considering that 60% of the total number of employees are not satisfied with their working group and relationships with colleagues.

CONCLUSION

Survey concerning the satisfaction with interpersonal relationships in the enterprise FAO "technique" was made to provide results if there are bad interpersonal relationships in this organization. Since the organization in the manufacturing organization JSC "Tehnika" from Kula is bureaucratic miscommunication occurs between hierarchical levels. Over 70% of respondents thought that they would better do their job if the interpersonal relationships were better.

The positive thing of all is that employees want to establish better interpersonal relationships, indicated by the fact that about 60% of them respect their colleagues and their opinion is very important to them. There are only 7% of them who said that after working hours they spend some time with their colleagues. This could be improved by organizing some internal meetings that would create a sense of community and belonging to the organization.

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KNOWLEDGE MANAGEMENT

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ABSTRACT

Knowledge management is popularized and has been spread across the industrial and the information research world. Organizations understand the significance of intellectual capital that is managed efficiently in order to improve the entire organizational performance by aligning the ability of employees in accordance with the overall business strategy. Knowledge management is a concept which is still constantly developing, as a number of firms proceed with overlapped information.

Key words: knowledge, management, knowledge management.

INTRODUCTION

Knowledge management is vital to reckon the organizational resource capabilities, align the organizational business processes, encourage innovation, and strengthen the social capital of the firm. Organizations that are reaching at the top level and have the competitive edge in the industry are better in their own dynamic capabilities. Dynamic capability or an organization refers to its abilities that are necessary for integrating, building, and reconfiguring the internal and external core factors that help to meet with the fast changing environments.

Knowledge management is a concept which is still constantly developing, as a number of firms proceed with overlapped information. Knowledge management is gradually becoming a vital business function for a number of organization s as they now understand that competitiveness depends on efficient management of intellectual resources . The organizational knowledge may be managed to add value and competitive advantage(s) of organization to create, spread, and apply all aspects of knowledge to achieve its overall goals.

KNOWLEDGE MANAGEMENT

Knowledge management is a concept which is still constantly developing, as a number of firms proceed with overlapped information. Knowledge management is gradually becoming a vital business function for a number of organization s as they now understand that competitiveness depends on efficient management of intellectual resources. The organizational knowledge may be managed to add value and competitive advantage(s) of businesses in an information-intensive society. Knowledge management enables the organization to create, spread, and apply all aspects of knowledge to achieve its overall goals.

The mechanism of organization s based on knowledge stresses upon the fact that knowledge is regarded as a central resource which drives organizations towards sustainable competitive advantages that link the knowledge to the organizational tasks. The mechanism further reveals that the knowledge in context of organization can also express technology, culture, and structure. Most of the studies on knowledge management throw light on major areas of the concept that contribute to its success. Furthermore, strategies have been devised which pour light on the meanings, objectivity, and importance of knowledge management practices in order to create, incorporate, distribute, and protect knowledge.

Knowledge management is also used in managing organizational knowledge to generate and enhance business, and to create competitive advantage. Due to the rapid changes in a business environment, sustainability of an organization is possible only if the knowledge management trademark is utilized (Grant, 1996). Knowledge management allows a firm to create, communicate, and apply knowledge of all kinds to achieve business objectives. The ability of the firm of integrating its intellectual assets for capitalizing its core competencies is necessary for persistent competitive advantage in the market. Kirk Klasson explains knowledge management as the ability by which greater value can be created and retained from core competencies of business. Knowledge management labels business issues and problems particularly of its creation, administration, improvement of work processes and practices, and produces innovative products and services. It also allows firms to retain, enhance, and manage the relationships with current and new customers, and also with the stakeholders of the organization.

MODERN KNOWLEDGE ORGANIZATION

Modern organizations in the knowledge era is one that learns, remembers and acts on information and knowledge available at the best possible way.

Learning organizations are those that have the greatest chance for success and progress in the future, where people continually expand their capacity to produce the results you desire, where new and expansive ideas of caring, where collective aspirations released and people are constantly practicing how to learn together. Peter Sengija work shows the strength of a company whose managers are ready to create "a learning organization." The ability to learn faster than competitors may be the only sustainable competitive advantage in today's business environment.

Drucker says that the nature of knowledge in the ever-changing. The dynamics of knowledge imposes the requirement that every organization must be incorporated into the strategy of management changes in the organization. The organization must be exploited and must develop the next generation of change of its own success. Innovation must be organized and directed as a process in the modern organization. Modern organization consists of specialist knowledge in that it follows that it must be an organization of equals, not superiors and subordinate organizations. Drucker pointed to the evolutionary process of change in the concept of knowledge. Previously, knowledge was related to the figure now is about the work, and it became a resource and tool. Knowledge is the current criteria of public good. At the beginning of knowledge is applied to the processes and tools products. This was the basis of the industrial revolution.

The goal of a modern organization is that all business processes are viewed as process knowledge. This includes knowledge creation, extension, upgrading and implementation throughout the organization. Modern organizations are seeking ways to create additional value through the identification, implementation and use of knowledge in a unique way, a process that is part science, part art, and partly luck. Organizations and their managers should strive to create a more explicit knowledge, which is collective in nature. Such knowledge is introduced into the operation can not disappear in the way an individual can leave an organization. Explicit knowledge is contained in the data bank, information and knowledge of an organization are between 10 - 20%, and applying the concept of knowledge management this can be doubled [3].

In the era of knowledge based businesses a competitive advantage in knowledge and the exploitation of opportunities for the exploitation of which is essential knowledge. The emphasis is on knowledge as a resource and what companies need to provide:

- Innovation by encouraging the free expression of ideas,
- Improving services provided to consumers,
- Increase revenue through better marketing of products and services to market,
- Decrease employee turnover by recognizing the value of employees' knowledge and rewarding them for activities related to knowledge management,

- Improving the operations and reduce costs by eliminating redundancy and unwanted processes.

CONCLUSION

Companies a competitive advantage in the era of knowledge based on knowledge and exploitation of opportunities for exploitation which is necessary knowledge. Connecting people who have specific skills and knowledge becomes imperative for managers in their efforts to provide a sustainable competitive position. Knowledge, innovation and flexibility are essential for not only for growth but also survival of the new, modern organization

The new organization includes competitiveness in key skills, but also individuals who are carriers of ability. Individuals must constantly improve their knowledge and to build as individuals who are carriers of the ability of the organization - that the organization is a set of successful individuals. The organization must focus on narrow market niches - you need to see less market segment , focus your energy on them, meet their requirements and market them to exploit.

Learning organizations where people continually expand their capacity to produce the results you want, have the greatest chance for success and progress in the future. The ability to learn faster than competitors may be the only sustainable competitive advantage in today's business environment. Individuals must constantly improve their knowledge and to build as individuals who are carriers of the organization's ability-successful organization is a set of successful individuals. Organizations and their managers should strive to create a more explicit knowledge, which is collective in nature. Such knowledge is introduced into the operation can not disappear in the way an individual can leave an organization.

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THE ROLE OF HUMAN RESOURCE MANAGEMENT IN PROFESSIONAL DEVELOPMENT AND PROMOTION OF WOMEN IN ORGANIZATIONS

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ABSTRACT

In the past decades development of information technologies, increased international competition on the free market, globalization and businesses expanding outside of their countries of origin have lead to significant changes in the societies all over the world. All these changes and the world economic and social crisis have to changes in the demographical structure of the work force, raising the issue of engaging human resources, especially women, into social and economic development. Responding to these changes and aiming to create a high level of competence, organizations today face the challenge of incorporating diversity management. Human resource management, through its policies and procedures based on diversity management, can recruit, motivate, develop and retain talented employees for all social groups, and especially women. The aim of this paper is to present and analyze how policies and procedure developed by the human resources management influence professional development and promotion of women in organizations. The paper will especially analyze four types of policies and procedures: equal opportunities, development possibilities, formalizing the human resources management system and work-life balance and their influence on professional development of women in organizations. At the end, the paper will present potential avenues of further research in this field.

Key words: women, human resources management, human resources management practices, diversity.

INTRODUCTION

In the past decades many countries have faced challenges of globalisation, development of information technology and dynamic business environment. These changes together with the global financial and social crisis have brought about a change of demographical structure in the work force, raising the issue of engaging the human capital, especially women, in the social and economical development. The strength of successful and sustainable organisations is based on human capital and participation of all, women and men. Diversity management concept was the main topic of a publication titled “ Work Force 2000: Work and Workers for the Twenty-First Century”, indicating that organisations willing to maintain their competitiveness should change their policies and procedures in human resources management (HRM) in relation to demographically diverse work force (Johnston , Packer, 1987). HRM through its policies and procedures based on diversity management can recruit, motivate, develop and retain talented employees from all social groups and especially women.

The aim of this paper is to present and analyse how different HRM policies and procedures applied in organisations influence professional development and promotion of women in organisations. The paper will especially analyse four types of policies and procedures and their influence on professional development of women in organisations: equal opportunities, carrier development opportunities, formalisation of HRM system and work - private life balance. At the end, the paper will present the path for further research.

POLICIES AND PROCEDURES IN HUMAN RESOURCE MANAGEMENT IN PRACTICE OF ORGANIZATIONS AND WOMENS' CAREERS

The most important policies and procedures of HRM in any organisation relate to: recruitment, selection, training and development, carrier development and employee retention (Fine, 1995, Heneman et al., 1996). In the context of diversity management all these HRM activities can focus on women as employees but also on other social groups.

In the process of recruitment, organizations can undertake different activities to identify and attract women and members of other social groups. In this context, organisations can advertise in publications aimed at women, participate in job fairs or hire recruitment agencies specialised in seeking highly qualified women and/or other social groups (Fine, 1995, Equal Opportunities Commission, 2004). Organisations can create an attractive environment for women as future employees with diverse recruitment teams, brochures, web sites and other promotional material developed on diversity management concept (Perkins et al., 2000).

In the process of selection of candidate organisations can explore if women are generally employed in certain positions more than persons from other social groups. If that turns to be the case, organisations can analyse the reasons and develop strategies to improve diversity in the selection process (Fine, 1995, Equal Opportunities Commission, 2004). In addition organisations can create recruitment teams with members from different social groups, improving the understanding how candidates react to a divers working environment. Structured interviews can also improve the diversity concept, using identical sample of questions on all candidates help future employees to demonstrate their abilities and skills.

Training and human resources development are important segments of HRM as they can include historically excluded social groups and especially women in different training and development programs. One of the programs is leaderships skills training as an important step in carrier development of employees with leadership potential, leading further to development of top management based on diversity principles (Fine, 1995, Konrad, Linnehan, 1995a). In addition, leadership skills training program developed specifically for women can help them develop their leadership abilities and skills, leading to leadership positions in organisations (Vinnicombe, Singh, 2003).

In the process of carrier development organisations should ensure that all employees, from all social groups, are included in the carrier development process (Fine, 1995, Konrad, Linnehan, 1995a). In addition, managers in the organisation can organise individual meetings with employees to develop individual carrier development plans (Perlmutter et al., in press).

In employee retention it is important for every organisation to treat all employees equally and fair (Konrad, Decktop, 2001). Organisations should provide equal access to training and career promotion to all employees from all social groups. From diversity management aspect, organisations can research if women or persons from other social groups are leaving the organisations more than others. Based on exit interviews with employees the organisations can learn of the reasons and can develop strategies to retain employees in the future (Fine, 1995, Konrad, Linnehan, 1995a).

THE ROLE OF POLICIES AND PROCEDURES IN HUMAN RESOURCES MANAGEMENT ON PROFESSIONAL DEVELOPMENT OF WOMEN

Based on a large number of researches we can specify four types of HRM policies and procedures relating to professional development of women and generally other social groups: 1) equal opportunities; 2) carrier development; 3) formalisation of HRM system; and 4) work – private life balance.

Equal opportunities

Numerous researchers looked into whether government equal opportunity programs have positive effect on professional development of women (Leck et al., 1995, French, 2001; Leck, 2002). These programs had a positive effect on development of HRM policies and procedures in organisations incorporating diversity management concept (Konrad, Linnehan, 1995a; Holzer, Neumark, 2000). In addition, research has shown these programs contributed to employing more women and members of other social groups. In the context of Canadian organisations who, incorporating broad equal opportunities programs, hired more women than others, especially women with disabilities and women from minority ethnical groups (Leck, Saunders, 1992). In the context of USA, the research has shown that organisations, aware of possible legal procedures based on failing to implement the obligations from equal opportunity programs, have more women in leadership positions and employ more persons from minority social groups compared to organisations who are not aware of possible repercussions (Konrad, Linnehan, 1995a). In addition, organisations with positive attitude towards equal opportunity programs tend to develop gender specific strategies through mentorship and networking in order to overcome prejudice against (French, 2001).

Carrier development

Proper training and carrier development have a very positive effect on women carrier development, as confirmed by numerous researches. Research in a large multinational company specialised in financial services point that personal growth possibilities represent an important condition in carrier development of women and men (Lyness, Judiesch, 1999). Training and personal growth possibilities are directly related with advancement of women to management positions (Metz, Tharenou, 2001).

Mentorship as an important factor in professional and managerial development has an especially positive influence on carrier success of women (Lyness, Thompson, 2000; Tharenou, 2005), but women also have more obstacles in gaining benefits from mentoring compared to men (Ragins, Cotton, 1991). Ragins and Cotton (1999) established that women, compared to men, gain less benefits in carrier development from learning and communicating with a formal mentor than informal mentorship.

Access to professional networks as source of knowledge and information is very important for carrier development (Brown, Konrad, 2001a, 2001b). Research on internal and external professional networks of women and men in management in large organizations revealed the segregation among them and the fact women have less access to managers in higher positions mostly made of men (Burke et al., 1995). In support of this research Linehan (2001) established that women managers in Europe consider lack of possibilities to network with senior management in organisation a significant disadvantage in carrier development.

Formalisation of HRM system

Formalising the decision making process about employees has positive effects on carrier development of women in organisations. In addition, Reskin and McBrier (2000) indicated, if organisations use formalised recruitment methods, especially in vacancy advertisement, and if they use recruitment agencies they are likely to have more women in management positions. The level of formalisation in the compensation process has positive effects on equal salaries for women (Elvira, Graham, 2002). However, the research in medical care indicated that informal compensation process, when combined with greater dispersion of salaries, resulted in lower salaries for women doctors (Yang et al., 2005). To summarise, research indicate that formalisation in HRM decision making process has a positive effect on professional development of women in organisations.

Balancing between the professional and private life

Based on numerous research we can safely say that 2/3 of women in the world, and possibly more, take care of family members and perform household jobs (Geist, 2005; Lee, Waite, 2005; Li, 2005) making work – private life balance very important to professional development of women. Forming a family has a strong influence on women carrier development, with varying effect in different societies. In USA marriage does not influence the number of women employed but the arrival of children does influence the number of hours women are paid for (Cohen, Bianchi, 1999), while in China, marriage and children have little influence on the composition of woman in the work force (Yi, Chien, 2002). Trying to balance professional development with family obligations women are looking for options to improve the work – private life balance. Organisations are trying to adapt to the changes with different policies, especially with young employees who are trying to maintain balance between work and other aspects of life (Smola, Sutton, 2002).

Research shows that benefits from work – life balance has positive effects on women, but also other employees. Holtzman and Glass (1999) indicated that longer maternity leave, flexible working hours and the possibility to work at home have a positive relation with job satisfaction. Dreher (2003) also indicated that benefits from work – private life balance in 1994 had a positive relation with number of women in senior management positions in 1999.

Summarising, benefits from work – private life balance have positive effects on job satisfaction among women but also other employees and can benefit organisations with reduced workforce drain.

CONCLUSION

Numerous researches indicate that the said HRM policies and procedures have positive effects on professional development of women and their carrier advancement. The positive effect of HRM policies and procedures is reflected in the process of recruitment, selection, training, development, carrier advancement and retention of employees. Analysing four types of HRM policies and procedures presented in the paper indicate that each of them have positive influence on professional development of women and their carrier advancement, especially in the aspect of mentoring, professional networking, formalisation of HRM system and work – private life balance. To summarise, it is important to point out the potential for further research. Researches so far were not able to explain how the application of HRM policies and procedures based on diversity management connect with the business strategy of the organisation. Having that in mind, HRM should have a strategic approach to creation, implementation and evaluation of the said policies and procedures.

Specifically in relation to HRM and professional development and promotion of women in organisations the researcher so far have mainly focused on white women, representing majority of women. Future research should include the problems relating to women from different ethical groups and women with disabilities in their analysis, implicating that HRM practice should be adjusted to women from different social groups (Proudford, 1999). The HRM practice aimed in removing obstacles in carrier development of white women should be adjusted to include women from different ethnic groups (Bell, Nkomo, 2001).

Important aspect in research relates to the age differences among women. Negative stereotypes about older women have negative effect on both man and women (Perry, Parlamis, 2006), indicating that those stereotypes are more prominent in older women than older men (McKelvie, 1993). We can conclude that outcomes in professional development are gender sensible and future research should take that into account. Another important aspect is treatment of persons with disabilities at work, especially women. Research in Canada indicated that women with disabilities faced additional humiliation at work due to their disability (Carr et al., 2003). Additional research

is necessary to explore the efficiency of HRM practice towards employees with disabilities, especially women.

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BENEFITS AS AN INSTRUMENT OF MOTIVATION

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ABSTRACT

The development of the global economy leads to the spread of multinational companies operating in all parts of the world. It follows that multinationals perform relocation of significant resources to other countries, from which eventually derive a profit from the business operations performed there. The influence of growth of international economy has become a major force in business and therefore human resources management. This is a fact with which they must reconcile and face all the multinational companies, and to coordinate policies and procedures to effectively maintain a balance between the needs and desires of citizens of Host Country Nationals, Parent Country Nationals and Third Country nationals. Compensation system is one of the most complex areas in the field of management at the international level of human resources. The reason that makes this system so complex is the need for harmonization of payment systems with local laws and customs of persons for compensation of employees, which also has to fit with the global policies of multinational corporations. In addition to the payment system, it is necessary to carefully consider using incentives as a motivation and reward system for employed persons belonging to one of the above three categories of citizens.

Key words: benefit, IHRM, motivation, job

INTRODUCTION

The system of compensation represents one of the most complex fields in human resources management in the international environment. Reasons making this system complex are the need to harmonize the system of paying with local laws, as well as the habits and the policy of compensation to the employees in multinational companies. The global business growth brings to new challenges with which human resources managers in multinational companies face as, up to now, their business have been determined by the national borders. They face different political systems, laws, tax policy, economic environment, habits and the dominant cultural environment where multinational companies do business.

Business globalization brings many challenges before human resources managers in multinational companies, especially in the field of motivation and the system of compensations and benefits. They focus on strategic targets of their multinational companies, developing the adequate plan of motivation-compensation, developing staff and their permanent training. The plan of compensation must be appropriate to attaining goals in the field of staff policy, as well as the company's plans. The system of compensation has to keep selected employees and their motivation to perform their obligation in accordance with set business plans of the multinational company.

Benefits, as components of the system of compensation, have represented for long the field of harmonization of compensation policies by multinational companies. Multinational companies often face the variant or confrontational goals. On the one side, the company tries to control costs caused by compensation packages, while, on the other side, it must be objective and fair to its employees, providing them the packet of compensations that will be enough interesting to attract, keep and motivate the best workers. This challenge is very complex for all multinational companies and it represents the

field of constant skill to harmonize wishes and possibilities of the company, as well as job satisfaction, especially selected staff of the company.

MOTIVATION AS AN INSTRUMENT TO PROVIDE THE REALIZATION OF ORGANIZATIONAL GOALS

The people, or the staff, are the most important and the richest resource in an organization. The employees make the basis of an organization and they are greatly included in realizing the economic growth and development. As successful business can be largely in the direct correlation with the employees, so there is the need to determine some factors, i. e. motives that exert influences on efficient engagement of the employees. Therefore, managers, today, besides the role of leaders, at the same time, have the role of psychologists with a view of recognizing the employees' behavior and their motives. Just motivation, according to Stoner J., Freeman E., Gilbert D., (1995) represents the resource that managers use to coordinate relationships in the organization. In fact, recognizing inclinations of the employees, they can determine working tasks, as well as rewards with the purpose of engaging the workers.

Considering the relationship between motivation and rewards as the driving force, we get impression that the motives of individuals can sometimes be very complex. Namely, the employees can be motivated by material property as cars, houses, flats, while, at the same time, they can wish a higher level of self-respect, higher social rank, etc. just these rewards have the role of motivators, which stimulate the individual to some kind of behavior. That is the reason why Weichrich and Koontz H. (1993) consider that managers must use the motivators that stimulate the staff to work successfully for the enterprise where they work.

Except motivation of the employees, which is one of managers' tasks, there is a problem of self-motivation that can be perceived through the prism of the individual's character. The workers can feel the satisfaction in their work, showing simultaneously the low level of motivation, because motivation relates to the effort oriented toward the satisfaction of wishes, while satisfaction can be identified with the fulfillment that the worker feels after satisfying needs. Therefore, managers have a complex task to create an appropriate environment oriented toward attaining goals of the organization through the process of motivation of the workers that brings to attaining goals in the organization, i. e. the employees' satisfaction.

Lyman and Edward Lawler set one universal motivation model, based on the theory of expectation and strengthening. According to Porter and Lawler (1968), the cited model includes six fundamental components: efforts of individuals, rewarding, recognizing the role in the process of work, characteristics of an individual, and the level of self-satisfaction. This model supposes that the size of efforts representing the sum of motivation and the quantity of energy necessary for performing the task depend on the value of reward increased for the quantity of energy that every individual considers sufficient to perform the task. The model supposes the regular distribution of the rewarding structure by managers so the cycle of efforts, realization, rewards, as well as satisfaction of the employees, could successfully integrate in the framework of an organization.

Just the cited model can be considered and recognized as one of motivation models when creating successful compensation policies, which are available to managers in the organization. Benefits in the form of rewards, available to the employees in the organization can be seen through the prism of motivators that activate and orient further activities for attaining goals of the organization.

BENEFITS AS A COMPONENT OF THE SYSTEM OF COMPENSATION

It is not surprising that business globalization often requires moving some of the employees abroad as expatriates, or residents based in foreign countries in order to do business better in the wide world. In their professional careers, managers, dealing with compensation policies, must be well familiar with compensation techniques for employed expatriates. As companies widen their business in the world, it is very important to know the laws and norms that define compensations and benefits in these countries.

Creating compensation policy represents the process producing the constant interest confrontation that unavoidably appears in the relation the company vs. employees. When creating these policies, enterprises try to protect their interests, and this form of behavior results mostly in the need to satisfy the employees' goals. According to Dowling and Welch (2004), enterprises are oriented, before all, toward harmonizing compensation policies with their own strategies providing, in this way, the transfer of employees, taking care of the enterprise's cost policy. The employees' interests can be amounted to financial protection in the form of benefits, social security, etc. Naturally, there are some disagreements between companies and employees during defining goals of compensation policies, just because the positions of both sides point to such sort of behavior.

The literature relating to international human resources management points to a sort of recommendation to companies to give up very rigid attitudes when creating compensation policies. They will not take into consideration only conditions in the home country, which, up to now, have been the basis for creating compensation policies, and, at same time, the obstacle between employees and companies. Namely, Dowling, Festing and Sr Angle (2007) cite the fundamental program components of international compensations:

- Basic salary,
- Stimulus for serving abroad,
- Compensations (flat, travel to the country of domicile, education of children, moving expenses), and
- Benefits.

The major problem when defining the package of benefits by the company is a pretty unequal and different approach to the employees' benefits, which can be seen in the practice of some countries. It includes differences in benefits given by the governments of some countries and taxes at the level of the worker and the level of the company. The governments can also provide many benefits provided by employers. Benefits give possibilities for health care, pension schemes, annual vacations, etc. If the government of a country gives the possibility of some kind of benefits, then there is no need to give the same benefits by the companies.

It is noticeable that the problem of compensations and benefits of expatriates is a complex and very delicate research field. This work points to the fact that the question of compensations and benefits in contemporary business is very complex. It is also proved in the practice some multinational companies. Today, there is a very complex task for managers of international benefits. It firstly relates to information about benefit systems in some countries. Benefits express their complexity through their structure, i. e. the row of elements representing together the sensible field for managers of international benefits. The complex structure of benefits is expressed through the following: number of working hours realized at the level of one year, privileges for annual vacations and holidays, insurance, pension schemes, paid and unpaid leaves, benefits in share distribution, etc.

The next part of the work pays attention to the data received by researches of the Cranfield Network on International Human Resource Management (CRANET) for the period from 2008 to 2010. The data collected and processed in more than 30 countries relate, before all, to the proportional survey of some elements of benefits within the framework of companies' compensation policies in some countries. Table 1 point to the data relating to childcare within the framework of companies, childcare allowances, parental leave, pension schemes, and private health care.

BENEFITS AS GENERATORS OF COMPANIES' COMPETITIVENESS ON THE INTERNATIONAL LABOR MARKET

Companies can provide benefits used today when creating compensation policies. At the same time, governments can regulate it by the laws. The next Table gives the survey of data relating to proportional sums of companies within the framework of a country, which, in its compensation policies, provide some sort of benefits over the legally issued conditions. By creating strategic compensation packages, companies try to realize competitiveness on the international labor market. Table 1 shows the data for 30 countries where CRANET carried out the research of human resources. Thirty countries were included in this research and their categorization was analyzed for EU, Europe and Non Europe.

Table 1: Proportion of companies with schemes in excess of statutory requirements per country

	Workplace Childcare	Childcare Allowances	Career Break Schemes	Maternity Leave	Paternity Leave	Parental Leave	Pension Schemes	Private Health Care
Austria	12%	8%	23%	68%	60%	74%	56%	35%
Belgium	10%	8%	41%	51%	48%	50%	81%	67%
Bulgaria	2%	22%	5%	50%	17%	22%	21%	21%
Cyprus	0%	1%	12%	56%	21%	35%	52%	70%
Czech Rep.	0%	0%	11%	17%	0%	15%	51%	9%
Denmark	3%	2%	58%	66%	64%	56%	75%	63%
Estonia	2%	6%	37%	31%	35%	31%	4%	29%
Finland	8%	2%	26%	40%	33%	45%	31%	46%
France	3%	16%	13%	51%	45%	45%	27%	75%
Germany	17%	20%	23%	76%	72%	62%	92%	43%
Greece	7%	58%	10%	62%	39%	64%	41%	79%
Hungary	4%	14%	14%	21%	31%	25%	50%	31%
Lithuania	3%	8%	3%	30%	30%	13%	11%	26%
Netherlands	8%	19%	12%	65%	32%	78%	58%	42%
Slovakia	3%	20%	9%	28%	25%	31%	41%	31%
Slovenia	1%	2%	1%	72%	74%	69%	51%	11%
Sweden	1%	0%	2%	41%	41%	19%	46%	31%
UK	11%	27%	26%	50%	49%	36%	72%	52%
Iceland	2%	1%	14%	23%	19%	24%	13%	26%
Norway	8%	5%	10%	25%	30%	23%	68%	25%
Russia	3%	16%	29%	81%	42%	68%	16%	77%
Serbia	0%	0%	50%	66%	50%	61%	39%	5%
Switzerland	13%	21%	11%	81%	41%	32%	77%	42%
Israel	3%	5%	8%	21%	11%	27%	24%	21%
Japan	48%	19%	56%	90%	97%	84%	74%	89%
Philippines	4%	4%	15%	58%	54%	46%	54%	81%
USA	7%	5%	4%	25%	22%	23%	17%	13%
Australia	2%	2%	18%	59%	54%	52%	49%	14%
Taiwan	10%	7%	89%	90%	87%	70%	62%	32%
South Africa	4%	3%	6%	90%	69%	61%	84%	74%

Source: CRANET Survey on Comparative Human Resource Management, International Executive Report, 2011.

Comparing the results received by this research, we can notice the fact that there are no enterprises in Serbia giving more benefits for Workplace Childcare and Children Allowances than regulated by the Law for this field. Serbia is not the only case and it can be seen in this Table where results point to some countries, which have very developed systems of childcare, but also companies in these countries do not feel the need to provide these benefits over the legally regulated conditions. These countries are Sweden, Norway, Island and Hungary. In other countries, involvement of the employers is regulated through private collective agreements, before all, in Austria, Germany and Holland, while liberal economies provide only minimum statutory standards. Companies in the U.S.A., for instance, combine lower employer involvement with only minimum statutory provisions.

For different kinds of leaves, the results in most countries point to the high percent of companies offering different arrangements of leaves and pension schemes. The high percents are characteristic for Japan, Taiwan, Germany and Switzerland, while, on the other hand, within the framework of countries, as Czech Republic and the U.S.A. there are not too many companies that offer these arrangements. The percent of companies offering these kinds of arrangements in EU varies between 17% and 78%. Considering these data, we can draw the conclusion that the Republic of Serbia with 66.5% and 60% relating to parental leaves falls into the group of highly positioned countries when considering the percent of companies offering these kinds of benefits.

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Private health care in the Republic of Serbia is not at the appropriate level. Only 5% companies in Serbia offer their employees this kind of benefits. Based on this negative record, Serbia is the country with the fewest percent of companies offering this kind of benefits. Except of Serbia, in the lower part of the Table are the Czech Republic with 9% and Slovenia with 11%, while the percents of other countries, EU members vary between 21% and 79%.

CONCLUSION

The increasing tempo of globalization requires from companies the need to develop efficient programs of compensations and benefits. Although globalization, as a phenomenon, does not represent an integration process that has recently seized the world economy, its escalating character has caused that multinational companies pay special attention to international labor trends, as well as all the advantages and disadvantages generating from transfer of the employed from one country to the other one.

Together with the increasing number of enterprises, widening their business in the international area, the need to understand attracting and keeping the employees through development of the system of compensations is also increasing. Business internationalization causes opening new questions, as salaries for the employed. As our country is not an exception for the foreign business influences, and it represents one of elements involved in the process business globalization, it is expected that the question of compensations and benefits in the next period be considered and processed by companies realizing economic activities in our country. Actuality of the topic in the work is increasing day by day, both for labor influx and labor drain in foreign countries, especially in multinational companies.

Business internationalization of the companies doing business in Serbia will unavoidably cause the need to select and train new staff, i.e. managers who will deal with the question of compensations and benefits. As we are convinced in the complexity of international human resource management in this region, future managers will not have an easy task when trying to create new programs of compensations and benefits. Namely, although this work cites the most used approaches, their efficiency and successfulness cannot be guaranteed when creating new programs of compensations and benefits. Skill, creativity, appropriate management for creating compensation programs, especially for every country; it requires well-skilled and informed managers of compensations and benefits.

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INVESTIGATION OF THE CONFLICT IN THE ORGANIZATION

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ABSTRACT

Stimulating the desired organizational behavior is one of the main goals and tasks of both managers at all levels in the organization and as well as the organization as a whole. Analysis of behavior patterns of the staff in the organization points out to the possibility of reviewing and resolving the behavior of employees. In every organized human activity, individuals and the group of individuals interact, and these interactions often result in conflicts. Conflicts are generally present social phenomena, which occurs at all levels and in all aspects of a social life. For managers it is important to know the nature, sources and consequences of conflicts, as well as the ways to control, channel, and resolve them. This knowledge represents the indispensable asset for executives of the organizations, for the level of conflict stands as a critical factor of organizational effectiveness. For that reason, managers have an important task to optimize the level of conflict within the organization.

Key words: conflict, conflict research

INTRODUCTION

Conflict is a process that takes place between two or more individuals (or groups, organizations, states) when important differences come to the surface making a living in a harmony impossible. (Vasilache, 2004)

Conflict is a phenomenon that is increasingly encountered in organizations, and is one of the main causes of employee dissatisfaction. Organizational conflict represents disagreement between two or more members of the organization that arises from the fact that they share limited resources, tasks that have different goals, attitudes or perceptions. Conflict may be viewed as a form of opposition of the opposite parties, based on the incompatibility of goals, desires and values of opposite parties.

There are two basic categories of causes of conflict, namely (Grubić – Nešić, 2005)

- Interests, material goods, power, position, privileges and needs of vulnerable
- Personal traits that are manifested through a scale, opinions, attitudes, emotions, concepts.

The organizational structure and organizational culture play the most important role in reducing the possibility of getting into a conflict within the organization. Conflict can never be completely eliminated. Due to differences in interests and attitudes, as well as competitiveness over resources, conflict can never be completely eliminated.

METHODOLOGICAL HYPOTHESIS

We analyzed the conflict in a work organization, in terms of determining the reasons for its formation, the manner in which it manifests, the ways to resolve and manage conflicts within a specific organization. Thus, the focus of research is conflict in the organization as a phenomenon that is increasingly encountered within organizations, and stands for one of the main causes of employee dissatisfaction. The study aims to provide new data on conflicts within the organization, in terms of gaining an insight into the current situation and finding ways for their resolving. Research goal is set in three levels:

1. Establish conditions that result in a conflict situation within the organization.
2. How employees perceive a conflict situation.
3. The way to resolve a given conflict situation

Research hypothesis is defined in accordance with defined object and purpose of research. The basic research hypothesis: Conflicts exist within the organization. The research instrument was a questionnaire based on Likert scale. In this survey, the most used three-level scale, four-level scale of answers, although some subject matters are formulated in the form of five-level and in some even ten-level scale.

CONFLICT RESEARCH

The study was conducted on a sample of thirty employees of a manufacturing organization JSC "Tehnika" from Kula. The survey was conducted in 2008 when this company employed forty-eight employees. We can use this data to confirm that sample is representative and that data collected authoritative. The sample represented the respondents of both sexes, different age, different years of service and employment.

PPRESENTATION OF THET RESEARCH RESULTS

Selected questions and results from the questionnaire

Table 1: Age of respondents

Age of respondents (in years)	Frequency	Percent
Up to 30	0	0
30 – 40	7	23.33
40 - 50	9	30.00
50 - 60	14	46.67
Total	30	100

Based on these results we can conclude that 53.33% of the organization consists of people aged thirty to fifty, no employee younger than thirty, and even 46.67% of employees who are between fifty and sixty years old.

- Level of education

Table 2. Level of education

Level of education	Frequency	Percent
University degree	2	6.67
College degree	2	6.67
Secondary education	12	39.99
Highly skilled worker	4	13.33
Skilled worker	5	16.67
Primary education	5	16.67
Total	30	100

The organization has 13.34% employees with have high i.e. higher level of education and the remaining 86.66% of employees has a lower level of education.

- Assessment of working environment

Table 3. Assessment of working environment

What are your relationships with co-workers	Frequency	Percent
It is important to me that my co-workers are fair team players, while I have no interest in socializing with them privately	15	50.00
I think I would do my job better if interpersonal relationships were improved	10	33.33
I socialize with my co-workers after working hours	5	16.67
Total	30	100

Based on the results we can conclude that one third of respondents feel that the atmosphere within the organization is very tense and that assignments are not clear. The number of those correspondents is considerably high in comparison to the total number of respondents for this category of questions. Conflicts can easily arise due to dissatisfaction and anxiety that have a huge impact on dysfunctional conflict.

- Relationships with co-workers

Table 4. What are your relationships with co-workers

What are your relationships with co-workers	Frequency	Percent
It is important to me that my co-workers are fair team players, while I have no interest in socializing with them privately	15	50.00
I think I would do my job better if interpersonal relationships were improved	10	33.33
I socialize with my co-workers after working hours	5	16.67
Total	30	100

Distribution of answers to this question indicates that the relationship between co-workers is highly unsatisfactory, because only 16.67% said that they spend time with co-workers outside the organization.

If we take into account the fact that majority of respondents has been employed for a long period of time, 43.33% over 25 years, and 26.67 between 20 and 25 years, we can conclude that the relationships with co-workers are far from satisfactory , since after so many years spent together they have not befriended yet, 33.33% percent said that they have poor relationships with their co-workers which may indicate that they are willing to come to change, but 50% of them sad that they are not interested in socializing with co-workers privately therefore making it clear that they do not care for changes in the working environment. This group constitutes respondents who are prone to conflicts with other co-workers.

- Relationship with immediate superior

Table 5. What is your relationship with immediate superior

What is your relationship wit the superior	Frequency	Percent
He is willing to listen to ideas and to discuss them together	11	36.67
He shares tasks and is occasionally willing to listen to ideas	13	43.33
We work according to the principle request-report on the realization process of the given task	6	20.00
Total	30	100

From the given table we can conclude that superiors are generally willing to listen to ideas and to discuss them together. Only 20% of respondents said that they cooperate with superiors the principle request-report on the realization process of the given task which is satisfactory because we must take into account the fact that there are workers for who this relationship is much more convenient. It is concluded that the workers are satisfied with the executives who should use this trust to bring the relationship between co-workers on a higher level.

- Aspects of a usual working day

Table 10. Rate important aspects of a usual working day

Rate important aspects of a normal working day	Grade									
	1	2	3	4	5	6	7	8	9	10
Work itself	15	4	-	4	3	-	4	-	-	-
Interpersonal relationships at the working place	-	18	4	6	2	-	-	1	-	-
Active participation in decision making	-	-	6	-	-	7	4	4	3	6
Salary and other compensations	4	2	10	4	4	6	-	-	-	-
Success in job performance	-	7	3	8	4	3	2	3	-	-
Working conditions	4	1	4	8	5	6	2	-	-	-
The possibility of promotion and development	-	-	-	-	9	6	8	4	3	-
leisure	-	-	-	4	-	-	3	7	11	5
Interesting job points	-	-	-	7	3	2	4	9	5	-
Surveillance	-	-	-	-	-	1	1	-	7	21
Total										

Based on these results we can conclude that the job itself is the most important to the workers of this organization. Next important aspect is interpersonal relationship which agrees with the previously obtained results. Workers socialize only during working hours, followed by salary and other compensations. Working conditions is rated as fourth. If all previous conditions are fulfilled, it is clear that there exists a need to succeed in job performance. This need is equally important to parties, workers and the organization as a whole. Workers are a part of the organization, especially in this particular case where workers have spent great part of their life there. Workers are therefore motivated to perform better and fulfill tasks on time.

The sixth place belongs to the possibility of promotion and development. In seventh place, interesting work points which shows the willingness and dedication of workers to do business crossroads, with the purpose of achieving a goal. Active participation in decision making and conflict resolving follows. We have come to the same conclusion as in participation in conflict resolution. Namely, workers do not want to take part in any part of organization that is not directly linked to their own job position. Responsibility is left for managers to find a way to involve the workers in both decision making and conflict resolving, and any other problem organization has. Free time and surveillance are found at the ninth and tenth place, respectively. Surveillance is not pleasant to any of the workers, but it is a must. Workers would perform on a much lower level if trusted and left without surveillance. Performance of the workers would be much more satisfactory if self-control principle is set, which this organization should take into consideration.

COMPLIANCE OF THE RESEARCH RESULTS AND RESEARCH HYPOTHESES

After presentations of research results, level of compliance with the given research hypotheses is approached. The results we have obtained can be interpreted in accordance with the hypothesis from which we started in the first place. Hypothesis that we set has been proved to be in a large part true. Based on gathered data, conclusion is that the general attitude of respondents regarding the conflict in organization is a positive one. Majority of the respondents see the conflict as functional and necessary. They are ready to resolve conflicts they that arise, although they resolve them only if ordered. These results are satisfactory if we take into account the fact that respondents

have been employed for many years in this organization, that they began to work in the environment in which the conflict was not discussed and when there was a belief that conflict can only be dysfunctional. These workers have a broader view and believe that it can be constructive. There is still a fright of getting into a conflict, therefore managers should try to provide them with a proper insight into the subject matter and get only the positive things out of a conflict situation. In this way, workers would get used to such situations and change their attitude towards the whole matter.

CONCLUSION

It is important to understand the nature of the conflict. As it has been previously pointed out, the nature of conflict is twofold. On the one hand, they can lead to violence and have other undesired consequences. On the other hand, they can represent an opportunity to upgrade the existing situation and establish new, more productive relationships in their working environment, place they live or where they might find themselves.

Proposal for conflict resolving consists of suggestion that workers at all levels get additional training in all aspects of functioning of organization, not just the one that had been the subject of the research. Training should be on the matter of conflicts and conflict solving. Both parties, workers and executives, should be familiar with techniques for conflict resolving and thus adequately be informed about the phenomenon. The conflicts do not threaten the organization. Quite the opposite, conflict as a phenomenon if properly managed can be very productive and helpful in both upgrading the work in general, and in improving interpersonal relationships in the organization.

As a personality, a man was never finished and perfect; he is a being of lack. He has no other way to fulfill him self, that is to expand and deepen, but to get in touch with people who differ from him. He can only learn something different from them, to change and develop in terms of understanding the world around him and himself. (Šušnjić Đuro, 1997).

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REFLECTION ON THE OCCUPATIONAL HEALTH AND SAFETY ELEMENTS IN CONTEXT OF CORPORATE SOCIAL RESPONSIBILITY

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ABSTRACT:

Organizations are becoming increasingly aware of a need for social accountability and the advantages it brings about. The contribution of an organization in a society where it does business has become an important aspect of its quality and its ability to do sustainable business. The paper examines the characteristics of social responsibility in the context of the ISO 26000 standard. It pays special attention to occupational health and safety in the social responsibility context.

Key words: Social responsibility, occupational health and safety, ISO 26000

INTRODUCTION

Corporate social responsibility represents a concept by which economic subjects surpass their primary function of acquisition and disposition of profit, and make a positive impact on their working, social and natural environment. Corporate social responsibility essentially represents a consciousness about the new position and the importance of the great organizations in the modern society and about the responsibility which stems from that [1]. The significance of the corporate social responsibility has also been recognized by the International Organization for Standardization which, at the end of the year 2010, promoted the ISO 26000 standard.

Occupational safety and health are usually managed by regulations and regulatory measures. However, business organizations and societies are trying to find additional ways of promoting occupational safety and health, by which they could promote the importance of prevention, i.e. develop and improve the climate and the culture of occupational safety and health. This points to the fact that corporate social responsibility has its place and importance in the field of occupational safety and health.

CORPORATE SOCIAL RESPONSIBILITY

The term „corporate social responsibility” has been widely used since the 1970s, although the different aspects of social responsibility have been the subject of activity of organizations and governments ever since the end of the 19th century. Corporate social responsibility is:

- a concept in which organizations integrate social challenges and challenges connected to natural environment into their business and into the interaction with all the actors (interested sides), on a free will basis [2];

- a concept by which organizations integrate economic, social and ecological imperatives into their daily business, by which they contribute both to the progress of society and their own growth;
- a responsibility for the impact of the decisions and activities of an organization on society and environment, through transparent and ethical behaviour which: contributes to sustainable development, including health and well-being of society; takes expectations of the interested sides into account; it is in accordance with the regular law and the international standards of behaviour; and it is integrated into an entire organization [4].

Corporate social responsibility is defined on three levels [5]:

- the first level encompasses fulfilment of the legal duties (for example taxes, health and safety, workers' rights, consumers' rights, environmental regulations) and industrial standard;
- the second level includes reduction or elimination of the negative effects that business has on society, and risk handling (from violation of human rights or pollution, for example);
- the third level increases the positive effects of business and creation of values through innovations, investments and partnerships directed to social and environmental well-being (for instance, job positions opening, social and economic development and conflict resolution).

Corporate social responsibility is a process in which organizations co-ordinate their relationships with different interested sides, which could have direct or indirect influence on their business. Corporate social responsibility represents business interest as well: through it, the organization strengthens its reputation, it gains greater trust of the investors, it reduces business risks through strengthening the bonds with the local community, it provides loyalty and greater motivation of the employees [3]. That is the reason why corporate social responsibility must be regarded as an investment, not as an expense.

There are three types of corporate social responsibility [6]:

1. Philanthropy, i.e. charity actions and usage of corporative resources with the aim to „do good deeds” (donations, other charity actions or giving the opportunity to the employees to do some volunteer work, for instance).
2. Integration of socially responsible aspects into the business itself, by which the organizations try to combine responsibility with the basic business activities. This includes activities like providing the greatest quality of the product, investment in research and development, application of ecologically pure technologies, development of occupational safety etc.
3. Innovativity in corporate social responsibility, which regards corporate social responsibility as a source of business innovations. This, among other things, includes the activities connected to the energy or material efficiency, as well as with the technologies which use sustainable energy resources.

Corporate social responsibility has arrived to Serbia along with the great multinational companies which do business on our market. The most frequent type of corporate social responsibility in Serbia is philanthropy. The reason for this is the fact that most organizations in Serbia still haven't integrated social responsibility into its business strategically. The strategical approach to corporate social responsibility, however, includes long-term orientation of an organization towards the responsibility for the local community, environment, employees, consumers and market partners [3].

ISO 26000 STANDARD

The importance of corporate social responsibility has as well been recognized by the International Organization for Standardization, which published ISO 26000 Guidance on Social Accountability in November 2010. The same standard has been published here in Serbia in April 2011, under the

name SRPS ISO 26000:2011 Uputstvo o društvenoj odgovornosti (SRPS ISO 26000:2011 The instruction on social responsibility) [7].

The standard could be useful to all types of organizations in the private, public and non-profit sector, regardless of the size and the level of development. Although not all parts of this standard will be equally useful to all types of organizations, the defined key subjects are important for every organization. The standard encourages the organizations to go further than obeying law, through the promotion of mutual understanding in the field of social responsibility. The elements of social responsibility reflect the expectations of the society at the specific moment and for that reason they are susceptible to changes. The basic subjects and questions identified in this international standard reflect the momentary depiction of good practice.

When applying this standard, an organization should be aware of the outer and the inner context of its business, which includes social, ecological, legal, cultural, political, organizational and economic environment. In that way, the organization establishes a better relationship with the environment and, in the immediate environment, it creates additional resources which contribute to more successful functioning of the organization. The consistent obeying of the international standards goes without saying.

ISO 26000 is not a management system standard. It is not suitable neither for certification or regulatory purposes, nor for negotiations. ISO 26000 provides organizations with the instructions on social responsibility and it could be used as a part of the activities in the context of the public policy. These instructions are connected to: the concepts, terms and definitions which are related to social responsibility; to the background, trends and characteristics of social responsibility; to the principles and practices which are related to social responsibility; to the key subjects and questions of social responsibility; to the integration, application and promotion of socially responsible behaviour in the context of the organization and, through its policy and practice, in the field of its influence; by identifying and engaging interested sides; by informing about commitment, performance and other information related to social responsibility [7;8].

The standard consists of seven points, two annexes and bibliography [4]:

- Point 1: The subject and the field of application
- Point 2: Terms and definitions
- Point 3: Understanding of social responsibility
- Point 4: The principles of social responsibility
- Point 5: Recognizing social responsibility and engaging interested sides
- Point 6: Instruction on the key subjects of social responsibility
- Point 7: Instruction on the integration of social responsibility through organization
- Annex A: Examples of the charity initiatives and the tools related to social responsibility
- Annex B: Abbreviations
- Bibliography

An organization should approach the application of ISO 26000 standard by:

- considering the characteristics of social responsibility and its connection to sustainable development (point 3);
- considering the principles of social responsibility (point 4);
- considering the two basic social responsibility practices: recognizing its own social responsibility in the context of its field of influence and identifying and engaging interested sides (point 5);
- analyzing the key subjects and questions of social responsibility, as well as the measures and expectations (point 6);
- striving to integrate social responsibility through its decisions and activities (point 7); that includes practices such as: integration of social responsibility into its own policy, organizational culture, strategies and activities; development of the internal competence in the context of social responsibility; the internal and the external communication about social

responsibility and regular re-examination of the measures and the practices which are related to social responsibility.

CORPORATE SOCIAL RESPONSIBILITY AND OCCUPATIONAL SAFETY AND HEALTH

Corporate social responsibility of an organization means that the organization is responsible for others, but also for itself and for its employees. An organization should have an open and fair relationship with the employees, it should provide the employees a stimulative working atmosphere, healthy human relations and a good communication, in order to create an environment which enables creativity, freedom to express opinions, discussion about problems, giving suggestions for improving the business. Training of the employees, constant learning about new things and skills, skill improvement, but the promotion of talent and personal development of the employees as well is not only the result of good will – it is an obligation of the organization [9].

Corporate social responsibility stresses the uneconomic aspect of the business. The monitoring of the uneconomic aspects and the activities of the organization which are reflected through performances of social responsibility becomes very important for the management of the organization. These performances include: social responsibility performances, ecological performances, ethical performances and occupational safety and health performances [10].

An organization should regulate the questions of occupational safety and health with regulations. The relationship of the organization to that group of regulations points to the level of its socially responsible orientation to occupational protection. ISO 26000 standard points to the importance of corporate social responsibility in the field of occupational safety and health through the key subjects and the questions of social responsibility (organization management, human rights, working internship, environment, „fair” business practice, the questions related to consumers, integration into community and its development).

In the context of the key subject 6.3 – Human rights, eight questions have been discussed:

6.3.10. Human rights, question 8: The basic principles and rights related to work.

In the context of the key subject 6.4 – Working internship, the standards defines the following:

6.4.1. The overview of the working internships

6.4.2. The principles and the reasons

6.4.3. Working internship, question 1: Employment and employee relations

6.4.4. Working internship, question 2: Working conditions and social welfare

6.4.5. Working internship, question 3: Social dialog

6.4.6. Working internship, question 4: Occupational health and safety

6.4.7. Working internship, question 5: The development of the human resources and occupational training

The standard points to all the necessary activities for the efficient realization of all these questions. When identifying the activities the organization should strive to better understand the challenges and dilemmas from the perspective of the individuals and the groups exposed to real or potential risks. After the organization has identified the spectrum of questions which are important for its decisions and activities, it should carefully identify and develop a set of criteria, performances and indicators of occupational safety and health, as well as a set of criteria for the decisions about occupational safety and health performance. The organization may also decide to improve its tools for monitoring and measuring the indicators of social responsibility performance, if the existing ones aren't efficient enough or if they're nonexistent.

The performances of occupational safety and health develop and are researched more versatily along with the growing awareness about: (1) the need of continuous life quality improvement, which includes both occupational safety and health protection and (2) the importance of the

occupational safety and health performances for the sake of the improvement of the economic performances of the organization.

The values of the realized occupational safety and health performances are conditioned by the inner and the outer factors, which could be objective or subjective. The objective factors are social (market and economically systemic), technical (production facet, technical progress, the characteristics of technic and technology), natural (climate), dispositional (innovativity, entrepreneurship, management quality). The subjective factors are organizational in their nature, i.e. everything which influences the performances through the characteristics of the employees and the collective as a whole [10]. The research and the cognition of the nature, the dynamics and the correlation of the objective and the subjective factors of the performances enables an overview of the ways and the trends of their influence, which creates a basis for managing the occupational safety and health performance factors, i.e. the occupational safety and health system.

The organizations with the insufficiently developed systems for managing occupational safety and health have problems with satisfying the demands related to the level of protection, with regards to the non-existence of the infrastructure for the management or the improvement of occupational safety and health. The systems for occupational safety and health management demand interfunctional cooperation with the aim of the continuous protection improvement. The successfulness of reaching the goals related to occupational safety and health depend largely on the presence and the quality of the informational and the documentational streams related to the knowledge about occupational safety and health. The knowledge about occupational safety and health is a significant organizational resource by which the process of the organizational knowledge management is managed. The management of the protection and knowledge about occupational safety and health has positive effects on competitiveness of an organization. These effects are the result of: defining the working procedures and instructions; planning and work management; more productivity as a result of the quality improvement and the reduction of costs caused by accidents; the greater satisfaction of the employees and the end users; the better reputation of the organization, considering that occupational safety and health are especially important for society; the higher level of innovations, as a result of technological and organizational innovations, initiated by occupational safety and health improvement [12].

The knowledge about occupational safety and health, the satisfied and motivated employees are the aspects which provide advantage to an organization compared to the competition, during a longer period of time. At the same time, they point to the high level of occupational safety and health in the context of corporate social responsibility.

CONCLUSION

Corporate social responsibility is an important activity of an organization which influences the evaluation of its business successfulness. ISO 26000 standard (and along with it the identical SRPS ISO 26000:2011) provides instructions and contributes to a better understanding of the questions related to social responsibility. The standard also recognizes the significance of social responsibility in the field of occupational safety and health through the questions and the suggestions about the activities of an organization related to the employees, the working conditions, social welfare, social dialogue, occupational safety and health, humane development and training. The crucial role in creating the framework which stimulates corporate social responsibility is held by the state. The Republic of Serbia has, by creating SRPS ISO 26000:2011, as well as the Strategy for the Development and the Promotion of Corporate Social Responsibility in the Republic of Serbia, for the period 2010-2015, created the frameworks for the coordinated development of socially responsible practice.

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Session C: RESEARCH AND DEVELOPMENT MANAGEMENT

Papers (pp. 183-284):

Dmitriy Treshchevskiy RUSSIAN REGIONS' INNOVATIVE DEVELOPMENT IN CRISIS PERIOD	...183
József Poór, Katalin Óhegyi THE CAFETERIA SYSTEM IN HUNGARY: DEVELOPMENT AND NEW DIRECTIONS	...188
Elizabeta Mitreva, Zlatko Jakovlev CREATION OF INNOVATION CLIMATE FOR IMPROVEMENTS AND INNOVATIONS OF THE BUSINESS PROCESSES IN THE MACEDONIAN COMPANIES	...194
Danilo Obradović, Slaviša Trajković, Andrija Babović INFORMATION TECHNOLOGY AS A BASIS E-BUSINESS IN TOURISM	...200
Zlatibor Ljubinković THE BENEFITS OF NEW APPROACH TO ENERGY MANAGEMENT AT THE LOCAL LEVEL IN REPUBLIC SERBIA	...205
Darko Marjanović, Miloš Pjanić, Predrag Radojević THE EFFECTS OF TAX COMPETITION ON THE OPERATIONS OF MULTINATIONAL COMPANIES	...211
Lidija Pulevska-Ivanovska, Kiril Postolov, Stefan Ivanovski, LOGISTICS DEVELOPMENT IN MACEDONIA – OPPORTUNITIES AND PERSPECTIVES	...217
Maja Timovska MANAGING RISK TO REDUCE DISASTERS RISK	...222
Danijel Kokanović RISK MANAGEMENT IN PRACTICE – TECHNOLOGY OF RISK	...228
Miloš Ilić MANAGING THE RISK OF E-BANKING	...234
Milivoje Davidović, Vera Zelenović MANAGEMENT OF INVESTMENT PORTFOLIO IDIOSYNCRATIC RISK	...240
Milena Naumov, Miljan Draganić ENTREPRENEURIAL MANAGEMENT IN SMALL AND MEDIUM ENTERPRISES	...245
Vasilijana Mirković TECHNICAL AND DATA SECURITY RISKS IN ELECTRONIC BUSINESS	251
Dragiša Radojković, Zvonko Sajfert, Janko Cvijanović, Predrag Atanasković, Zoran Škrinjarić ANALYSIS OF NEEDS FOR CERTAIN PROFILES AND VOCATIONS NEEDED FOR LABOUR MARKET	...257
Dejan M. Vasović, Stevan M. Mušicki, Miomir B. Stanković STRATEGIC ROLE OF SMALL, DECENTRALIZED HYDRO GENERATION SYSTEMS IN SERBIAN ENERGY POLICY DEVELOPMENT	...263
Ivan Tasić, Jelena Tasić, Teodora Mitić, Dajana Tubić TEACHERS' ATTITUDES ABOUT DEMOCRATIC RELATIONS IN THE SCHOOL	...268
Ivan Tasić, Jelena Tasić, Teodora Mitić, Dajana Tubić POSSIBILITIES FOR INCLUSIVE EDUCATION IN EDUCATIONAL INSTITUTIONS	...273
Dejan Đorđević, Dragan Čočkaló, Srđan Bogetić, Sanja Stanisavljev, Dragica Ivin ENTREPRENEURSHIP AMONG STUDENTS: THE POTENTIAL IN SERBIA	...279

RUSSIAN REGIONS' INNOVATIVE DEVELOPMENT IN CRISIS PERIOD

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ABSTRACT

The article describes the problem of Russian regions ranging by the indicators of innovation development in the crisis period. Author suggested step-by-step analysis of the regions' innovation conditions. As the result the homogeneous groups of regions have been found out. Author called them "clusters". There are five clusters: the capital city, leading regions, active developers, active producers of innovative production and the passive ones.

Key words: region, innovative development, cluster, an indicator, clusters types.

INTRODUCTION

In the crisis period we continued the analysis of innovative processes in Russian regions. The 10 indicators of innovative development represented in the official statistics were taken for the analysis (Regions of Russia, 2011). The set of indicators has been changed as the 7 indicator 'the amount of organisations realising innovations (units)' disappeared from statistics. Other indicators saved their numbers (Risin and Treshchevskiy, 2011).

COMPARATIVE ANALYSIS OF RUSSIAN REGIONS' INNOVATIVE DEVELOPMENT

In consideration of different dimension of the indicators we made their normalization:

$$\frac{x_i - x_{\min}}{x_{\max} - x_{\min}} \quad (1)$$

where: x_i – value of the indicator, x_{\min} – minimal value of the indicator in the array, x_{\max} – maximal value of the indicator in the array.

The set and numeration of regions remained with the exception of 69'th - Chita Region - which is now called Transbaikal Territory. It was decided to leave this region and its number. Thereby the information array of 78 regions and 10 indicators was formed. We chose two methods of comparative innovative development analysis: rating by the rank in information array and cluster analysis. So we got the results comparable with presented earlier (Risin, Treshchevskiy, 2011). Data which show the innovative development of leading regions in 2010 are represented in Table 1.

The information in the Table 1 let us make the following decisions.

1. Moscow remains the most developed region in Russia. It considerably passes ahead of the other regions. Even the nearest developed region - Saint-Petersburg - is behind Moscow in 1.92 times.
2. In total the innovative development of leading regions is quite differentiated: Moscow passes ahead Tumen Region in 4.18 times.

3. Besides Moscow in the leading group 3 regions - Saint-Petersburg, Moscow Region and Nizhniy Novgorod Region - are sufficiently distinguished. However the maximal difference between the leading regions in the group (besides Moscow) is 0.5 points (in 2000 and 2007 there were 0.9 and 0.7, respectively). That shows the degree of uniformity increasing.
4. As compared with 2007 the leading group has not been changed. However certain regions changed their places. So Moscow Region and Saint-Petersburg which were on 2nd and 3rd places are now taking 3rd and 2nd places, respectively. Samara Region fell from 4th to 7th place making way for Nizhniy Novgorod Region. Republic of Tatarstan is also enhanced its position.

Table 1: leading regions rating by the sum of the normalized indicators in 2010

Rank	Regions' numeration	Region	Sum of the normalized indicators
1	18	Moscow City	7.399114075
2	28	Saint-Petersburg	3.857295118
3	10	Moscow Region	3.441009076
4	48	Nizhniy Novgorod Region	3.258891218
5	43	Tatarstan Republic	2.926874449
6	55	Sverdlovsk Region	2.811572254
7	51	Samara Region	2.363154821
8	46	Perm Territory	2.184194561
9	57	Chelyabinsk Region	2.051182103
10	56	Tumen Region	1.768902171
SUM			32.06218985

CLUSTER ANALYSIS

We used MS Excel and Statistica 6.1 software to the goals of cluster analysis. The step-by-step approach for clusters selection was used. Regions in clusters were appointed in Euclidean space. The normalization was made by Formula 1. The results of cluster analysis with five clusters in 2010 are represented in Table 2.

Table 2: Division of Russian regions by five clusters (2010)

Indicators	Clusters' average normalized indicators				
	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
1	0.143316	0.028342	0.042086	0.024895	1.000000
2	0.120355	0.015824	0.019791	0.007256	1.000000
3	0.108500	0.011901	0.012419	0.006044	1.000000
4	0.059380	0.007591	0.013417	0.006558	1.000000
5	0.182353	0.014706	0.030000	0.008877	1.000000
6	0.375211	0.096668	0.123981	0.048447	1.000000
8	0.315064	0.155128	0.241410	0.156098	0.326923
9	0.508454	0.083980	0.079453	0.054009	0.577410
10	0.441944	0.156510	0.061067	0.015570	0.400327
11	0.371862	0.677922	0.252468	0.069287	0.095238
Regions	9, 10, 28, 43, 46, 48, 51, 55, 56, 57	17, 33, 38, 42, 53	25 regions	37 regions	18
SUM	2.626439	1.248572	0.876092	0.397042	7.399898

The analysis of all 78 regions showed extremely high stability of leading group in the innovative development. The most developed cluster like in the period of favourable business conditions (2007) includes only Moscow. It is necessary to notice that another leading cluster (Cluster 1) completely preserved its composition. Besides, Lipetsk Region entered this cluster.

Table 3: Division of Russian regions by three clusters (2010)

Indicators	Clusters' average normalized indicators		
	Cluster 1	Cluster 2	Cluster 3
1	0.310351	0.049465	0.031428
2	0.289114	0.032113	0.012147
3	0.278508	0.024217	0.008497
4	0.219719	0.011368	0.009220
5	0.369748	0.038603	0.017118
6	0.552959	0.170180	0.077704
8	0.291667	0.271635	0.188085
9	0.594026	0.240096	0.063294
10	0.374612	0.370364	0.033649
11	0.232529	0.632035	0.149124
Regions	10, 18, 28, 48, 55, 56, 57	9, 17, 38, 42, 43, 46, 51, 53	63 regions
SUM	3.513232	1.840076	0.590266

Table 3 represents the three-cluster divided Russian regions' innovative development conditions in 2010. It is interesting that in 2010 three-cluster division of all 78 regions shows rather different results versus 2007. First of all Moscow did not stand apart from other leading regions. The most developed cluster besides Moscow consists of Moscow Region, Nizhniy Novgorod Region, Sverdlovsk Region, Tumen Region, Chelyabinsk Region and Saint-Petersburg.

The lag of the 2nd (sub-leading) cluster became noticeable. It consists of sufficiently developed leading regions - Lipetsk Region, Samara Region, Republic of Tatarstan, Perm Territory, and some other regions which were not in the leading group - Vologda Region, Ulianovsk Region, Republic of Mordovia. Thereby in the period of economic downturn one could see some smoothing in the regions' differences.

Though the dominating role of Moscow in the crisis period did not show itself as definitely as in 2000-2007 we allocated it in one separate cluster for the further analysis. The great lead in the capital city's indicators' values and the high homogeneity of the general body of regions made us exclude Moscow from the information array in the next step. The indicators of innovative development of three-cluster divided Russian regions without Moscow in 2010 are represented in the Table 4.

The analysis still shows us the high stability of leading regions. There are two leading clusters as well as in 2007 and their compositions are almost the same. The results differ in two points. First of all Nizhniy Novgorod Region which was in the most developed cluster with Moscow Region and Saint-Petersburg in 2007 is now in the sub-leading cluster. The second point is that Lipetsk Region entered the leading group.

As in 2011 (Risin, Treshchevskiy, 2011) the excluding of the leading regions let us to make the third step in our analysis – dividing the biggest group of regions into separate components. The results are represented in the Table 5.

The analysis shows us that in 2010, like in the period of favourable business conditions, there are the same regions in the cluster with the maximal sum of average normalised indicators. Besides, Omsk Region, Tomsk Region, Tula Region, Yaroslavl Region and Republic of Bashkortostan entered this cluster. After we excluded the 8th indicator from the analysis we got the clusters' structure change (Table 6).

The analysis shows that the regions of the cluster which we called “active developers” (Risin, Treshchevskiy, 2011) are mainly saved their positions. Vladimir Region, Volgograd Region and

Yaroslavl Region left this cluster. Irkutsk Region, Omsk Region and Tula Region entered the cluster.

Table 4: Division of Russian regions by three clusters (2010, w/o Moscow)

Indicators	Clusters' average normalized indicators		
	Cluster 1	Cluster 2	Cluster 3
1	0.070065	0.879822	0.177671
2	0.035866	0.971847	0.186197
3	0.026520	0.955674	0.167042
4	0.038604	0.881016	0.091376
5	0.027837	0.757937	0.179564
6	0.109751	0.555662	0.502665
8	0.187859	0.216346	0.339744
9	0.065739	0.402531	0.534935
10	0.043064	0.541817	0.416976
11	0.182377	0.347920	0.377166
Regions	67 regions	10, 28	9, 43, 46, 48, 51, 55, 56, 57
SUM	0.787682	6.510572	2.973335

Table 5: Division of Russian regions by three clusters (2010, w/o leading regions)

Indicators	Clusters' average normalized indicators		
	Cluster 1	Cluster 2	Cluster 3
1	0.512136	0.221845	0.136477
2	0.428678	0.138978	0.042405
3	0.418510	0.142728	0.044379
4	0.248103	0.074888	0.034392
5	0.430000	0.138000	0.042286
6	0.450607	0.224013	0.093286
8	0.200053	0.240705	0.153480
9	0.445862	0.154618	0.078379
10	0.234638	0.196007	0.030577
11	0.207467	0.307842	0.102080
Regions	4, 6, 16, 17, 39, 40, 52, 63, 64, 66, 67, 68	1, 3, 11, 15, 24, 26, 30, 35, 36, 38, 42, 44, 45, 47, 49, 50, 53, 72, 73, 75	35 regions
SUM	3.576053	1.839624	0.757740

The other results shows us the "active producers of innovative production" cluster: the only regions that saved their positions in it are Republic of Mordovia and Ulianovsk Region. Vologda Region, Kaliningrad Region and Kemerovo Region left the cluster. Volgograd Region, Tver Region, Yaroslavl Region and Stavropol Territory entered the cluster.

It is extremely important that these regions are strengthened their positions in the percentage but not in the volume of innovative goods. It indicates that the crisis period made these regions develop just innovative products on the strength of economic downturn. The composition and the position of the "passive" cluster are practically has not been changed.

RECOMENDATIONS

The results of step-by-step cluster analysis show us the possibility of the division all Russian regions on five different groups, which are saving their positions with the changes in the business conditions.

The first group consists only of Moscow. It differs by its development from all other regions. It weakened its position of country's innovative centre in the crisis period. It was to be expected in the strategic situation since the innovative development should be spread on the whole Russian territory.

Table 6: Division of Russian regions by three clusters (2010, w/o leading regions, w/o indicator 8)

Indicators	Clusters' average normalized indicators		
	Cluster 1	Cluster 2	Cluster 3
1	0,531553	0,231392	0,154944
2	0,428944	0,196932	0,062836
3	0,419063	0,205530	0,064653
4	0,250616	0,084647	0,044152
5	0,433333	0,113333	0,071837
6	0,439321	0,264841	0,128401
9	0,394626	0,257073	0,100163
10	0,211978	0,442553	0,053203
11	0,168111	0,610052	0,133502
Regions	4, 6, 16, 35, 39, 40, 52, 63, 64, 66, 67, 68	15, 17, 36, 38, 42, 53	49 regions
SUM	3,277546	2,406353	0,813690

The second group consists of developed industrial regions. They found themselves extremely stable to the crisis and saved their positions. This indicates the rational innovative policies of these regions. Nevertheless the process of R&D products implementation is needed to be strengthened. Even the crisis could not activate their activity in the innovative production. The represented "market downfall" needs governmental regulation.

The third group consists of regions with relatively high level of innovation generating ("active developers"). The group found itself rather steady to the crisis. As the innovation production like in 2007 is its weakness, there alternative ways of regions' development are possible: intensifying of the innovation implementation and the expansion of R&D activities.

The fourth group is notable for low level of innovations generating, relatively high level of innovative production and sufficiently developed industry. The structure of the group is liable to the influence of business conditions. It is quite explainable from the position of demand structure changes at the transition from high economic activity to crisis. As it was it is not necessary to increase the innovation generating volume. We suppose our last recommendations - the faster production and distribution of innovations which were made in other regions and abroad - is the only possible.

The fifth group – the biggest one, consists of majority of Russian regions. It has low and poorly used innovative development potential. And both structure and development indicators are not liable to the business conditions changes. The recommended strategy – the forming of innovative growing points with the goals of institutional environment improvement - is reasonable.

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THE CAFETERIA SYSTEM IN HUNGARY: DEVELOPMENT AND NEW DIRECTIONS

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ABSTRACT

The cafeteria system in Hungary is a specific form of flexible benefits, which became widespread across the country in the 90's due to their preferential taxation. They are found in most sectors, within small and large companies, as well. The cafeteria system is popular among employees, not only because of the flexibility, but also because some of the elements may contribute to the monthly expenses. Over the years the regulation of the cafeteria kept changing in line with the governments' objectives in economic and social policies from time to time. In 2012 there is a major shift in the regulation of the benefits. This analysis of the evolution of the cafeteria system from 1996 until today, especially the drivers of the key changes and the how the key players adapted to the changes. We are also looking into the expected directions over the next few years.

Key words: cafeteria, flexible benefits, compensation, taxation of benefits, Hungary

INTRODUCTION

Cafeteria systems appeared in Hungary in the 90's, and since then these became widespread, majority of employers offers them as part of their compensation package. It is important to the employers that the cafeteria system contributes to the competitiveness of the compensation package, thus increasing the commitment and satisfaction of its' employees. Another important factor is the cost effectiveness of the system versus other compensation elements, such as cash compensation. Therefore employers keep adopting their packages to optimize to the regulatory environment at any given time.

The Management and HR Research Centre at Szent István University (Gödöllő) conducts a research on cafeteria benefits in Hungary, which takes place fifth time this year. It tracks and analyses data each year on how employers shape their offerings in the changing regulatory environment. The 2012 research at the time of publishing this study is in the data collection stage, the detailed results will be available later this year. In this study our objective is to introduce how the cafeteria systems developed in Hungary. In addition, we summarize the key considerations which influenced the development of the cafeteria systems in Hungary, and based on which the question blocks of our research questionnaire has been designed.

CAFETERIA BENEFITS

Benefits are only one part of the total compensation. There are various definitions of benefits, ranging from broader to more specific approaches. A broader definition sees benefits as "part of the total compensation package, other than pay for time worked, provided to employees in whole or in part by employer payments" (Milkovich et al., 2011). A more practical approach defined benefits as non-cash compensation (Mercer, 2004). In this study we refer to benefits as provisions which are above the statutory requirements, not part of the cash compensation structure, not linked to

individual performance, and provided equally to defined group of employees. Common characteristic of all the above approaches that benefits is considered to increase employee satisfaction and commitment and the improvement of competitiveness of the compensation package.

The flexible approach (cafeteria systems) in compensation has been invented in the US, where it has widely spread in the 70's and 80', especially in the area of benefits. It means that there is a „menu” of possible benefit provisions and related costs, and employees can choose the elements they prefer within the available allowance. This allows employees to optimize the benefit package to their lifestyle and preferences. Such way the perceived value of benefits may be maximized. Advantages of such flexible systems included the possibility individualizing the benefits package to by employees, which became an important consideration as the war for talent became fiercer, and attraction and retention of employees put more emphasis on the individual. Outside this there were other advantages, such as improved cost control by the employer or the ease of harmonisation e.g. in case of integration of two organisations (e.g. during M&As) (Poór, 2007).

These plans were brought to Europe by the international companies, and became widespread in the 90's, especially in the UK and Ireland. Later the flex systems became widely used in Europe. Although it started to gain presence in Asia, it still has large potential as the employment trends are changing there, too (Chow Koo, 2011). In the US the range of flexibility is much wider; employees may even flex part of their salaries for benefits such as equities, additional vacation or medical insurance. In Europe salaries are protected by labour laws, and basic benefits such as basic medical insurance and pension are provided by the state, therefore the flex plans are structured differently.

The number of elements offered in a flexible plan is a key consideration. It depends on the size of the employer, the demographics of its employee base, and available resources for the provisions and their administration. According to a study made by Towers Watson in 2011 in the United Kingdom, 59% of those employers which offer cafeteria provide the choices of 10 or more elements. The most typical offering is between 11 and 15 elements (39% of the companies); in comparison to the 2008 result where the most frequent packages included 5 – 10 elements (38%). This indicates the increasing value of flexibility (Tower Watson, 2011).

THE EVOLUTION OF BENEFIT PLANS IN HUNGARY

Prior to the market economy employers in Hungary provided wide range of benefits. These were mainly social provisions, such as usage of the company's holiday facilities, subsidised meals in the company's canteen, health & safety related provisions or company products). After the introduction of the personal income tax in 1988 the wages were grossed up, but the benefit provisions remained tax free, providing a clear cost advantage for these benefits.

During the privatisation companies, especially those with foreign ownership have re-evaluated the role of benefits in the total compensation package. International companies attempted to implement their compensation philosophy regarding base pay, incentives, as well as benefits – they adopted their approach in the Hungarian regulatory environment. The range of provisions was still based on the heritage of the pre-market economy era.

Vouchers appeared in the early 90's, and the industry supporting the benefits systems developed, including issuers of vouchers, consultants, admin service providers, software solutions, which made it possible to introduce cafeteria systems. Cafeteria appeared in Hungary in the mid 90's. Although their administration is more costly and labour intensive than fixed benefits', the cafeteria became very popular among employees therefore more and more companies made them available. Pioneers in the cafeteria were some of the large national companies (such as MOL), and the international companies which acquired businesses in Hungary. However, cafeteria was shortly adopted by businesses of all sizes and sectors.

Flexible plans were adopted early in the privatisation era in the 90's, not only by international companies, but large state-owned employers also introduced such benefit packages. Gradually cafeteria benefits were widely spread in Hungary. The cafeteria is applied in various structures. There are modular systems, combination of core benefits and cafeteria, as well as fully flexible packages. There are also different practices to define the allowance. Most companies applies the same allowance amount for all employees, some companies has different allowance for different employee groups (e.g. managerial and non-managerial), whilst others provide the allowance in the percentage of the basic salary.

THE RESEARCH

The Management and HR Research Centre at Szent István University and Larskol consultants carry out a research each year. The research is benchmark type, which intends to provide basis for comparison for future research. In addition, it intended to get a snapshot on how companies perceive the role of benefits in the current environment. The last data collection took place in 2011. The 2012 research is the fifth year of the study – it is currently in the data collection stage.

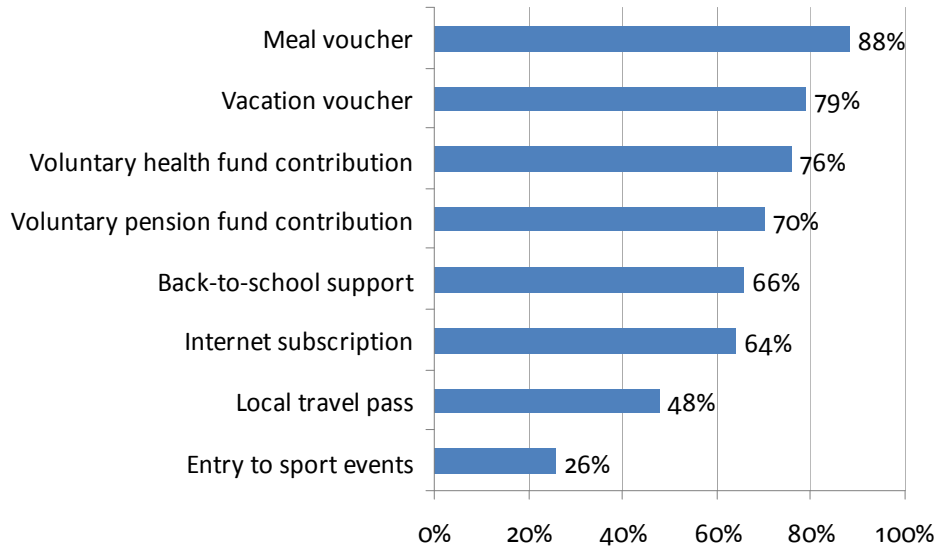
Participation in the research is voluntary and free of charge, confidential data are handled with appropriate confidentiality and security. The technique of the data collection is web-survey. The questionnaire contains 9 blocks of questions, related to the participating company's main data, the type of benefits provided, guaranteed benefits, flexible benefits, the operation of the flexible system, cafeteria allowances, impact of tax changes, impact of 2012 changes, as well as the willingness to implement cafeteria where there is no flex offer currently. In the study the conclusions were based on descriptive statistical features such as averages, frequencies and distributions.

Although the sample is not representative of the Hungarian employers, given the list of the participants it includes some major or leading organizations, and a variety of sectors and sizes are represented, therefore the results illustrate the tendencies in benefits policies.

2011 HIGHLIGHTS

In this section we summarise the key conclusions of our 2011 research from which we developed the context of the 2012 study.

92% of the respondents offer some kind of benefits outside the wages. However, only 57% of them provides the possibility of the flexible choice to employees, either with a core + flex or in a full flex package. There is a connection between the size of the organisation and offering of flexible choice. 70% of companies which employ more than 1000 people do have cafeteria in place, and only 20% of those employing 10 or less people. (see Figure 1)



*Figure 1: Most popular cafeteria elements
(Source: Authors' own research)*

The most popular cafeteria elements are the benefits with the preferential tax rate. There is one new item on the list: entry to sport event, which is not yet widely offered despite it is tax free status, and it did not appear among the most popular guaranteed elements, either.

In the recent three years the cafeteria gained presence in the public sector, this was the main driver in the implementations post 2008. Only 11 organisations implemented cafeteria after ceasing the tax exemption on benefits. 45% of these operates in the public sector.

Another interesting point is the main purpose why organisations introduced cafeteria systems. The ability to plan the costs and using the advantages of the tax exemptions are among the leading reasons. The early adopters of cafeteria put far more emphasis on the employee commitment and retention, as well as the employer's reputation, although the cost considerations were also important to them. In the latest implementations the cost related motivation dominating among the organisations.

A surprising finding that 39% of the respondents never evaluate the effectiveness of the cafeteria system, 42% looks at it occasionally, and only 19% of the employers carries out a regular review, 77% of these companies are among the large organisations.

As far as the administration is concerned, 87% of the companies operate the system with in-house administration. Outsourcing the whole or a part of the administration is more typical among the large organisations, too. The most typical administration tools are spreadsheets (38%) and cafeteria solutions integrated into the payroll systems (34%). Only 9% of the companies administers the systems on paper.

CAFETERIA AND TAXATION

Government influence on benefit choices also became prevalent. The government limited the tax exemption to a defined range of benefits which were supported, and imposed high tax to the rest of in kind provisions. Later each year the range and maximum tax-free amount of benefits were slightly changed. In 2010 a preferential tax rate has been introduced to all benefits which were not required by the law and previously were tax-free. Since 2012 an additional contribution is also payable on benefits. As a result, the gap between the cost of preferential and non-preferential benefits is smaller each year (see Figure 2).

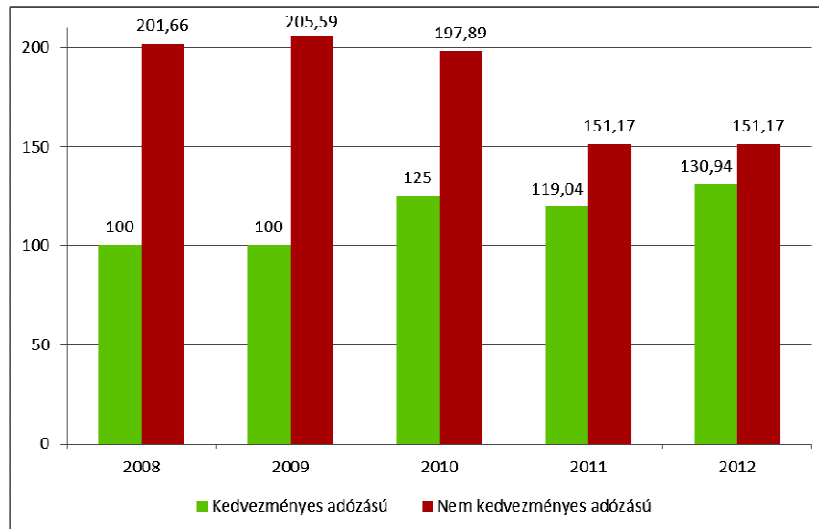


Figure 2: Total cost of 100 HUF net benefits
(Source: Authors' own research)

In our research we have found that majority of the companies passed on the tax burden fully (58%) or partly (14%) to employees. Only 27% of the companies took the additional costs resulting from the taxes.

2012 UPDATE

In 2012 significant changes were implemented to the range of benefits with preferential taxation. It is expected that the electronic payment forms will gain more importance in the future. Apart from the cards of the voluntary health funds and the web based internet voucher the paper vouchers dominated until the end of last year. The appearance of the Széchenyi Recreation Card (Széchenyi Pihenőkártya, SZÉP card) may bring breakthrough in this area. The card has been introduced in July 2011. Originally it was designed to replace the vacation vouchers. In 2012 the card has been developed further, it now has 3 sub-accounts, which may be used to pay for catering, recreational and accommodation services. In our 2012 research we anticipate that the SZÉP card will appear among the most popular cafeteria elements. The previously available cafeteria vouchers remain in place.

The government, besides its regulatory role, wants to gain more presence in the cafeteria market. Until now the state was involved indirectly in issuing the vacation vouchers through the National Holiday Foundation (Nemzeti Üdülési Alapítvány). The foundation introduced the Erzsébet meal vouchers. The amount of the social security contribution paid on the Erzsébet vouchers is available for the foundation to finance tenders for social programmes. The Erzsébet voucher, contrary to the other meal vouchers, enjoys the preferential tax treatment. Due to this fact, as well as the controversy around the expansion of the range of outlets contracted to accept the voucher some market players argued for a case of discrimination – the reconciliation is still in progress.

Although the allowance with preferential tax rate increased to a significant amount (500 thousand HUF per annum) the cost of the preferential benefits increased by 10%. There are other changes impacting the cost of employment. The minimum wage was increased by 19%. In addition, the government requires employers to compensate the adverse effect of the recent tax changes for those who earn less than 300 thousand HUF per month. This is a one-off adjustment, but its cost impacts guaranteed wages, therefore the impact remain permanent. The companies which do not comply will be closed out from government tenders, on the other hand there is a government fund which aims to share the burden with employers if they meet certain criteria. It is subject to our 2012 research how all these factors may impact the benefit allowances.

CONCLUSIONS

The cafeteria systems are in continuous development both internationally and within Hungary. The main driver of the changes in Hungary is the changes in the tax and social security regulations.

The main factors we observed in 2012 is the further increase of cost of benefit provisions, increasing participation of the government, more importance of electronic payment forms and appearance of new elements. A current research aims to find out how these factors influenced the employers in adjusting the cafeteria benefits in 2012.

The cafeteria benefits contribute to various forms of the recreation of employees, and include appropriate range of choice enabling diverse range of employees to customize benefits to their own preference. In the future we expect the further development of the cafeteria systems. The research of the national and international trends in flexible benefit plans remains a topical field.

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CREATION OF INNOVATION CLIMATE FOR IMPROVEMENTS AND INNOVATIONS OF THE BUSINESS PROCESSES IN THE MACEDONIAN COMPANIES

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ABSTRACT

This paper presents several principles and strategies which will assist Macedonian managers to build the management, which would further on participate in designing and implementing the system of quality so that they would more easily accept the changes and incorporate within the flows of market business where the quality of the service is crucial in gaining customers. It should be stated that the benefits of the implementation of these strategies cannot be seen immediately but after a longer period of time. Nevertheless, that should not be a reason to recall initial initiative since the quality of the product/ service is a long term process. The benefits of the application are merely to increase the dedication of the top management and the employees to improve the processes but also the satisfaction of the customers, employees, the stockholders, the suppliers, the community as well as the increase of the business results of the Macedonian companies which will serve as a motor force for continuing improvements.

Key words: system of quality, TQM, innovation climate, education and motivation, strategies

INTRODUCTION

For the application of the strategy TQM (Chepurnoska, 2009) in the Macedonian companies there are certain changes that need to be made such as 'the awareness for the quality of the product/ service which needs to be present at all times in the top management, and then also with the employees. The awareness for the quality of the service is created through many motivational activities (McHenry & Husvik, 1997):

- developing the ability of awareness in each employee that the quality of the product/ service is crucial for the sales and consequently the business results depend on the sale itself;
- each employee to realize that they and the position they hold have a significant influence on the quality of the product/ service;
- to show each employee that their idea for improvement and innovation will be implied because it's important;
- to introduce a system for promotion and rewards for the achieved results.

Many top managers are able to recognize the creativity of their employees, their potential to create ideas for new business opportunities but they do not, as managers, succeed in creating the climate, training and the process for those ideas to be realized (Dessler, 2003). In this way, they unconsciously suppress the creative potential of their employees. A more efficient and productive way, if looking into the future, is through the encouragement for innovations for improvement of the properties of the products and the processes.

CREATION OF INNOVATION CLIMATE FOR IMPROVEMENTS AND INNOVATIONS OF THE BUSINESS PROCESSES

The road to perfection of the companies (EFQM, 1997) goes through implementation of improvements and innovations of the business processes, creation of innovation climate by the management with a purpose to encourage each individual for creative thinking and original solutions. The main creator of the innovation climate is the top management, which has to be innovation enthusiast, to be innovative itself – to think outside the stern patterns of business and to be open for new ideas, to be prepared to take risks and to provide with all the necessary resources for realization, to be able to listen to, encourage and support the employees, to trust them and to be tolerant to possible failures and mistakes.

The Macedonia managers evaluate the obstacles in the process of introduction of the system for quality and those most often are (EFQM, 1997):

- the monopoly of certain companies;
- the style and the culture of the management;
- highlighting the particularities;
- affinity to improvise;
- thinking that there is always someone else who is responsible for the problems;
- the opinion that the system of quality destroys creativity;
- the opinion that the quality is expensive and it is a luxury;
- the opinion that the quality is acquired through control;
- the fear of changes–status maintenance – quo;
- the mentality, laziness and shallowness - we do not have the time for that.

The analysis of the practice show that the Macedonian companies (Mitreva, 2010):

- show little concern for the quality;
- not enough attention is paid for the continuous education;
- do not invest enough in innovation;
- only a small number of companies have a system of quality;
- little concern is paid for the employees, the buyers, the suppliers and the community;
- there is poor implementation of SPC (statistics process control);
- work with large expenses;
- team work is considered returning to the past;
- lack of macro climate for the development of the quality in R.Macedonia;
- lack of motivation for the development of the quality in the companies;
- poor implementation of information technology in the process of production;
- to obtain a certificate under any cost;
- no strategy planning and effective managing (there is usually one person for many positions).

To summarize, re-engineering is necessary in the Macedonian companies. For that purpose we herewith suggest principles and strategies for the improvement of the communication and the encouragement for creativity of the employees in the Macedonian companies (Mitreva, 2010).

The contributions that are to be expected not only do they have an educational character but also their practical implementation will lead to an increase of the effectiveness and productivity of the Macedonian companies and their sustainable development. Without active participation of the top management and their dedication and determination there will be no changes since all starts and ends with the top of the management.

PRINCIPLES AND STRATEGIES FOR THE IMPROVEMENT OF THE COMMUNICATION AND ENCOURAGEMENT FOR CREATIVITY OF THE EMPLOYEES IN THE MACEDONIAN COMPANIES

Motivation is an obligation of the top management, and for that reason they are required to always search for appropriate stimuli for more effective and productive work of the employees in the different levels in the organizational structure.

Motivation of the top management are the business results of the tourist company presented through the continuous and high profit, the ratings, the turnout, the technological development, the working quality, the good business relations, etc.

For the manager of quality, motivation is an introduction of the system for providing quality in accordance with the standard ISO 9001:2008, especially if that sign has an international verification.

For the managers of tactical level motivation is: effective managing of the business processes within optimal expenses and increase of productivity.

For the employees there are several ways through which the managers need to improve the communication and encourage the creativity (EFQM, 1997).

- 1) *Encouragement and positive criticism for new ideas.* When a new idea is presented, the normal reaction usually is to criticize it and find its weaknesses. New ideas are mostly half-way defined so they can easily be rejected. They are usually far from the focus of our activities and we quickly reject them. But, there are no bad ideas. Bad ideas are most often the initial point to get to good ideas. Each company is in need of many bad and crazy ideas, because in their frame there is a concept which can further be processed and adjusted to become an innovation that actually works. Every time one approaches with an idea that has been criticized by the supervisor, returns discouraged for further creativity. This sends a bad message that new ideas are not needed and every person that voluntarily comes forward with one, risks to be criticized or even mocked.
- 2) *Making a practice of the Brainstorming meetings.* For many companies brainstorming is old-fashioned and left in the past, but good brainstorming activities are one of the best ways to create fresh new ideas and actively include all the employees from all levels. If the companies do not have brainstorming meetings for finding creative solutions for problems, they are missing out on the opportunity for new ideas. Brainstorming meetings should be short and energetic, with a clear focus and creating a field for a large number of ideas. These meetings should be supervised by someone who possesses great enthusiasm and helps the others to present their ideas and also prevents initial criticisms and judgments.
- 3) *Reducing the problems by including the employees in the process of bringing decisions.* In most instances, it is the top management that takes the responsibility for dealing with the problems. The strategic problems are too complicated. On the other hand, the employees of the lower scales of the hierarchy are closer to the processes and the buyers themselves and can see the problem. If they are to be actively included, and should they be given the chance and the challenge to help find the solution, they can turn out to be a rich source of ideas and they will get the feeling of being useful and that their work is respected. Much better decisions will be made and the employees will much easily accept initiative to participate in solving the problem.
- 4) *The advantage of the innovations over the effectiveness of the business processes.* It is understandable for the managers to focus on an existing business process to function better. Each process can be improved only if considerable attention to improve things is paid and there always exists the risk to miss on a chance to do the things differently, which is the essence of the innovations. The existing processes must be improved and new methods and

techniques are always required to be applied in order to improve the performances of the services.

- 5) *The control of the overtime work.* In the tourist companies, following the road of effectiveness there usually are many overtime working hours and hard work. The belief that the hard work will solve the problems is useless. The need to find different ways to solve problems is much more than working in the old way. The working day should contain time for learning, fun, thinking for something else, incredible ideas and trying out new initiatives. We should stop and try out different opportunities. As the creativity expert Edward de Bono says 'You cannot look in a new direction by looking harder in the same direction. If we are focused to do the things in the same manner as always, then it is impossible to find the time to try out a new way to achieve the goal.
- 6) *Flexibility in the realization of the plans.* The cooperative plans should be within a flexible frame, to be used as directives but not as detailed maps which the companies use to work. Unexpected changes in the process of working, new chances and experimenting have to be expected. The plans should not represent a shelter where the uninventive managers will hide. The tourist company that plans a lot and firmly sticks to that plan will only limit itself. The market and the needs of the buyers change rapidly which poses the question how accurate is our plan.
- 7) *To avoid the imposture of the feeling of guilt.* To impose the feeling of guilt due to failure is a certain way to cease the business spirit. Many projects for innovation will not succeed but they are worth the time spent because if they have not been tried out it cannot be determined whether they are useful or not. Thomas Alva Edison had many failures in his experiments which resulted in the invention of the light bulb. When asked how he dealt with the failures he said that they made him think in a different way.
- 8) *Creation of a system for rewards.* There are different kinds of stimuli required for the team that leads the innovation project. The team should be rewarded by the accomplished points. The members of the team should be treated as entrepreneur and to be given the chance for action. If our rewards are structured in that manner, only the positively structured services and works will be rewarded, in which case the chances to start new business processes are slim.
- 9) *To prevent giving innovation projects to the production units.* The new services are delicate and vulnerable and should be given special attention until they become stronger and get the control. Every operative manager is too occupied fulfilling the monthly requirements and goals, so that they are not able to pay enough attention and energy to the new service. The best way is to put the new innovation in an incubator for innovations, in a special department. This department has other tasks and goals, works under different rules, and there is usually a manager for innovations that has the required strength and tends to have at least one successful and to learn from the ones that were unsuccessful.
- 10) *Training of the personnel.* With an adequate training, people can develop the skill to observe, to brainstorm, to adapt, to combine, to analyze and to select good ideas. Each of us can be creative if one is encouraged enough and if the way how to do things is well presented. We are all creative, but our creative instincts get lost in the daily routine of work.

Five rules how to convince the employees and how to make an impact on them. To make others do what you ask them to do is art and a science that needs to be learnt if we want to succeed in his era of fast changes, team work, decentralized management and to do more than the seemingly possible. There are five rules that are based on our mentality, culture and deeply rooted needs and urges of people.

1. The principle of affection: Love the people to be loved back

To show the employees that they are liked because people like to show affection and to comply to our needs.

There are two strategies for that, what needs to be done for people to like us.

Strategy 1: If we become an active listener we can find out what we like about the other person. The reality shows that we are all a mixture of strength, virtues and weaknesses and no extra energy is needed to find the good side in a person compared to the required energy to find the weaknesses. For this to succeed we need to focus our mental energy to stimulate the good things in people and to show them that. It is important to be sincere in the process because a great number of people have an inner lie detector and can sense that your words do not match your body language which will result in aversion and offence.

Strategy 2: To find something in common with the other party and to show that. The similarities enable positive relationships with others and create good will and confidence.

2. The principle of reciprocity: The more we give, the more we get

It may seem very simple but it is hard to perform. If we want more love, money or confidence, all should be given first in order to get it. If we want the members of our team to respect and trust us, to cooperate with us, we should behave in a similar way and we will receive more than our expectations. We might be able to discuss perfectly but if our words are not supported with concrete results, the members of our team will forget our words in no time and will show no interest of what we work and expect from them. The guilt is never imposed because of the failure of our team. All successful managers have understood well the principle of reciprocity and they have the habit to assign their merits to the others and to accept full responsibility when things go wrong.

3. The principle of loyalty: the possibility for the employees to do the things they are committed to is great

A very powerful strategy for the employees to do what we want them to do is: to stimulate the people to like us, to make them know that we have something in common and to shape their behavior in the way we like it. To achieve people to sign up for an activity voluntarily, to put that obligation on paper and to publicly declare it, will not only increase our capability to convince but that person will also have the obligation to fulfill it. The imposed, forced loyalty vary rarely works.

4. The principle of specialty: the possibility that the employees will accept the advice from the experts is great

The people that have the rightfulness of an expert in a given field have greater opportunity to convince others. For that reason, it is necessary to point out our specialty and make it visible, with an emphasis on our academic and practical achievements and recognitions and also presenting our rewards where they can be seen, and if we are part of the management to share our previous experiences and skills with the members of our team or with the buyers. This all can be effective only in an atmosphere where they would be able to see the specialty and the competence themselves, which will exclude the negative effects of boasting.

5. The principle of deficit: People tend to want the things they cannot have.

Whenever we see signs saying 'limited amounts' or 'buy now' are examples of the fact that we always notice what is less available and we consider it more valuable. If we are in a managing position, to increase the motivation of our team we most often make clear to the members that only the five best workers will be selected in a separate team, or that only those that will show certain level of completion of the task in a period of six months will be selected for training. Or, many more people will be interested to hear what we want to say if we make clear that our information is exclusive and hard to find.

How to make a step further?

To increase our possibility to convince and influence the employees these five principles should be used together, combining them. If we are really interested in the people we work with, we should find out what are their virtues and what do we have in common. That will help to give true compliments, to point out the similarity, which establishes the relationship and gives the foundation to qualify to convince and make an impact on them. While we listen to them actively, we should have in mind what we want to get from them. By showing admiration and interest in them, a sincere smile, an absolute trust, showing more energy and joy we can feel the reciprocity. When the others will find out how we have improved our personal and professional life and the lives of the people that have had similar problems that we can use the principle of specialty. We go forward, convincing the employees to commit voluntarily putting their obligations on paper and publicly announcing it.

CONCLUSION

The realization of an effective dialog with the employees is achieved through building an effective communication system. *The effectiveness of the dialog* depends on the readiness of the company to include the employees in the process of making decisions on every issue. The rules of team work which refer to respecting the individual, their character, experiences, knowledge, will lead to a more relaxed atmosphere, a constructive conflict, creative tension and enthusiasm and will enable the new approach for quality to be considered prime and implemented in every segment of the work of the company and by that an opportunity to introduce many new approaches.

The companies that have an organized ambience where the employees show and develop their potential and creativity, where the motivation is provided through an acknowledgement of their individual needs, the open communication channels in both directions as well as the democratic culture and climate, the conditions for more creative working, giving professional contribution and continuous improvement of the business processes and services are created, which leads to success.

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INFORMATION TECHNOLOGY AS A BASIS E-BUSINESS IN TOURISM

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ABSTRACT

The paper presents the current state of the tourism market from the perspective of information and communication technologies and e-business. Tourism is basically an expression of the human quest for experience, education and entertainment. Motivations for tourism also includes social, religious and business interests. The economic consequences of this phenomenon are manifold. Whatever they may be community activities or businesses, each of them carries something of a community or business customers. Consumers receive such information through many sources, or channels. These channels are combined in order to create information systems that are still functional, regardless of whether they maintain an or not.

Key words: Information technology, e-business, tourism, tourism information systems

INTRODUCTION - SIGNIFICANCE OF TOURISM

International tourism receipts form part of the balance of payment accounts of individual countries and are of major significance to both developed and developing countries. The main consideration for the development of tourism in several countries is, therefore, its balancing impact on the foreign trade account.

Tourism generates income and employment in the tourist receiving regions, be it a country, region, town or village. It makes the best use of resources which may not be used otherwise. Tourism can, thus, become an effective instrument of growth if it is developed through proper planning as a positive force to stimulate economic activity, improve ecology, foster national integration and mutual understanding of people of every nation.

The spectrum of employment generated by tourism varies from highly trained communication and computer specialists to room boys, sales girls, receptionists, waiters and unskilled workers. The airlines, travel agencies and tour operators also need several men and women with a variety of skills which are not too difficult to master. Tourism also provides high potential for self employment in a variety of ancillaries such as horticulture and handicrafts.

Tourism is also a source of amenities for the resident population of the tourist destinations. Because of visitor's arrival, the residents may enjoy a higher standard of public transport, shopping and entertainment facilities than they would be able to support otherwise. The provision of employment, income and amenities for the resident population are, thus, the three main beneficial effects of tourism which apply to a greater or lesser extent to any tourist destination. These benefits are of particular significance to developing countries as no sophisticated technology is required to

establish such facilities.

INFORMATION NEEDS IN TOURISM

Travel is a basic human instinct. Technological revolutions in the last few decades and the consequent changes in the social systems accelerated its intensity in the current century. Thus, tourism is presently a mass phenomenon involving every human being in the world. They need detailed information about each place they intend to visit. The specific elements of such information needs are:

- Geographical information on location, climate, landscape, etc.
- Attraction features
- Social customs, culture and other special features of the place
- Accessibility through air, water, rail and road and availability of scheduled means of transport
- Accommodation, restaurant and shopping facilities
- Activities and entertainment facilities
- Seasons of visit and other unique features
- Quality of facilities and their standard prices including exchange rates
- Entry and exit formalities and restrictions if any on tourists, etc.

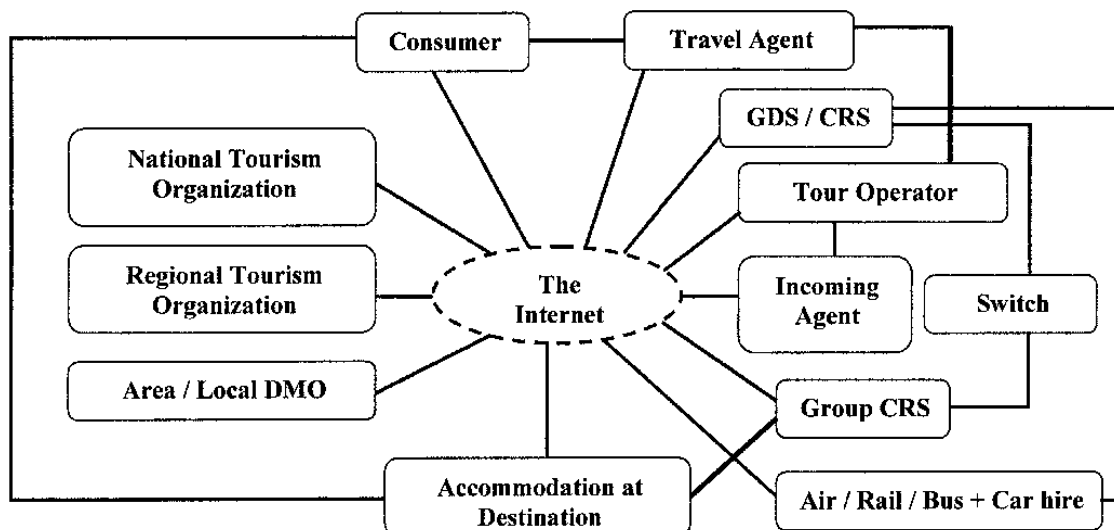


Figure 1: The role of the internet as an information exchange system. (WTO, 2010)

Though the ultimate users of this information are the consumers i.e. the tourists, the actual benefits in money terms accrue to the tourism industry consisting of the destination managers and service providers. There is, therefore, a strong competition amongst various destination countries in the world to produce and package such information in the most attractive format to attract the consumers from the tourist generating countries.

The travel intermediaries like travel agents, tour operators, and reservation system store such information in respect of each destination to service their clients and improve their business. They need the information in the easiest retrieval format so that the information needs of the clients are met as quickly as possible.

Tourists generally need both static and dynamic information. Information on those features which do not change rapidly over time is termed as static information. It includes details information about location, climate, attraction features, history, facilities available, etc. Information about airline, train and bus schedules, tariffs of transport and accommodation units and current availability of such facilities is considered as dynamic as they can change very frequently. These

items of information have to be gathered, stored and disseminated on a real time basis. All types of reservation systems including air, rail and accommodation sectors contain such information.

USE OF INFORMATION TECHNOLOGY

Till a few years ago, the basic sources of information in the tourism sector were pamphlets, brochures, directories, guide books, etc. produced and published by different countries. These sources prevail even today, though they are the most inefficient means of information.

The last few decades witnessed the application of computer and communication technologies in the field of tourism. Two distinct streams of information sources viz, (i) online and (ii) offline came into existence. Databases containing information about places, tourist attractions and facilities became available for online access in several countries. (Angelina Nj., 2010) The emergence of computerised reservations system (CRS) like Galileo, Amadeus, Sabre, PARS, JALCOM, QAMTAM and ABASUS, etc. opened up a new source of online information on tourism and are being expanded continuously. The latest sources of online information is INTERNET which contains some pages on most of the tourist destinations in the world.

The CD-ROM technology also took the tourism industry by storm. CD titles which came in the market during the initial period mostly contained geographical information. Soon multimedia CDs on specific tourism products made their appearance. Several such titles are presently available in the market. The next few years are likely to witness a rapid growth in CD titles covering every aspect of tourism due to improved marketing efforts and increased competitions. Further hotel management and catering technology is fast emerging as an area of information technology application in the field of tourism.

CHARACTERISTICS AND PROBLEMS OF TOURISM INFORMATION SYSTEMS

There are three characteristics that all successful information systems are:

1. Each channel in the system has its own function. Passengers using different channels to get different information. An example is the decision where to go on vacation. A person can consult a friend or agent in the travel agency, but to decide what to do when you arrive there, he will talk to regular visitors or employees at the destination.
2. All information channels in the system rely on each other. Tourist information system as a novel because many different parts are connected correctly. Although the system channels serve different functions, all of which are projected message.

Problems concerning the application of information technology are:

1. Tourism is relatively young and not developed enough to cover the advances in information technology. Generally lack the technical and financial resources and tourism area of work is too limited to benefit from information technology.
2. So far there was no unified policy or coordinated approach for the development of information products on tourism at the national level. Yet to be developed and implemented.
3. Information industry is currently composed of several software development companies, and some information centers in the government sector. Thus, there are no manufacturers who make a database of their own base and sell them. In the absence of such, all efforts are encouraged by the government and the products are generally not available in the market. It is therefore necessary to provide appropriate support to relevant government initiative to develop such industries.

E-BUSINESS ACTIVITIES ORIENTED BY USER

The main applications of e-business in tourism is in the field of e-marketing and sales, for example. communications and transactions with customers. Initially, tourism companies, primarily used the Internet as a means of gathering information and communication channel. Today they offer a

number of online services for transactions. This basic strategy has strong reasons for existence: Online-marketing activities, particularly at the international level, are cheaper than traditional activities, and provide opportunities for tourism companies to reach new customers, who before were separated by physical distance, and therefore expensive for business. Moreover, online travel transactions allow companies to interact with end users, avoiding direct agents, which reduce profit margins.

TOURISM AND APPLICATION OF INFORMATION TECHNOLOGY

Tourism in its present form is a post war phenomenon developed essentially as a consequence of technological developments in the fields of automobiles, railways, ships, aircrafts, computers and communication systems. Although sails were the earliest means of transport, the invention of steam powered automobile by Nicholas Joseph Cugnot in 1769, the assembly of the first commercial steamer by Robert Fulton in 1807 and the production of first successful locomotive by George Stephenson in 1814 introduced several means of mass transport. It was, however, the advent of air transportation during twentieth century which revolutionised the phenomenon of international tourism. It reduced the distances between the nations to a matter of few hours.

The developments in computer and communication technologies have made it possible to have rental cars with computerised driving directions and self-service video-terminals at rental counters in high traffic airports. Fully automated rental transaction systems — National's "Smart Key" machine and Budget's "Remote Transaction Book" came into existence. Yet another major contribution of technological developments in computers and communication systems to tourism is the computerised reservation systems (CRS). These systems can now inform subscribers about schedules, fares and seat availability, issue tickets and boarding passes, record bookings, maintain waiting lists, display preferred airlines or classes, search for the lowest fare available or the first available non-stop flight and calculate fares for domestic and international itineraries. The system can also make reservations for other services like hotels, car rentals, cruises, railways, tours, boat charters, theatres and sporting events.

IMPACT OF ELECTRONIC BUSINESS TRENDS IN TOURISM MARKET

The tourism value chain is created that has become traditional and it connects five major stakeholders in the tourism market in the sale of services. These are: suppliers (airlines, companies that deal with other forms of transport operators and providing accommodation), tour operators (whose role is to sell a combination of service provider), the global distribution systems - BDS (used by service providers to get information, reservation services), travel agencies (which are intermediaries in the sale of tourism products from supplier to end customer) and ultimately end users / visitors.

Key changes in the distribution of the tourism market as a result of the increasing use of electronic poslovanja. Privredni entities in the tourism market, such as airlines and other carriers rely primarily on e-business to bridge the traditional distribution through travel agencies. Carriers (particularly airlines), who have historically participated in creating the GDS system, tend to invest less in the GDS systems and are increasingly turning to direct targeting of end users to avoid the high costs of distribution. Hotels in successfully selling services through GDS systems. On the other hand there is a growing tendency to tourists themselves bukiraju accommodation and avoid middlemen and higher prices and because hotels in their Web sites allow customers (tourists) access to free facilities, bookings and electronic payment.

Tour operators are turning to e-business to offset the operating system via GDSa using Internet technologies and achieve a direct relationship with tourists. Global distribution systems in the future because of new developments in technology development, to become agents through which tourists can find individual travel services when booking, each of them, integrate them into a complex group of related services (transportation, lodging, car rental and other services). In this

way, GDS is placed in direct competition with travel agencies that are their biggest customers. End users (passengers / tourists) are more informed about the use of new technologies and are able to use much more "tools" to directly contact sellers, choose a destination, comparing prices and access on-line booking and buying. Tourists can also use multimedia content over the Internet to directly learn about the destination, hotel, services, attractions and to directly share experiences and give their impressions of travel with other tourists.

CONCLUSION

On the basis of the above, it is clear that e-business and Information and Communications technology with the tourism sector creates an unbreakable connection. Tourism is a sector that recorded the highest growth in the world economy is strongly supported by the new possibilities of e-business.

Development of electronic business, and create new types of products and services in the tourism industry, which until recently could not be realized. Travel information systems function as a puzzle. Different parts of the puzzle, the channels are used to communicate with tourists. If a piece of the puzzle are missing the picture is incomplete. If one or more channels are not used effectively provide information, or information that you give not agree with the rest of the system, then the system will effectively convey the whole message.

If one or more of these characteristics is missing a tourist information system, then his message will be inconsistent and ineffective.

Application of modern information and communication technologies in tourism involves the use of the Internet, GDS and electronic (online) business in daily operations. There are many advantages to the makers and sellers of tourism services in these technologies that have led to changes in the way of enterprise and facilitate cooperation with other stakeholders of tourism industry.

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THE BENEFITS OF NEW APPROACH TO ENERGY MANAGEMENT AT THE LOCAL LEVEL IN REPUBLIC SERBIA

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ABSTRACT

The paper has been written primarily to emphasize the importance of rational use of energy in the Serbian economy and rationalization of energy consumption in individual households, residential buildings and public services. In practice these activities may have the name „Energy Management”. The initiative was launched ten years ago to meet the need for information dissemination on sustainable energy at local and regional level in EU, because there are good chances for increased energy efficiency and security at that level. In addition advantages in the economy must be observed and questions of environmental protection and general social benefits from energy management. But, possibility for achieving of each of these benefits depends on the current willingness of society and economic situation in Serbia, because it is not possible without investing in new technologies and equipment. This paper also wants to emphasize the duty and responsibility of energy management, on all levels, primarily through: legislation, strategic plans and implementation projects. However, in the jurisdictions of local self-governments should not be exclusively sector energy spending, already and sector energy production, particularly from renewable sources, and this is partly process of decentralization management structures Serbian energy system.

Key words: energy-management, energy-consumption, energy-production, benefits, decentralization

INTRODUCTION

The energy management initiative aims to facilitate global strategic thinking at the local level and support local actors in the process creation adequate capacity, resulting in better use of available solutions to sustainable energy efficiency. The explicit approach to energy efficiency is to focus on new technology and solutions such as replacing lighting or cooling equipment with more efficient technologies and the inevitable modern insulating materials for construction of manufacturing and other commercial and residential buildings. Strategy energy management at local level is approach that sets long-term energy savings goals and which implies strictly monitoring and permanent reporting of the energy situation.

State authorities and local self-governments in Serbia shall can leverage these energy management frameworks to lead by example and to encourage enterprises and the Serbian economy as a whole to adopt best practices to achieve energy efficiency and security. Also, here we must comprehend the structure of the energy sector Serbia and what should and what should not be decentralized of management functions.

On the issue of energy security, as a primary problem, local self-governments in Serbia must find funds to build facilities for reception, accumulation and transformation of energy from renewable natural sources. It is also important for local governments to foster local growth and to providing their inhabitants with a clean and safe environment. Sustainable energy management integrated in urban and territorial planning, transport plans as well as facilities management can be a key means to achieve these multiple objectives.

THE TOPICAL ENERGY SITUATION AND COMPETENT INSTITUTIONS IN SERBIA

The topical energy situation in Serbia

Republic of Serbia has a certain energy needs, which should provide for the orderly and continuous supply of consumers, recognising the need for rational consumption of energy and energy sources and sustainable development, sources for the provision of the required energy, i.e. energy sources, way supply for specific types of energy and energy sources, required level of stocks and reserve capacities of energy facilities for the reliable supply of consumers with energy and energy sources. For example, according to the indicators from 2008 year (NEEAP, 2010) the energy consumption it is in following sectors:

- **Residential, commercial and public service** - accounted for 3,22 Mtoe or about 38,3% of the total final energy consumption,
- **Industry** - accounted for 2,83 Mtoe or about 33,6% of the total final energy consumption,
- **Transport** - accounted for 2,36 Mtoe or about 28,1% of the total final energy consumption.

The biggest problem of the business activity of the energy sectors comes from the uncoordinated consumption and production of appropriate energy products, particularly during the winter period when, due to the heating of residential, working and office space, the needs frequently exceed the production capabilities of power sources and district heating companies (Energy sector development strategy). This situation is a consequence of not only the insufficient investment in the previous period in the performance of full overhauls and capital maintenance, but also the uncoordinated development of energy sectors from the standpoint of the economical use of energy products, increasing energy efficiency, both in production and distribution. The energy industry of Serbia consists of the following:

- **Oil sector** - the domestic refineries total refining capacity installed for 6.6 million tons per year (crude oil mainly from imports, domestic resources are the weak);
- **Natural gas sector** - the total supply is about 2.298.970 thousand m³ of natural gas per year, of which imported 93.9% and from domestic sources 6.1% (PE „Srbijagas”, 2008);
- **Coal sector** - the maximum annual production of 39 million tons of coal, of which 95% of the total coal production from the open pit mines is used for power production;
- **Power sector** - which include power plants with installed power of 7120 MW (3936 MW in lignite-operated thermal power plants, 2831 MW in hydropower power plants and 353 MW in crude oil and natural gas operated thermal power plants-district heating companies);
- **District heating company system** - existing in 45 cities of Serbia, consists of decentralized heat sources, with an installed power of about 6.000 MJ/s;
- **Industrial energy system** - includes heating sources, with about 6.300 MJ/s. In about 30 industrial companies, there are power plants which enable combined production of thermal energy and power, with a capacity of about 250 MW.

The basic characteristic of all energy system parts mentioned is a significant obsolescence of technology and low energy efficiency, as well as currently alarming and in the long term unacceptable technological condition from the standpoint of environmental protection.

Non-renewable energy resources of Serbia

The volume and structure of energy reserves and resources of Serbia is very unfavorable. The reserves of quality energy products, such as oil and natural gas, are small and constitute less than 1% in the total balance sheet reserves of Serbia, while the remaining 99% of energy reserves consist of various types of coal, predominantly low-quality lignite, with a share of over 92% in the total balance sheet reserves. This particularly relates to the lignite extracted in open pit mines, which with the total extraction reserves of about 13350 million tons represents the most important domestic energy resource of the Republic of Serbia. Non-renewable energy resources of Serbia, geological total reserves are:

- Lignite (open pit mines) 3753 Mtoe,
- Hard and brown coal (underground mines) 130 Mtoe, and
- Oil and natural gas 60 Mtoe. (Energy sector development strategy)

Renewable energy sources of Serbia

The most important renewable energy resource of Serbia is its hydropower potential (around 17000 GWh), about 10000 GWh of which has been used until today, so that the total remaining, technically usable, hydropower potential in Serbia is about 7000 GWh. This potential is mostly located at the Morava river basin (2300 GWh), then on the Drina and Lim (1900 GWh) and the Danube (1000 GWh), for the construction of individual facilities with power over 10 MW and an annual production of about 5200 GWh. At about 900 potential locations on the Serbian rivers, including small rivers, the possibilities have been determined for the construction of small hydropower plants (of up to 10 MW), with a possible production of about 1800 GWh/year (with the potential of small hydropower plants of about 0.4 Mtoe).

In addition to hydropower, exist poorly utilized potential in box the new renewable energy sources category. It should be pointed out that there are special possibilities and needs in Serbia for their organized utilization in the so-called decentralized heat production (by biomass combustion and „collection” of solar radiation and power by constructing hydropower maximum plants with a power to 10 MW and wind power generators, with up to 1 MW of power), in order to meet the needs of local consumers as well as the delivery of surplus power to the local network within the Serbian power system. The energy potential of the new renewable energy sources in Serbia is very significant and amounts to about 3,43 Mtoe per year. The greatest energy potential is in the utilization of biomass, about 2,4 Mtoe, the geothermal energy potential in Serbia is about 0,20 Mtoe, the potential of solar energy has been estimated at about 0,64 Mtoe and the potential of wind energy is about 0,19 Mtoe (Energy sector development strategy).

Structure energy sectors and energy entities managing in Serbia

The legal subjects, respectively operators for managing, production, transmission, transportation and distribution energy in Serbia in accordance with Energy Law (2011) are shown in Table 1, below.

Table 1: The showing structure energy sectors in Serbia

SECTOR	SYSTEM OPERATORS
Electricity sector	<p>Producer of electrical energy - includes the production of electricity from hydro power plants, power plants, thermal power plant and other power plants that use renewable energy sources;</p> <p>The transmission system of electricity - transmission system consists of a network voltage of 400 kV and 220 kV, 110 kV merge fields, power line fields along the 110 kV busbars in substations 110 / x kV and 110 kV transmission lines as of tightening the chain on the portal transformer station 110 / x kV, measuring devices all points of delivery to the transmission system, the telecommunications infrastructure in the transmission facilities, information and control systems and other infrastructure necessary for functioning of the transmission system;</p> <p>The operator of electricity distribution system - electrical power distribution system consists of transmission lines and junction boxes 110 kV, 110 kV busbars, transformers 110 / x kV transformer with the corresponding fields in the transformer stations 110 / x kV, medium voltage network (35 kV, 20 kV and 10 kV) distribution network and low voltage measuring device at all points of delivery to the distribution system, telecommunication infrastructure in distribution facilities, information and control system and other.</p>
Natural gas sector	<p>The transmission system of natural gas;</p> <p>The natural gas distribution system;</p> <p>The storage of natural gas.</p>
Oil and oil derivatives sector	<p>Transport oil and oil derivatives - energy entities that perform activities of energy production of petroleum products, pipelines transport crude oil and oil derivatives, transportation of petroleum, petroleum products and other forms of biofuel transportation, storage of petroleum, petroleum products and biofuels, trade oil, petroleum products, biofuels and compressed natural gas, motor fuels and other stations for the supply of vehicles and biofuel production.</p>
Heat energy sector	<p>Manufacturers of thermal energy;</p> <p>The distribution and supply of thermal energy.</p>

The competent institutions for energy management in Serbia

In recent years, the Serbian government has enacted legislation and other strategy, that regulate jurisdictions of the institutions in the energy management system in Serbia, harmonized with EU principles. The major institutions that are active in the field of energy efficiency are:

1. **Ministry of Mining and Energy** is responsible for setting the energy policy objectives and methods of its implementation, legal framework, approving the tariff systems, issuing energy permits, seeing to the certainty of delivery of energy and energy sources;
2. **Ministry of Environment and Spatial Planning** is responsible for setting the energy-related properties and ways of working out the thermal properties of multi-floor buildings, energy-related requirements for new and existing buildings, as well as the conditions, contents and

- method of issuing certificates to legal entities and individuals, as well as the contents, method and procedure for drawing up the planning documents, contents and method of issuing building permits and inspection certificates;
3. **The Energy Agency** performs activities issuing licenses for the performance of energy activities of determining the methodology for the calculation of justified costs for the performance of appropriate activities of energy entities, preparations of tariff systems proposals for regulated energy activities, the amount of costs for the connection to the system, the approval of the regulation on the energy market operation and the costs amount of the energy entities the activities of which are regulated;
 4. **The Energy Efficiency Agency** performs activities related to the improvement of final energy use efficiency, as well as the encouragement of economical use of primary energy sources. It proposes changes in the legislation, technical and other regulations which can lead to an increase in energy efficiency, prepares and implements the programs for saving, economical and efficient use of final energy in industry, transport, households, construction, as well as in the fields of energy generation, transmission and distribution and promotes projects for the utilization of renewable energy sources. (Energy Law, 2011)

THE ENERGY MANAGEMENT IN JURISDICTION OF LOCAL SELF-GOVERNMENT

The European Commission has supported the creation of local energy management or local advisory bodies across the EU, to provide local population and organisations with the information and support needed. They are formed by regional or local authorities and partner organisations. The role of local energy managers is to promote and disseminate good practice in the areas of energy efficiency and renewable energies. Local energy managers are about informing and supporting local residents for these decisions, so that local actions bring direct benefits to local people. Ideas for local initiatives are often simple and have already proved their worth elsewhere, but successful implementation requires commitment and resources. Also, the implementation of standards: BS EN 16001:2009 or ISO 50001:2011 provides guidance for reduce energy-consumption and GHG emission. This is achieved by helping you develop and implement energy management systems, which include strategic targets that take into account legal or other specific requirements and information about their significant energy aspects. A simple energy management system model (Geneve, 2011) can be seen in Figure 1, below.

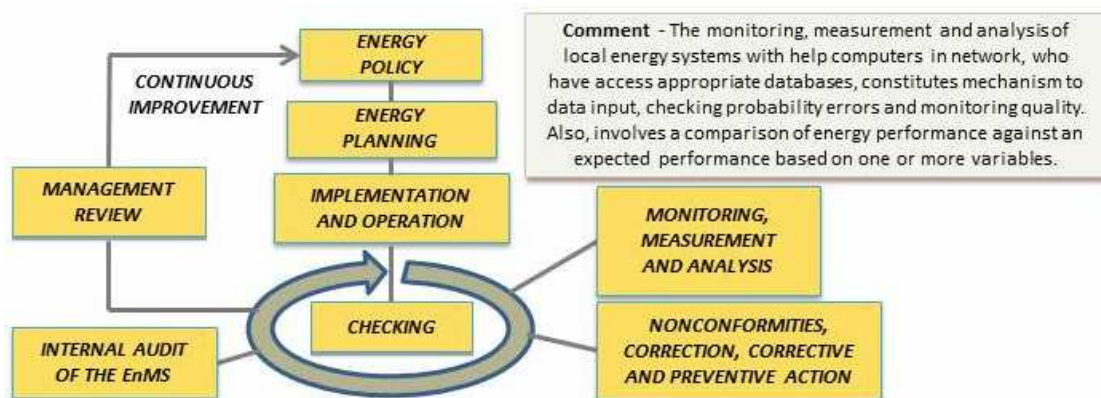


Figure 1: The energy management system model

Until recently, in local self-governments was not any significant functions in the field of energy. While energy production, transportation and distribution were predominantly the responsibility of the state, local authorities functions were limited almost solely to their role of heat and electricity consumer. In consequence of the privatisation and decentralisation in the energy sector, local self-governments beginning to perform new functions. In the Central and Eastern Europe, of course and on the Western Balkan, these changes to be occur parallel with the political reforms. The functions local self-governments with respect to energy we can deploy in different roles, as follows:

- The energy consumer,
- The energy producer and energy supplier,
- The regulator and investor at the local level energy sector,

- The motivator for more efficient energy producing and consumption and for environmental protection.

Recent years, in European practice for the implementation of these functions, local authorities undertake a variety of actions. A considerable number of them investing large efforts to reduce of energy consumption, minimize harmful impacts on the environment from energy production and energy use on the area of the local self-governments and a change of the behaviour of users in the residential sector, the services and local industries. This functions local self-governments can be broken down into several essential components in energy sector, as seen in Box 1, below.

Box 1: The essential components functions local self-governments in energy sector

- ▣ Energy production from renewable natural resources (biomass, hydropower potentials of small rivers, geothermal, wind and solar energy);
- ▣ Energy use in local industry;
- ▣ Energy use in residential buildings;
- ▣ Energy use in office buildings and other non-residential and non-industrial buildings, such as energy use for lighting, heating, cooling, office work and auxiliary appliances;
- ▣ Energy use in buildings used for leisure and entertainment, ie, shopping and sports centres;
- ▣ Energy requirements for new and existing buildings, as well as the conditions and issuing certificates for construction;
- ▣ Energy use for transport, including both public transport systems and private vehicles.

Ministry of Mining and Energy of Serbia much expected of Law on Rational Use of Energy, due to the introduction the energy management in public sector, as well as in other consumption sectors. In addition new Energy Law already affects development renewable energy sources and this is a winning combination the energy stability. In future collaboration between Energy Efficiency Agency (through five regional energy efficiency centres) and local energy managers, practically we get synergy of these laws. The realization these activities is related to the accessibility of relevant technical knowledge, technology and equipment. It is therefore necessary carry out an energy managers training and licensing.

EXPECTED BENEFITS OF ACTIVITIES LOCAL ENERGY MANAGEMENT

It is important to note The Energy Policy for Europe (Brussels, 2010) provides core objectives: competitiveness, sustainability and security of supply energy. The energy market has to improve in the coming years, so that: from renewable sources have to contribute 20% to our final energy consumption, GHG emissions have to fall by 20% and energy efficiency gains have to deliver 20% savings in energy consumption. In this sense there is many opportunities to improve energy efficiency by sectors, from activities of energy managers in Serbia, with global aspect but measures at the local level (see Table 2). Serbia has a good energy potential from renewable sources. Therefore development autochthonous industry of renewable energy source on locations with best characteristics bears large benefits (see Box 2). Finally, we can conclude that main benefits from local energy management, specified in Box 3.

Table 2: The general measures to improve energy efficiency by sectors in line with NEEAP of Serbia

SECTOR	MEASURES AND EXPECTED OUTCOME
Residential, commercial and public service	This sector accounts for about 38% of the total final energy consumption in Serbia and it is largest area which has large opportunities saving from coating buildings and more efficiently: air-conditioners, supply of hot water, appliances and equipment, followed advanced lighting options such as compact fluorescent lamps, light-emitting diodes and improved controls. Better insulation in the new-building, retrofit commercial centers and reconstruction public lighting is a large opportunity for savings. Possible saving is 0,30 Mtoe per year, only from 2018.
Industrial	This sector has a broad array of fragmented opportunities in: steel, chemicals, food processing, textiles, electronics, and many other industries. There is large intersectoral-possibility for the combined production heat and electricity, then installation new heat pumps and further optimization of the drive systems, the utilization of more-efficient system for cooling plant and other possibility. From introduction energy management in large-industries can save about 0,15 Mtoe per year. Of course, this is expected only of 2018.
Transport	Automotive manufacturers working to improve engine for less consumption fuel, and vehicles to electric drive, opportunities exist in reducing vehicle weight through the material and vehicle redesign. It is necessary consider opportunities switching from road to electrified rail systems, or tram and trolejbus systems, wherever possible, and then investments in modernization of traffic infrastructure. Only from application EU standards for energy efficiency in the transport can be saved roughly 0,06 Mtoe per year (from 2018). But that's not all of the possible outcomes.

Box 2: The benefits of developing renewable energy sources

- Reduced CO₂ emissions;
- Small-pollutant industry of new energy sources;
- Secure and stable long-term supplies;
- Reduced reliance on fuel imports;
- Less exposure to volatile global energy prices;
- Protecting consumers from monopolistic behavior producers energy and creates a healthy competition;
- Providing investment and employment;
- Economic development in rural and under-developed areas.

Box 3: The main benefits of local energy management

- **Saves money** - Reduction energy cost is important for enterprises because brings to increased profit. For public organizations of saving energy allows funds can be redirect for second purposes. Sure it is useful and for households budget.
- **Saves fossil fuel** - Fossil fuels will not last forever. All less fossil fuel we use in this generation. Finds opportunities for development industry renewable forms of energy low carbon economy.
- **Reduces pollution** - Saving energy, reduces the amount of CO₂ and other harmful gases who discharged into the atmosphere. Kyoto Protocol recognized that CO₂ provides a major contributor to global warming and climate change.
- **Reduction cost in the production process** - Energy management for example favors stable work of the plant, with more efficient cooling of the systems and therefore less frequency of maintenance and thus brings reduced energy costs.
- **Improves the working and life environment** - Buildings which are too hot or cold can have a negative impact on tenant comforts, morale and productivity employees. Also poor control of energy can lead to damage in making product, equipment or goods within a building. Energy management provides implications for health, safety and risk management.
- **Respect law and regulations** - Buildings, vehicles, technologies and equipment must comply with legislation. Mismatch with the law can lead to legal procedures. Energy management affecting on the actors to respect regulations.
- **Stimulation for positively behavior organization** - The organization gains the business benefits for behavior socially responsibly. Especially, if respect standards for environmental protection and so.

CONCLUSION

The energy management is designed to implement complex measures for energy efficiency at local level. Energy managers on behalf of local self-governments play key roles in sector energy management. The local self-governments are at the same time in role consumer and service provider. Planners, programmers and regulators for local company and stakeholders. Suppliers of energy for their citizens and local company. Also, advisors and motivators for raising awareness or promoters of sustainable energy.

Especially, new legislative policy that encourages investment in renewable energy technology will initiate the development of local energy industry, which will lead to prosperity local governments in Serbia, by reducing transmission costs energy and employing the local manpower. Producers of energy in local communities in Serbia will produce the energy to their neighbors and this will keep substantial part of money within the local self-government. The exploitation of renewable energy source preventing dependence on monopoly of energy producer and dealer, and fairly improves energy supply in Serbia.

It remains hopes that Republic of Serbia, in the purpose of achieving a higher level of socio-economic development, can strengthen the energy system, through harmonization energy production sectors with the energy consumption sectors. Also, with aid new approach in energy management, Republic of Serbia can provide energy stability, create a surplus of electricity for export, and partially can reduce the import of some energy products and ultimately to contribute to improving quality environmental protection.

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THE EFFECTS OF TAX COMPETITION ON THE OPERATIONS OF MULTINATIONAL COMPANIES

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ABSTRACT

Multinational companies are the main driver of world economy and globalization, as well as the overall process of innovation, research, development and transfer of modern technologies. Given that the objective of the multinational companies that rationally structured network affiliations, and maximize the benefits offered by different countries, the decision to locate the mean activity of the previous detailed analysis of all relevant potential determinants of the country in which to invest capital and its comparison with other potential sites. Today, many countries have introduced various incentives to attract multinational companies. The goal is to create a more competitive economic environment, tax policy is a legitimate and important instrument for achieving this goal. Tax competition implies that each jurisdiction tries to attract capital and investment by offering favorable tax treatment, through a broad tax base and/or low tax rates. One of the main reasons for the appearance of tax competition is certainly the tax burden. States fully realize the situation that if there is a deliberate reduction in effective tax rates automatically comes to attracting foreign capital.

Key words: Tax competition, Multinational companies, Investments

INTRODUCTION

The single European Union market is characterized by high competition within the free flow of capital, people, goods and services. Member States shall endeavor to create a more competitive economic environment, tax policy is a legitimate and important instrument for achieving this goal. Using tax policy to achieve competitive advantage is particularly obvious at the beginning of the millennium when the new EU members from Eastern Europe competed to attract foreign investment from Western Europe.

The ratio of the relative advantages of fiscal harmonization, on the one hand and tax competition, in turn, leads to two guiding principles of fiscal integration in the EU: (1) is necessary to harmonize only those taxes that lead to real distortions in the process of economic integration and (2) agreements on minimum tax rates should prevent tax systems in the direction of suboptimal levels of taxation. In the field of fiscal harmonization, as default, the question is which taxes should be harmonized, and the answer to this question depends primarily on the phase and the degree of fiscal integration.

TAX COMPETITION AS A SIGNIFICANT FACTOR IN ATTRACTING INVESTMENT

Tax competition implies that each jurisdiction tries to attract capital and investment by offering favorable tax treatment, through a broad tax base and/or low tax rates. It is widely accepted view

that high taxes impede economic growth so that tax competition between states is useful for economic growth, which means the global economy and increasing investments. Tax competition exists when people can lower your tax burden by moving capital and/or work from jurisdictions with high tax burden in jurisdictions with low tax burden. Tax competition is, in itself, a positive phenomenon in so far as it affects the reduction of public spending in the state, which makes tax and a state public sector more efficient. However, when tax competition leads to erosion of tax revenues levied on the base consisting of the income or capital income, it is necessary to take appropriate measures to prevent it. For this purpose, and to prevent double taxation, and the double exclusion and to improve cooperation between national tax authorities, it is necessary to establish a coordinated action at EU level. The necessity of cooperation should exist between themselves and the national tax authorities of the Member States. This is especially important, since the line between fair and unfair tax competition is very unclear.

Tax competition is only a small part of the competition between countries, but it is increasingly important because the growing mobility of capital and labor. Workers and people with money want to invest to achieve the greatest benefit when they refuse to tax (the highest rate of return), and their quest for opportunities for profit is not limited by national borders. Not surprisingly, investors and workers tend to leave the country with "heavy" burden of taxation and strict tax laws. Instead, these resources are going to reward states that wealth creation in the private sector. Businesses of all types - if you are faced with the pressure of competition - are constantly forced to improve quality and offer new products to maintain consumer interest. Competitive pressures encourage a better allocation of resources and improve economic efficiency. This is why a market economy grow faster and provide higher standards of living.

One of the main arguments in favor of tax competition is that it encourages public sector efficiency, as well as attempt to provide taxpayers the best services at lowest cost. Tax competition means lower tax rates and reduce public revenues, and states are forced to, in order to provide the existing level of public services, encourage public sector efficiency. Also, tax competition leads to a reduction in public sector costs by promoting the transition of public enterprises from the state to the private sector, which particularly affects the strengthening of the local private sector.

Tax competition is entirely inconsistent with fundamental tax reform, and is reflected in the following (a) the goal of tax reform is a system with low tax rates on productive behavior. Tax competition promotes tax reform by helping to lower the marginal tax rate, (b) the goal of tax reform is a system in which income is taxed only once. Tax competition promotes tax reform by helping to eliminate the double taxation of income that is saved and invested, (c) the goal of tax reform is a system in which government does not tax income earned in other states. Tax competition promotes tax reform by rewarding territorial taxation and common-sense idea that the government tax income earned inside national borders, (d) plan for the harmonization of taxes, however, is a clear threat to the rights of states to reform their tax laws and introduce systems that are proportionate and based on taxing consumption. Tax harmonization plan will almost certainly mean that the tax reform has become unlikely, (e) the OECD and other international bureaucrats believe that the territorial form of taxation "harmful" competition. The flat tax also eliminates double taxation, but the OECD initiative is intended to assist the authorities to discriminate against income that is saved and invested. (A. Jones, B. Sufrin, 2001)

MULTINATIONAL COMPANIES AS CARRIERS OF FOREIGN DIRECT INVESTMENT

The strategy of a country to attract foreign direct investment is part of the overall economic strategy of the country. In the past 20 years completely changed the attitude of most countries to foreign capital and foreign investors. Until the mid-80s of the last century, most countries are very suspicious attitude towards foreign investors. In early 90-ies of the last century was followed by a reversal in attitudes towards foreign capital, and today many countries have introduced various incentives to attract multinational companies and more foreign capital, particularly foreign direct investment. Multinational companies are commercial organizations that have their own businesses

in several different countries. They operate under different tax and economic systems, different economic policies and has different goals that each country in which they operate. Multinational companies have a growing importance in the global economy. Instead of products in one country and then exported goods in the other, they establish their businesses in countries where they want to sell their products. So operate as domestic legal entities and thus avoid any restrictions that states may impose on the international exchanges. These companies bring a certain benefit the country in which they operate, for employing domestic workers, and they are mostly local companies supplying the necessary raw materials. These are companies engaged a large volume of capital and production, which, moreover, are becoming larger. Some of these companies achieve greater national product of many countries. Estimates show that even now the 250 largest multinational companies produce nearly half of world gross domestic product. Because multinational companies dominate many national economies, and control how their business.

Today, multinational companies are the main driver of world economy and globalization, as well as the overall process of innovation, research, development and transfer of modern technologies. Multinational companies are seeking the best investment opportunity around the world and enter and exit from certain markets, looking for better conditions for investment, thereby forcing the country to compete with each other to attract foreign capital. The great importance of multinational companies and say the following: (a) 500 largest companies achieved one third of world gross domestic product and controls about 70% of world trade, (b) 1% of the largest multinational company achieves over half of world foreign direct investment. Most countries try to attract multinational companies to invest in their country so as to reduce the tax burden as possible. This behavior results in tax competition, which is described as a thesis about the "race to the bottom" (RTB thesis), and it is about attracting foreign capital only to tax mechanisms.

In achieving the goals of multinational companies use various strategies, which seek to improve their business and win more market share worldwide. At the end of the twentieth century an increasing number of multinational companies adopt a global strategy and accept the global structure. Global access means that investment decisions are made with the fall orientation to the local market than is the case with multinational strategies. Basic characteristics of the global strategy of multinational strategies are (a) increasing global market share, (b) the branches located in different countries receiving characteristics of increasing specialization, and flows between them are internalized in order to reduce transportation costs, (c) multinational companies locate their activities in countries in which they invest, and who possess the required competitive advantage, (d) branches of multinational companies have business activities in the host country, selling, exporting to third countries or even in the exporting country of origin of multinationals. Comparative advantages are realized activities of foreign subsidiaries and their relationships with local businesses, and government measures in host countries aimed at improving the investment climate in the country. Under this approach, the multinational companies require that countries meet the requirements for adequate tax competition, qualified workforce, good communications and transport networks, transparent and stable judiciary, ordered societies and political stability. Thus, if a country implemented a successful investment policy it will be at the same time attractive to both domestic and foreign multinational companies.

The strategy of a country to attract foreign direct investment is part of the overall economic strategy of the country. A country that has a good macro-economic indicators alone attracts large amounts of foreign direct investment. Economic measures to benefit the country in attracting foreign direct investment can be divided into financial, fiscal and other incentives. It should ensure that social benefits exceed social costs. Studies show that export promotion brings in the most positive effects of foreign direct investment on the domestic economy, as well as a request for greater involvement of local suppliers. The fiscal incentives include tax measures such as reducing income taxes, deferred payment of tax (accelerated depreciation), making agreements on avoidance of double taxation, tax deductions for investment and reinvestment in the form of foreign direct investments, deductions from the tax base associated with number of employees. Financial incentives include granting funds to finance businesses of foreign direct investment, such as state

aid and subsidies in the amount of the investment cost, subsidized state loans, state guarantees, and insurance against currency and non-commercial risks by the government rather than insurance companies. Among other incentives are thought to increase the profitability of investments nonfinancial ways, such as the provision of services relating to infrastructure under favorable conditions.

Implement strategies that allow multinational companies to understand the process of globalization of economic activities. Linking the activities of multinational parent companies with subsidiaries can be achieved through (a) stand alone strategy in which the connections are direct, concentrated on technology, financial capital and property, (b) strategies for simple integration of subsidiaries which provide inputs to the nut and (c) strategies for complex Integration, which aims to exploit global economies of scale and greater degree of functional specialization, which includes specific corporate activities worldwide. Although all three strategies coexist, there is a very pronounced trend toward the integration of the complex.

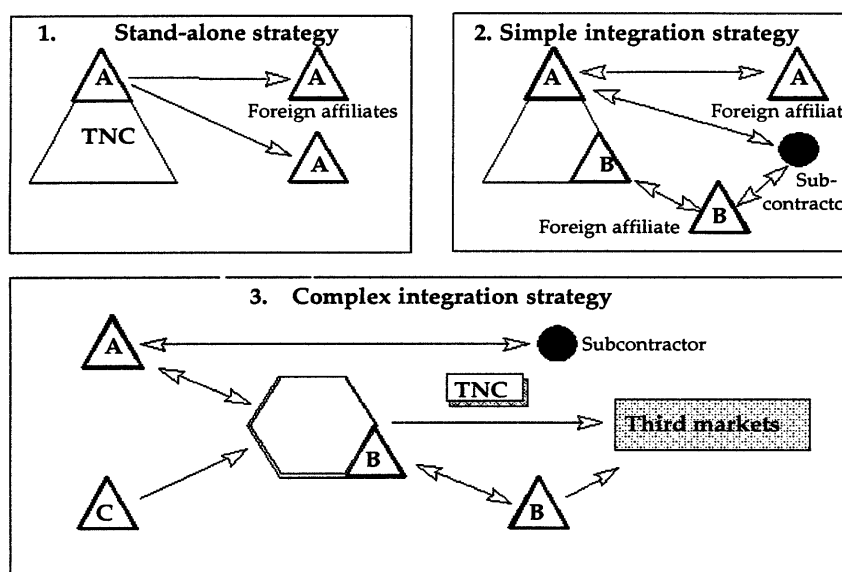


Figure 1: International production strategies

More specifically, the growth and organization of international production under the governance of transnational corporations has several implications for the organization of domestic labour markets:

- The conditions underlying firm-level competitiveness are changing, relying less on traditional natural assets and more on created assets, above all assets in the form of skills and knowledge. Such assets are therefore an important factor influencing the locational advantages of countries as hosts to transnational corporations.
- The importance of skilled human resources, as well as the proliferation of cross-border production linkages via foreign direct investment, subcontracting arrangements and strategic alliances and the adoption of complex integration strategies by transnational corporations create both challenges and opportunities for mutually beneficial relations between employers and employees.
- As the organizational scope of transnational corporations widens, both geographically and functionally, and as the mobility of capital increases, labour and governments must adapt more quickly to changes in the international competitiveness of their industries and firms.
- Increasing reliance on market forces redefines the relationships of firms, labour and governments with one another, including those in the areas related to employment and the workplace.

Table 1: The strategies and structures of transnational corporations

Strategy	Intra-firm linkages	Foreign affiliate type	Degree of integration	Environment
Stand-alone, e.g., multi-domestic	Ownership, technology, finance; mostly uni-directional	Miniature replica of the parent firm	Weak	Host country accessible to foreign direct investment; trade barriers; costly communications and transportation
Simple integration, e.g., outsourcing	Ownership, technology, markets, finance, other inputs; mostly bi-directional; subcontracting	Rationalized producer of one or a few elements in the value chain.	Strong at some points of value chain, weak in others.	Open trade and foreign direct investment regimes, at least bilaterally; non-equity arrangements permissible.
Complex integration at the regional or global levels, e.g., networks	All functions; mostly multi-directional	Product or process specialist; functional specialization	Potentially strong throughout value chain	Open trade, technology foreign direct investment and related regimes; use of advanced information technology; convergence in tastes, heightened competition, low communication and transportation costs.

The extent to which foreign direct investment affect the integration of national economies into the global economy depends on the strategic role that has an affiliate within the multinational company. In Table 1 highlighted the strategic role of the affiliate, depending on their type, within the corporate bonds, the degree of integration, and the prominent characteristic elements of the host environment in which they operate. As can be seen, the highest level of integration with affiliates that are specialized for a particular product or process within the multinational companies. They have strong links with the homeland, and are an integral part of its production network. On the other hand, miniature replicas are integrated into the composition of the multinational companies that are primarily oriented to serving the domestic market.

In order for a country was able to attract foreign capital must first create a favorable investment climate that will be created if a stable economic conditions, there is a political and social stability, a favorable foreign trade, customs and foreign exchange treatment of joint ventures, as well as available, reliable and skilled labor power and access to raw materials and other domestic sources of supply. Each country is trying to offer better conditions for conducting economic activity and investment. Special attention is paid to the tax requirements and tax treatment of companies, in a way that the tax base for corporate income significantly expanded, while lowering the tax rate so that almost approaches zero or even disappears completely. Consequence of this behavior state represents a significant erosion of tax base, and create a very "unfair" tax environment compared with the terms of entities in neighboring countries.

The motive for the opening of new markets or expanding existing markets is a logical response to the situation of multinational companies that have their domicile market become too narrow for the sales of goods and services. In the situation of lack of resources in their own country or the inability to secure imports, multinational companies are motivated to get closer to sources of raw materials which are largely located in countries in transition, where it can provide cheaper labor because the wage level is lower in countries in transition.

CONCLUSION

As all the countries of Southeast Europe, including Serbia, are in a position relative to the most developed countries are lagging behind in development and that the sources of their own accumulation can not get enough of their own funds to get closer to most developed countries, and Serbia are foreign direct investment very interesting. Serbia and other countries in transition to leaving the socialist way of doing business were outside the foreign direct investment. Move to a market economy and privatization of foreign investors are beginning to express interest in this

country. Therefore investment in transition economies are not sufficiently researched form of international capital movements in economic theory.

Behind the multinational companies are the national interests of those who seek to impose on other countries by transferring production of its own segments and treating them by external factors, which need to master and subordinate their own interests. Multinational companies emphasize the concentration of strategic factors in the development of home countries and other countries and seek to integrate their economies into the global production system primarily as a source of cheap resources and markets for their products. Experience in many countries has shown that the effects of such activities of multinational companies are not always positive for the development of the country in which to invest. However, it is significant that the multinational companies involved in technology development process under-developed countries, and transfer of capital, technology and different types of knowledge, creates conditions for the reduction, or at least alleviate underdevelopment relative to developed countries.

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LOGISTICS DEVELOPMENT IN MACEDONIA – OPPORTUNITIES AND PERSPECTIVES

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ABSTRACT

In recent years, effective logistics and supply chain management have been recognized as key opportunities for improving the profitability and the competitive performance of the companies. Supply chain performance will be a key indicator of overall corporate success in the upcoming period and core advantage when entering foreign markets and compete with low cost countries. Companies with efficient logistics and Supply Chain Management will be able to maximize their profitability and improve their competitiveness. Success in integrating global supply chains starts with the ability of companies to move goods across borders rapidly, reliably and cheaply. In order to connect the Macedonian economy to the world trends and processes and connect the Macedonian market to the European and the world market, the highest priority should be given to the development of logistics and supply chain management in Macedonia. This paper elaborates the current level of logistics development in Macedonia measured by the Logistics Performance Index (LPI) and makes a comparison among the countries of South-East Europe .

Key words: logistics, development, Logistics Performance Index, Macedonia

INTRODUCTION

Business logistics is a relatively new field of study compared with traditional areas of finance, marketing or manufacturing. Logistics is defined as the process of planning, implementation and control of material and information flows from their place of origin to the place of their consumption in order to meet the desires of the consumer.

Logistics, especially the one in transportation, is increasingly becoming a factor for dynamic movement of economic trends in one country, but is particularly significant in the international arena. A World Bank analysis shows that medium developed countries with well developed transport logistics network have great potential for economic growth. Economies that have modern logistics facilities have a comparative advantage over other economies, and therefore, in order Macedonia to successfully engage in global trends and processes, developing logistics is a necessity.

One of the goals of logistics is to facilitate the process of trade, and this in turn can aid the economic well-being of all countries. Ensuring good logistics systems are in place is thus a key component in efforts to help developing countries in particular. As the global economy has evolved and grown quite considerably, especially in the latter decades of the twentieth century and into the current century, in order to facilitate this, the logistics sector had also to evolve and grow (Mangan J. et al, 2012).

Globalization of economy as a process enables a creation of a single market and logistics is an important tool in this process. A market with contemporary logistical capacities has a comparative advantage over other economies. Trade logistics is critical for developing countries to improve their competitiveness, reap the benefits of globalization, and fight poverty more effectively in an increasingly integrated world. Success in integrating global supply chains starts with the ability of companies to move goods across borders rapidly, reliably and cheaply.

LIMITATING FACTORS AND CHALLENGES FACING THE LOGISTICS DEVELOPMENT IN MACEDONIA

The present level of development of logistics in Macedonia can be assessed as unsatisfactory, but Macedonia has a strategic territorial position that offers opportunities to develop effective business logistics. The main advantages of Macedonia for the development of the logistics concept and to build a logistics center are the favorable geographical position and the level of development of transport and other infrastructure. Macedonia The traffic benefits are primarily arising from the Pan-European Corridor 8 and 10, the parts pass through Macedonia and intersect each other in the vicinity of Skopje. Positive trend in the development of logistics in Macedonia and the entry of a world famous logistics companies such as: Logwin, Kuehne + Nagel, Gebruder weiss, DHL, DB Schenker, Mediterranean Shipping Company (MSC), etc.

Generally, we can say that the road infrastructure in Macedonia is adequate for developing a modern logistics concept and building a logistics center. Macedonia's inner urban road network is about 9750 km. Its road infrastructure is characterized by a pronounced development of the Pan-European corridor X North-South E-75, which has a total length of 172 km through the territory of the Republic of Macedonia, and Xd corridor which has a total length of 127 km.

In Macedonia there are 1000 km of railway infrastructure, which follows two pan-European Corridors VIII and X. Corridor X is the length of 217 km through the territory of Macedonia. The railway is a standard size. Electrified with modern signaling system of communication. The total length of railway infrastructure needed for Corridor VIII is 339 km.

Air traffic in Macedonia is going through two airports in Skopje and Ohrid. The Skopje Airport has been recently renovated and is one of the best airports on the region. It is equipped with modern technology, modern navigation system of aircraft in all weather conditions and with modern information system.

Since Macedonia is a landlocked country, the most important seaport performing services for it is the port of Thessaloniki, Greece.

Limitating factors facing the development of logistics in Macedonia are the following:

- Macedonia is a landlocked country;
- Lack of foreign trade;
- Existence of a small number of companies offering integrated transportation, logistics and forwarding services. These are only the foreign companies mentioned earlier, while most of domestic companies only operate customs brokerage;
- Bureaucratic and administrative obstacles;
- Lack of support from all previous governments.

Despite the limitations specified, the geographic position of Macedonia feature enables the bridge across the center of the Balkan Peninsula and it makes it a special place to implement long-term logistics concept within the region. Thanks to its position and level of development of transport and other infrastructure, the Republic of Macedonia, without doubt, can become a logistics center in the region.

The development of logistics shows that classical settings of the tasks of general transport and storage are increasingly going in the background at the expense of logistics services. This means that the logistical concept of a region gets increasingly more important in terms of natural traffic benefits. Surveys show that logistic potentials in Macedonia are primarily in the textile industry and food processing products. Also, profitable opportunities exist in the sectors of construction materials, sanitary and free economic zones.

LOGISTICS IN MACEDONIA MEASURED BY THE INDEX OF LOGISTICS PERFORMANCE

Logistics performance index (Logistics Performance Index-LPI) is an interactive benchmarking tool created by the World Bank in collaboration with the Turku School of Economics in Finland, and aims to help countries identify challenges and opportunities they face in their trade logistics and what they can do to improve their logistics performance. The database contains the World Bank data for 155 countries worldwide. Logistics performance index is based on research conducted between carriers and shippers in these 155 countries and contains questions about logistical environment in their own countries, the perception of logistical environment in countries with which trade and work experience from the global logistical environment. These data are supplemented with objective data on the performance of key components of logistics supply chains in separate countries.

Logistics Performance Index (LPI) is the weighted average of the country scores on the six key dimensions:

- Efficiency of the clearance process (i.e. speed, simplicity and predictability of formalities) by border control agencies, including Customs;
- Quality of trade and transport related infrastructure (e.g. ports, railroads, roads, information technology);
- Ease of arranging competitively priced shipments;
- Competence and quality of logistics services (e.g., transport operators, customs brokers);
- Ability to track and trace consignments;
- Frequency with which shipments reach the consignee within the scheduled or expected delivery time (Arvis J.F. et al, 2010).

The index is calculated using the method of Principal Component Analysis (PCA). The index ranges from 1 (lowest) to 5 (highest). The database contains the World Bank indices of logistics performance for 155 countries.

Logistics performance index of the Republic of Macedonia for 2010 is 2.77 and according to this index, Macedonia is located at 73-th place out of 155 countries worldwide. This is shown in Table 1. The highest index of logistics performance in the world has Germany and it is 4.11, and immediately followed by: Singapore (4.09), Sweden (4.08), Netherlands (4.07) Luxembourg (3.98); Switzerland (3.97), Japan (3.97) UK (3.95), Belgium (3.94) etc. Somalia has the lowest index of logistics performance in the world, and it is 1.34. Other countries that are at the bottom of the table and have a value of logistics performance index under 2 are also African countries: Eritrea (1.70) and Sierra Leone (1.97).

If we make a comparison of logistics performance index of the Republic of Macedonia and other countries of Southeast Europe, we can conclude that a total of 9 countries, Macedonia is located near the bottom of the table, or the sixth.

As can be seen from Table. 2, in South Eastern Europe, the highest indices of logistics performance have Croatia (3.51) and Hungary (2.99). According to the value of logistics performance index, Macedonia is only before Bosnia and Herzegovina, Serbia and Albania, which is unfavorable indicator.

Table 1: Logistics Performance Index for Macedonia in 2010

	Value of the LPI	Rank
Total logistics performance index	2,77	73
Infrastructure	2,55	68
International shipments	2,83	79
Logistics competences	2,76	60
Ability to track shipments	2,82	76
Duration of the procedure for execution of export and import	3,10	105
Customs procedures	2,55	61

Source: World Bank

Table 2: Logistics performance indices of the countries of Southeast Europe in 2010

Country	Logistics performance index	Customs procedures	Infras-structure	Intern-ational shipments	Logistics Infrastr-ucture	Ability to track shipments	Duration of the performance of export and import
Czech Republic	3,51	3,51	3,25	3,42	3,27	3,60	4,16
Hungary	2,99	2,83	3,08	2,78	2,87	2,87	3,52
Slovenia	2,87	2,59	2,65	2,84	2,90	3,16	3,10
Romania	2,84	2,36	2,25	3,24	2,68	2,90	3,45
Bulgaria	2,83	2,50	2,30	3,07	2,85	2,96	3,18
Macedonia	2,77	2,55	2,55	2,83	2,76	2,82	3,10
Bosnia and Herzegovina	2,66	2,33	2,23	3,10	2,30	2,68	3,18
Serbia	2,69	2,19	2,30	3,41	2,55	2,67	2,80
Albania	2,46	2,07	2,14	2,64	2,39	2,39	3,01

Source: World Bank

Another measure for logistics performance is UNCTAD's liner shipping connectivity index (LSCI), which measures 162 coastal countries' access to container shipping services. The top ranked country in the 2010 LSCI was China, while the bottom ranked country was Paraguay. This measure is not available for Macedonia.

CONCLUSION

Indices of the logistics performance for 150 countries worldwide show that there are significant differences in logistics performance between different countries and regions. It is important to point out that there are significant differences not only between developed countries and developing countries, but there are significant differences between countries with similar levels of development.

Also, these data show that although the time and cost are very significant, nevertheless, for the traders the most essential thing is the entire reliability of the whole supply chain. Insurance costs became important part of the logistics costs in many developing countries. Logistics performances of certain countries, to a great extent, depend on the weakest link in the supply chain, because poor results in only one or two areas can have serious repercussions on the entire competitiveness.

Although the situation with the level of development of logistics in Macedonia can be considered a pessimistic one, in the direction of improving this situation we must first identify actions to be taken in order to develop a national logistics concept. First, we need to determine which are the import and export potentials of the country, the ways for their improvement and how our manufactured products to convey to European markets. And, of course, how to set the flow of

logistics of goods being imported into Macedonia. But we also need to raise awareness of the government about the importance of the logistics sector because logistics can be a key to economic development of the country. Main advantages of Macedonia for the development of logistics concept and building a logistics center are the favorable position and level of development of transport and road infrastructure. The sectors where there are most optimal potentials for the development of the logistics concept are the sectors of textile industry, agriculture, food and construction industry.

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MANAGING RISK TO REDUCE DISASTERS RISK

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ABSTRACT

Experiences in the region show that disasters obtain protracted and long-lasting characteristics, and from lessons learned so far it is necessary to find the direction for their outgoing or elimination. Therefore, the author presents an inner view to risk assessment as an integral part of decision making process in disasters and its implementation should involve and require close collaboration among all the sectors of society. This approach seems multi-disciplinary process, rather than an activity, that allows for the identification, quantification and understanding of the nature and extent, and impacts of the risks a community or society is facing, which are associated with unanticipated extreme events and the vulnerability of the exposed community or society. Each stage of the risk management process should be recorded appropriately. Assumptions, methods, data sources, analyses, results and reasons for decisions should all be recorded. The records of such processes are an important aspect of good governance. The goal of a disaster assessment process is to provide objective and transparent information for making decisions on countermeasures to reduce disaster risk. To do this, the risk assessment, assesses and compares risks according to their likelihood and impact, to prioritise planning and allow a proportionate allocation of resources.

Key words: assessment, risk, disaster, management, planning.

INTRODUCTION

In accordance with the Protection and Rescue Law (Official Gazette of RM issue No. 36/04, 49/04 and 86/08) the Protection and Rescue Directorate is obliged to carry out specific measures, activities and steps to protect and save the lives of the people jeopardized as a consequence of natural and other disasters.

Also, in accordance with the Rule Book about the content and the conduct of the training for self protection within the educational institutions (Official Gazette of RM issue No. 48/06), and with an aim to accomplish the system of protection and rescue, the Protection and Rescue Directorate is obliged to carry out risk management process, to establish capacities for protection, rescue and assistance but also self protection, self assistance and mutual help. The point of managing risk of the people lies in the fact that an organized protection in case of disaster won't help everyone being in danger in spite of all the efforts and engagements. This lack of protection of each organization could be resolved with a massive engagement of the population i.e. their enabling and equipping to carry out tasks within the area of the protection.

Therefore, in order to realize the reduce the disasters risk, it is a duty of the Protection and Rescue Directorate to organize and conduct the necessary activates which will enable better preparedness in case of disaster. In this case, risk assessment as an integral part of decision making process in disasters and its implementation should involve and require close collaboration among all the sectors of society, the assessment process should be well organized and coordinated activity in function of the general task to protect the people and the material goods in case of disaster. Applying all the other measures for protection and rescue carried out by the citizens itself. (Stojanovich, 1984)

Defining basic concepts

The complexity of the nature of disasters underscores the paramount importance that it be addressed within the premises of a learning environment. Acknowledging that disasters are likely to happen to anyone regardless of age, place and time could lessen the aggravating factors that usually lead to lives lost. Schools and educators, with their fundamental role in shaping the minds of children to become competent adults and responsible citizens, provide the best avenue for helping the students learn at an early age the natural hazards that they face, and the actions that they have to take to reduce their vulnerabilities to disasters. Natural process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. “Natural Disasters” are earthquakes, landslides, snowstorms and snowdrifts, icing, hail, drought which as uncontrolled forces threaten the living environment, health and lives of people, material things, the flora and the fauna and the cultural heritage. Within the framework of this definition, Earthquakes are for example natural events and in order to be characterized as a disaster, it is required that they cause losses and bring about a halt in people's daily lives. Therefore, effective and sustainable risk and disaster management implementations are needed in order to prevent the earthquakes' leading to disasters. Disaster Management is generally made up of 4 main integrated phases. These are conceptualized as damage mitigation, preparedness, combat with disasters and redevelopment and amelioration. The need for public awareness and participation is being stressed in every phase of disaster management (Van den Eynde & Veno, 1999).

The Hyogo Framework for Action 2005–15 articulates a worldwide consensus that disaster risk reduction is an integral part of sustainable human development, not a side issue of limited, technical interest or concern (Wisner, 2006). Priority 3 of the Hyogo Framework focuses on education to build a culture of safety and resilience.

Definition of basic concepts

“Disaster is a serious disruption of the functioning of society, causing widespread human, material or environmental losses which exceed the ability of affected society to cope using only its own resources.” (UNISDR ,2009)

In accordance with the Protection and Rescue Law “Risk assessment” is a qualitative and quantitative data analysis on the possible risks of natural disasters or other disasters, that includes forecasting of the possible future flow of events and their consequences on the population, as well as proposed prevention and other protection and rescue measures. And “Mitigation and prevention of occurring of natural disasters and other disasters” is projection and applying of prescribed measures for protection from fires and seismic activities on buildings constructed or used, assuming measures for protection from hail, building of levees, regulation of waterflows, protection from forest fires, afforesting of bare areas, building of water accumulation facilities and assuming of other measures set by laws or other regulations. *Risk assessment* is the determination of quantitative or qualitative value of risk related to a concrete situation and a recognized threat. Quantitative risk assessment requires calculations of two components of risk: R, the magnitude of the potential loss L, and the probability p, that the loss will occur. $Risk = Likelihood\ of\ Occurrence \times Seriousness\ if\ incident\ occurred$. *Vulnerability* refers to the susceptibility of a person, group, society or system to physical or emotional injury or attack. And *Hazard* is the potential to cause harm; risk on the other hand is the likelihood of harm (in defined circumstances, and usually qualified by some statement of the severity of the harm). The relationship between hazard and risk must be treated very cautiously. If all other factors are equal - especially the exposures and the people subject to them, then the risk is proportional to the hazard. However all other factors are very rarely equal.

Purpose of Disaster Risk Management

Risk management is the systematic application of management policies, procedures and practices to the tasks of identifying, analyzing, assessing, treating and monitoring risk. As a process, it includes analyzing the risk, estimating its potential effects, and determining its importance in the scheme of things. It includes an evaluation of all the elements that are relevant to an understanding of existing or probable hazards and their effects on a specific community or environment. When this evaluation is considered in socio-economic and political terms, it enables the determination of appropriate vulnerability reduction, prevention and mitigation, as well as preparedness and response strategies, (Guzman, 1997). The purpose of Disaster Risk Management is to reduce the underlying factors of risk and to prepare for and initiate an immediate response should disaster hit. The Disaster Risk Management distinguishes, conceptually, the different phases of the cycle: pre-disaster, response and post-disaster. Actions in the pre-disaster phase are aimed at strengthening the capacities and resilience of households and communities to protect their lives and livelihoods, through measures to avoid (prevention) or limit (mitigation) adverse effects of hazards and to provide timely and reliable hazard forecasts. In the response phase, communities and relief agencies focus on saving lives and property. In the post-disaster phase, the focus is on recovery and rehabilitation. In reality, the shift between these phases is fluid, in particular, between the stages in which communities move from rehabilitation to development, integrating aspects of hazard mitigation into their developmental activities. Risk assessment is a key factor in understanding disaster risk reduction. One way to ensure school safety is by building a disaster resilient culture at an early age. This strategy involves raising awareness among elementary school children about disasters and the dangers they pose to lives and properties. Children are taught by educators or experts not only of the appropriate response when confronted with a life-threatening event, but also of the proper measures that children can do to reduce the risks in their immediate localities, whether at home or in school. While it is commonly known that the concept of school safety is related to educating school children at the earliest possible stage, it also extends to other factors. Understanding building restrictions, observing safety precautions, and maintaining strict monitoring and regulations of school facilities and equipment are some of the ways to ensure the structural and physical safety of schools. Unlike non-structural school safety where teachers or educators and experts from relevant fields are mostly involved, school safety from a structural perspective employs careful assessment of the school setting itself by engineers and other professionals involved in building construction and maintenance. Disasters do not recognize age, thus children are as susceptible to suffer from the damaging results of disasters as adults are. However, children are more vulnerable in the sense that they have lesser capacity to deal with disasters than adults. Thus, raising awareness in children about what disasters are, what natural hazards exist in their specific communities, and what tools are available for them to prepare and mitigate the potential impacts of disasters will build their confidence and ability in dealing with a life threatening situation.

Stages of a Disaster Risk Assessment Process

The purpose of Disaster Risk Management is to reduce the underlying factors of risk and to prepare for and initiate an immediate response should disaster hit. The Disaster Risk Management distinguishes, conceptually, the different phases of the cycle: pre-disaster, response and post-disaster. Actions in the pre-disaster phase are aimed at strengthening the capacities and resilience of households and communities to protect their lives and livelihoods, through measures to avoid (prevention) or limit (mitigation) adverse effects of hazards and to provide timely and reliable hazard forecasts. In the response phase, communities and relief agencies focus on saving lives and property. In the post-disaster phase, the focus is on recovery and rehabilitation. In reality, the shift between these phases is fluid, in particular, between the stages in which communities move from rehabilitation to development, integrating aspects of hazard mitigation into their developmental activities.

In the context of this paper, the goal of a disaster assessment process is to provide objective and transparent information for making decisions on countermeasures to reduce disaster risk.

The objective of the hazard assessment of the educational institutions and the qualitative and quantitative analysis of data on possible danger of natural and other catastrophes, prediction on further possible danger and consequences caused by the same ones, with proposed preventive and other protection and rescue measures.

Content and manner of hazard assessment:

- General characteristics of the subject-the school
- Assessment according to the protection and rescue measures
- Needs and capabilities for organizing and managing the protection and rescue and preparation of the protection and rescue forces
- Capabilities of the subject-protection and rescue school
- Capabilities of the employees and students.

Analyzing and managing disaster risks by the following stages:

- Establishing the disaster risk context
- Identifying the disaster risks
- Analyzing the disaster risks
- Assessing and prioritizing the disaster risks
- Treating the disaster risks
- Monitoring, reviewing and communicating.

Managing disaster risk through education

Education is a human right, universal and inalienable. Education is especially important in enabling people to reach their full potential and exercise other rights. This right does not disappear or get suspended because of disasters and emergencies. When education is interrupted or limited, students drop out, with negative and permanent economic and social impacts for students, their families, and their communities. Natural hazards are part of the context for educational planning. Whether it is annually recurring floods, a once-in-5- generations earthquake, the increasing severity of storms, water shortages, these known and expected hazards can be mitigated with the determined application of knowledge, education, and ingenuity. We are not able to prevent the earth from shaking, the wind from blowing, or the rain from falling. However, with assessment and planning, physical and environmental protection and response preparedness we can prevent these events from becoming disasters. Since schools are our universal institution for sharing knowledge and skills, the expectations for schools to be role models in disaster prevention is high. Successful disaster mitigation is one of the ultimate tests of the success of the education we provide over generations.

Importance of assessment

Assessment is a vital component of the planning and implementation of the response. Assessments provide the information on which the response is designed and adapted. While good assessment information does not guarantee a good response, poor assessment information almost certainly guarantees a bad one.

The use of standard methodologies means that information may be compared with data collected during previous assessments and the work of different assessment teams is complementary. For UNDP, a comprehensive risk assessment consists of the following steps: *Step 1*: Understanding of current situation, needs and gaps to assess what already exists, avoids duplication of efforts, and builds on existing information and capacities. This is done through a systematic inventory and evaluation of existing risk assessment studies, available data and information, and current institutional framework and capabilities *Step 2*: Hazard assessment to identify the nature, location, intensity and likelihood of major hazards prevailing in a community or society *Step 3*: Exposure

assessment to identify population and assets at risk and delineate disaster prone areas *Step 4*: Vulnerability analysis to determine the capacity (or lack of it) of elements at risk to withstand the given hazard scenarios. *Step 5*: Loss/impact analysis to estimate potential losses of exposed population, property, services, livelihoods and environment, and assess their potential impacts on society *Step 6*: Risk profiling and evaluation to identify cost-effective risk reduction options in terms of the socio-economic concerns of a society and its capacity for risk reduction *Step 7*: Formulation or revision of disaster risk reduction strategies and action plans that include setting priorities, allocating resources (financial or human) and initiating disaster risk reduction programmes. The assessment provides information about the needs, possible intervention strategies and resource requirements and aims to identify:

- The impact a disaster has had on a society and its infrastructure, and the ability of that society to cope.
- The most vulnerable segments of the population that need to be targeted for assistance.
- The level of response by the affected country, its internal capacity to cope with the situation, and the level of response from the international community.
- The most urgent relief needs and potential methods of meeting them most effectively.
- Coordination mechanisms.
- Significant political, cultural, and logistical constraints.

Planning for natural disasters and emergencies is something every educational institution must consider, regardless of its size or location. It is not possible to plan for every eventuality that might occur; however, managing preparation is key to saving lives if a disaster strikes. For disaster mitigation and preparedness, there are specific tasks for the pre-, during and post disaster periods. Numerous organizations need to work in coordination for responding to and preparing for disasters. Specifically, it is of vital importance to increase risk management awareness for disasters and to institute necessary skills and resources for mitigation and preparedness. Community organizations for mitigation/preparedness are equally important and necessary. Risk perception, general and personal efficacy beliefs for the possibility of engaging in mitigation/preparedness actions are very important predictors for actual responsible behavior. Studies conducted in Turkey showed that despite high risk perceptions, self-efficacy for taking appropriate actions for mitigation was low. Furthermore, an externalized responsibility for action, and low levels of preparedness behaviors were observed. Short-term community education programs may improve attitudes; however, for behavioral change, longer and pervasive programs and community organization networks are needed.

CONCLUSION

Managing risk and having an efficient protection and rescue system which involves cooperative work of all the relevant factors in the education system will create experts that will be able to be involved in and outside the country in all the areas of disasters protection. To make this possible, an efficient system for protection and rescue at all levels should be created. It will help accomplish the new imposed situations in the societal and economic context which consider principles for sustainable development. It means, providing opportunity to gain new knowledge, skills and abilities, basic concepts, features of the natural disaster, consequences of their emergence, means and equipment used for protection and rescue, practicing procedures, preventive and operational measures for personal and collective protection in case of emergencies, further education and training by considering the guidelines for sustainable development of the society as a whole. Managing risks as activities are aimed to train the participants and the personnel how to respond in case of natural or other type of accident and at the same time are a test of the separate segments of the protection and rescue plan which enables its evaluation and revision. Daily experience gives us the right to summarize that the idea of managing disaster risk is implemented in practice. Obviously, there is a legal coverage and it is recognized according to the realistic needs. We can conclude that by developing the global culture managing disaster risk has become the most significant part of an integrative approach towards disaster reduction carried out by adopting the

risk assessments policy in any vulnerable area as well as increasing the institutional capacities and having efficient use of the resources. Education and training in the area of prevention, preparedness and risks and consequences reduction is also part of it.

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RISK MANAGEMENT IN PRACTICE- TECHNOLOGY OF RISK

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ABSTRACT:

Specific requirements of modern financial institutions should be analysed in order to identify different nature of each segment in the system of decision making. Impressive and turbulent changes in risk technology in practice, are caused by variety of internal and external users of informations and their specific information demands and requirements. Therefore, technology and requests of managing risk differs from the front office to middle office and finally to senior management. Specific function in the financial institution and requirement is fundament on which there will be designed and controlled specific risk management system. Both market and credit risk as major risk categories have different instruments to measure and to control specific risk. General purpose of this work is to stress some important issues in demands and requirements but also in practical usage of risk management system in modern financial institutions. It is evident that only few areas of the financial markets changed so rapidly and unpredictably as risk technology. There have been many different reasons affecting risk complexity and influence on company objectives such as social, political, economic and environmental. Awareness of such complex influence on objectives of financial institutions is the first step in modern approach of risk management system, but in following lines there will be displayed many different milestones in understanding such problem. It is only system approach in risk analysis capable to explain diversity in understanding risk.

Key words: Users, market and credit risk, front office and back office, risk technology, designing risk system

INTRODUCTION

The risk technology has significantly evolved in the past decade. Basic standards and procedures have changed dramatically. The main source for such development was in technical progress in amazing directions, but it was also caused by changes in specific requirements for different users of informations. Not only users of various informations have influenced on such development but also national and international regulators and industry bodies have played important role in sketching directions and defining requests for activities in measuring and risk management.

In this text, there is introduction to the technology required for risk management, but there is also description of organisational context in which such technology should be applied. There is also a review of existing and probably future software industry for risk management process.

Practice of measuring and managing risk differs from point of view of the internal and external users and complexity of system approach in analyzing risk needs both well based quantitative methods and procedures, as well as well trained and experienced financial experts that will guide technology of risk towards specific goals and objectives. It is evident that there is no prescribed and unique technology for specific risk problems, but since risk management has changed rapidly, predictions for future development should be considered carefully.

Above mentioned changes have largely influenced in better understanding the nature of risk and finding better ways to minimize destructive effect of financial risk in investment portfolio.

DIFFERENT REQUIREMENTS IN RISK TECHNOLOGY

Fundamental question in analyzing technology of risk is what and how the risk system should operate? Answers to this questions may vary from the point of view of the users of informations, so it differs significantly from many business functions existing in modern financial institutions. Basicly there are two major risk categories, market and credit risk. Market risk is defined as exposure to various movement of prices, rates or volatility of financial instruments, while credit risk is defined as exposure to default or event effecting a counterparty or instrument issuer.

Specific role in the financial institutions of informations users is a basic step in understanding different requirements of the risk management system. For example, detailed risk procedures and instructions for credit adviser in retail division of the bank is for providing necessary tools to perform advisers everyday business activity in approving and transferring money funds. On the other hand, this type of risk procedures provides only few important informations for risk officer in specific risk division of the bank, because risk division operates with wider range of tools in analyzing risk, and finally internal risk procedures in retail division have very small or none importance for executive board of the bank. It is obvious that executive board will be more interested in total sensitiveness of his portfolio instruments, rather than specific detailed risk procedures. This statement means that executive board has a legal requirement to understand global nature of the risk that is taken by their financial institution.

There are few organizational schemes of modern financial institutions, but mainly there are three important parts of financial institutions for the purposes of this work. Modern financial institutions are consisted of front office, middle office and senior management.(Alexander, 1998)

Front Office requirements in risk technology

The most popular divisions in modern financial institutions are based upon direct or indirect contact with banks clients or partners and suppliers. Front office operates upon direct contact with clients and provides them with various financial instruments and financial services, actually front office is consisted of traders and sellers of financial assets and services. Risk measures for front office are mainly sensitiveness indicators of the instruments value to a movement in several factors such as external rates or prices. The objective of such risk sensitiveness indicators are to inform the traders or advisers how to lower risk to some specific position against specific market risk.

Appropriate IT(Information Technology) system in institution should provide identifying and displaying for traders such informations as all transactions that he operates, as well as possibility to re-price such transactions if there are any changes in market conditions. Today in turbulent economic circumstances, there is also a need to create “what if” scenario, in cases of hypothetical transactions and usage of these scenarios increases rapidly. Also, trading limits or maximum risk exposure are often expressed in terms of sensitiveness, so traders in front office should be able to view their own limits and to be aware of the effect of each trade on their limit. This means that if trader is very near his own maximum risk limit, he should be very carefull in taking further steps in direction of lowering his risk level to optimum.

In above mentioned, there was a traditional approach in measuring and evaluating credit risk in which the trader simply needs to be able to determine his own limits on a trade by trade basis or on specific time horizon, for ex. yearly, quarterly or even daily basis. Credit limits has also tended to be expressed in terms of either nominal values or sensitiveness, so the fact is that the same information was used for measuring market and credit risk together.

Only few years ago, due to large progress in sophistication and developments in credit quantification, there has been created more complex limits structure. Many large international financial institutions have turned to trading in markets with lower liquidity, with enormous

influence of instruments reputation, so it was logical for financial analysts to answer on such new circumstances¹.

Whereas the front office in the past could consist of many different systems serving specialized requirements of each product area, for example mortgage residence loans, the new additional requirements can provide adequate risk systems capable of calculating risk measures for entire institutions, not only for mortgage housing loans but for all range of banks instruments and services.²

Middle Office requirements in risk technology

Middle office as part of modern financial institutions usually consists of product control, finance, accounting, internal audit and risk control, and it is very often organized as specific divisions and departments, related to existing organizational chart in financial institutions.

For a start, there is need to emphasis distinction between risk management and risk control, even though they are constituent part of common risk management process in all financial institutions. National regulative institutions varies from German minimum requirements regulations for risk management but also for risk control to other countries that rely on existing international regulative based upon Basel recommendations and internal risk management systems. It is definitely obvious that minimum regulative for risk management and control should be defined by national and expert associations in order to minimize negative risk effect. Actually, risk management is related and operates within front office. Risk management should provide proactive work with specific portfolio by using sensitiveness indicators that will ensure credit activity within defined risk guidelines in each business line. Each business unit are creating their own risk management groups consisted of head trader and other employees capable and trained for performing activities in risk analysis. It is very important to select adequate specialist instrument knowledge, that needs well education but also a good practice in the institutions as the object of risk management.

Risk control, on the other hand, operates within middle office and their constituent parts from internal audit to finance and accounting. Risk control needs to be divided and structurally independent from front office. Independence of the risk control is *conditio sine qua non* of modern risk management in financial institutions. This applies to stuff independence as well as reporting and subordination within financial institution. Major tasks of risk control have been in active role in monitoring the risk profile of entire financial institution and making sure that regulatory and internal limits are respected.

Risk control, should be able to re-evaluate all the positions that institutions enter into, on an independent basis, and to give objective measures of the risk taken in every specific area of business. There is multiple interaction needed between risk management and risk control. First of all, risk control should identify undesirable risk profile and probably unwanted situations, so its role is to detect or to alarm specific risk management groups that one or more business areas are facing. Second step is expected from risk management groups so that they are able with their knowledge and experience to find the solution and to normalize the risk level on acceptable level.

Requests for real time analysis and specific instruments within portfolio wide scope of activities are main characteristics of front office point of view. Middle office, on the other hand, use daily analysis with independent instruments that measure risk desk wide by using key informations³ such

¹ Therefore, measures such as Credit Value at Risk (CVaR) are designed intentionally in order to be independent toward instrument but allowing risk across many product areas

² This new approach could be defined as product independent form of risk measure

³ Basle Group recommendations are now embodied in legal frameworks such as European Capital Adequacy Directive (CAD2) and they are starting to permit financial institutions to measure their own regulatory capital requirement in terms of VaR

as VaR⁴, CVar, Stress-testing or Back-testing. There are many different techniques that measure VaR, so each one of them has some weaknesses and can be criticised. The most common remark of VaR concept is in its inability to measure the degree of possible loss in the event of the market change that was outside the models degree of confidence.

Stress testing models are used to calculate upon which level entire institution is subjected to some incident price and rate movements. Also, middle office systems should be capable to perform retrospective analysis of the actual and predicted VaR indicators, rather known as back-testing. Best results can be achieved by using back-testing as a continuing activity in which historical method for longer time horizon is adequate data base for prediction of future VaR values.

Back Office requirements in risk technology

Very low and incomplete informations regarding actual risk, are common place and cause for large failures of financial institutions. Board of directors is always confronting two diverse and contradictory business goals, such as maximum efficiency with satisfying level of security. By defining levels of expected return, management is actually determining the level of risk that is tolerable for their institution. The situation is more complicated in highly diversified institutions where capital funds are allocated between a variety of high risk and high return portfolio, but also a low risk and low return portfolio. To make optimal reallocation, management needs to know specific return of each business units, but also a specific risks that each business unit is subjected to. Then, comparison from unit to unit will provide more efficient data base and allocation will be more effective. This measure of risk should be consistent with the view of risk being taken by middle office, so middle office will provide another functional requirement in providing performance data for senior management for example on monthly, quarterly or annual basis. There are few important facts regarding informations for different users in financial institution. Real time data from risk analysis is restricted to the front office and real time data are widely varying and highly specific to the nature of the financial products and services. Risk related conclusions drawn by middle office must be independent from the front office. Finally, credit and market risks have became more closely connected if there is more complex organization in financial institution, and at the risk control credit and market risk are actually inseparable.

RISK SYSTEM DESIGN

It is common place in risk system design to divide market risk and credit risk in specific division, rather than along the organizational lines. Most modern risk management systems are trying to activate company wide role required by risk control function, or to the product specific role appropriate to the risk management function. There for it is not possible to describe optimal risk system design that will fit any financial institution. Specific characteristics of each financial institution should be considered before approaching to design risk system. In fact there are mainly two important parts in designing specific risk system. First part of risk system design is risk management system as the process of identifying risk, assessing risk and taking steps to reduce risk to an acceptable level for each business unit but also for entire financial institution. Basic knowledge about risk system design provides a foundation for the development of an effective risk management program, containing both the definitions and the practical guidance necessary for assessing and mitigating risks identified within entire financial institutions. The ultimate goal is to help financial institutions to better manage credit and market risks within each business unit but within entire system as well.

Second part of risk system design is risk control system that provides answer to the most complex problem in risk technology and explains how to obtain and aggregate different data for different users in the system.

⁴ VaR is indication of the maximum probable loss that a portfolio or institution can be subjected to over a given period and with a given degree of confidence

The Risk management system

Risk management system should be a fundamental part of any kind of financial institution because in few past decades risk related functionality of most popular financial institutions evolved. In practise there has been few popular trading system (such as Summit Systems and Reuters“Kondor+“⁵) and they are oriented amongst front office systems. But there is a problem in use because there are many specific demands and therefore lot of providers that populate the market simply by using their specific knowledge of particular sector. Basicly, the nature of financial institutions use of front office technology is determined by specific demands from the traders because they are free, to some extent, to select their own front office systems.

Problem is arising when many of such specifically designed front offices do not match within entire organisation. It can be very hard to put together into function different data bases, hardware platforms or support requirements. Another problem may be in staff circulations between institutions and beeing slowly accustomed to new techological preferences. Of course in such situations it is vital to make necessary transition period to explain and to make things work properly for the new employees. Finally, efficiency of the risk management system is well covered by the trading systems in each business unit or profit centre, but efficiency of risk control is highly endangered and suffers from various quality informations. Since beeing part of one complete system, important feedback from risk control toward risk management is crucial and if it does not function, risk management system is less opearative, in general.

The Risk control System

Large financial institutions are facing a large organisational structure with more than hundreds front office units and each one of then is having their own data base⁶. Such diversity should be connected into unified central system that will provide risk management for entire financial institution. There could be three generic types of informations in such islands:

- Transactions informations such as deal date, the settlement date, instrument type, price, maturity date etc.;
- Valuation parameters such as yield curves, volatility or price history;
- Standing data such as names and adresses, trading limits or standard settlement instruments or master instuments definitions, terms and re-evaluation rules and contract types.

The main role of risk control system is to get collection of sufficient informations and to re-create main characteristics of every transactions in entire front office system. Neither the transactions, nor the sensitivity approach is the best solution in the design of a risk system, so modern approach of risk control system needs well based theoretical and practical knowledge applied to specific financial institution.

CONCLUSION

It is more than evident that risk design technology rapidly evolved in few past existed, actually it is born not so long ago, but techical changes in wider risk control have helped in better understanding risk. Measuring and managing risk largely differs from the point of view of the internal and external users and complexity of system approach in analyzing risk. Information requirements do not match for front office, middle office and back office and they have specific tools and instruments for analysing risk. Only both parts of the risk management system, well based quantitative methods and procedures, and well trained and experienced financial experts, will be

⁵ Summit Systems is aimed for over the counter interest rate derivates, and provides functionality to hedge and report on the risk. Kondor + is aimed for support for basic hedging and risk management in real-time environment. Dembo, R.S.(1989) Optimal Portfolio Replication. Toronto, Algorithmics Inc.

⁶ Specific data base of each business unit could be better understood ad „islands of informations“.

able to provide efficient technology of risk. Therefore, specific characteristics of each financial institution should be considered before approaching to design risk system. There are two important parts in designing specific risk system, first part is risk management system as the process of identifying risk, assessing risk and taking steps to reduce risk to an acceptable level for partial business units but also for entire financial institution. Basic knowledge about risk system design provides a foundation for the development of an effective risk management program, containing both the definitions and the practical guidance necessary for assessing and mitigating risks identified for entire financial institutions. Search for helping financial institutions to better manage their own credit and market risks within partial business units but also within entire system as well, continues in the future.

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MANAGING THE RISK OF E-BANKING

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ABSTRACT:

Customer requirements of banking services have grown and significantly changed over the past twenty years. Because of this, banking sector had to adapt by constantly offering new services to customers, which is especially manifested as widening of electronic banking (e-banking) services. Today is impossible to find a bank which does not provide e-banking services to its customers. On one hand customers need e-banking services, while on the other hand bank must offer a wide range of e-banking services if it wants to keep up with competition. Although e-banking will bring significant amount of benefits in the future, it also carries many risks to which bank has to pay attention and try to manage. A numerous frauds in this field in recent years are a big warning, which highlighted the seriousness with which to approach the risks of electronic banking. The aim of this paper is to define e-banking risk, relationship of these with other banking risks and how to manage with them.

Key words: bank, e-banking, risk, managing risk

INTRODUCTORY REMARKS

In recent decades, the financial sector is under significant influence of liberalization and modernization. Without no doubt the technology is currently the biggest strategic issue in the financial sector. Every day there are more and more investments in informational technology, all in order to provide better customer service and to keep pace with the competition. Under the influence of these technologies, new types of banking products and services are created, and financial markets have become more diversified and more efficient. Precisely on this basis has evolved a new concept, electronic banking or e-banking.

Defining e-banking is not easy, because there are many different interpretations and presentations of the term. However, in order to avoid misunderstanding of e-banking, it is necessary to divide this term into two parts. These two parts are products of electronic money and electronic product distribution. Electronic money products are broadcast in exchange for cash, deposit or loan, which essentially represent a credit card. On the other hand, the distribution of electronic product represents giving instructions for the electronic transfer of funds. When electronic banking is perceived through these two prisms, it can be more precisely defined. E-banking is an automatic delivery of new and traditional banking products and services to customers through electronic, interactive communication channels (Rahman Khan and Karim, 2011).

Electronic banking can improve the efficiency and competitiveness of banks so that existing and potential clients can enjoy a greater degree of comfort with effective transactions. This higher level of comfort provided by the bank, when combined with new services, opens a wider circle of potential clients. Because of this, financial institutions are very aggressive in adopting e-banking functions that involve sophisticated market system, then the possibility of „remote“ banking and large databases. All these technological advances have brought enormous benefits to clients, which by using e-banking get a sophisticated service that is available to business people as well general public.

Despite the great benefits and the increase in efficiency which e-banking provides to banks, along comes a big risk, especially as bank clients are expecting e-banking services to be available 24 hours a day seven days a week. When we say that e-banking carries some risk with it, we primarily think of existing risks associated with the traditional banking but also we must include more wider range of risk which goes with new possibilities that e-banking offers. As electronic banking depends on informational technology, many risks are dependent on the complexity and security of the system. Therefore, special attention must be given to complex systems solutions that will ensure full protection of clients.

The risks are numerous, but they can be reduced to a few of the most important. This includes strategic risk, operational risk, reputational risk and legal risk. For them, financial institutions must pay particular attention and try to manage them in appropriate way. By organizing Electronic Banking Group (EBG), Basel Committee has confirmed the seriousness of this problem. Primary task of EBG is to try to resolve problems of e-banking risks. In this way, it provides support to banks to cope with the risks of electronic banking and how these problems can be solved and risks managed.

KEY RISKS OF E- BANKING

Although acceptance of electronic finance and other electronic services offered to emerging economies new possibilities for enormous progress, it also brings a great amount of risk. Most criminal actions which exploit weaknesses in these technologies are not new – they are fraud, theft, identity theft as well as other illegal activities that have tormented the banking and financial sector in the past. In order to minimize these risks, banks and other financial institutions should ensure the adequacy of e-banking service with respect to the basic principles of information systems (National Bank of Croatia, 2006). Since bank's customers expect daily availability of services, banks should ensure sufficient capacity and redundancy of information system resources services to be reliable and available.

In addition, e-banking services would have to be provided in a consistent and timely manner and with accordance with applicable regulations and in accordance with user expectations that the services will be rapid and continuous. Also, the bank is obliged to provide security to its clients due to confidentiality and data integrity.

On the risk assessment basis bank should try to implement precautionary measures and adequate controls which will ensure the confidentiality of clients data, and should adopt the corresponding internal rules and standards.

Risks, which perhaps more than others, more concerned banks when providing electronic banking services are (Basel Committee on Banking Supervision, 1998):

- Strategic risk
- Operational risk
- Reputational risk
- Legal risk.

Strategic risk is one of the most significant risk that affects banks or its electronic banking. It's typical in every business and, because of that, it should always be defined in an appropriate way. So when we talk about strategic risk in e-banking following description, in best way describes how it acts on the electronic banking: "Rapid changes in technology, competitive pace of competitions with other banks and financial institutions and the nature of these strategies may expose banks to considerable risk if the planning and implementation of the strategy is wrong or otherwise not thoroughly thought out. Driven by competitive pressures, banks may seek to introduce new or expand current services and electronic banking products without adequate cost-benefit analysis. In this case, a problem may be represent as organizational structure together with existing resources,

doesn't have appropriate skills for managing e-banking. Therefore, banks should have the support for this kind of strategic risks from the very top, to ensure that correct strategies are used in order to take into account the effects of e-banking wherever deemed necessary. Such strategy should be clearly distributed through the entire business, supported by clear and comprehensive business plan" (Sokolov, 2008).

Operational risk arises from potential losses due to deficiencies in banking system security and integrity. Until the implementation of Basel II regulations, this type of risk was not allocated as a separate category, which has significantly hampered its measurement.

The issue of security is important, because there is always possibility of various internal and external attacks on the bank or its systems and products. In addition, operational risk can also be caused by customer abuse or ill-design electronic banking. Therefore, operational risks can be classified into the following:

- Security risk
- The risk of designing
- The risk of implementation and system maintenance
- The risk of misuse of the products or services by the client.

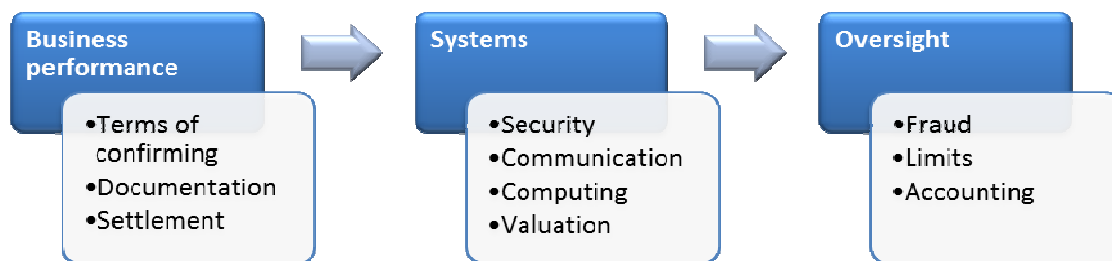


Figure 1: The scope of operational risk in banks (Radojevic, 2009)

Reputational risk is the risk of negative public opinion, which results in significant loss of funds or outflow of clients. There are many different ways, through e-banking, that could harm reputation of the institution. These ways are (Karim, Rahman Khan, 2011):

- Loss of confidence due to unauthorized activity on customer accounts
- Disclosure or theft of confidential customer information by unauthorized parties (e.g. hackers)
- Inability to ensure reliable service
- Customer complaints on the complexity of using e-banking services.

In order to protect from reputational risk, bank should provide its services consistently and constantly, in accordance with high customer expectations. It is important to establish mechanisms for emergency situations to minimize the reputational risks that may result from unexpected events, including internal and external incursions into the system that could affect the provision of e-banking services.

Legal risk arises from violations or noncompliance with laws, rules, regulations or practices prescribed or in cases where legal rights and obligations of participants in the transactions are not legally regulated. What specifically must be regulated is Anti Money Laundering – AML, because the modern way of doing business can be extremely attractive for this kind of abuse. Therefore, special attention must be paid to the identification and authentication of client, and his privacy also.

To minimize legal risk, bank is required to ensure adequate information on their websites. This would allow customers to check the identity of the bank's regulatory status before engaging in e-banking transactions.

RISK MANAGEMENT

Electronic business has become widely applicable in the financial sector, both by banks and by the users of those services. Therefore, this modern way of doing business brings with it certain kinds of risk. The objective of banks is that these risks are managed in the best way to ensure maximum protection for both bank and its customers. Risk management process involves three stages:

- Risk assessment
- Risk manage and control
- Monitoring of risks

All these processes must be supported and controlled by management.

Risk assessment is a process that evolves through three phases. In the first phase it is necessary that the bank identifies and measures the degree of risk. This is very important phase because identification of a risk is the main part in the risk assessment, since the most dangerous risks are those that are not known, and therefore they produce the most damage. In the second phase of defining the level of risk tolerance, which is based on an assessment of the losses that the bank can handle. The bank should be aware of the risks with which it operates, then the method of its expression and the frequency of occurrence. The third phase involves assessing whether the exposure ranges within tolerable limits, and also defining monitoring of risk if it occurs.

Managing bank risk is performed after assessing the level of risk. It can be seen as qualitatively and quantitatively. Qualitative is used for risks that cannot be measured through experience from banking experts. Quantitative banking risk management consists in analyzing the average loss amount and rate of loss dispersion trend values. Risk management involves different activities: implementation of security mechanisms and measures, coordination of internal communication, valuation and improvement of products and services, implementing measures to control risks related to outsourcing and planning of unforeseen circumstances.

Risk monitoring is an important aspect of any risk management process. Risk management requires constant monitoring, which is achieved through testing and reviewing the system. There are several different ways to manage risk, and one of the most basic tools in the ALM. ALM in banks means identifying and analyzing all risks, defining their boundaries and all that followed by appropriate information system (Vunjak, 2005). The main task of ALM concept is to establish a correlation between risk and profitability of individual banking transactions. This helps to prevent high risks that may cause losses in the bank (Vunjak, Đurasinović, 2007).

Risk management is very complex and complicated process, which is an opinion of the Basel Committee. Committee, at the end of last century, understood that enormous amount of work is necessary in the field of electronic banking risk management, and therefore formed a task force that will take these issues seriously. This task force is Electronic Banking Group –EBG, comprised of bank supervisors and central banks.

EBG has found that e-banking brings particular challenges for risk management. These challenges are (Radojević, 2009):

- Speed changes related to technological innovation and customer service is unprecedented. Historically, banking applications were applied in relatively long period and only after fundamental checks. Today, situation is different, since banks are suffering from the pressure of competition to prepare new business applications in a very short time. This competition intensifies the management challenge to provide adequate strategic assessment, risk analysis and safety studies carried out before the implementation of new e-banking applications.
- Transnational e-banking websites and related applications in the affairs of the citizens and economy are usually integrated into existing information systems. This greatly reduces the

possibility of error, which occurs in manual labor, but on the other hand increasing dependence on information systems.

- E-banking increases bank's dependence on information technology, increasing technical complexity of many operational and safety issues and the continuing trend towards greater number of partnership arrangements, outsourcing alliance with third parties, which many of them are not subject to regulation.
- Internet is an open network in which all over the world can access an unknown parties, with routing messages through unknown locations and via, rapidly developing, wireless devices. Therefore, internet greatly increases the importance of control security, customer authentication techniques, data protection, logging procedures and standards of customer privacy.

By identifying fourteen basic principles for risk management of electronic banking, the Committee has just given it new importance. These principles were developed in order to help banking institutions in e-banking risk management. All principles are divided into three main groups (Rahman Khan and Karim, 2011):

- Supervision and management board
- Control of security
- Management of legal and reputational risks.

Division of all principles into three main groups is an attempt by the Committee to provide banks with an easy reference during the risk management of e-banking. It should be a good practice, not an obligation for banks. From the other angle, the banks are not obligated to use these principles if they already have better ways to control and manage the above risks, they are just “stepping stone” for those institutions that have not had much more experience with it. Therefore, the Basel Committee and new formed task force EBG, adds an important role in training and new practices in e-banking risk management. Since the speed of changing technologies and the increasing level of training of illegal acts is big, role of EBG will only be even greater.

CONCLUDING REMARKS

Following the line with lower transaction costs, 24 hours service, greater control over transactions, higher volumes of transactions in a smaller time interval and a much wider range of banking products and services, electronic banking has become an integral part of modern banking. However, despite the inevitable benefits that entails e-banking increases different levels and types of risks that threaten banks. Moreover, customers who rely on e-banking services may have less tolerance to the systems which is unstable and unreliable, or the system that allows precise and accurate information. With the advent of on-line services, customers are no more tied to a particular financial institution and they have a wider choice of services. For these reasons, if we want e-banking to be long-lived, it must be based on the accuracy, reliability and responsibility.

Risks that arise if the basic needs of e-banking are not met are almost uncountable. However, risks that banks should pay more attention are strategic, operational, reputational and legal risk. In order to protect bank from mentioned risks, services that e-banking offers must be provided in consistent and timely manner, in accordance with high customer expectations in terms of constant and rapid availability, and in accordance with the potential high demand for transactions. To answer customer's needs and demands, bank should have effective capacity, business continuity as well as plans for each of potential possibility. Therefore, banks need to develop adequate plans for responding to incidents, which include communication strategy, then business continuity, control reputation risk and reducing liability on the basis of disturbance in the e-banking services.

That risk management is a complex task is shown by the Basel Committee who made the EBG. In order to allow banks more easier monitoring and managing the risk of e-banking as well as their general understanding, Committee has developed fourteen principles for managing e-banking.

These principles are divided into three groups, The Board of Supervision and Management, Security Control, Legal control and reputation risk. This includes all manner of e-banking activities, which greatly facilitates the monitoring and risk control.

E-banking is the present and the future of modern banking. Therefore, managing their risk will be a great challenge and necessity, because without it is almost not able to imagine banking business.

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MANAGEMENT OF INVESTMENT PORTFOLIO IDIOSYNCRATIC RISK

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ABSTRACT

The investment portfolio is a collection of securities composed according to investor's attitude in terms of yield and risk. It includes total (total) risk that can be decomposed into systematic and idiosyncratic (non-systemic) component. The systematic part of risk is associated with the overall financial market fluctuations, while non-systemic component is associated with the particular investment. Depending on the characteristics of the securities (quality of the issuer), idiosyncratic component is varying in total risk. This paper deals with the management of idiosyncratic risk. It is controllable variable that can be reduced by increasing the number of securities in the portfolio – by diversification. The lower correlation between the yields of securities in the portfolio, diversification is more effective. The first part of paper deals with theoretical concept of idiosyncratic risk reduction through a process of diversification. The second part is devoted to empirical analysis of the impact of increasing the number of securities in the portfolio to reduce idiosyncratic risk. As an example of the financial market we use shares of companies that compose Belex 15. Also, we employ index model (one-factor model) to decompose total risk on systemic and idiosyncratic risk. The conclusion is reserved for research results.

Key words: investment portfolio, systemic risk, idiosyncratic risk, diversification, index model

INTRODUCTION

Portfolio management is based on technical and fundamental analysis of investment alternatives and making appropriate decisions about taking "long" and "short" investment positions. The investment portfolio is a collection of securities (stocks, bonds, financial derivatives, shares in investment funds) held by individual investors in accordance with the characteristics of the portfolio in the context of risk and return. Bank investment portfolio includes a set of securities hold by bank. Creating an investment portfolio reflects the transformation of the economic environment (under the influence of globalization and deregulation). The banks are in the new circumstances faced with increased competition not only within the banking sector, but based on the "overlapping" business there has been a cross-competition between banks and institutional investors. On this basis, the new competitive game can be described as "a struggle of all against all", where the profit is main driving force. The importance of the investment portfolio is coming from the importance share of securities in the balance sheet structure of modern banks. Although the credit operations maintain primacy in the asset structure, the empirical analysis shows that different types of securities have about 40% of bank balance sheet share. It is also important to emphasize that the creation of the investment portfolio is primarily motivated by profit reasons, but that should not neglect the role of the one part of the investment portfolio to maintain an appropriate level of liquidity, which can be determined by the qualitative characteristics of securities in the portfolio structure. Portfolio management is based on an active, balanced and passive investment strategy. Investors, in relation to their risk aversion, trade-off between return and risk, are trying to create optimal, efficient, diversified portfolio that is compatible with their

investment preferences. They apply a variety of models and portfolio performance evaluation technique - CAPM, APT, Sortino's index, Sharpe's index, Jensen's index and so on, to create an efficient portfolio: on the efficiency frontier and the highest level of utility. CAPM model and its variants (the market model) are used to structure the risk on systemic and idiosyncratic risk (non-systematic risk). Idiosyncratic risk (non-systematic risk) is controllable variable that is controlled by diversification. The effects of diversification are risk reduction, increased average yield and reduce investment portfolio yield variability.

THEORY

The investment portfolio is weighted with total (total) risk that the modern portfolio theory structured into two components. The first component is a systemic risk. Systemic risk is the product of systemic factors that are inherent to financial market. Systematic (market) risk is constant within the structure of investment portfolio risk: investors must take this part of risk to themselves, accept it as a investment fact. The second component is idiosyncratic risk (non-systematic risk, specific risk), which is associated with individual securities (Bodie, Kane, Markus, 2010). This part of the risk arising from the performance of securities issuer: the greater the degree of issuer business uncertainty, the higher idiosyncratic risk (non-systematic risk) of securities.

Idiosyncratic risk (non-systematic risk) is the subject of evaluation, monitoring and management in the context of maximizing the criterion function: the maximum yield at an acceptable level of risk or minimal risk with acceptable yield level. Management of idiosyncratic risk (non-systematic risk) means the creation of the investment portfolio, which is characterized by the smallest possible degree of correlation between the securities yield. In such correlation coefficients constellation, increasing the number of securities reduces the idiosyncratic risk (non-systematic risk). Ideally, the portfolio diversification annuls idiosyncratic risk (non-systematic risk), reducing the overall risk of the investment portfolio to the systemic risk level (Figure 1).

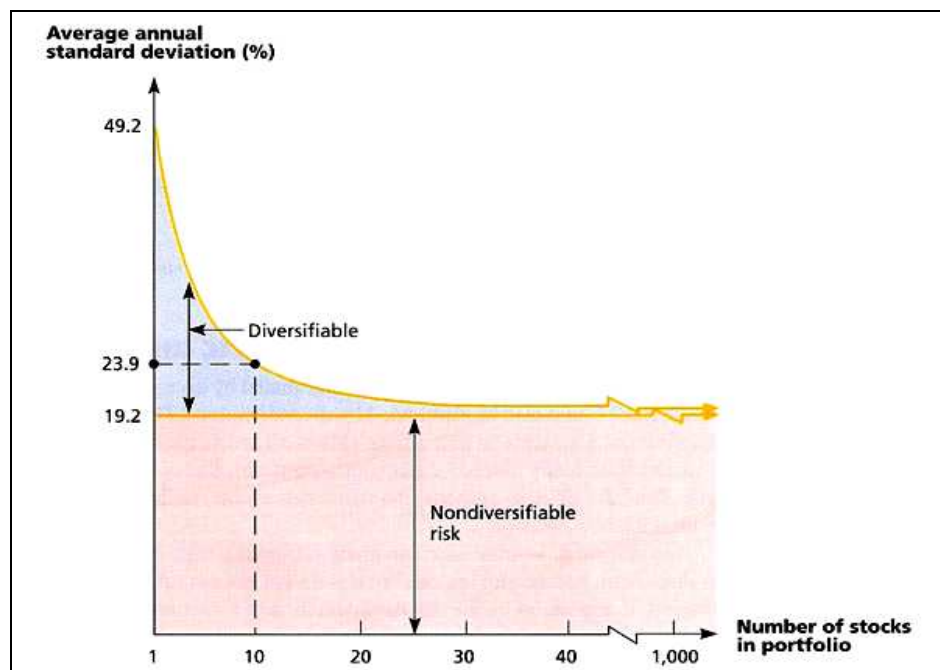


Figure 1: Systemic and idiosyncratic risk (non-systematic risk) (Sutton, 2009)

Diversification does not provide profit automatically; it also does not irrevocable guarantee to escape financial losses. It a straightforward strategy that has many complex iterations, but its logic is very simple – increase the number of securities in portfolio, and include different types of securities with different maturity and different issuers. Efficient diversification reduces risk and

portfolio return volatility, contributing to the realization of investment goals (Vunjak, Davidović, Antonijević, 2011).

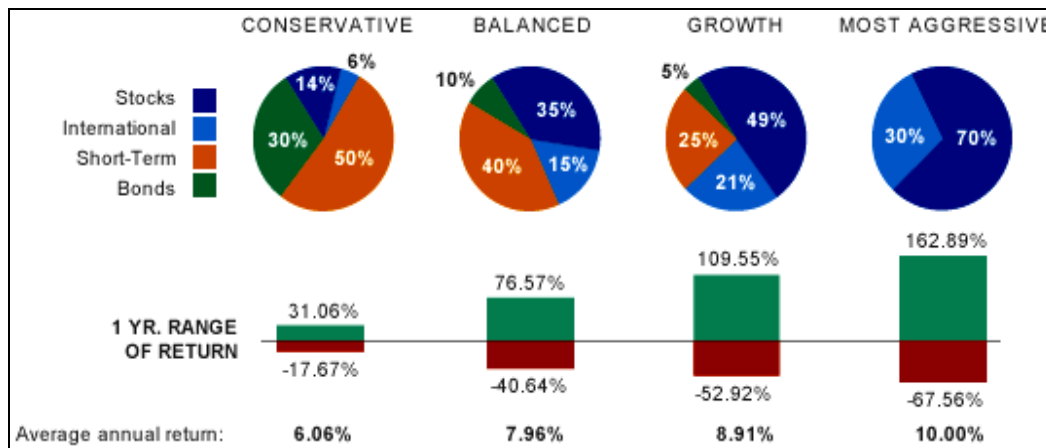


Figure 2: Diversification – returns and risks (Ibbotson Associates, 2011)

Figure 3 illustrates the conservative, balanced, growth and the most aggressive portfolios as a different combination of stocks (USA), international bonds, short-term securities (money market) and bonds (T-bonds and corporate bonds). In the investment horizon from 1926 to 2010, different portfolio structures realized different average annual returns, returns and losses (including reinvested dividends and other gains). Based on the illustration, it is possible to confirm the return-risk trade-off axiom. The most risky investment portfolio records the widest return range, as well the biggest average annual return. Portfolio structure movements towards conservative structure reduces the profit/loss volume (portfolio volatility decreases) and the average annual return. Thus, it is the matter of investors' preference, i.e. risk appetite. Financial market rewards risk appetite, i.e. it "punishes" risk aversion.

METHODS

To analyze the effects of diversification, we used a modified version of the CAPM model. It is an index model (market model), which tries to distinguish the impact of additional market index return changes on the additional portfolio yield (systemic risk) in compare to a idiosyncratic risk (non-systematic risk) (specific component of risk). As an expression of idiosyncratic risk (non-systematic risk), market model uses the standard deviation of the residuals (standard error of regression). Portfolio structures include some shares that compose BELEX 15, while the index used for calculating the total market yield. For calculating the additional yield, we used the yield on government bonds (A2012) as risk-free investment. The database includes daily cumulative portfolio returns and market index BELEX 15 in 2010-2011. Based on the regression analysis, we established the relation between additional returns of the portfolio and additional returns on the market index itself.

$$R_{pa} = \alpha + \beta R_m + \varepsilon \quad (1)$$

Where R_{pa} is additional portfolio return in relation to risk-free investment ($r_p - r_f$), R_m is an additional return on the market index, and ε is a residual estimation value. We created four portfolios and assume that the investor has no preference in relation to certain share, or that there is a linear distribution of financial resources.

FINDINGS

Research results can be divided into two categories: first category consists of descriptive statistics (Table 1) for each portfolio (average yield, risk, variability of yields), a second category consists of the results of regression analysis - portfolio α , portfolio β , standard error of regression (Figure 3).

Table 1: Descriptive statistics

	Mean	Variance	St. Dev	Coef. Var.
Portfolio 1	0.024548	0.261517	0.511387	20968.28
Portfolio 2	0.024234	0.076066	0.275801	19751.87
Portfolio 3	0.030619	0.033791	0.183822	18082.86
Portfolio 4	0.032169	0.018954	0.137672	15570.06

Source: Author's calculation based on data from www.belex.rs

Analysis of descriptive statistics shows that the increase in the number of securities reduces the standard deviation as a measure of risk, with reducing the variability of yield measured by the coefficient of variation. Also, the positive effects are achieved in the area of average yield, since the average portfolio yield increases with increasing number of securities.

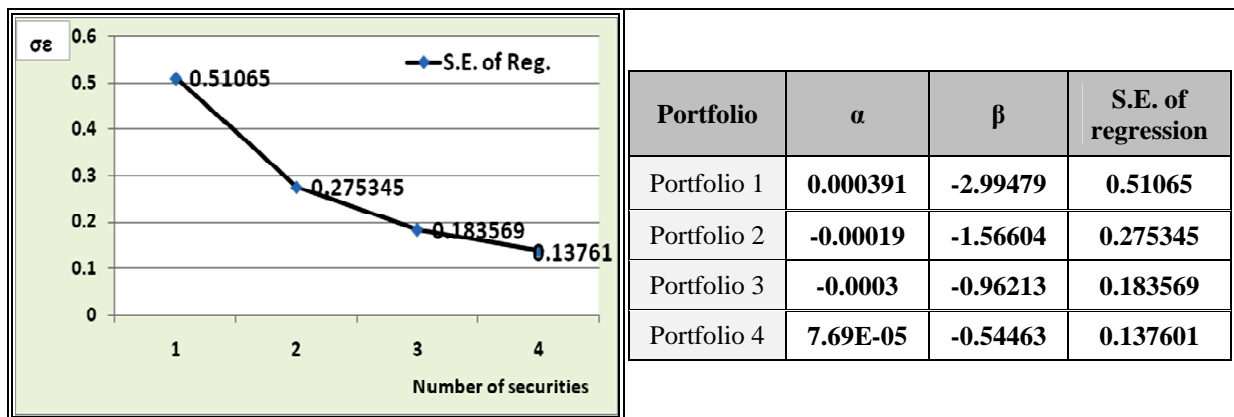


Figure 3: Effects of diversification

Source: Author's calculation based on data from www.belex.rs

DISCUSSION

Results of regression analysis are very instructive. Using the index model overall risk of the investment portfolio is segmented on the systemic and non-systemic component, whereby the non-systemic component is monitored by the standard deviation of the residuals, calculated as the standard error of regression. With the increasing number of securities in the portfolio, idiosyncratic risk (non-systematic risk) is reduced. It shows the downward slope of the curve that symbolizes the standard error of regression. Analysis of the coefficient β indicates the degree of systemic risk, or the coefficient of sensitivity to movement portfolio yield in relation to the movement of the market yield. We see that those portfolio structures are countercyclical, and the degree of countercyclicality decreases with increasing number of securities.

CONCLUSION

Modern portfolio theory has emphasized the importance of not only the total risk, but also its structural components: systematic (market) risk and idiosyncratic risk (non-systematic risk, specific risk). As the systematic (market) risk can't be diversified, investment portfolio risk management is based only on the idiosyncratic risk (non-systematic risk) management. The best way to reduce the idiosyncratic risk (non-systematic risk), and therefore the total portfolio risk, is the portfolio diversification: designing the structure of the portfolio depending on correlation of securities returns. The inclusion of securities with the correlation coefficient closer to zero, you get the highest possible efficiency of the diversification process. Experience shows that diversification reduces the variability of portfolio returns. The greatest diversification effect is achieved by increasing the number of securities in the portfolio from 1 to 10. After that, the diversification effect is reduced, while increasing the number of securities above 20 has not significant effect on reducing of idiosyncratic risk (non-systematic risk).

IMPLICATIONS

The investment portfolio is the dominant item of the balance sheet of banks in developed countries, while in developing countries consistently growing its balance sheet share. Given the above, the management of investment portfolios in the context of the risk-return relationship is imposed as the most important challenge for banks and investors who tend, in the turbulent economic conditions on the global financial markets, to achieve a satisfactory rate of return with the tolerance risk level. Risk management and investment portfolio is essentially based on the idiosyncratic risk (non-systematic risk) management and diversification is imposed as the most powerful investment tool for the realization of this goal. The importance fact is that diversification has its limits: If an investor allocates their funds in any securities that compose a market index, then the possibilities of diversification are exhausted. However, the effect of diversification can be increased by investing in securities traded in another country. In this way, the national diversification is replaced by international diversification, with positive effects on reducing of idiosyncratic risk (non-systematic risk).

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ENTREPRENEURIAL MANAGEMENT IN SMALL AND MEDIUM ENTERPRISES

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ABSTRACT

Small and medium enterprises as a significant economic resource of serbian and one of the most fundamental pillar of economic stability, not can survive without proper management entrepreneurship. MSP is a synonym for entrepreneurship and offers a number of possibilities for the application of entrepreneurial behavior in the economy. Encourage economic growth and jobs, reducing the unemployment. entrepreneurial management is the basis of survival of family farms. In modern conditions of earning in process of struggle for predominance on the market, they are daily faced with many challenges and problems. Search for new ideas and market adjustment requests must be constant, because every single moment stagnation is lost in the fight in market arena and leaving advantages of competition. Development of sme sector should be based on the optimum economic enviroment and as such could exists in the problem of the poverty countries.

Key words: SMEs, management, entrepreneurship

INTRODUCTION

Problems of Small and Medium Enterprises in Serbia take on a historical category, for not recognizing the role they play in the overall economic development and market economy. In the literature there is almost no universally accepted definition of SMEs, while in practice there are many. Different forms of market economy lead to the emergence of organizing companies of different sizes.

SME sector is made up of micro enterprises with up to 9 employees, which includes entrepreneurs as individuals who self-employed, small businesses, the number of employees is 10-49 and the high number of employees 50-249.

Following the example of developed countries, entrepreneurship in Serbia should become a new development philosophy. The survival of the company is conditioned by a number of factors, such as the highly industrialized production, accelerated new product development, adjustment to the demands of consumers, and increasingly stringent regulations regarding the protection of consumers. To ensure the growth of global business, opening new jobs and meet market demands, the economic environment in which companies operate today, and need to adapt the strategy of development and reform. The aim of this study was to examine the quality of management of the SME sector in Serbia, which requires all institutions of the system should be used to create conditions and environment for entrepreneurship and business.

In the agricultural sector in Serbia there is significant potential and challenges of development, as evidenced by the fact that the small and medium-sized enterprises accounted for 99.8% of the total enterprises. The collapse of the former giants has led to the center of agriculture, small and medium

enterprises, which now employ 67.2% of employees. Management of MSP is synonymous with quality, successful, rapid transformation and regeneration, rapid progress, but also great risk.

Table 1: The number and structure of businesses in the SME sector in 2010.

Type of organization	Micro (number)	Small (number)	Average (number)	Total (number)	Total (structure in %)
Companies	77.989	9.614	2.257	89.860	28,2
AD	899	546	514	1.959	2,2
LLC	72.035	8.594	1.483	82.112	91,4
Other	5.055	474	260	5.789	6,4
Entrepreneurs	228.680			228.680	71,8
In total	306.669	9.614	2.257	318.540	100,0
Structure (%)	96,3	3,0	0,7	100,0	

Source: MF

SME sector in Serbia makes 66.6% of turnover, about 35% of gross domestic product, 59.1% of gross value added. The total exports accounted for 45.9%, imports 60.5% and 58.7% of investments. SME development is a significant step towards European integration of Serbia and the integration of national economies into the wider European economic framework.

Entrepreneurial management as a combination of factors of production and decision-making about their optimal allocation is the basic of a successful SME sector. In a small business, entrepreneurial management, based on a series of individual decisions: the selection of business ideas, products, programs, technology, personnel, leading to job mobility and survival.

METHODS

In the analysis of SMEs, the data for the period 2008. and 2010. The report from the SME, who took the Ministry of Economy and Regional Development, the National Agency for Regional Development.

To determine the most important factors for the success of small and medium enterprises, the results of U.S. studies (Chaganti et al., 1991, p. 17).

Since there has not generally established definition of small and medium enterprises, the work is based on a number of books and articles relevant to this domain.

RESULTS AND DISCUSSION

In the discussion we'll discuss the most important results, relating to:

- Entrepreneurial Management in SMEs
- The principles of entrepreneurial management in SMEs
- Advantages and disadvantages of SMEs

Entrepreneurial Management in SMEs

Entrepreneurial management as well as modern technology is a key factor in growth and development of small and medium enterprises. The main cause of deterioration of the SME sector, it is the absence of adequate entrepreneurial management. His role in the SME sector will be implemented successfully only if they provide and define the conditions in the theoretical and practical application, and provide quality answers to the problems they facing. Due to growing demands from the market, the manager must be a person who is a good entrepreneur and leader. To make the organization function effectively, requires to be managed, entrepreneurial managing

companies must effectively introduce the new changes. In every organization there must be a number of individuals who will deal with its mission, strategy and goals.

As a prerequisite for the success of companies in competition occurs an upcoming concurrence. Corporate governance can be defined as a continuous process, which directs business activities towards the realization of business objectives. Management of the company consists of three subsystems, which are interrelated, and they are planning, decision making and control. Planning is the foundation of all managerial activities of the aims of business and organization development and predict future tasks to be fulfilled. Decision making is based on recognizing the problem and the selection of possible solutions for a desired state. The role of control is reflected in the measurement and evaluation of the planned results achieved.

The main characteristics of corporate governance can be defined as follows (Ceranić, 2007):

- Management is a prerequisite for the survival, growth and enterprise development;
- Management is a dynamic process because the environment and the company are in constant change and are directed toward new goals;
- Management of an activity in which there is a responsibility of the efficient use of resources available to the manufacturing process;
- Management is a continuous process of solving problems facing the company in the conduct of its business activities;
- Management of the company today is not possible without the use of computers based on their information systems;
- Management of the enterprise usually examines the systemic approach, which the company considered as a complex system composed of many subsystems, as well as a subsystem of the system of higher order - the economy.

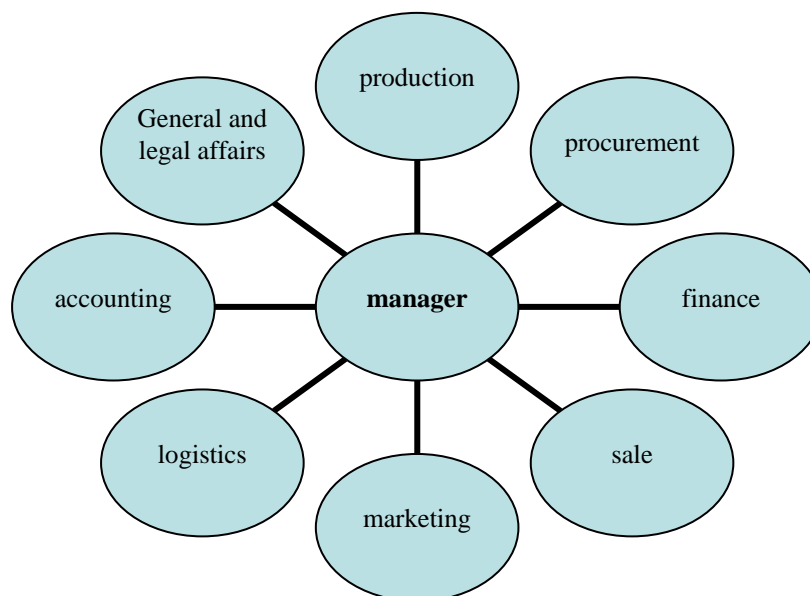


Figure 1: The organization functions in small and medium enterprises (Ceranić, 2009)

The success of a small entrepreneurial business, just like other businesses, largely committed by defining a valid strategy. In developing any business strategy into account must be taken: corporate, customer and competition. Small entrepreneurial business strategies must be such that at any moment to strengthen its competitiveness, due to the fact that such an enterprise, have almost no right to make mistakes, because of its very limited power.

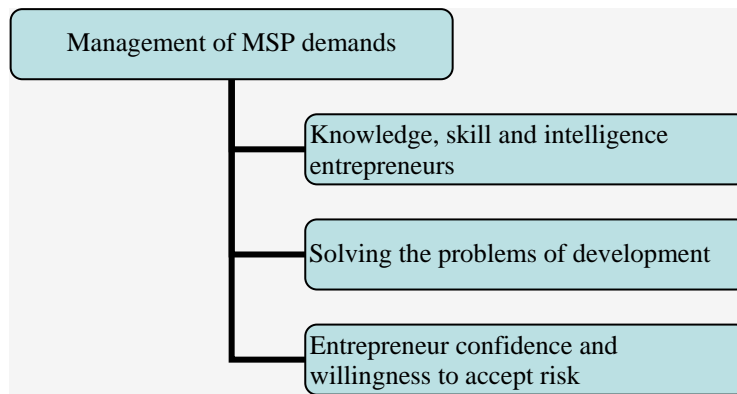


Figure 2.

The basic strategy of small business should be based on high productivity, offering products and services with higher added value than the competition, continuous improvement of working conditions, training staff and technical - technological application.

The principles of entrepreneurial management in SMEs:

The SME sector which is properly managed entrepreneurial management is a successful small business that is evolving. The presence of entrepreneurial orientation indicates that the owner-manager aware of the importance of managerial competencies for a successful business.

1. Small business means a small investment, a relatively small investment compared to the capacity and number of employees.
2. Requires the application of high-tech achievements, knowledge, and constantly increase the productivity of knowledge.
3. It requires dedication, work, diligence and competence of all employees to achieve productivity growth and knowledge. Money does not come neither quickly or easily.
4. Knowledge of customer requirements and demands of consumers and competition is a prerequisite for success.
5. Poor quality business can not survive in today's market.
6. Increasing the productivity of business is a global goal, leading to market expansion and increased employment.
7. Marketing is not advertising or selling, but the control concept should enable the continual pursuit of the business while ensuring the development of company goals.
8. Profit motivation often leads to misunderstanding the purpose and functions of the Company. In the contemporary economy, profit is not the main goal is primarily to meet customer requirements.
9. Small programs can be stimulated only if they are profitable.
10. Small businesses also create and disappear in large numbers. They survive only by understanding that the knowledge base of operations, increase productivity necessity of business, and continuously improving quality in line with market demands, the main goal of business.

According to one American study (Chaganti et al. 1991, p 17)., Conducted on over 500 small businesses found that five factors separate profitable from the not-so-profitable companies: employee productivity, the ability of firms to manage cash flow, innovative company, general manager competence of the owner - manager firminih and location of office buildings (factories, etc.).

A group of authors (Megginson et al. 2006, p. 21) is a different opinion about the most important factors that make a successful small business. They point out the following factors: a well defined product and market it properly serviced, acquire (provide) enough capital, effectively recruit and

use of human resources, to ensure timely flow of information and use effectively monitor the state regulation, the owners have the experts and employees to be flexible.

Advantages and disadvantages of SMEs

Table 2: Advantages and disadvantages of SMEs compared to large enterprises

BENEFITS	DISADVANTAGES
<ul style="list-style-type: none"> - A small number of employees and the efficient use of labor - More efficient use of material and production resources - Greater flexibility and dynamism in relation to the incentives that come from the market - Greater flexibility to market and technological changes spurred by the development of innovative activities, willingness to accept innovation - The motives for the work and results achieved are higher for owners of small firms than for managers of large - With greater specialization, more rapid changes in technology and application of modern management methods provide greater competition in domestic and foreign markets - Reduces the need for imports - Often used by-products of large firms and thereby reduce pollution - Provide self-involvement of family members and own funds - Absorption workforce laid off due to the modernization and automation, contribute to faster development, structural changes and adjustments to large companies - Do not lead to large earthquakes due to social and liquidation or bankruptcies 	<ul style="list-style-type: none"> - Access to external sources of funding is often limited due to the increasing dependence of financial institutions - Lower stability, in comparison to large enterprises reduced access to loans intended for risky investments - Small and medium enterprises can hardly stand the presence of various monopolistic structures and excessive paperwork - Lack of managerial skills and experiences, insufficient knowledge of management, finance, marketing, legislation, accounting, etc.. - In the transition countries often resort to hiring illegal workers - Lack of development of motives, since the majority of SMEs makes no pretense to be developed - Small impact on suppliers - Low demand

Management of MSP is specific, because of lack of funds, manpower, machinery and other resources. The main barriers that prevent further development of small and medium enterprises are lack of financial resources, lack of knowledge and markets, and lack of adequate institutional infrastructure. SMEs suffer from Serbia organization form of stagnation.

CONCLUSION

SMEs are a significant mixture future, given their role in agriculture and industry. They are characterized by flexibility and innovation, because that can quickly adapt to environmental changes and to respond to specific problems and requirements. Small and medium enterprises in agribusiness contribute to development through: employment, exports and competitiveness.

The economic environment in which companies are supposed change management models and leadership in the fashion business in an environment of change. For the most part this means a change in terms of adjustment and reform strategy for the development of business necessary to ensure the growth of global business, new jobs, creatively respond to market demands. Business development and growth is largely determined by the growing demands of the modern consumer society.

Without entrepreneurial management can not be expected survival of small and medium enterprises. Companies that are managed in an entrepreneurial way of living with the spirit of

entrepreneurial managers: a vision, tend to innovate, continuously educate staff, fast growth, build a competent management team, defining long-term strategy and success.

Strong growth and technological development, speed of implementation of new developments, the increase of complexity of operations, the necessity of adapting and planning are just some of the characteristics of a ruthless struggle for competitiveness. Each strategy is based on building and maintaining a competitive advantage. A company can control its long-term rivals in the industry only if it manages to achieve a sustainable competitive advantage.

The elements and benefits of having SMEs, creating a competitive knowledge-based economy, innovation and quality requires changes in the factors that determine the business environment. SMEs contribute to the overall development of the Serbian economy, if only to create an environment that will contribute to entrepreneurial development.

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TECHNICAL AND DATA SECURITY RISKS IN ELECTRONIC BUSINESS

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ABSTRACT

Electronic business implies exploitation of all possibilities which provide the presence of business organizations and their products and services on the Internet, regardless of whether it is a case of simple marketing support or demanding computer applications. However, increasingly intensified application of telecommunication and information technologies, as well as online data exchange, provokes fear from harmful events and financial losses among managers of these organizations, since the poor forecasts and low quality in implementation of new technologies can cause decrease of performances, even the liquidation itself. In this regard, during the process of organizing and conducting electronic business activities, special attention should be devoted to the technical risks, i.e. risks of designing, implementation and maintenance of electronic business system as well as data security risks. This paper places a great emphasis on explanation of causes and consequences of adverse events which may occur in connection with these risks, and provides the analysis of statistical data availability on such events in present conditions.

Key words: technical risks, data security risks, electronic business

INTRODUCTION

The e-business models provide numerous benefits to consumers and economic organizations and indirectly contribute to economic development in general. The simplest models involve the company's web site designed to insure marketing support, while the most complex encompass all elements of online information exchange as well as exchange of funds and documents. However, regardless of the economic activity, all forms of entrepreneurship lead to the emergence of different types of risks which, to a greater or lesser extent, may threaten financial stability as well as the existence of economic undertakings. In this regard, during the process of organization of e-business activities, special attention should be devoted to the already known entrepreneurial risks, but, due to the intense reliance on telecommunications and information technology, more attention should be paid to the technical and data security risks as varieties of operational risk. Therefore, the first part of this paper strives to identify and analyze the causes and consequences of adverse events that may occur in connection with these risks. Since the risks cannot be effectively managed without adequate statistical data on the frequency of their occurrence and severity of damage they produce, the paper's second section provides a comprehensive overview of statistical data sources for such events in the present conditions.

TECHNICAL RISKS

Technical risks in electronic business arise as a result of external interference in communication networks as well as errors and omissions in the information system that supports e-business. In other words, gaps and failures in public computer network that provides online communication between companies and consumers, omissions and failures in the telecommunications and electricity networks as well as errors and insufficiencies in design, implementation, maintenance and management of software applications and technical assumptions necessary for the companies'

web presence and business via the Internet cause various adverse events. Their primary manifestation is a slowing or complete shutdown of the system.

Examples of omissions and errors that may occur in the infrastructure of application of Internet information technology are:

- The capacity of applied Internet technology is not sufficient enough to submit increased traffic and the amount of data exchanged.
- The technology is outdated and insensitive to further expansions or reductions in capacity.
- Applied solutions are not reliable when it comes to internal and external attacks.
- The technology is not approachable, compatible and operational in specific markets.
- Management and employees of the companies that offer electronic business services are not sufficiently prepared for the changes in technology and working methods.

In order to successfully perform the activities of e-business, many companies rely on external service providers, whether in case of all operations related to information technology or only in case of specific ones. In this respect, external companies may be involved in the development of web sites or other Internet applications, or they can be engaged in managing of e-business information technology infrastructure (hosting service). In this case, there is a risk that external service providers will not be sufficiently professional and accurate. Therefore, companies offering electronic business services have to verify financial liquidity, operational capabilities and project management skills of the external providers.

The consequences of a slowdown and temporary or prolonged e-business system downtime are primarily reflected in financial losses - lost profit and additional financial investment. A renewal of software/hardware technical support, further education for employees or employment of proven professionals (programmers, operators and web editors) may be required. In case of external service, provider contracts and agreements concluded under adverse circumstances, costs may arise regarding a contract termination and hiring of new providers. During an extended outage of the system, a large number of previously satisfied customers can reevaluate their loyalty and turn to competing e-business services providers (reputational risk). Transaction errors and omissions, as well as uncertain information technology, may lead to unwanted and unauthorized text and data changes during the exchange of documents between the parties or during the process of information publishing. Therefore, they can cause severe data security risks.

DATA SECURITY RISKS

The integrity and reliability of electronic business system implies that data and information may be modified only by authorized persons or institutions. A violation of system's integrity leads to important data loss, information and money theft and intentional and unintentional modification of data by internal and external parties involved in a specific e-business process. Thus, the aforementioned problems represent the leading causes for data security risks.

Data integrity violation can occur in cases such as the following:

- unauthorized access to the system by hackers;
- insertion of viruses into the system;
- insertion of malicious passwords hacking programs or applications designed to steal small amounts of money from large numbers of big transactions in the way that it is not immediately noticeable as well as the insertion of other similar programs;
- transaction errors and omissions;
- data misuse by former employees;
- data misuse by current employees;
- information system faults, errors and omissions.

The first five items can be grouped into so-called 'external omissions, attacks and misuses', while the last two fall under internal failures and frauds.

Data integrity violations and incorrect information may lead to the following problems that threaten to hinder the smooth functioning of electronic business:

- The company is not able to offer customers the right products.
- The offered products do not meet the clients' specifications.
- Consumers can challenge, dispute and refuse to acknowledge legitimate transactions.

These types of data compromising risk most often occurs as a result of intentional actions of computer criminals. Moreover, crimes can be committed by outsiders who penetrate into the computer system (often via communication lines), or insiders authorized to use the computer system but misusing their authority. The consequences can be far reaching, ranging from funds theft and funds extortion to misuse of confidential information in terms of unwanted disclosure, which in turn can lead to customer complaints and loss of their confidence and even to company's collapse. In addition to this, the additional investments in the field of security technology will be required and a special attention focused on making up for lost reputation.

STATISTICAL DATA SOURCES ON INDICATED RISKS

Risk cannot be effectively managed without adequate statistical data on the frequency of their occurrence and severity of damage produced. By means of an adequate analysis of internally or externally collected data, the adverse effects of previously described technical and safety problems can be foreseen and, therefore, reduced or eliminated completely. The best sources of data are, of course, data gathered by the companies themselves but they do not always possess all information or those information prove to be insufficient or need to be updated.

Internal Data

If a company has implemented e-business in the long run, it is the best to use its own data for the analysis of adverse events. It is understood that these events are properly and objectively recorded. In order to achieve this goal, it is desirable to define certain standards and clearly delineate data necessary to collect while the process of internal data collection is still on.

Those information may be the following elements:

1. date of loss event occurrence,
2. date of loss event discovery,
3. country of loss event occurrence (in the case of international business),
4. organizational units responsible for the loss event,
5. loss event category,
6. amount of the loss in local currency and its exchange rate,
7. amount and the date of the loss coverage,
8. type of the loss coverage (insurance, client, etc.),
9. correlation between the loss and losses that arise from other types of risks, in order to prevent the possibility of double counting) etc.

In addition to the aforementioned data, it is necessary to define threshold below which data on adverse events will not be collected or will be collected in significantly smaller amounts. It is desirable that this threshold is as low as possible in order to limit the costs of data collection. (Industry Technical Working Group on Operational Risk, 2003)

External Data

Since there will always be data insufficiencies in case of individual business lines and certain types of risk events, external data on adverse events at similar companies can be used as alternatives.

Data obtained in this way may be used to complement incomplete internal loss records and increase the quality and credibility of future scenarios. However, when external data is used, organizations engaged in e-business must take into account suitability and scalability of data in question.

- Suitability or applicability of external information is related to the characteristics of business environment within which the organization operates. For example, if the external data relates to the organization operating in a completely different business and control environment, such data are essentially irrelevant and should not be used to assess their own risk exposure.
- Scalability of external data refers to the fact that some risks are dependent on the size of the organization and scope of business activities. Scalability of data can be solved by grouping organizations with approximately the same volume of activity in the same group and by using external data from only one appropriate group. Another way is to use regression analysis to determine the connection between the size of the organization and loss frequency and then to determine the correlation between the size of the organization and loss severity. Regardless of the way implemented to incorporate external data into company's records, it is important to periodically check the chosen approach. (Selvaggi, 2009)

There are numerous external data sources. Organizations conducting e-business activities can independently collect such data, use the services of commercial consulting firms or use industrial data pools.

Independent Data Pools

If it is a standalone data collection in question, organizations can search databases of public intelligence networks or other public data sources. The main advantage of this method is that it is not expensive, but its key disadvantage lies in the time required. Also, data collected in this way can be subjective depending on reporting source used. The media tend to report on fraud, trials or natural disasters, but this does not necessarily mean that their assessments are completely reliable. Risk managers can also use official and free reports of the companies that manufacture and sell safety equipment and software. These reports are available on their web sites and they are mostly objective, but we should not overlook the fact that the main goal of those companies is selling of that very equipment. Reports by Verizon Business and Symantec can be taken as an example. For several years, these two companies conducted research on cyber crime and attacks on confidential data in different industry branches and different countries through the world. According to Symantec, the number of new malicious programs is approximately doubled each year (Symantec Corporation, 2010). These reports are very detailed and they represent a solid foundation for the research on the aforementioned risks. The reports from Verizon Business during the last two years have become exceptionally elaborate, since their data gathering has been supported by United States Secret Service (USSS) and the Dutch National High Tech Crime Unit (NHTCU). (Verizon Risk Team, 2011)

Commercial Vendors

There are a limited number of commercial data sources - commercial vendors that collect data on operational and other types of risks. Here are some of them: Operational Risk Analytics (based in London), OpVantage (Fitch Risk subsidiary, based in New York), insurance brokerage firms Aon and Willis etc. These and similar consulting firms collect data from various sources (media, courts of law, etc.) and it is considered that they have achieved a significant level of their data completeness and reliability of their databases. In this way, organizations conducting e-business can save significant time and provide a significant collection of data, but such information have to be bought and they do not necessarily have to be complete and reliable. Also, there are private consulting firms that primarily provide various services they charge for (accounting, advisory services, tax services, risk management services, etc.). However, these companies often carry out various surveys in the field of certain industrial branches where their reports are free of charge and available on their web sites. An example is a private British company Deloitte that annually conducts research on safety and protection of data in financial institutions. During the latest

research conducted by this company, over 350 of the largest financial institutions were interviewed in 45 countries worldwide. One of the conclusions made in the field of external attack and misuse of data was that the greatest number of financial institutions (i.e. 34%) have experienced attacks caused by malicious programs outside the organization during the last 12 months. In addition to external attacks, they studied internal attacks and abuse as well and assessed the financial losses. (The Creative Studio at Deloitte, 2010)

Industry Data Pools

Industry data pools have become more and more important, since many national and international organizations put pressure on their members to regularly submit data on adverse events, convinced that it can be of use to member states and that it can support business activities in general. The obtained data is then processed and in processed form returned to the involved companies (the anonymity of each company is guaranteed). The advantage of this external data collecting method relies on a high degree of accuracy and data completeness, but the demands toward the states involved are very high. In this sense, the company involved in this process has to invest considerable effort in collecting and registering their own data on adverse events. There is a great number of such organizations in the banking sector: British Bankers' Association with their database Global Operational Loss Database (203 banks and 57 associated members), Operational Riskdata eXchange Association (54 leading banks from 18 different countries), Operational Risk Subgroup of The Standards Implementation Group as a Sub-Committee of The Basel Committee on Banking Supervision (analysis includes 121 banks from 17 different countries). The Association of British Insurers (ABI) is well known in the field of insurance. However, the weakness of the aforementioned databases lies in covering the loss events across all types of operational risk, where e-business is not singled out into a separate entity.

The state can greatly affect the formation of industry data pools or, at least, corresponding activity patterns related to electronic business. As a positive example of such practice, the research of Statistical Office of the Republic of Serbia on the use of information and communication technologies in households and businesses that have been conducted since 2004 cannot go unmentioned. Their questionnaires include questions about the security of information systems (data loss or corruption due to the attacks (viruses), an unexpected accident or hardware or software malfunction, the disclosure of confidential information through unauthorized intrusion into the ICT system, unavailability of ICT services due to external attacks). (Вукмировић, Шутић and Павловић, 2010) In this way, companies and individuals in Serbia can be informed about e-business in their country and a given sector of the economy as well as about the level of protection of the information and communication technologies it rests upon.

CONCLUSION

Because of the strong reliance on telecommunications and information technology, during the organization of e-business process, special attention should be paid to the technical risks and the risks of data security. Technical risks in electronic business result from external interference in communication networks as well as failures, mistakes and omissions in the information system that supports electronic business. The main adverse event that may occur is slowing down or complete shutdown of the system. Data security risks arise in the event of disruption of system's integrity, which may result in loss of important data, information and money theft, and intentional and unintentional modification of data by internal and external participants in the process of electronic business. The consequences in both cases can be far reaching, and they are assessed by financial losses that include lost revenues and profits, additional financial investments in the technology and personnel training, compensation of damages to customers, making up for lost reputation, etc.

In current conditions, there are many sources of statistical data regarding those risks. Apart from personal data sources, in order to increase the quality and credibility of future scenarios, the external data on adverse events from similar companies can be very useful. Free reports or

information regarding these topics can be downloaded from the web sites of many organizations (private companies, governmental organizations and media). Some consulting firms possess their own databases, but they require monetary compensation. Recently industry data pools of a great quality (particularly in sector of banking and insurance) have been started to form, but the membership in them is certainly implied.

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ANALYSIS OF NEEDS FOR CERTAIN PROFILES AND VOCATIONS NEEDED FOR LABOUR MARKET

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ABSTRACT

Analysis of need for knowledge and skills is a procedure made on macro (national or regional), field or companies' level. It provides identification of types of vocations in need on macro level or regional level, field level or a company's level. Analysis of needs for knowledge and skills should provide information about people who need them, about the jobs they perform or will perform and about the products themselves or about the processes that are results of their work. Analysis of needs for knowledge and skills of the unemployed, i.e. analysis of needs for knowledge and skills needed on the labour market is a more complex procedure. It contains identification of specific needs of organization, community or labour market or it identifies new programs and program topics.

Keywords: knowledge, skills, vocational profiles, vocational standards, outcomes of education

INTRODUCTION

Today permanent education becomes one of the most important forms of human resources management and development. Education process always has certain outcomes but their nature is often vague and unclear. Even in the vocational education and adult education there are programmes, which are not rare, that have unintentional, inadequate and imprecisely defined outcomes that have a consequence of „production“ practise of personnel who have formally acceptable qualifications but they don't have some basic competence that are expected.

Expert aspect of the vocational education reform includes skilled training of the students, as well as professional education of the employees and their training for labour world having in mind needs of organizations and society. Permanent education and advanced training of the employees becomes one of the most efficient ways of concurrent advantage, entrance on market game and competition for gaining sympathies and trust of the consumers and thus the most efficient way of continuous improvement of organization performance.

Management of organization performance is done through several segments and one of them is by all means investing in employees education, which has great influence on the improvement of complete organization performance. Change in technology, constant increase of complexity, turbulence, uncertainty of professional environment and modern business ask for new, greater and different knowledge and put men in the first plan not only for development but also for

organization survival. These changes make quickly knowledge old-fashioned and ask for new knowledge and permanent education.

KNOWLEDGE AS A FACTOR OF STATE ECONOMIC GROWTH AND DEVELOPMENT

Knowledge as a factor of state economic growth and development is to be represented by permanent innovations in order to enter world's technology development. Modern companies devote more of their resources (monat, time, energy, information and etc.) to constant education and permanent training of the employees. Insufficient investments in education and development of the employees are one of the key reasons of losing shares on the market and falling behind the competition.

Accumulation of the scientific knowledge in future will be increased 100 percent in comparison to the beginning of this century. It becomes obvious that suitable development of science and technology demands permanent activity of education. Because of that, it is necessary during primary and secondary education to notice and cherish talents, motivate them and give them directions in order to make them successful in life. Measures for evaluation and support of creative and inventory work should be taken. Interaction between education and technical progress becomes more and more apparent. With economic development, introducing new working technologies there are many changes in working methods and they have influence on the employees' structure. Since a man in production is permanently tied to techniques, the apparent changes in technology and introduction of new products have also influence on the changes and structure of jobs. All this demands bigger competition and bigger knowledge of basic culture of the employees who improve working and its efficiency.

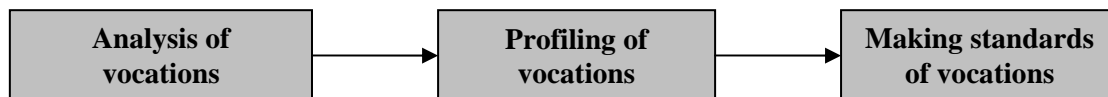


Figure 1: Procedure how to establish needed knowledge and skills[7]

Development of industry and education has caused- consequent importance:

- If economic development has bigger level, need for educated stuff is bigger and if the stuff is more educated the development of industry is faster,
- Interdependence of economic development and trained employees is visible in modernization and production process and in making new products,
- Educational and technological systems should be be in harmony, because the disharmony of education does not give optimal results and does not have influence on jobs productivity.

Science is even more present in the life by discovering new technologies, in new ways of production and living itself. According to the latest researches there will be three major levels of technology[7]:

- Innovations in current technological structure,
- New technology for improvement of new technologies,
- Realization of new development directions.

From all these mentioned above, we may come to the conclusion that the aims of education for market economy have new strategy in upbringing and education system and new knowledge content.

There are some preconditions for overcoming of the crisis: development of democracy, legal state, cultural behaving, democratic personnel politics codex and educational democracy. Upbringing and education have unchangeable role in all this. Having in mind that education means life, it cannot be meant just for small groups, thus it is defined as a vary important society need. The young should be involved in working process immediately after they graduate. Competition of the skills and market knowledge is to be made as soon as possible. Combinationa of professional development and evaluation of the experts will be basis for adequate and right professional promotion. Besides, it is necessary to stimulate knowledge, skills, enterprise and success in order to stop brain going – exodus of intelligence.

Old knowledge and increasement of needs for new information demands permanent education. New phase in market economy development asks for well-palnned multiplied education, evaluation and promotion system. Modern business system is based on team work. Professional improvement implies the process of enlarging, deepening and specializing of knowledge and skills when performing jobs and working tasks that need some complexity on the given complezity category. Occasional overttaking of more complex jobs and working tasks on the basis of acquired new knowledge and skills is just a preparation for participation in new phase of the degree of qualification.

Forms of education are to be directly connected to the working situations and they should be realized not only in separate educational patterns, but also in appropriate working tasks. Contents and levels of training and specialization should be largely in harmony with the aims of the organizations and personal needs and motives of the employers.

CREATING SYSTEM OF EMPLOYEES' PERFORMANCE EVALUATION

When creating system of employees' performance evaluation we should make decision upon the choice of the type of evaluation, i.e. type of performances that will be the object of evaluation. In order to get the most complete view on the employees' performances it is very important to combine, during the evaluation process, all relevant indexes of the employees. Basic performance types that can be object of evaluation are the following: Personal characteristics of the employees; Results done by the employees; Behavior of the employees that are necessary to the organization

For each and every job in the organization that is object of evaluation we should define those dimensions of the jobs that are going to be objects of evaluation. They are by all means: quality, quantity, time deadlines, minimal expenses, maximal results, level of independence, interpersonal relationships and willing to cooperate with colleagues in group work.

After defining subjects of evaluation we should choose the evaluators who will give marks for the employees' performance. Every choice has certain advantages and disadvantages and therefore the choice of the carrier of the evaluation is strategic question of defining system for employees' performance evaluation. In practice, in order to overcome certain disadvantages of some solutions evaluation is done simultaneously from several sources:

- From the direct supervisor
- From all subordinates
- From his/her associates on the same hierarchy level and
- From the employee himself/herself.

The primary aim of this evaluation is to obtain information on individual performance of all the people in the working environment in which working activities are done. During the evaluation we can combine different levels; some activities can be evaluated on individual level, some on team level, organizational units or the whole organization. It is a common practice that evaluation system does not include all the employees, i.e. that there is a different approach to different categories of the employees, that the performance evaluation of certain profiles is a basis for rewarding, for certain personnel it is a basis for promotion and for some it is training, retraining or moving to some other position. Such evaluation can give additional information in order to develop the employees. After the evaluation of individual employees' performance it is necessary to make analysis of needs for knowledge and skills of the employees.

IMPROVEMENT OF ORGANIZATION POTENTIALS BY IMPROVING EMPLOYEES PERFORMANCE

In order to improve organization potential, modern companies devote their resources to education, continuous training and professional qualifying of the employees. Employees training can be defined as effort to improve employees performance on their job or on some related working position. Teaching, training and retraining imply certain changes in specific vocations, abilities, skills, attitudes or behaviour. Efficient teaching must be well planned and in accordance to the identified needs, organization needs and individual needs of the employees and to technological development of the organization. Continuous employees education means employees development in order to help them develop their personal development, professional specialization that is not related only to their current working position but the aim is, by means of professional specialization, to prepare the employee to meet future organization demands or to develop personal career in long term period.

Professional specialization and trainings can be performed on the working position, in organization in which they do not work, in secondary vocational schools or in high educational institutions. Introduction of Modular teaching in secondary vocational schools and their connection with social partners and related organizations enables secondary qualified staff to gain new knowledge and skills by organizing professional specializations and retraining and thus it enables students of these vocational schools to have adequate practise in organizations that work in these fields.

Professional standard is used as a basis for making educational programs, teaching, learning and it is usually made as a part of the profession analysis that results with vocational profile. Implementation of education in organizations is complex activity and task that develops and that is done in human resources management

and it is one of the most important subfunctions. Modular teaching and learning are organised and realized through modules, i.e. specific, integral segments or learning packages that lead to professional competence and in which disciplinary and subject limits while presenting and adopting the content are very fluid or even revoked.



Figure 2: Professional standards – basis for making educational programs[7]

Modules are individual segments or learning packages that lead to achievement of defined learning results. They are relatively independent learning units and they can be organized and achieved independently or as a part of broader program or organized contents. Having this structure, the modules provide learning different knowledge and acquiring competence, development of adequate skills and interdisciplinary and intersubject connection of different contents.

The advantages of modular teaching can be seen in the presence and in the participation of the students in the learning process, i.e. in their participation in it, this is a very important factor that enables outcoming of good and qualitative personnel. In that way - by participation in education, new personnel, after finishing the school, will be fully qualified for the job and therefore acceptable for the employers,

A person of the age of 40 -50 can be trained using modular teaching, who became technological surplus manpower under specific circumstances and who becomes unemployed and by retraining he acquires quick and practical knowledge, skills and directions how to do a certain job and thus he becomes completely acceptable for the employers.

Education process always has certain outcomes but their nature is often vague and unclear. Even in the vocational education and adult education there are programmes, which are not rare, that have unintentional, inadequate and imprecisely defined outcomes that have a consequence of „production“ practise of personnel who have formally acceptable qualifications but they don't have some basic competence that are expected.

Use of the programming process with previously identified knowledge and skills needs gives optimal didactic and teaching method form and structure in order to achieve predicted educational and learning outcomes. In vocational education and adult education educational and learning contents are given in the form of the modules, i.e. in modular units.

UNIVERSAL MODULARIZATION AND FRAGMENTARY MODULARIZATION

The modules are interdisciplinary in their content but they are not limited as subjects. They contain complex of knowledge from different fields that are necessary for doing certain job or working in vocation. In vocational education there are two dominant concepts of modularisation and two methodologies for creating modules:

- Universal modularisation – that leads to integral qualifications,
- Fragmentary modularisation - that leads to partial qualifications and partial training for some jobs and working functions.

Universal modularization leads to integral qualifications and level of specialists' training. In this type of modularization the modules are formed by the development of knowledge in less complex but more differentiate role parts, functions or working competences of a specific vocation that can be achieved, evaluated but can not be recognized (certified) individually. The modules are verified only as a part of broader set that leads to universal vocational qualification, i.e. to vocational training. This type of modules are realized in schooling system and it is mainly intended for the young, although the adults in regular schools are not denied the possibility to learn some modules as well as the adult educational institutions.

Universal modules are used as a basis for program making, i.e. for modules for the adults. While adapting the universal modules, i.e. integral qualifications, for the needs of the adults it is necessary to take care of the previously acquired education, knowledge and specific ways of adult education and learning. Adaptations are made in the following fields: Organization of education; Time and duration of the education; Aims and outcomes of the education; Ways of evaluation and giving marks.

Fragmentary modularization leads to partial qualifications, i.e. partial training for working functions, working position or task. Fragmentary modularisation means that the modules are made:

- By dividing the vocation in less complex but differential parts, or

- By identifying the labour market or some organizations needs for specific working competences and trainings for specific jobs, functions or roles.

This type of the modules can be achieved individually (separately) and it can be accepted (certified) individually out of the universal qualifications system. Fragmentary modules are realized in schools and adult education and they are expression of tendency in order to meet the needs of labour market and continuous technical –technological innovations and restructuring of the companies.

EVALUATION OF EDUCATIONAL PROCESS PERFORMANCES IN ORGANIZATION

Marks and evaluation of the performances is a process that deals with evaluation of realizing wanted aims contribution, realization of the outcomes and quality of education and learning in some specific period of time. In secondary vocational education and adult education there are two types of evaluation - valuation of program successfulness and influence on the social and economic development and productivity and Evaluation of the achieved during the program training.

Evaluation as a process of identification of the education and learning quality includes: analysis, research, studying, critical aspect, rethinking and valuating of different components of the educational process. We may start choosing relevant component for evaluation by asking ourselves the following question: what can and should be evaluated in education, i.e. which components will be included by evaluation system? The following component complex can be easily distinguished as evaluation objects:

- Educational work program (meaning 1. – process of performing/transporting programs for educational profile and 2. Program contribution to achieve the aims) implies extern evaluators involvement;
- Participants work during the educational process – (self) esteem and (self) evaluation of the students / employees and (self) evaluation of the teachers and other participants in educational process.
- Conditions in which the process is realized: personnel- material – technical;
- Entrance of the students / employees in the process, which is done not only by entrance tests but also as actualization of the educational work in a very specific way with the adults as a accreditation of the knowledge previously acquired and working experience when we talk about short-term forms, training, retraining, specializing and education which lasts two or three years (implies extern evaluators involvement);
- Outcomes (students / employees achievements – by testing knowledge and skills and having good view of the competence and effects of developed competences in working process) implies extern evaluators involvement
- Institution etc.

A very important part connected to the evaluation of different educational process components can be regulated by: standardization, accreditation and licensing process. Special attention is paid to the development of evaluation methods of students / employees achievement during and in the end of educational process. In the concept of education oriented to the outcomes, we have to have in mind that quality of all mentioned components have important part in creating total quality of two separated components/aspects of the educational process.

SPECIFICATION OF THE PERFORMANCE EVALUATION IN EMPLOYEES EDUCATION

During doing the evaluation we have to respect that its methodologist basis consists of the quantitative – qualitative combination of technics and instruments, so that optimal combinations should be used for getting the most truthfull view. The course of actions or steps in building the evaluation system , during certain realisation phases, as well as in the end of the educational process in education oriented to the outcomes is as following:

1. From the profile, i.e. vocational standard, we choose functions and tasks (for analysis unit certain functions or certain tasks or even sometimes subtasks that the job contains are chosen; choice will depend on precise case);
2. Because of the separated functions and tasks as analysis unit, aims, sub aims/or educational tasks are formulated. It is made on three levels: on the level of standards (dominant orientations, manner of behavior and behavior), then knowledge and skills. During this, special care must be taken about the formulating – which verbs we use. It is possible to happen that certain situations or tasks cannot give aims, sub aims/or tasks on some of three levels, and that on some levels there are more aims, sub aims/or tasks.
3. Formulated aims, sub aims/or tasks are divided in logical schedule, which corresponds to the adoption of attitudes schedule, knowledge and skills. In this part formulated schedule is adopted,

it is divided in phases that contain total sets of attitudes, knowledge and skills, which are achieved in short periods of time, and after finishing them they are evaluated as a part of following and judging process during educational activity.

4. For each of the analysis unit, with possibility of enlarging and connecting, relevant characteristics are made (such as: automatization, speed, quantity of products, precisement, etc.) and levels of their development which altogether taken show adoption of attitudes, knowledge or skills, i.e. levels of competence development. Therefore, lower limits of knowledge and skills must be set, and which must be acquired in order to gain competence and maintain it after finishing educational process. The major part of the job in this phase is to find "criteria measure".
5. All functions and tasks are not equally important for performing certain job, and based on the "importance" or "presence" they can be formulated with certain precisement (for example, for some jobs, quantity and quality of the products are the most important; for some hygiene; for others precisement of jobs; or it is perhaps working on some machines and tools, etc.) Also, some of the jobs have more functions. We should keep that in mind during the evaluation, i.e. during the evaluation of space and time. This step is called "optimal difficulty" and it opens the possibility to tell if necessary a total success or partial success.
6. Conditional last step in this chain is "choice of measuring" adoption and development of certain attitudes, knowledge and skills; acquired for the given aims, sub aims and tasks. In this case, there are several quantitative and qualitative techniques and instruments for evaluation.

While evaluation in steps can be done by the teachers themselves or some of the relevant social partners, team, that makes final evaluation, done on the profile cut, should involve personnel from educational institutions and social partners. This manner of evaluation should provide possibility for self following, self-evaluation and self inspection of the participants during developing personal competence, and all this gives and makes a path for relatively individual educational programs.

CONCLUSION

Professional specialization and trainings can be performed on the working position, in organization in which they do not work, in secondary vocational schools or in high educational institutions. Introduction of Modular teaching in secondary vocational schools and their connection with social partners and related organizations enables secondary qualified staff to gain new knowledge and skills by organizing professional specializations and retraining and thus it enables students of these vocational schools to have adequate practise in organizations that work in these fields. Implementation of education in organizations is complex activity and task that develops and that is done in human resources management and it is one of the most important subfunctions. Modular teaching and learning are organised and realized through modules, i.e. specific, integral segments or learning packages that lead to professional competence and in which disciplinary and subject limits while presenting and adopting the content are very fluid or even revoked.

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STRATEGIC ROLE OF SMALL, DECENTRALIZED HYDRO GENERATION SYSTEMS IN SERBIAN ENERGY POLICY DEVELOPMENT

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ABSTRACT:

In the last decade of the 20th century, a clear consensus between researchers has been made: there is significantly increased energy demand but classic energy sources are decreasing and alternative energy sources are strongly encouraged. Following these ideas, with respect to both national energy management policies and European praxis, a strong impetus to alternative energy sources in Serbia is given. Among them, according to the authors of this paper, particular attention should be given to decentralized energy generation (DEG) systems. Within DEG systems, a widespread possibility is identified in the small surface waters sector for generating hydroelectric power. Bearing these facts in mind, the authors were also motivated by the fact that the small surface waters sector in the Republic of Serbia has not been subjected completely to such analysis. In this paper, the application points of small hydro generation have been defined as objectives of study, together with detailed reviews related to applicable legislative issues. The authors also considered a list of factors influencing the techno-economic viability of electricity generation in such systems, including the influence on water quality. Major results obtained by this research could be divided in three groups: Extended knowledge about the operation and maintenance of these systems, The abovementioned DEG systems could play a more significant role in the Serbian energy market by increasing a total number of installed and operational generators, Efficiency of small operational DEG systems could be significantly improved by coupling them with intelligent monitoring and control systems. This research clearly indicates a necessity of hydro-economic models application: instead of building new energy sources, it is better to upgrade existing ones. The authors list limitations of contemporary energy policy in Serbia, recommend way of policy improvement, and suggest directions of future work.

Keywords: decentralized energy generation (DEG), small hydro power plants (SHPP), intelligent control systems.

INTRODUCTION

The turn of the 21st century was marked by both significant scientific discoveries and the realisation of the fact that energy demands are ever-increasing, with the existing energy sources having various limitations. The altered global energy conditions, especially the rise in petroleum products prices and intensified exploitation of coal and other fossil fuels in thermal power plants and heating plants, which were predominantly responsible for a series of environmental issues, both globally and locally, are forcing us to seek out new solutions in terms of renewable energy sources. Renewable energy sources include hydropower, wind energy, solar energy, biomass energy, geothermal energy, etc. It is to be expected that all countries in the world will need to fully resort to using renewable sources of electric energy. This paper focuses on small, decentralized systems of hydroelectric energy generation. The introductory part analyzes the possibility of using hydro energy on small watercourses because the operating principles of all hydroelectric power

plants are the same. As regards the utilization of the hydropower potential, it can be concluded that large hydropower facilities were usually built in all the places where it was economically viable. One should also consider that investing in SHPP cannot solve the problem of insufficient electric energy without investing in other sources but it can certainly alleviate it in an eco-friendly manner. Apart from this primary reason of building SHPP, there are also secondary reasons, such as construction of roads to less accessible areas, development of tourism, light industry, etc. The advantages and downsides of building SHPP can usually be viewed from the perspective of financing as a key aspect, especially in middle-income and low-income developing countries. Therefore, the paper provides an economic analysis of SHPP construction. The end objective of the paper is to use the analysis to emphasise the need for a more extensive construction of such facilities in Serbia.

GLOBAL HYDROPOWER POTENTIAL

Of all renewable energy sources, hydropower was at the top from the very beginning of the electric power industry development in the world. From an economic perspective, the most suitable locations for building SHPP were river basins, where big hydropower potentials could be easily exploited. With this approach, technically available big hydropower potentials were exhausted rather quickly while hydropower potentials contained within smaller basins were more interesting for exploitation. It is estimated that the total global commercially usable hydropower potential amounts to ca. 15,000 TWh/year, 20% of which has already been exhausted. Hydropower potential has an 18% share in total global electric energy production. The total global electric energy production in 2002 was 16,000 TWh, of which 2,800 TWh was hydro-generated. The annual production in SHPP was estimated at ca. 100 TWh. Table 1 showcases the available and exhausted hydropower potentials in countries with the most hydropower.

Table 1: Available and exhausted hydropower potentials in countries with the most hydropower

Country	Commercially usable, in TWh	% of globally usable	Production, in TWh	% of usage
China	1923	12.7	107	5.6
Brazil	1195	7.9	199	16.7
USA	1095	7.3	229	20.9
Canada	600	4.0	52	8.7
Russia	593	3.9	307	51.8
India	376	2.5	229	60.9
Norway	150	1.0	109	72.7
Japan	130	0.9	96	73.9
Venezuela	99	0.7	70	70.7
Germany	72	0.5	78	108.3
Globe	15099	100.0	2044	23.5

Based on global and local analyses it can be concluded that from the aspect of potential, the development of SHPP is imminent and promising.

HYDROPOWER POTENTIAL IN SERBIA

If we look at the geological and hydrological circumstances in Serbia, we can see that the total usable water potential is significant and that our country ranks high among European countries rich in water. On the other hand, our country also ranks high among European countries with a relatively low level of exploitation of the available and technically and economically usable hydropower potential. The level of exploitation is estimated at no more than 46%, which places Serbia among those countries with a perspective of substantial expansion of electric power production capacities in favour of hydropower potential. Therefore, as the ecologically most suitable and cheapest energy source, hydropower potential is a resource of national significance,

i.e. a resource which needs to play an important role in defining a national energetic development program. Considering, on the one hand, the constant increase in the electric power deficit in Serbia and, on the other hand, a lengthy period of construction of large hydropower production capacities, the hydropower potential corresponding to SHPPs becomes an important and current issue. The total hydropower potential in Serbia is estimated at 35,000 GWh/year, of which 27,000 GWh/year are technically and economically usable according to the current situation, and the most recent technical achievements and economic criteria. Out of this value, a SHPP with installed power of up to 10 MW can yield about 2,131 GWh/year, with total installed power of ca. 650 MW.

In Serbia, only about 50 MW is installed in few dozens of SHPPs. It follows that a negligibly small percent (around 1%) of the hydropower potential of small river basins is used. It can therefore be concluded that our country is somewhat irresponsible as regards the exploitation of a reusable and ecologically and economically most suitable type of energy. In the early 1980s the SHPPs, as one of the best known reusable energy sources, were re-established regarding their significance. This was a logical step, as many countries had already possessed SHPPs which were ready to be restored and upgraded. Simultaneously, most developed countries began a detailed examination of all available locations and construction of new SHPPs at those locations.

CLASSIFICATION OF SMALL HYDROELECTRIC POWER PLANTS

A small hydroelectric power plant (SHPP) is a facility whose definition usually depends on the role and significance it is attributed when constructed. Most countries have varying classifications of SHPPs because they are dependent on a number of parameters:

- A country's level of economic development,
- Development of the electric power industry,
- Available and usable water resources,
- Natural topographic, geological, and other conditions,
- Development of industry, machine engineering, electrical engineering, and hydro engineering,
- Quantity of coal, petroleum products, and other raw energy materials,
- Population density.

The basic parameters to be used in SHPP classification are the following:

- Installed aggregate power,
- Aggregate type in relation to the turbine and mode of operation,
- Rotational speed,
- Mode of operation in relation to the general energy system,
- Installed drop rate, etc.

Definition and classification of SHPPs is usually based on their nominal power. Accordingly, there are different classifications and recommendations by international and national organisations that deal with the hydropower potential exploitation. For our purpose, the following standards could be accepted:

- Micro hydroelectric power plants up to 100 kW,
- Mini hydroelectric power plants from 100 kW to 1000 kW,
- Small hydroelectric power plants from 1000 kW to 10 MW.

Depending on the presence of accumulation reservoirs which regulate inflow irregularity, there are two basic HPP types:

- Run-off and
- Reservoir.

TECHNO-ECONOMIC ANALYSIS OF THE VIABILITY OF INVESTING IN SMALL HYDROELECTRIC POWER PLANTS

This section contains the work viability analysis of all SHPPs described in the previous section. The primary intent of the authors was to establish whether literature given cases demonstrates that the positive return on investment from power plant construction is reasonable. If it was shown that in all situations the positive return on investment did not exceed ten years, the conclusion would be that investing in construction of these SHPPs was by all means justifiable and that that everything was known during the plant design stage.

Based on literature analysis authors made certain assumptions. Namely, we know that with rough estimates of investments in SHPPs such as those described in this section, which require construction of dams and reservoirs or relatively long pipelines, the investment value exceeds €1,000 per kW of installed power; depending on the system complexity, the expenses may go as high as €2,000. Without a more detailed analysis but according to literature review we will assume that in all examples of SHPPs investment value amounts to €1,300 per kW of installed power. Together with annual data on electric power production in these plants and estimates of investment values, the analysis of investment viability also requires the cost of electric power, which the electric power industry pays to the power plants, and annual data on the plants' operational expenses.

TECHNICAL CONDITIONS FOR CONNECTING TO POWER DISTRIBUTION GRID

Electric Power Industry of Serbia has prepared the technical conditions for connecting SHPPs to the electric power grid. They cover basic technical requirements, connection, electric power grid safety, measurement of delivered electric energy, and connection procedure. The second part of the recommendation pertains to electrical equipment of SHPPs and encompasses the following: generator, measurement and regulation, safety, automatic and manual handling, distribution and transformation etc. This is a part of a program activity and a result of broad cooperation among interested organizations in developing technical recommendations for designing, equipping, and installing SHPPs.

CLOSING REMARKS

Interests for small, decentralized energy systems in Serbia are constantly increasing after years of stagnation. This urges for identification of locally available energy generation in the decentralized energy generation sense. Selection and application of the most suitable small decentralized energy generation systems largely depends not only on technological but on a series of socio-economic, environmental, and political conditions. In addition, small decentralized energy generation systems are significantly interlaced with different kinds of produced energy distribution to the end user. This implies that application of these systems has to be thoughtfully designed in order to ensure that varying needs are met, for example:

- satisfying energy demands,
- justifying initial investment and operational costs and providing income,
- making effective use of hydro energy without influencing water quality.

In order to achieve a better, i.e. acceptable and sustainable energy policy, Serbian institutions in charge are obligated to promote and to stimulate possible usage of small, decentralized energy systems, reorder the energy sector (in terms of national laws harmonization), and encourage further researches and commercial utilizations. Incentives related to small, decentralized energy systems are more than welcome. It is expected from the Government to provide a concrete financial impetus for decentralized energy systems promotion. According to the recent national energy efficiency strategy, this is, hopefully, going to happen in the near future. The Government's regulatory role (particularly through subsidizing) in these issues is decisive. Present situation in Serbia's decentralized energy systems sector reveals that some efforts have already been made. First results

indicate that even without concrete Government support these energy production systems could work profitably. However, for a wider acceptance of small, decentralized energy systems and appropriate market development, concrete government incentives are needed.

Based on everything explicated in the paperwork, a general conclusion may be drawn that the construction of small hydroelectric power plants is fairly beneficial and profitable work. In such situations, when power plants are built on sites where a constant annual water flow can be ensured, positive return on investment is significantly shorter than with isolated power plants. Finally, the authors emphasize that we must be aware that further activities regarding the decrease of fossil fuels consumption will not be possible without renewable resources promotion.

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TEACHERS' ATTITUDES ABOUT DEMOCRATIC RELATIONS IN THE SCHOOL

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ABSTRACT

Democratic schools are well-known in the world for a long time. In democratic schools, students have the right to participate in the process of deciding when it comes to the curriculum, teaching and activities. Here, students have a major role in creating and managing school rules primarily because in democratic schools direct democracy is practiced, which gives each student the right to vote and his voice has the same weight as the voice of the school staff. Democracy in all aspects of interaction in the school as a social group and education as a process must have a practical meaning and significance. School is a starting, basic, fundamental place for the exercise of democracy and the seed of democracy in society but also the assumption of democratic habits, tolerance, autonomy and responsibility of the individual in his life and activities after school period.

Key words: education, school, student, democracy

INTRODUCTION

In the 21st century, democracy is one of the most pointed heritages of society that every free democratic country is proud of. Education is the first step in the socialization of people and as such, it should bring up and educate young people for life in the framework of a democratic society. In democratic schools students have a right to participate in decision-making process and play an important role in creating policies and school management. This method is completely understandable considering that the school is an institution in which young people spend most of their life and should have the right to decide what school they want. Their right to vote is not only apparent mechanism on paper that would create a false impression of democracy, but their decisions have their weight [1].

THE CHARACTERISTICS OF A DEMOCRATIC SCHOOL

Despite the prevalence and spread of the concept of democratic schools around the world, experts can not agree on a single definition of the term "democratic education", perhaps because the individual and dynamic approach in which this kind of education is based [3]. Democratic orientation is manifested in the way of thinking, through mutual and intergroup relations and behavior. Family, peers, educational institutions, the means of mass communication, socio-political organizations, as well as the entire social climate affect the development of democratic and

undemocratic orientation. In addition to the direct effect of education and influence the content of teaching certain subjects, the development of democratic (or undemocratic) orientation contributes to the personality of teachers, teaching methods and forms of work, organization of school life, and the general atmosphere at the school in the way of communication among the participants of the educational process. A special part in the development of democratic orientation can have extra-curricular and extracurricular activities, student participation in school decision-making, and cooperation with schools and parents across the community [2].

DEMOCRATIC RELATIONSHIPS IN SCHOOLS

As a product, company or institution, the school has its own characteristics that make it more specific, particular and different from other social institutions. For centuries, it built up its own system, its operation and action, its own dynamics. Although it is expected that schools, under the influence of social trends and developments, are changing their dynamics and own style and way of life, however, usually, the school retains its previous features as long as it is possible. The school is known as an institution that is fighting for autonomy, uniqueness and specificity of the society[3].

School can be seen as a social group that consists of several collective subjects and a larger number of individual participants. So, school is not only the state, educational institution, but a certain group that establishes the intragroup and intergroup relations, perform certain roles and give the results of their work and activities. Relationships in school have several layers: the relationship of students and teachers, the relationship between students, teachers' relations, relations between students and school administration, relations between teachers and school authorities, relations between teachers and parents and relations between the school administration and parents. Within such a complex and interwoven relationships, schoolwork is carried out and demonstrated as its social function[4]. The main objectives of each individual, students are moving in the field of general, group (students') interests and individual, personal (personnel), individual interest. Requirements and objectives, interests and expectations of middle school and, as a collective interest, must be thoroughly analyzed, investigated and understood [5].

THE METHODOLOGICAL CONCEPT OF RESEARCH

It can be said that the research and studies dealing with the issue of democracy in today's schools and its participation in the courses of education in our region are very rare. This position involves a double difficulty, and limitation of liability: first, the lack of current research is directly related to this topic, it reduces the ability of critical analysis and orientation within a given topic, and secondly, an attempt to be among the first to research a topic carries with it the danger of remaining at the level of description for many problems, without in-depth analysis, and to ignore some aspects at the expense of others that will study the imposed flow.

Object and purpose of research

For a long time there is the need to investigate and review the numerous scientific problems in the implementation of the socialization of children in primary school and related problems of development of democratic relations in the school. The main goal of this study was to examine the level of representation of democracy in school, how, how much and in which way teachers contribute to or hinder students' participation in decision-making in a democratic way, and how they use knowledge about democracy in their own intellectual, educational and teaching activities and self-education.

The method and survey instrument

Based on case studies and a given goal, as the main instrument a questionnaire composed of 12 questions is used. The questionnaire contained combined and closed questions. Then the scales are

used to assess the attitudes of teachers about the possibilities and importance of participation in decision making on important issues relevant to their work and progress in school

Sample survey

This study included a total of 198 teachers in 10 elementary schools in the municipality of Odžaci (West Backa District).

Research results from the discussion

1. On how many people are satisfied with their jobs and their status in that business, directly depends on their attitude towards work, their willingness to further engage in the creation of favorable conditions for group work and the shaping of the group. Therefore, it is important to know what their social potential is. When asked if they had the opportunity to change their jobs of teachers, would they do so, 31 respondents or 15.66% corresponds with "yes", which 56 or 28.8%, with "maybe", and 111, or 56,06% answered with "no." When it comes to this issue by adding the area prefer to go to work and perform, then get some interesting relationships that can intersect and continue to follow in order to know what are and what preferences of teachers / professors to social action. This can best be traced in the following table.

Table 1: Responses to question "if you had the chance, would you have changed the job of teachers / professors," and asked "what another job would most suited to you"

YES	a) in public administration	2
	b) the public company	10
	c) in private enterprise	5
	d) a bank or insurance company	7
	e) I would open company	7
TOTAL RESPONSE WITH "YES"		31 (15,66%)
PERHAPS	a) in public administration	10
	b) the public company	16
	c) in private enterprise	5
	d) a bank or insurance company	4
	e) I would open company	16
	f) I would not trade jobs in the school	5
TOTAL RESPONSE WITH "PERHAPS"		56 (28,8%)
TOTAL RESPONSE WITH "NO"		111 (56,06%)
TOTAL NUMBER OF RESPONDENTS THAT ANSWERED THESE QUESTIONS		198 (100,00%)

We see that, among those who would change their teaching job most of them would like for some public sector. It shows their desire to have a job that is secure and finances that depend on some funds, something that is close to their current status. It is important to notice that, a significant percentage of respondents, who would change the present work, would decide to start an own business. This can be interpreted as the presence of certain entrepreneurial desire or inertia that is present in the environment to be "it's own boss".

2. Democratic potential and resources in schools, can be traced by examining how teachers are satisfied with the overall situation in the school. In the following table we see the answers respondents gave to the question "How satisfied are you with the overall situation in your school?"

Since about one-third of those who are satisfied with the overall situation in your school, we conclude that there is an assumption that two-thirds of those partially satisfied or dissatisfied with a lower resource for building democracy in school, or become more active and determined to

improve the overall condition just through the development of social relationships and demands for socialization of students to democratic principles and democratic procedures.

I am completely satisfied	76	38,38%
Mostly I am satisfied	97	48,99%
I am not satisfied	25	12,63%
In total	198	100,00%

3. The interest of teachers for changes in school is an important indicator of their attitude towards work, commitment, effort and overall ambitions. Relationship to the changes are compared to the overall social democratic resource, just as in school and as in the environment. To learn more about it, we placed the question of what respondents would first change in the school, if given the opportunity to do so? The table structure of the responses we have interviewed teachers.

The way organizations work	46	23,23%
Courses and programs	72	36,36%
Teaching	31	15,66%
Activities out of school	22	11,11%
Something else	6	3,03%
I would not change anything	21	10,61%
In total	198	100%

From table 3 we see that only 10.61% of teachers would not have changed anything in school. Here we note that the majority of respondents is in favor of some form of change in the current school, and most of them would change courses and programs (36.36%).

4. This issue relates to the assessment of teachers' attitude of society towards the school. " From Table 4, we see that 36.87% of this ratio ranks the lowest grade (1), while a further 35.86% of respondents is giving a minimum passing grade (2) compared to the school society. It is indicative, that no one has the relation with the highest marks.

Table 4: Rate from 1 to 5 attitude of society toward school

1	73	36,87%
2	71	35,86%
3	45	22,73%
4	9	4,54%
5	0	0%
In total	198	100%

5. When teachers are asked to grade from 1 to 5 their school's reputation in the community where the school is located, then we get ranked answers (Table 5) The two-thirds of high school ranks its reputation in the community where there is . Even 41.92% of respondents gave a rating of 5, and 37.88% of respondents gave a fourth grade This represents a significant resource of self-confidence and belief that the school is a social group that can develop democratic relations and set an example and catalyst for successful relationships and development in the immediate environment.

Table 5: Rate from 1 to 5 reputation of your school in your area

1	2	1,01%
2	7	3,54%
3	31	15,65%
4	75	37,88%
5	83	41,92%
In total	198	100%

6. The following table indicates the proportion of surveyed teachers on the issue of internal interpersonal relationships within the school. Highly expressed positive attitudes about relationships at school shows that there is one very important assumption that democratic relations and democratic procedures in the school environment can be developed, and that in future we can expect of school to become a master of democratic development in the environment and social groups to acquire the first steps of democratic socialization of young people. Approximately 47% of respondents rated the quality of interpersonal relationships in the teaching staff with grade 4.

Table 6: Rate from 1 to 5 quality of interpersonal relationships in the teaching staff

1	5	2,52%
2	9	4,55%
3	39	19,7%
4	92	46,46%
5	53	26,77%
In total	198	100%

7. Results, similar to previous ones, we get when we ask the question about the total human relations in school. This means that teachers think that relations between students and teachers are good and can be successfully carried out the education and socialization, and that is a good way of further incensement of overall education. Almost half of respondents (44.95%) gives 4 for this statement. Table 7 reveals an overview of these attitudes.

Table 7: Rate from 1 to 5 ratio of students and teachers

1	5	2,53%
2	8	4,04%
3	41	20,71%
4	89	44,95%
5	55	27,77%
In total	198	100%

CONSLUSION

One of the goals of education policy is to create a democratic environment and democratic climate in the school. Since the democratic climate achieved through democratic procedures and democratic communication, it is necessary to create conditions and provide mechanisms for their implementation. Democratic relations in the school, as this research shows, are only the beginning. There are, for now, the modest resources expressed the desire, willingness and motivation of participants in the educational process. The school is still developing as a national (social) institution, and very slow as a social group in which it will be a democratic, creative, and free way to place the process of socialization of children, such that they are aware of that process. The democratization of education does not happen by itself and it is not given once and for all. Even the significant results achieved in this field are able to "collapse" if we stop working on preserving and improving the already existing standards. For this concept, it is crucial to school involvement (participation, participation) in various ways for all stakeholders. Teachers, students, parents and the community here are on the same important task. Their inclusion is possible only if the communication that is fully open, intense and sincere between these groups and individuals is provided.

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POSSIBILITIES FOR INCLUSIVE EDUCATION IN EDUCATIONAL INSTITUTIONS

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ABSTRACT

Education today should be available to everyone, including people with disabilities and developmental disabilities, enabling them to develop their full potential and contribute to society, to enrich us with their differences, and not impaired. The Mind of the Child, as well as the body needs help to grow, and the three most important 'food' for the development of mind are language, play and love. Let's be friends to them first, then teachers, counselors, therapists and others.

Keywords: inclusion, education, children, special needs, rights

INTRODUCTION

The main task of education is to prepare children for life in the community. If one's education begins in the conditions of isolation, the sparse, uniform, and a separate space, then that child's chance to equal involvement in community life and necessary support is denied. Inclusion of students with special needs in regular schools and classrooms is part of a great world's movement for human rights, which calls for full inclusion of people with disabilities in all aspects of life. The concept of inclusive education refers to the philosophy of education that promotes education for all pupils in primary schools.

DEFINING INCLUSION

New Law on Basic Education was enacted in August 2009. and thereby the conditions for institutional support to the development and implementation of inclusive education and providing access to education for children of different vulnerable groups who largely remained outside the system until now, are created (1).

Searching for the final definition of inclusion, we will find a variety of approaches, from the treatment diversity, through school organization for inclusion of children with special needs in regular classes to inclusion and equality for all children (2)

When we talk about inclusion, it usually refers, mainly, to the inclusion of children with disabilities. However, inclusive education means the education system, which is open to all children, especially for those who are excluded from the education system or that system does not

provide adequate support (children with disabilities, children belonging to different ethnic minorities (Roma children), refugees and displaced children, children without parental care and children from socially vulnerable families ...). Inclusion of marginalized groups in the education system is a long and gradual process. Already at this point, some children who have been excluded from mainstream schools could be involved, then the process would be continued by including other groups, whose involvement is necessary, and time is needed for schools teachers, parents and children to prepare themselves for the inclusion.

Inclusion has a completely different value system, and based on it has a different type of education. It involves significant changes in relation to work programs, teacher training, methods and method for estimating actual schematically. Encouraging the development of all children is a primary goal of inclusion. Inclusive schools impart knowledge to students through the agreed programs, which differ from those used in schools that exclude some students from regular classes. Inclusive education is in a function of the students and their developmental and educational needs. Therefore, it is important that based on communication with teachers, school principals, community representatives, parents and students, identify supports and barriers to the development of inclusive education in Serbia.

INITIATION OF INCLUSIVE EDUCATION

Inclusion is based on the principle of respect for the rights to education. Every child has the right to quality education in line with their abilities and skills. Inclusive education for all children is the opportunity to be part of the school community and so to prepare, as adults, to participate equally in social life.

Inclusive education is a:

1. human right,
2. quality education and
3. social development

Inclusion as a human right

1. All children have the right to learn together;
2. Children should not be less important or separated solely on the basis of disability or learning difficulties;
3. Adults with disabilities who describe themselves as "Survivors of Special school" require stopping segregation;
4. There is no legally valid reason for the separation of children in education. Children need to be together - with advantages and benefits for all. We should not protect them from each other;

Inclusion as a quality education

5. Research shows that children who are in an inclusive environment have better academic and social achievements;
6. There is not one aspect of teaching or care in a special school that can not be implemented in a mainstream school;
7. If there is commitment and support, inclusive education is a more efficient use of educational resources;

Inclusion as social development

8. Segregation encourages prejudice and teaches children to be frightened and uninformed,
9. Each child needs an education that will help him / her to develop social ties and be prepared to live a regular life;
10. Only inclusion has the potential to reduce fear and build friendship, respect and understanding.

Inclusive orientation and planning practical steps at school should be a part of school documents (school development plan, the school program). The school prepares and institutionalizes inclusive education as it plans and organizes well resources within the school, and use resources in the community. The introduction and implementation of inclusive education requires good analysis of opportunities and

needs in accordance with the planning of human, material and financial resources necessary to provide support to children with special educational needs (4). Good governance can include:

1. Flexible use of school records;
2. Creating a functional timetable - the possibility of merging departments and a team of teachers,
3. Inclusion of parents as volunteer - Teaching Assistant,
4. Creating small groups within the mainstream schools;
5. Popular complementary / supplementary education,
6. Inclusion of students Faculty and senior class students as pedagogical assistants,
7. Organizing peer support.

DOMINANT VIEWS ON INCLUSION

Wanted or not, people categorize themselves and others, considering them to certain classes. They usually do that spontaneously and thereby reduce and simplify the information about the person they evaluate. There are several hundred of non-verbal gestures by which we estimate person we see for the first time. All this information is processed automatically in our head, and we get a first impression about a person, then that impression further test the communication, behavior and situations.

Children with disabilities often cannot conceal his handicap, and at the first contacts with unknown people they feel uncomfortable, threatened and vulnerable. Categorization is "classification of people into groups based on common attributes" [5]. Sometimes these attributes are widely installed, for example, in a form capable - or incapable nice - odious, normal - abnormal and so on. No matter how much we like it or not, there is a "general scientific consensus that humans could not survive without the inclusion of social categorization." It will be easier to deal with various categorizations if we know how they are formed, how they differ and how to affect them. How are stereotypes made as the result of categorizing? Stereotypes can be defined as "fixed ways of thinking about people and their classification into categories where individual variations are not permitted"

We can expect more stereotypes about the children with special needs: the civilization or cultural, narrowly professional, generational... Sometimes stereotypes are formed based on the prototype. What is Social prototype? It is a member of certain groups or communities, who represent the general characteristics of a group or category in the best way. For example, a mentally retarded individual can be seen as representative of all mentally retarded, although it has specific properties. For example, can be aggressive, and burdened by stereotypes, observer would say that all mentally retarded are aggressive at the same time, which is not true.

Table 1. Stereotypes about inclusive teaching

The stereotypical view of children with special needs	Viewpoint released stereotypes about children with special needs
<ul style="list-style-type: none"> • Bothers other children in the classroom. They should be in class with other children. • Regular classroom teachers cannot help them. • Teaching is not possible to keep in the classroom where is a child with special needs. • Inclusion of abolished special schools. • Special school is beneficial for children with special needs than regular • Regular school is a trauma to a child with special needs 	<ul style="list-style-type: none"> • Regular classroom teachers can help these children especially if they improve themselves. • With the inclusion of human conditions, we can have in teaching children with special needs • Regular school is more useful for children with special needs and we can combine the work of these institutions. • Regular schools is needed for children with special needs in order to socialize them, bring to life. • Special schools are organized differently and establish a better relationship with regular ones

THE BENEFITS OF INTRODUCING INCLUSIVE EDUCATION

The introduction of inclusive education model would increase the coverage of children with disabilities in educational system, would improve the quality of education and children would be given the opportunity for professional qualification and independence for life.

Parents of children with disabilities would obtain a security, a sense that they are not singled out by the company on their own as now is the case. Most often parents are knocking at different doors, first to cure their child and then to involve their child to socialize with other children. So the inclusion amplify parents and therefore they will be less stressed and more able to accomplish relationship with their child. Parents would become economically independent because no more all-family members would have to care for the child. Children without a disability would gain awareness that we are not all the same and that the fact that someone is different is no reason to be excluded from society. In an inclusive school, children without disabilities could learn some things that would not otherwise can learn, such as sign language, Braille. Children would become more tolerant of diversity and less prone to discrimination.

Parents of children without a disability would get a chance to form positive attitudes towards children with interferences, ie. They would get the same thing as their children only in a broader scope. By inclusive model of education teachers would improve their professional competence in terms of better understanding the specific needs of children with disabilities and general developmental needs of children. Teachers would be given the opportunity to access in a more complex way to work and thus raise the quality of teaching. Throughout greater coverage of children with disabilities, schools would be given opportunities to increase the number of enrolled children, to improve the quality of the educational process and educational staff that offer a wider choice of vocational training. The local community becomes the service of all citizens to participate in creating the conditions for a better life for all its citizens, which indirectly leads to a reduction in the number of welfare cases and decreasing the budget by reducing social benefits to families. Involvement in society and social processes leads to many other positive outcomes, such as the establishment of the family and others. Through the inclusion of returns and functionality of the family, parents and other family members are able to devote himself free time, caBy inclusive education, government and society achieve the realization of strategic goals and in general are becoming better. The attitude of all respondents was that if the inclusion is well prepared and accompanied by appropriate legislation and training of teachers there is a little possibility of lost. However, if inclusion is not carried out properly, resistance in implementation is possible. The resistance can be expected especially in special education circles where there is fear that in this way they are going to lose their jobs. There is also fear about the ratio of students without disabilities to sensitive children. To avoid potential problems of this kind it is necessary to devise and implement an appropriate time to campaign.

BARRIERS TO IMPLEMENTATION OF INCLUSION

Inclusive education can be seen as two-way process, one related to increasing participation and learning, and the other, related to identifying and reducing or eliminating barriers to participation and learning. Obstacles or barriers that hinder or prevent an inclusive process and the inclusion of children with disabilities in educational institutions can be classified into 3 groups.

1. Psychosocial barriers - for people with disabilities are sometimes associated negative attitudes and prejudices that result from the lack of information and ignorance. There are intolerance, ignorance and social aloofness. There is normally present misconception that children with disabilities are always sick, slow, boring, and that other children do not like to socialize and learn together with them. Negative attitudes towards children with disabilities are the largest barriers to access of children to mainstream education and the benefits from it. They are on all levels: among parents, community members, schools and teachers, civil servants, and even among the children with disabilities. As a result, children with disabilities and their parents, often develop low self-

esteem, hide and stay away from social interaction, which can lead directly to exclusion from education and social life

2. Physical barriers - barriers in the environment can prevent or hinder access to buildings and services, cause a feeling of inferiority, confusion, or even cause injury. Inability to use public transportation means, lack of adaptation of housing conditions, lack of audible signals and tactile paths on our streets, not enough wide sidewalks with high shoulders, lack of ramps and sloped path for the smooth movement of people in wheelchairs, unadopted access to information, inadequate facilities for work are part of the physical barriers that need to be removed or adjusted to be longer. Barriers are present in the physical environment due to the limited view of disability, when the necessity of children with disabilities and persons with disabilities are not taken into account when adopting or incorrect assumptions about their requirements. All buildings where institutions are located (health, cultural, educational) would have to be accessible to all, which can best be achieved by using the principles of inclusive design, which is based on respecting the needs that are common to all, and then adjust the same or enabling design among other solutions that meet specific requirements such as the needs of people with disabilities.

3. Institutional barriers - institutional barriers talk about how social institutions contribute to isolation and exclusion from various forms of social life, individuals or groups because of their disability, social deprivation, ethnicity or gender. This type of barrier is rooted in intolerance of diversity and the abuse of power to create and sustain inequality. In all societies there is a need to raise awareness regarding the fact that children with disabilities have the same rights and needs as other children. Overcoming psychosocial, institutional and physical barriers represent an enormous challenge, but it is key to ensuring inclusive education.

NETWORK OF INCLUSIVE EDUCATION IN SERBIA

Network of Inclusive Education is an informal group of teachers and professional schools, organized at the local level in ten cities in Serbia. What is common to all members of the network is to support the inclusion of children with special needs and education reform in the broadest sense and that all have some experience in working with children with special needs.

The main objectives are to propagate the idea of including children with special needs at the local level and providing professional support to teachers, parents and children. At the time the survey was carried out during the second phase was the development of a network that aims to expand that. inclusion in the work of the Network staff and experts of different profiles from the local community ie. those individuals who are interested in the inclusion of a position and his knowledge can help increase the success of inclusive education.

Gains from the inclusion exist at all levels, from children through family, school, education system to the local community and the community at large. Children with special needs gain greater opportunity to master certain skills and gain knowledge that will enable them to more easily get into society and have a better life. The inclusive model of education provides the family of a child with special needs greater sense of acceptance and support from society, intensive cooperation with teachers and educators and that is a great help to parents who are often encountering situations that they are not able to solve properly. The school and education system as a whole becomes more humane and more open, accessible and meet the needs and capabilities of the individual. All this eventually leads to a more just and tolerant society of differences.

Gains from this form of organization are large, especially in terms of support for teachers working with children with special needs. What miss most teachers in mainstream schools is systematically resolved help by professional support staff. Many schools have no these people or if they have, they usually do not have the appropriate skills needed for educational work with children with special needs. Within the network, teachers have the opportunity to share experiences, seek advice or concrete help from their colleagues or peers. This kind of support contributes to successful

implementation of inclusive education model. Also, this way of organizing and contributing to the propagation of ideas and change dominant attitudes towards inclusion that are still negative. On the basis of mutual positive experience it is easier to get to the arguments for inclusion and it is easier to fight the stereotypes that underlie negative attitudes towards inclusion

CONCLUSION

Looking at the education system as a whole, we can conclude that the attitudes towards inclusion of children with disabilities are still negative. These negative attitudes are, first of all, the fear of the unknown and ignorance of the concept of inclusion. Also, there is no unified position on inclusion of children with disabilities and the unique platform of implementation. Schools need a kind of support that unfortunately they still do not get. Regular primary schools where there are children with disabilities do not have adequate technical support (special education teacher, psychologist). The most common arguments against the inclusion is the large number of students in classes and hence the inability of teachers to provide appropriate care to a child with disabilities, then the under-specified roles in terms of providing necessary support to teachers, inadequate training of teachers for work with children with handicapped development, concerns whether the special treatment required by children with disabilities and the adaptation of teaching them will be denied by the other children in the class, as will other children in the group receive children with disabilities, and very often, fear of parental reaction of other children.

The ultimate outcome of inclusion and inclusive education are definitely multiple, when it comes to a disability. Including them in regular schools, we contribute to their independence and sense of greater security, but also to the quality of knowledge. Quality education can greatly assist these children in the recruitment, which is a reflection of socialization.

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ENTREPRENEURSHIP AMONG STUDENTS: THE POTENTIAL IN SERBIA

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ABSTRACT

The ambience where young people can be stimulated to start their own business is not developed enough in Serbia. Possible solutions can be education and encouragement of the young to start and perform their own business. Stimulating enterprising behaviour of the young is especially important in transitional countries faced with recession. The authors of this paper are analysing the necessity of implementing a modern enterprise concept on the territory of the Republic of Serbia with a special attention to the role of students and the opportunities of their involvement in enterprise activities. Especially in this paper are compared and presented the results of three consecutive researches carried out among Serbian students.

Key words: entrepreneurship, knowledge, SMEs, young entrepreneurs.

INTRODUCTION

Global economic crisis has caused a lot of economic problems identical for most countries in the world. As a result national economies started transformation of their economic policies and they began the process of creation of new economic policy able to cope with the changes on the market. One of the greatest world economic problems is unemployment which is rising and, therefore, its reduction by opening new possibilities for employment and encouragement of business start-ups represent the most challenging economic task in the future.

Encouraging opening of small and mid-size enterprises (SMEs) whose aim is reducing unemployment represents a new economic recepe. In other words, the experiences of developed countries such as Italy, Germany, South Korea, USA and the others, have confirmed that it is a good direction which should be followed during recovery of national economies. The examples of Italy and Germany have become demonstrative – they show how to start economic development in damaged economies. However, the crucial fact in these countries was the existence of appropriate ambience which made possible promotion of effective entrepreneurship through:

- State support through institutions (relevant Ministries for economy or industry, education, science and technology, research and development) for encouraging entrepreneurship;

- Creation of efficient legislation for the work of SMEs – setting laws/regulations related to entrepreneurship, especially for young entrepreneurs, reducing bureaucracy and administrative procedures as main obstacles for free entrepreneurship;
- The existence of institutions which are closely specialized for help and support to SME sector;
- The existence of a bank which directs its financial means to quality programs of the present and new SMEs;
- Cooperation with Universities and institutions whose aim is improving knowledge of entrepreneurs;
- Encouraging the making of clusters as important institutions in improving competitiveness of SME sector;
- Encouraging establishment of incubators as crucial institutions for young entrepreneurs;
- Cooperation of SME sector and big companies through cooperative relations;
- Encouraging entrepreneurship of the young through programs of support by Association of entrepreneurs, Chambers of Commerce and similar associations.

As we can see, the creation of entrepreneurial ambience requires the engagement of all participants on the market, especially the state. Namely, the state should found the system in which all elements will have the common aim related to entrepreneurial encouragement.

ENCOURAGEMENT PROGRAMS FOR THE YOUNG ENTREPRENEURS IN EUROPEAN UNION

European Union have understood that the results of global crisis negatively influence the economy of its members and the Union as well. As a solution for economic problems European Commission has created a strategy "Europe 2020" wishing that EU economy becomes: intelligent, sustainable and comprehensive. The aim of these three segments is to provide EU and the member countries with high degree of employment, productivity and social cohesion. In the sphere of unemployment reduction EU Commission has scheduled promotion of business creation and self-employment. Moreover, there is a plan for modernization of public administration aiming at reduction of bureaucracy and making conditions for new business start up in the period of three days.

The program „Europe 2020“ is consisted of 7 holders and they are (European Commission 1, 2011, p. 4): digital agenda; young on the move; union of innovations; new industrial policy; new skills and new business; platform against poverty and resources efficiency.

The initiative "Young on the move" has the following aim – reducing the rate of unemployment of the young so it started cooperation with numerous institutions in EU and created European network for employment of the young. This network has several pillars and they are (European Commission 1, 2011, p. 14): help in getting the first job and starting the career; support to the young in risky situations; providing an appropriate network of social security for young people; support to young entrepreneurs and self-employment.

According to the information of Eurostat for 2012, it can be concluded that the percentage of unemployment in EU is in permanent rise during the period from 2010 to 2012. Namely, the unemployment rate in EU 27, in February 2012 was 10.2% which represents a small increase comparing to the previous two years - 9.8% (2011) and 9.6% (2010). The unemployment rate for the Eurozone countries in February 2012 was 10.8%, which is for 0.5% more comparing to November 2011, or 0.8% comparing to November 2010 (Eurostat, 2012). In the Tables 1. and 2. We can see Table review of three countries with the lowest and highest rate of unemployment in EU.

According to the data from the previous three years ranking of the countries is similar, which points at the fact that increase of unemployment has lasted for several years. Opposite to EU, USA and Japan had fall in unemployment in 2011 and 2010. In other words, in 2010 the unemployment

rate in USA and Japan was 9.8% and 5.1%, while in the next year the unemployment decreased to 8.6% in USA and 4.5% in Japan.

The unemployment rate in the group of young people in EU is in permanent rise which indicates a systemic problem that European Commission is trying to solve. The data show that in 2012 the unemployment rate of the young in EU is 22.4%, which is a small rise comparing to the previous two years: 2011. (2.3%) and 2010 (21%). The same situation is in Eurozone where we can notice a rising unemployment rate considering young people, in February 2012 it was 21.6 %,and in the previous two years 21.7% (2011)and 20% (2010).

Table 1: Highest rate of unemployment (Eurostat, 2012)

Country	Percentage (February 2012)
Spain	23.6
Greece	21
Lithuania	15

Table 2: Lowest rate of unemployment (Eurostat, 2012)

Country	Percentage (February 2012)
Austria	4.2
Holand	4.9
Luxemburg	5.2

The Tables 3 and 4 we can see the list of countries with the highest and lowest unemployment rates considering young people. According to them Spain and Greece have the highest unemployment rate. In comparison to the last two years this trend is constantly increasing. In 2010 this rate in Spain was 43% and in Greece 36.3%, but in 2011 this relation in percentage has come closer, so in Spain it was 49.6%, and in Greece 46.6%.

What is new comparing to the previous two years is that Portugal appears as a country with high percentage of unemployment concening the young. In the last two years the third country according to high unemployment rate was Slovakia which has managed to reduce the unemployment rate in 2012.

Table 4 shows the countries with the lowest unemployment rate. It is interesting that Holand, Austria and Germany have had the lowest unemployment rate in EU in the last three years. However, inspite of the fact that these three countries have the lowest unemployment rate concerning the young in EU, this rate is constantly changing. In 2010 Germany had 9.1% which is for 1% more than Austria and 0.7% more than Holand. However, in the following year this relation was changed so in Germany the unemployment rate of the young was 8.1%, which is 0.2% less than in Austria and 0.5%less than in Holand.

Table 3: Highest unemployment rate of the young (Eurostat, 2012)

Country	Percentage (February 2012)
Spain	50.5
Greece	50.4
Portugal	35.4

Table 4: Lowest unemployment rate of the young (Eurostat, 2012)

Country	Percentage (February 2012)
Holand	9.4
Austria	8.3
Germany	8.2

From these statistic data we can see that EU has had a serious many year problem with unemployment especially concerning the young. Global economic crisis has only forced member countries and EU itself to try to find ways for unemployment reduction. However, unemployment is not the only economic problem but the present business ambience which inhibits companies and influences their competitiveness.

In 2011 European Commission created an aid program to future and the present SMEs owners and big companies' owners in order to improve the state of EU economy. The program "The program for competitiveness of companies and SME" has been focused on the following groups (European Commission 2, 2011, p. 1): entrepreneurs, especially SME which will benefit from easier access to financial means for financing their own business; citizens who want to start their own business and who face with difficulties during this process; authorities of member countries which will create and apply effective policy of reforms with great efforts.

The budget of this program is 2.5 billion EUR and its main aims are (European Commission 2, 2011, p. 1): improvement of the access to finances for SME in the form of capital and loans ; improvement of the access to the market within EU and global market as well; promotion of entrepreneurship: the activities will include development of entrepreneurial skills and attitudes especially among new entrepreneurs, young people and women.

STUDENTS AS ENTREPRENEURS IN SERBIA

Since the early 1980s Serbian economy has had problems with improving quality and productivity. The productivity problem did not appear in Serbian economy only in the time of transition but it was present before, as well. These problems were the result of inappropriate business performance which was not based on market principles. Certain products had unjustifiably high prices which were not competitive on the world market. Therefore, Serbian companies reduced export prices in order to gain competitiveness on the world market, while Serbian customers had to pay this cost of unproductiveness through high prices. Old technology, poor quality, unattractive packaging and high prices are thus the main reasons for uncompetitive appearance of Serbian products on international market. (Đorđević et al.,2011)

In Republic of Serbia several researches have been carried out recently in order to get the attitudes of young people about entrepreneurship, business start up, the reasons for and against business start up. These researches are very important because they show certain failures on the side of the state in the fields of education, legislation and the work of institutions.

In November and December 2011 a research was carried on the territory of 16 towns and municipalities in Serbia under the name „The analysis of attitudes and opinions of the young in relation to business start up and implementation of socially responsible business“. Within this research 654 students from 19 to 27 years of age who were surveyed expressed their attitudes about own business start up, socially responsible business and competitiveness of domestic economy. In the last three years (2008, 2009 and 2010) similar researches were carried out which can serve as comparison and help in creating the picture of the relations of young people towards their own business start up.

According to research results from 2011, the majority of students, 76.88% of them, wanted to start their own business. These data are similar to the previous two researches (2008, 2009.and 2010) which showed high preference of the young to start their own business. The results from 2011 showed that private business represents: risk and uncertainty (23.53%), challenge (21,93%), pleasure and self-confirmation (14.90%).

The interviewed students mainly agree (44.90%) with the statement that private business is more successful than the one in other forms of ownership and that the people here still do not know real business possibilities of private companies (32.92%). The interviewed students, 49.77% of them, agree with this statement which points at the need for promotion of successful entrepreneurs in

Serbia in order to change certain stereotypes related to entrepreneurship and managing private companies.

The interviewed students are in most cases turned to their own financial means for business start up (60.38%). The reason for such attitude is a consequence of their insufficient trust in banks and other institutions which offer financial means for business start ups. As a support to this goes the attitude of the interviewed students (5.74%) that start up loans of commercial banks are not favourable. Namely, they think that start up loans of commercial banks are overloaded with high interest rates (80.38%) and a long process for getting the means (14.42%). The data from 2008 research showed that the students (54.03%) were not satisfied with conditions of start up loans and among other reasons they emphasized high interest rates (33.79%) (Đorđević et al., 2010, p. 473). The researches from 2010 and 2011 had similar indicators as previous two, 68.57%, and 70.17% of the interviewed students would finance their own business from their own finances. Young people think that start up loans are not favourable 54.17% (2010) and 60.46% (2011), and that the main problem represented high interest rates 48.07% (2010) and 4.38% (2011),

One of the reasons against business start up the interviewed students found in the lack of ideas - (78.42) of them said this, which means that it is necessary to insist on development of entrepreneurial skills at faculties and high schools within promotion of entrepreneurial concept (Đorđević et al., 2010, p.71).The researches carried out in 2010 and 2011 showed that the reasons against business start up according to the interviewed students were: insufficient financial means (29.43%) and (26.77%) insecure political and economic situation (20.38%) and (23.99%). From these data can be concluded that the young still do not have enough self-confidence for starting their own business. There are several reasons for insufficient self-confidence of the young and one of them is education from the field of entrepreneurship which is still insufficient and inappropriate. There is a need for finding new ways of education and promotion of entrepreneurial concept. Young people in Serbia are still not enabled enough for development of entrepreneurial initiative and business start up. Another reason for lack of self-confidence of the young is inappropriate ambience for encouraging entrepreneurship of the young.

The research results from 2011. point at the fact that 55.95% of the interviewed students are not informed about the existence of stimulating funds for business start up.

The research results from 2011 show that the majority of students (89.30%) think that in Republic of Serbia does not exist an appropriate ambience that stimulates the young for business start up. The main reasons for this, according to students, are: lack of financial means (31.59%), unstable political and economic situation (28.91%) and too high taxes (23.77%). In the research from 2008 the students expressed dissatisfaction (78.70%) with the ambience for encouraging young people for business start up. The most important factors which represent barriers related to business start up are the same as in the research from 2009. The only thing which is different is the sequence of reasons:unstable political and economic situation (36.54%), long and complicated procedure of registration (13.75%), as well as too high taxes (1.02%) (Đorđević et al., 2010, p.72).These indicators point at the inappropriate state's policy towards the young as potential entrepreneurs, but towards a private entrepreneurship itself. Unstable political and economic situation, long procedure for getting registration and too high taxes have been repeated for two years in the similar research which points at the lack of appropriate ambience for business start up. When we add the lack of specialized institutions that would support the young to start their business then we come to the reasons for dissatisfaction with the ambience for encouraging the young to start business. Without appropriate ambience which will encourage the young for business start up it is not possible to encourage them seriously to behave entrepreneurially.

The majority of the interviewed persons in all researches from 2008 to 2011 considered that the state should have a key role in stimulating the young to start their business. The last research (2011) showed that 91.44% of the interviewed thought that the state should have a key role in stimulating the young to start their business. The interviewed extinguished the following

supporting ways as the key ones: favourable loans, education and laws/regulations related to the young as entrepreneurs. Such an attitude was supported by 90.33%, 88.08%, and 90.78% of the interviewed students in the research carried out in 2010, 2009 and 2008. The ways of support is the same, only their sequence is different.

CONCLUSION

Young entrepreneurs represent unused resource for development of national economies which is especially significant in the period of global economic crisis. Namely, according to statistic data in EU unemployment is in constant rise and unemployment of the young as well. Business start up represents one of the ways for reducing unemployment and revival of national economies. European Union has understood in time the importance of encouraging the young to start their own business because it has begun developing different programs for stimulating the young to go in entrepreneurship since 2000. However, as the situation on the market has changed the ways and initiatives of support have changed too.

Unfortunately, the young in Republic of Serbia are still not in the position to believe that their own business start up will be the best solution. The main reason is. the lack of appropriate ambience on domestic market which will stimulate entrepreneurship. The problems like lack of financial means, too high taxes and unstable political and economic situation are making difficulties to the present entrepreneurs and discouraging the future ones.

Possible solution can be in creating the ambience for stimulating entrepreneurship with a special accent on the young. Creating the ambience is not only a task for the state but it should be the common task of the state and : Serbian Chamber of Commerce, Union of employers, universities, NGO, National Bank of Serbia and other interest bodies which understand that the young represent unused potential and resource for developing entrepreneurship and national economy as well.

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Session D: MARKETING MANAGEMENT

Papers (pp. 287-345):

Srđan Bogetić, Snežana Lekić, Dragiša Randić THE ROLE OF INNOVATION IN IMPROVING ENTERPRISE COMPETITIVNESS	...287
Mila Zibak STRATEGIES AND E-MARKETING TOOLS FOR CREATING BRANDS	...293
Vesna Rodić, Nemanja Lukić, Jelena Rodić COSTUMER RELATIONSHIP MANAGEMENT IN INSTITUTIONS OF HIGHER EDUCATION	...299
Nikola Milićević THE IMPLEMENTATION OF EFFICIENT CONSUMER RESPONSE CONCEPT	...304
Jelena Rodić, Deniz Ahmetagić, Vesna Rodić LOYALTY CARDS AS INNOVATIVE MARKETING TREND IN CREATING CUSTOMER LOYALTY	...310
Igor Nikodijević, Vitomir Bošković, Dragan Miletić SURVEYING AND EVALUATING CUSTOMER SATISFACTION USING A PRODUCTION COMPANY - INDUSTRIJA PRECIZNE MEHANIKE AD BEOGRAD - AS A MODEL	...316
Mirjana Rikalo, Marija Lazarević, Dragoljub Novaković VISUAL IDENTITY AS AN INSTRUMENT OF TOURIST DESTINATION BRANDING CASE STUDY: THE VINČA ARCHEOLOGICAL LOCALITY	...322
Marina Dobrota, Ana Nikodijević, Dobrivoje Mihailović INFLUENCE OF CUSTOMER EXPERIENCE ON SATISFACTION WITH MOBILE PHONES	... 328
Edit Terek, Biljana Goševski, Višnja Istrat, Savina Đurin SOCIAL NETWORK MARKETING	...334
Branka Jajić, Jelena Jajić ZRENJANIN - CREATIVE CITY	...340

THE ROLE OF INNOVATION IN IMPROVING ENTERPRISE COMPETITIVENESS

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ABSTRACT

Modern business conditions require from the enterprise to change its traditional way of business. Companies today, as part of their business philosophy, must have features such as: flexibility, creativity, unconventionality, innovation and willingness to constantly improve their knowledge. The authors of this paper attempt to show the importance of innovation as an important element of creating comparative advantages of the company from the competition. By creating innovative processes, enterprise, regardless of its activity allows the business to be efficient and productive, which contributes to the satisfaction of end users.

Keywords: innovation, advancement of knowledge, competitiveness

INTRODUCTION

The conditions in the global market have influenced the fact that companies have to change the way their business to remain competitive. The process of adapting to new market demands requires the company to devote more attention to: flexibility, creativity, innovation, creating unconventional work environment and readiness for constant upgrading of knowledge. Only those companies that have realized the necessity of the time changes in our attitude towards the market, employees, customers and business partners have the ability to survive in the market.

According to Hamel (Hamel, p. 57-58) what makes our time different from all others is not the impact of communication that connected the whole world, or economic superiority of China and India, nor the degradation of our climate, or reawakening of the old religious hostility. What makes our times different is the increasing speed of change. In the coming decades, the degree of adaptability of each society, organizations and individuals will, as never before, be on the exam. Fortunately, disorders are born as opportunities and challenges. But the balance between hope and danger for any organization depends on its ability to adapt. Therefore, the goal is to create an organization capable of continuous regeneration, without trauma.

Creating changes significantly depends on the enterprise or the executives of those enterprises, who need to know in which direction they want to change their enterprises. One of the possible solutions to improve the competitiveness of enterprises is development and creation of innovation. However, creating innovation is a very of complex activity that requires from the companies the appropriate environment that stimulates innovation, which consists of several segments such as:

- the willingness of management to encourage the development of innovation in the enterprise;
- organizational capacity for development and implementation of innovation;

- appropriate technical and technological level of enterprises;
- good communication with end users and business partners;
- continuous improvement of employees' knowledge as a prerequisite for the development of innovation in the enterprise;
- continuity of the process of creating innovation.

The famous Norwegian economist Erik Reinert believes that innovation must not be seen as a means for achieving the economic growth. Innovations are the most important protective mechanism of our society, which allows us to remain wealthy despite the forthcoming change in paradigm. Innovations are primarily needed to sustain the wealth and not to ensure economic growth (Reinert, p. 61).

According to research by Boston Consulting Group (BCG), related to innovation, creating ideas is easy. The biggest problem is the speed of development and coordination. The Table 1 shows the greatest obstacles for the development of innovation, in the opinion from the respondents of BCG.

Table 1: Enemies of innovation

Barriers to innovation	%
Long development path	32
Lack of coordination	28
Aversion to the Culture of risk	26
Limited insight of the buyer	25
Poor selection of ideas	21
Inadequate tools for measurement	21
Lack of ideas	18
Marketing or communications failure	18

Source: http://www.businessweek.com/magazine/content/06_17/b3981405.htm

INNOVATIONS ROLE IN THE DEVELOPMENT OF ENTERPRISES COMPETITIVENESS

The structure of the parameters, by the World Economic Forum (WFO), consists of 12 columns that are divided into three groups, each one related to the level of development of the country. Innovations and sophistication of business processes are linked to the third group of parameters. The reason for measuring the level of development of countries in this area is connected to big influence of innovations in the economic development of countries. According to Reinert (Reinert, p. 55-56), it is necessary to understand that innovations and new knowledge are essential driving forces in the history of economic development. The level of innovation in a country significantly affects the competitiveness of national economies, but in some countries it is not used enough. As it can be seen in Tables 2 and 3, the level of competitiveness is not the same as level of innovation. What is interesting is that Switzerland ranks first in both categories.

Table 2: the level of innovativeness in the most competitive countries

Country	Rank of competitiveness	Rank of innovations
Switzerland	1	1
Singapore	2	8
Sweden	3	2
Finland	4	3
U.S.	5	5
Germany	6	7
Netherlands	7	12
Denmark	8	10
Japan	9	4
United Kingdom	10	13

Source: World Economic Forum, The Global Competitiveness Report 2011-2012

Table 3: the innovativeness level of competitiveness of the countries in the region

Country	Rank of competitiveness	Rank of innovations
Hungary	48	34
Slovenia	57	40
Montenegro	60	50
Bulgaria	74	93
Croatia	76	76
Romania	77	95
Macedonia	79	105
Serbia	95	97
Bosnia and Herzegovina	100	104

Source: World Economic Forum, The Global Competitiveness Report 2011-2012

Tables 4 and 5 show the relations of countries in the region towards the research and development, ie, the level of states' investment in this area. Also, we can see the given list of top ten countries according to the levels of spending funds on research and development. As it can be seen in Table 4, the investment in research and development of Slovenia and Montenegro occupy high positions in relation to other countries in the region, while the Serbia and Republic of Macedonia occupy the bottom two positions. Republic of Serbia is at the last place in terms of investment in research and development.

Table 4: Investments in R & D in the countries in the region

Country	Rank
Slovenia	39
Montenegro	44
Croatia	71
Hungary	81
Romania	87
Bosnia and Herzegovina	96
Bulgaria	98
Macedonia	109
Serbia	130

Source: World Economic Forum, The Global Competitiveness Report 2011-2012

According to the World Economic Forum (WFO), in the top five countries for investing in R&D there are four countries from Europe and one from Asia, while in the top ten, there are most countries from Europe (5) and from Asia (3).

Table 5: Top ten enterprises in investing in R&D

Country	Rank
Japan	1
Sweden	2
Switzerland	3
Finland	4
Germany	5
U.S.	6
Denmark	7
Israel	8
Taiwan, China	9
Singapore	10

Source: World Economic Forum, The Global Competitiveness Report 2011-2012

As can be seen in Table 5, Japan is in first place by investing in research and development. However, according to recent data from the market, there has been a major problem in the technology area of Japan, who has previously represented a giant in this field. The reason lies in the fact that the leading enterprises in this field suffered severe financial losses and cannot find a way

out of them. As an example for this is the company Sony, that has been a symbol of innovativeness in the field of technical devices.

One of the most famous Japanese technology giants Sony is in serious problem because it should, due to its inefficiency, close 3,000 job positions. However, this company plans to release as many as 10,000 workers, but unfortunately even that will not be enough. Sony, as many other Japanese manufacturers, has missed a lot of trends over the last time, which he tried to make up with panic purchasing, or collaborating with other companies such as Ericsson (in the field of mobile telephony), which resulted in the necessity of structural changes of their business.

Also, all producers have the dilemma of household appliances, which, for a long time represented an important product for these enterprises. However, data from the market show that these companies are losing money on these products, which contributed to the fact that Japanese enterprises with certain cost savings made their products more available to its customers.

This is not really a matter of economics and management, but the vision, which created the Sony's famous Walkman. If we talk only about business statistics and development costs, Sony would still be far in the first place in the entertainment electronics. **While Apple allocated 2.2% of total turnover for research and development of new products, Sony stands out even 5.9%! Sony engineers every year present more than 100 proposals of new devices to its management, but virtually none of them goes to production (www.b92.net).** Problem of Japanese enterprises lies in the fact that because of its failure to adjust to market conditions, it could not adequately respond to the growing competitiveness of companies from South Korea and China, which are taking now an increasing share of the market.

Unlike Sony, successful companies such as Google, as the only way to maintain its place of pioneers in this field see through the constant innovation of its products. This can largely be attributed to the Google's unified procedure for new product development, which is based on a variety of small autonomous teams. Each of these teams is hoping to invent something new in the area web-searches, or to create a new and indispensable service for Internet users. The logic of Google loose interconnectedness and multilateral approach to the development of new products is simple: a multitude of flexible independent teams increase the Google's chance to run into the next revolutionary product (Hamel, page. 121).

INNOVATION DEVELOPMENT IN THE LOCAL ECONOMY

According to the research conducted by the Republic Statistical Office (RSO) about the innovative activities of businesses in the Republic of Serbia in the period 2008-2010, on the sample of 3982 business units, had showed that most of them are still turned to innovation. The total number of surveyed companies has 47.9% share in one form of innovation. When it comes to innovations, in we see from Table 6 that the big companies are more dominant in this segment compared to small and medium enterprises. Also, manufacturing companies, in relation to service companies, pay more attention to the innovation.

Report of the National Agency for Regional Development (NARR) on the situation, needs and problems of entrepreneurs in Serbia for 2001, shows that every seventh company runs its own innovative activities, and every fourteenth realizes innovative collaboration with other commercial entities. However, one in four medium-size enterprises said they carried out their own innovations, and every eighth, to have a more permanent cooperation with institutions and others (6, page 5).

Research conducted by the Republic Bureau of Statistics shows that surveyed domestic companies (regardless of the size of the company) are facing the most innovation in the organization of enterprises (28.8), while, on the second place there is a process of innovation and marketing innovation, represented by 26.2%. What is the problem is that the innovation of products/services represented at least one of the innovative activities of enterprises, which can be connected with the still low level of investment in research and development in companies.

Table 6: Businesses according to innovations, activity and size of the domestic market (2008-2010)

	Total	Innovators	Business subjects that had not innovated	Innovators participation %
Total	12.141	5.812	6.329	47,9
Small businesses	9.347	4.143	5.204	44,3
Medium businesses	2.237	1.280	957	57,2
Large businesses	557	389	167	69,8
Manufacturing businesses	4.141	2.314	1.827	55,9
Service businesses	8.000	3.498	4.502	43,7

Source: Republican Bureau of Statistics

Table 7: Structure types of innovations in total innovative activity of Enterprise-Innovators (2008)

	Total	Innovation of product/services	Innovation in process	Innovation in company's organisations	Marketing Innovations
TOTAL	100	18,8	26,2	28,8	26,2
Small	100	20,3	26,4	28	25,3
Medium	100	17,7	26,1	29	27,3
Large	100	18,5	26,2	29,5	25,9

Source: Republican Bureau of Statistics

When it comes to expenditures for innovative activities, as given in Table 8, we can see that most of the assets relates to the purchase of machinery, equipment and software, and it is 75.1%. This type of innovative activity is dominant in domestic enterprises, and for external research and development, as well as, for buying other forms of knowledge; there has been a low rate of representation.

Table 8: The structure of expenditure on innovative activities

Innovation activities	%
External Research and Development	5,2
Internal research on the development	13,6
Purchase of other forms of knowledge	6,1
Purchase of machinery, equipment and software	75,1

Source: Republican Bureau of Statistics

Bearing in mind that most companies invest in the area of technological innovation procurement of equipment, machinery and software, the result of these activities is that the most significant effect of these innovative activities is to improve the quality of products / services by 29.7%, while the smallest effect refers to the reduction of material costs and energy per unit of production, about 11.6%. These data should worry, because in developed economies and European Union countries, there is a trend of application of green technologies, the technology does not pollute the environment and saves energy.

NARR According to research on SMEs in the Republic of Serbia in 2011, the effects of innovations implemented in 54% of cases were related to the saving of raw materials and energy, and 46% reduction in labour costs (NARR, p. 5).

Companies, as part of research conducted by Republic Statistical Bureau, had the opportunity to list the factors hindering the process of innovation, and as a major rated the cost factors, as follows: lack of financial resources in an enterprise (36.4%), lack of funding from sources outside the business entity (26.3 %) and too high direct innovations costs (30%). Another aggravating factor is market factor, and then goes the factor of knowledge. From this we can conclude that the government investment in stimulating innovativeness companies is still insufficient compared to the needs, even though structurally investing in this area is the largest compared to other forms of financing.

CONCLUSION

Companies that want to be competitive and to survive in the market must constantly innovate business processes. Examples of some companies from well-developed economies indicate that the

innovation is quite complex, but it also depends on several factors, one of which is creating an environment in which they will be able to develop and valued innovation.

Table 9: The most important effects of introduced innovations (%)

	Technological innovators			
	Total	Small	Medium	Large
Increasing the range of products and services	24	21,8	29,7	29,6
Replaced outdated products or processes	20	18,9	21,3	26,7
Breaking into new markets and increase market share	15,6	13,1	21,1	23,7
Improving the quality of products and services	29,7	28,2	30,9	42,4
Increasing the flexibility of the product or service	17,7	17,6	15,9	24,2
The increase of production capacity / volume of services	18,4	16,3	23,8	22,9
Reducing labor costs per unit of product	15,2	14	18	18,5
Reducing costs of materials and energy per unit	11,6	10,3	14,1	17,5
Reducing the harmful impact on the environment	14,2	12,5	17,2	21,9
Improving the health and safety of employees	17	15,4	20,7	22,1

Source: Republican Bureau of Statistics

Table 10 Factors that hinder innovation (%)

Cost factors	Lack of financial resources in an enterprise	36,4
	Lack of funds from sources outside the business entity	26,3
	Prohibitive costs of direct innovations	30
Factors of knowledge	Lack of professional personnel	5,5
	Lack of information on technologies	3,4
	Lack of information on markets	3,9
	The difficulties in finding partners for cooperation	11,1
Market factors	Markets dominated by the positioned business entities	14,5
	Uncertain demand for innovative goods or services	14

Source: Republican Bureau of Statistics

Companies in the domestic market still lack the means to create innovations in order to increase competitiveness. The reason for this lies in the fact that there is not an environment that will encourage companies to create innovation. The studies that were done by the National Agency for Regional Development and the Republic Statistical Office showed that there are a number of companies that have realized the importance of innovation for their future operations. However, there are still certain factors that impede their work, and they usually relate to: lack of finance that would enable them to follow the entire process of creation and realization innovations, but also free and regulated markets.

In order to raise the level of innovations in the domestic market, it is necessary to allow greater investment in research and development, and to achieve closer cooperation between research institutes and universities with industry. Only in this way, companies will get what they need to improve competitiveness and gain access to new knowledge. Developing awareness of the importance and usefulness of innovation in enterprises is a long process in which is necessary to have support from these institutions, and also from the successful local companies. The SME sector, through creation of clusters, can create, in the best way, a base for innovation and improving the level of competitiveness.

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STRATEGIES AND E-MARKETING TOOLS FOR CREATING BRANDS

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ABSTRACT

The brand is an inseparable component of the business which makes the company to stand apart from the competitors. Branding is about message and image. It's about impression company makes upon its customers. The logo and the company name are part of branding process, which is an ongoing, evolving and living thing. Branding is the process of creating distinctive and durable perceptions in the minds of consumers. A brand is a persistent, unique business identity intertwined with associations of personality, quality, origin, liking and more. Although most people associate brands with big companies, the smallest of enterprises can use e-marketing tools with great rewards.. Creating online brand is very important especially at the initial stages of establishing an online presence of the company as people online search for products and services on search engines and other platforms on the basis of keywords that are product oriented or services oriented and thus land on site where they get information about the company. There are many important strategies that can help companies to create successful brands. The research is based on this methodology: literature from domestic and world known authors, domestic and foreign web sites, comparative analysis, qualitative and quantitative analysis.

Key words: brand, e-marketing tools, strategies

INTRODUCTION

A brand is the personification of a product, service, or even entire company. Like a person, a brand has a name, a personality, character and a reputation. Like a person, people can respect, like and even love a brand. They can think of it as a deep personal friend, or merely an acquaintance. Just as an individual likes to be around certain people and not others, so also he/she likes to be with certain brands and not others. Also, like a person, a brand must mature and change its product over time. But its character and core beliefs shouldn't change. Neither should its fundamental personality and outlook on life.

People have character...so do brands. A person's character flows from his/her integrity: the ability to deliver under pressure, the willingness to do what is right rather than what is expedient. People judge a person's character by his/her past performance and the way he/she thinks and acts in both good times, and especially bad. The same are true of brands.

BRAND AND STRATEGIES FOR CREATING A BRAND

A brand is an intangible asset that resides in people's hearts and minds. It's defined by the expectations people have about tangible and intangible benefits that are developed over time by communications and, more importantly, by actions! To build a successful brand means doing the following four things: making a promise, communicating your promise, keeping your promise, strengthening your promise (Mootee, 2009). The tangible aspect of a brand is a promise. What do you do best? What's the payoff? What can your consumer count on? This promise becomes an intrinsic part of marketing message. In order to own it, company must communicate strategically and creatively across a broad media mix. Both internal and external audiences must be true

believers of the promise. And the only way to make them truly believe is to be true about the promise. A brand means trust, promise or guaranty that all expectations of the customers will be achieved (Kotler, 2009). A brand has several meanings, like: it gives some characteristics to the product (highly prestigious, durable product), gives many functional and emotional benefits to the customers (the product will last many years- functional benefit, the user fills proud because of the product, he/she represents higher society class- emotional benefit), represents the value of the company (prestigious company which stands for quality products and services), it is a reflection of one's culture (like Mercedes that represents the simplest German culture that can be described by the words: organized, successful, with the best quality), reflects the personality of a person (Mercedes drives successful director of a company) and presents the type of a customers that buy the product (Chernatony, 2006). Brand equity is a set of assets (and liabilities) linked to a brand's name and symbol that adds to (or subtracts from) the value provided by a product or service to a company and/or that company's customers and consists of the categories: brand name- refers to the strength of a brand's presence in the consumer's mind), brand quality- defines competitive advantages and affect the positioning of the brand in the mind of the customer, brand loyalty- brand value is created based on consumer loyalty to the brand and brand association- attributes of the brand that consumers think the moment you mention the brand (First, 2009).

Today many psychologists and economists have understood that recognition and recall of brand are signals of much more than just remembering a brand (Aaker, 1996). This can be presented by Graveyard model (see Figure 1).

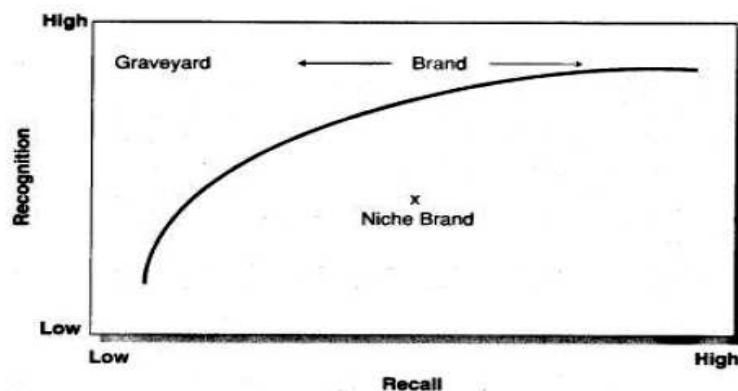


Figure 1: Recognition versus Recall: The Graveyard Model

Recognition reflects familiarity gained from past exposure and a brand is said to have recall if it comes to consumers' minds when its product class is mentioned. The relative power of recall (versus recognition) is shown in Figure 1, representing the "Graveyard model". In this model, brands in a product class are plotted on recognition versus recall graph. Brands tend to follow the curved line shown in the figure, but there are two exceptions, each of which reveals the importance of recall. One exception is healthy brands, which fall below the line because they are not known to a substantial group of consumers, and therefore have relatively low overall recognition, but have high recall among their respective loyal customer group. The second exception is the graveyard, an area in the upper-left-hand corner populated by brands with high recognition but low recall. Here customers know about the brand, but it will not come to mind when considering a purchase.

The dynamics of brands located in the upper-middle or upper-right part of the figure can be important predictors of future brand health. Movement toward the graveyard is associated with sliding sales and market share. If however, the brand is moving away from the graveyard, sales and market share can be expected to increase. Thus the graveyard model provides evidence that recall is as important as recognition.

Today in a competitive world every marketing agent wants to have power to create successful brand. According to the author Jagdeep Kapoor there are nine strategies to create a brand (Kapoor, 2004):

1. Brand category growth strategy- implies that the brand marketer must identify needs of and create needs for consumers based on what is necessary or wanted. Identifying or creating a consumer need is the first strategy toward building winning brands.. In order to identify new or hidden needs REAPS

model can help. This model refers to: R- rational needs, E- emotional needs, A- aspirational needs, P- physical needs, S-spiritual needs (Kapoor, 2004). The desire and need to communicate while traveling, on the move, or when out of the home or office, led to the creation of the mobile phone category. Human beings inherently need to communicate and feel secure when they are in touch with other. This deep emotional need manifested itself at the physical level through the mobile phone. With various models of handsets, including those with advanced features like the inbuilt camera and MMS, the need grew to be aspirational. The decision to make all this available at a particular price point targeted a rational need. Sending SMS between each others for holidays targeted a spiritual need.

2. Brand idea growth strategy- once the brand marketer has grasped the idea of what his/her brand embodies and who it is aimed at he/she must plant the seed firmly in the consumer's psyche. He/she must seed the idea of the brand in the minds and hearts of those whom he/she wishes to target. The existing need of a solution for a cough was addressed by a fast-growing company in pharmaceuticals through their "Best on health" offering called "Toff". The simplicity of the concept cut through the existing clutter and seeding was done through the brand positioning, "With Toff, No Cough". Further, the company also addressed this existing need by explaining a simple process called OSC, which stood for "Opens Nose, Stops Cough, and Clears Throat". Though a late entrant in the cough and cold category, it was able to make an impact.
3. Brand awareness growth strategy- awareness needs to be created so that the consumers pay attention to the brand. This strategy consists of three steps: awareness (the brand conveys and communicates that it exists in a particular category of product or service), recognition (comes from a sense of familiarity with the brand, the look and feel, the identity, the colors, the logo, the audio, the visuals and the overall personality of the brand help the consumer recognize it and brings the consumer closer to the brand in terms of considering it for purchase) and recall (consumer can recall the benefits, attributes, core values and the positioning of the brand).
4. Brand trials growth strategy- brand marketing does not start or stop at creating awareness. In fact, unless the brand moves forward from awareness to trials, and from trials to repeats, the brand would not have progressed in terms of sales, market share or profits. This strategic tool consists of three parts: "the way", the try" and "the buy". Let's begin with the first step of the why: Why should anyone buy a brand? Why should anyone switch from another brand to your brand? There are many ways that a brand manager should think about. The answer to the why is to communicate core values through a clear brand positioning. In the case of .the try sampling comes into its full and literal element. For example, in food products, whether it is a soft drink or a papad, whether it is soap or an FMCG product, the physical trial makes the brand move forward. In case of industrial products, demonstrations and initial runs of the machine would constitute the try. The actual buy or purchase takes place where money is exchanged for goods or services.
5. Brand repeats growth strategy- no brand marketer wants one-time consumers. He/she knows that he/she will remain in business only if there are repeat purchases. In order to ensure that his/her brand grows through repeated purchases and the conversion of the one-time teaser into a life-long devotee, he/she must ensure the following seven elements: product quality, product service quality, brand experience, brand satisfaction, brand delight, brand surprise, good brand word of mouth.
6. Brand sales growth strategy- once a brand is on track and on the right path, it must not hesitate to increase pace. If it slows down or becomes complacent it could lose tremendously. It is important to gain speed and accelerate to ensure brand sales growth.
7. Brand trust growth strategy- it is very important to have a creed, which retains credibility. It is important to know that people buy brands because they trust brands.
8. Brand market share growth strategy- one's brand may have a good sales growth but it also needs to have good market share growth. The concept of this strategy urges brand marketers to keep an eye on their market segment and its growth rate. They must ensure that their brands are growing faster as compared to the market growth. In fact they should aim to drive the market and not instead be driven by it. That is the only way to take one's brand to new heights.
9. Brand profit growth strategy- brands are built to build businesses and businesses are built to make profits. Profit means a reasonable and well-deserved return, that any manufacturer of a product or service in the branded form, could get only after satisfying the consumer. The consumer benefits from the brand and the brand marketer benefits in terms of profits. While the consumer gets satisfaction and is able to improve his/ her standard of living and quality of life, the marketer profits from the brand experience that the consumer gets and is able to generate a surplus after having satisfied the consumer.

E-MARKETING TOOLS FOR CREATING A BRAND

The Internet can have an impact at every phase along the consumer purchase cycle, from creating initial awareness and interest for a product, service or brand, to stimulating purchases, to delivering post-sales support and reinforcing brand loyalty.

Based on the research of the agency “Interbrand”, the best global brands for 2011 are (<http://www.interbrand.com>): Coca Cola, with 71,861 brand value- rank 1; IBM, with 69,905 brand value-rank 2; Microsoft, with 59,087 brand value- rank 3. From internet brands the best is Google with 55,317 brand value, increased from previous year by 27%.

Search engine marketing is the most important digital marketing channel for customer acquisition. If the customer knows the company or the product he is looking for, search engines are used for typing the web address of the company into the search box. Search engine marketing consists of two parts: search engine optimization and pay per click (Jones, 2010).

Online Public Relations- today consumers are choosing how, when and where they get news and information that is important to them. And, if the company needs to reach out to a younger demographic, or a global marketplace, target audience will only see the message online, so the best way to communicate is directly to that target market using the web. Successful public relations today mean moving beyond media relations and into direct to customer relations (Philips et al., 2009). Web site in many ways presents online face of every company and it is the most important thing for creating online relationships.

E-mail marketing is cost-effective communication with market in a way that it is immediate and relevant (Stokes, 2008). E-mail is more editorial than advertising, and it is powerful because it can support and even drive a sales process. It should think of e-mail as a one-to-one communication – personalized, relevant, timely—not a blast.

Social networks are built around site platforms that enable members to develop identity profiles, interact with other members, and participate in various site activities (Howard, 2009). Although interactions with others can seemingly approximate synchronous real time communication, the messaging structure is static rather than dynamic. Networks can be thought of as utility based tools. They are an elegant but fun way to organize content, socialize, and promote one’s self-identity. Despite this, social networks have grown in popularity from their ability to provide a platform for information sharing, communication, and relationship development and maintenance. MySpace and Facebook support relationship building and maintenance. YouTube offers a venue for sharing and promoting videos and related opinions. Flickr enables photo sharing and reviewing. LinkedIn provides a form of self promotion and career networking. There are niche sites as well focused on any number of hobbies and personal interests. Catster, for example, offers tips and information on caring for one’s feline companion with the added benefit of being able to talk with others who define themselves in part by the pets they love.

Blogs provide a window to the world of individuals (Sweeney 2008). For some, like artists or innercity youth who tag buildings and vehicles with graffiti to make their mark and get noticed, a personal blog represents an escape from anonymity. For others, a blog is their private journal, open to the world. By posting their innermost thoughts and concerns, they are per-haps hoping that others with similar thoughts and struggles will connect with them. Naturally, bloggers with perspicacity and a clear voice have emerged and obtained a following. Some of these have become a new breed of citizen journalist who wields as much power as any major newspaper columnist.

Affiliate marketing is an internet based marketing practice in which a business rewards one or more affiliates for each visitor or customer brought about by the affiliate's marketing efforts. Affiliate marketing is also the name of the industry where a number of different types of companies and individuals are performing this form of internet marketing, including affiliate networks, affiliate management companies, and in-house affiliate managers, specialized third party vendors, and various types of affiliates/publishers who promote the products and services of their partners (Palmer 2006).

Viral marketing describes any strategy that encourages individuals to pass on a marketing message to others, creating the potential for exponential growth in the message’s exposure and influence (Kirby et al., 2006). Like viruses, such strategies take advantage of rapid multiplication to explode the message to thousands, to millions. Consumers are also more involved than ever before

in controlling communications and message delivery at a global level, thanks to the aforementioned rise of digital media, such as blogs and forums. Consequently, advertisers are finding it more and more difficult to reach marketing-shy, fragmented audiences, let alone engage with them. Unlike traditional ‘top-down’, marketer-to-consumer techniques, viral marketing focuses on personal experience of the brand and taps into the new power of the consumer.

The 2011 update of the University of Massachusetts Dartmouth Center for Marketing Research’s longitudinal study on social media marketing usage among the 500 fastest-growing private companies indicates they are continuing to increase their usage of some social media tools, while pulling back from others.

Facebook usage was up in 2011, along with usage of Twitter and foursquare. The study also examined several services and techniques for the first time, some of which already have high usage. Nearly three-quarters of the companies studied were using LinkedIn in 2011, and almost half had adopted YouTube.

Compared to 2009–2010, the usage of blogs, online video in social media, message/bulletin boards, podcasting and Myspace were all down. There was also a 50% decrease from 2010 in 500 companies who said they used no social media marketing tools. This is shown in figure 2.

<i>% of respondents</i>	2009	2010	2011
Facebook	61%	71%	74%
LinkedIn	-	-	73%
Twitter	52%	59%	64%
YouTube	-	-	45%
Blogging	45%	50%	37%
Online video	36%	33%	24%
Message/bulletin boards	28%	33%	15%
Texting	-	-	15%
Mobile apps	-	-	14%
foursquare	-	5%	11%
Podcasting	12%	16%	6%
Discount sites	-	-	5%
Myspace	-	6%	1%
Don't use any	9%	18%	9%

Figure 2: Social media tools currently used by companies

<i>% of respondents</i>	2009	2010	2011
Message/bulletin boards	91%	93%	96%
Blogging	88%	86%	92%
Mobile apps	-	-	91%
Online video	87%	93%	90%
LinkedIn	-	-	90%
Discount sites	-	-	88%
YouTube	-	-	87%
Twitter	82%	81%	86%
Texting	-	-	84%
Facebook	54%	85%	82%
Podcasting	89%	71%	80%
foursquare	-	75%	68%
Myspace	-	36%	0%

Figure 3: Successful social media tools

But some of the tools marketers are abandoning are still reported to be highly effective—at least for those companies that continue to use them. Message and bulletin boards, along with blogging, got the highest success ratings of any tools, among companies that use them for marketing. While a strong majority of respondents indicated they were having success with Twitter (86%) and Facebook (82%), this was lower than several other, less-popular services. This is shown in figure 3.

The research could suggest that marketers are abandoning techniques that work. However, it could also be a sign that marketers who have mastered these techniques are sticking with them, while those that have seen less success in these areas are pulling back from their efforts. Those marketers

who continue to blog are likely the ones who have seen the most blogging success, for example, while those who found blogging's return on investment too low have likely moved on. In addition, the overwhelming popularity of Facebook among marketers means that those with less social media marketing experience or sophistication are likely using it, perhaps pushing success rates down.

Based on the research "The social media data stacks" (hubspot.com) in USA Facebook is dominating web brand with 53.5 billion minutes usage by users per month. Yahoo users come in a distant second with an average of 17.2 billion minutes usage by users per month, less than one-third Facebook's total. YouTube ranks sixth, claiming 9.1 billion user minutes per month. Looking at the top U.S. social networking/blogging sites during 3Q 2011, Facebook, with an average monthly audience of more than 140 million, almost triples the average monthly audience (50 million) of its nearest competitor, Blogger. With this audience, Facebook reaches 70% of active internet users.

CONCLUSION

A brand establishes an identity for a product, service, or business. It creates a visual, emotional, and cultural connection between customers and the company. A brand conjures up powerful images for customers, both consciously and subconsciously. It paints a picture about the company, the product or service, and the type of customer it represents. When customers buy a brand, they buy its values and promises, and feel that their expectations are aligned with the company. The product or service the customers buy and the quality experience they receive is what persuades them to buy the same brand again. The product or service and brand have a direct reflection on one another. A number of companies have successfully created a brand that stands out in customers' minds. A successful brand has a positive association, a recognized name, and a higher perceived value than its competitors.

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COSTUMER RELATIONSHIP MANAGEMENT IN INSTITUTIONS OF HIGHER EDUCATION

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ABSTRACT:

In terms of an increasingly competitive market, universities around the world recognize the need to change their business towards developing the best possible relationships with students. Today's students have more complex requirements regarding availability of information of their interest, as well as better service which they received. The need for attracting new and retaining current students brings educational institution in a position to struggle for its place on the market. Students are more and more perceived as users of educational services, and educational institutions recognize the need for applying marketing strategies in their business. Modern concepts of developing a long term relationships with customers are relationship marketing, database marketing and customer relationship management. Customer relationship management is both, business strategy and set of software tools and technologies with the aim of identifying new opportunities to increase customer (student) satisfaction and their retention. Future of many educational institutions and their survival depends largely on application of these concepts.

Key words: Educational institutions, relationship marketing, costumer relationship management, information systems.

INTRODUCTION

In economic theory, the market is a means of "social coordination whereby the supply and demand for good and services are balanced through the price mechanism" (Brown, 2011,11). Today's educational institutions are rapidly identifying themselves, both conceptually and in their discourse, as agents of national and international markets (Maringe i Gibbs, 2009, 6). In order to recognize marketization of higher education, authors suggests four indicators of market in higher education: institutional autonomy, institutional competetion, price and information. In the more marketised systems, institutions of higher education have a greater degree of autonomy when it comes to decisions related to their programmes, fees, number of students and staff etc. When it comes to institutional competition as key indicator of marketisation, there is amount of competition between institutions for students, revenue and status (Brown, 2011, 13).

Competition for students represent a new struggle for many institutions of higher education. On the one hand, there is increased number of private faculties and on the other there is reduced number of students. New conditions leads to an ever greater competition in the institutions of higher education. In terms of an increasingly competitive market, universities around the world recognize the need to change their business towards developing the best possible relationships with students. Students are more and more perceived as users of educational services, and educational institutions recognize the need for applying marketing strategies in their business.

Twenty years ago, many colleges and universities around the world began restructuring and reengineering their operating processes to cut costs and become more efficient in order to respond to actions of competitors. The focus of today's faculties is shifting from improving internal operations to concentrating more on customers (Grant & Anderson, 2002). Their „customers“ are students, alumni, donors, faculty members, and staff members. Another term for this group is stakeholders, which is defined as group of people who are concerned by the existence of institutions in various ways. Building long-term relationships with each of them has become unavoidable for the educational institution of a new era. Modern concepts of developing a long term relationships with customers are relationship marketing, database marketing and customer relationship management.

Intensive development of relationship marketing is an important turning point in overall development of the theory of marketing. This is the latest innovation in the theory and practice of marketing. There are findings that it is the most important innovation in the development of marketing in the 20 century. Relationship marketing (RM) appeared in the 1980s as an alternative to the prevailing view of marketing. At the time, marketing has been understood as a series of transactions. The reason for this was that many exchanges are relational by nature, especially in the services sector (Leverin & Liljander, 2006).

Relationship marketing can be observed on several levels. At the first level, relationship marketing is considered as database marketing. It is about technology-based means by which companies make it easy to acquire customers and directed them towards efficient management. Basically, this is a new approach to the regulation of transactions with customers. (Lovreta et al. 2010, 55). Database marketing uses a database for storing and analysis of consumer information, which supports the formulation and implementation of marketing strategies.

Maximizing customer value means fostering long term relationships with them. Fostering relationships with customers that include improving relationships with customers have led to that database marketing is evolving in Customer Relationship Management (Salai & Končar, 2007, 69).

CUSTOMER RELATIONSHIP MANAGEMENT

In the knowledge-based economy, companies around the world are required to obtain complete information about their customers. This commitment is necessary so their products and services can be customized in order to meet customers' needs and expectations. Companies must be more customer oriented, so previous product centric model is replaced by customer centric model. The authors (Wang & Yang, 2010) suggest that customer-centric approach is especially important for Small and Medium-sized Enterprises (SMEs). Although companies are small scale, certain processes must be applied as well as in large-scale companies. Such is the case with the application of customer relationship management. The same authors compared and even identified SMEs with educational institutions. Reason for this, they state that educational institutions „are SMEs with limited resources purchasing expensive equipment or facility to appeal and delight customers“ (Wang & Yang, 2010). Like SMEs, educational institutions have limited resources (human resources, finance) and technology. All of this is no reason to give up on trying to stay competitive in a market where is a daily struggle for each student. In that sense, it can be understood a need of faculties worldwide to implement a methods that were previously reserved only for the business sector.

There are several trends that have affected the universities to begin applying a customer relationship management. Some of them which are suggest by authors (Daradoumis et al. 2008) are new demands of students, their patterns of behavior, increasingly competitive global markets, frequent innovation in teaching/learning procedures etc. In the new circumstances, it is not surprising that universities are increasingly interested in new technologies, information systems and last in CRM technologies. CRM technology implemented in institutions of higher education can provide interesting information for faculty management like identification of students who require

greater attention. Therefore, those students are like customers who need personalized service and they should get one. Faculty management must deal with their needs and form service in order to satisfy those specific needs. Besides that, their task is to reduce number of dropouts and maximize the value of the service of their faculty (Daradoumis et al. 2008).

There are many definitions of CRM (*Customer Relationship Management*). Couldwell (noted at Lovreta et al. 2010, 59) defined that CRM „includes the use of information on existing customers to improve profitability and increase customer service“. Another author (Swift , 2000; noted at Lovreta et al. 2010, 59) thinks that CRM is “an enterprise approach to understanding and influencing customer behavior through meaningful communication to improve customer acquisition, customer retention, customer loyalty and customer profitability.” According to Grant and Anderson (2002) CRM “is both a business strategy and a set of discrete software tools and technologies, with the goal of reducing costs, increasing revenue, identifying new opportunities and channels for expansion, and improving customer value, satisfaction, profitability, and retention.” Software applications within CRM helps employees to achieve these goals.

EFFECTS OF THE IMPLEMENTATION OF CRM IN INSTITUTIONS OF HIGHER EDUCATION

The effects of the introduction of CRM may be multiple. Effective CRM programs result in long-term retention of customer loyalty. In this way they achieve higher levels of customer satisfaction, higher rates of revenue growth and increase competitive advantage and position in the market. The exposed frames can specify the following specific effects of the CRM concept (Lovreta et al. 2010, 61):

- Opportunities to identify individual customers and their profitability;
- Identification of specific needs of individual customers;
- Customizing products and services to requirements of our customers;
- Longer retention of customers;
- Cross-selling other products in the total portfolio of products and services;
- The ability to identify new product opportunities;
- Ability to direct the "offer package" to potential high-valued customers.

When it comes to institutions of higher education, CRM is a concept which is greatly directed to students and their parents as the main costumers/consumers. Authors (Hallinger & Snidvongs, 2008) pointed that there are numerous examples of CRM in educational practice, such as *student-centered learning* or a *learner-centered school*. There are several features of CRM which can be assign into educational management (Hallinger & Snidvongs, 2008):

- Identification of substantial products or services – e.g. faculty management can explore students perception about what kind of knowledge, skills and abilities they are looking for;
- Identification of favored channels of learning and anticipated level of service – e.g. exploring what kind of methods, channels, time and environment in learning is suitable for specific group of students;
- Identification of channels which can be used for effective communication with mayor stakeholders – e.g. which group of stakeholders (students, parents) considered specific kind of interaction as favorable;
- Identification of the organization’s value to customers and vice versa – e.g. likewise students studing in order to have a better future for themselves and whole socitey, institutions of higher education have to learn how to improve its performanse in order to increase the value of its services;
- Identification of price of the educational services - e.g. which is the price that coresspond a stakeholders capabilities;
- Increasing of customer loyalty – e.g. in which way we can meet or exceed students’ expectations so they would spread a good “word-of-mouth” among others.

AN EXAMPLE OF CRM IN INSTITUTION OF HIGHER EDUCATION

Grant and Anderson (2002) introduce an example of CRM in institutions of higher education. Their example shows implementation of CRM business strategy in order to support students during their recruitment process. If some institution of higher education have an enrollment goal to recruit foreign students or minorities and to increase number of students interested in the medical profession, that institution must target a specific groups of potential students. It can be done by using data analysis to determine which prospective students are most likely to apply. First, they began with mailing campaign. Prospective students would receive a mail with a code for access to the university. When student activate link which has been in mail, he/she goes to university's recruitment Web page. They have to enter a personal identification code and then is linked to personalized page. Customized Web page is built on the base on interests of specific student. For example, if somebody is interested in art or sport, links to university's art club or sport department is provided on that page. Besides that, standard links are provide for all, so everybody can see link to financial aid information, scholarship search programs etc. Thus, potential students receive a personalized service that is only the first step towards the whole customization of students.

Some other authors (Seeman & O'Hara, 2006) introduce another example of implementation of CRM concept in institutions of higher education. They pointed to the student information system which offer a streamlined application that allows registration of students wherever and whenever they want. This way, students have full access to their information. They can update their information without requiring assistance from staff members.

According to Grant and Anderson (2002) the benefits of implementing a CRM bussines strategy are farreaching. For college and universities those benefits are:

- Increased income by improving the recruitment and retention of students;
- Reduced costs of recruitment;
- Improved customer service;
- Quicker yield conversions;
- Improved customer satisfaction.

Besides those, there are a numerous benefits which CRM can bring to institutions of higher education. Among other things, authors (Grant & Anderson, 2002) suggest that there is a tendency to shift responsibility for information maintenance to student and faculty members. Thus, administrative staff can focus on more productive and satisfying activities, such as building long-term relationships with students and helping them with their problems. Implementation of CRM in higher education provides new kinds of relationships between professors and their students. When professor can acces student learning profiles, he is then able to prepare a personalized learning options for students who have difficulties.

CONCLUSION

Intensive development of relationship marketing is an important turning point in overall development of the theory of marketing. This is the latest innovation in the theory and practice of marketing. Relationship marketing can be observed on several levels. At the first level, relationship marketing is considered as database marketing. It is about technology-based means by which companies make it easy to acquire customers and directed them towards efficient management. Maximizing customer value means fostering long term relationships with them. Fostering relationships with customers that include improving relationships with customers have led to that database marketing is evolving in CRM.

Implementation of CRM concept in institutions of higher education became a reality of numerous institutions worldwide. Since the basic settings of CRM are attracting and retaining new customers, this task can be done with the help of specific software solutions within CRM. Several authors introduced examples of implementation of CRM in these institutions, so they pointed out benefits

which arising from this concept. Among them are increased income, reduced costs, improved service and students' satisfaction. These are sufficient reasons for those institutions that have not yet begun the implementation of this concept in their business.

Nowadays, students have different needs than the generations before them had. Students are increasingly looking to be served on time and in the way they want it. The old interaction modes with students are increasingly replaced by new ones. They do not want to stand in lines for hours in order to validate the semester, enroll the next year of studying or sign up for exams. They are now in a position to choose and if their needs can't be met on time, they can easily go elsewhere – where somebody will respect their requests.

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THE IMPLEMENTATION OF EFFICIENT CONSUMER RESPONSE CONCEPT

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ABSTRACT

Efficient Consumer Response represents the concept that connects the supply chain and the demand management. It was established in the early 90-ies of the twentieth century in FMCG industry, by large American retail companies. Later, that concept was accepted and developed in many European countries, which led to the establishment of the European ECR association (ECR Europe) in 1997. in Brussels. Its implementation is based on several strategies, including category management and continuous replenishment program (CRP). Successful realization of this concept requires a higher level of cooperation between business partners, in order to organize smooth flow of products. This also implies an adequate exchange of information, using modern information systems and technologies like EDI and ERP. The implementation of the Efficient Consumer Response concept significantly affects the reduction of costs, primarily inventory costs, as well as the optimization of logistics, and other supply chain operations. It also increases the product availability and the effectiveness of marketing communications.

Key words: Efficient Consumer Response, supply chain, category management

INTERDUCTION

In the last few decades the long-term business relations, with emphasis on mutual trust and adapting, take precedence over the traditional transaction-based, contractual relationships. All activities undertaken within the established vertical cooperation are directed towards meeting the needs of final customers. Partnerships relations between retailer and its suppliers can be implemented on many different levels. One example of the operational relationship marketing is the "Efficient Consumer Response" concept. It has been established in the late eighties of the twentieth century, as a result of initiatives of large retail chains and their suppliers in order to coordinate logistics activities and reduce costs. Implementation of this concept provides many benefits to manufacturing, and trading companies. The adoption and expansion of this business network form, has been supported by establishing the "ECR Europe" organization. Furthermore, many "ECR" initiatives have been started on national levels, in order to spread the ideas of strategic and operational linking between market participants.

THE EFFICIENT CONSUMER RESPONSE AS A FORM OF OPERATIONAL MARKETING NETWORK

In the late eighties of the twentieth century, large retailers and their suppliers were confronted with problems of logistics coordination and high operational costs. In order to minimize these problems, they decided to establish a new way of business relations. Among many factors that encouraged the forming of new business cooperation, were changes in consumer demands, directed to better, cheaper and more varied offers. The willingness of companies to work on supply chain coordination is also an expression of their desire to achieve operational certainty and reduce the consequences of business internationalization. They together try to fulfill consumer wishes better, faster and at less cost with a shared business process leading to shared benefits across the value chain.

When the U.S. food industry fell into a business crisis in the early 90's of the last century, the consulting agency "Kurt Salmon Associates," on the basis of "QR" strategy (quick response), created the special business concept called the "Efficient Consumer Response" (ECR). The problem associated with the lack of efficiency in the supply chain, required a rapid reduction of unjustified costs. Emphasis was on business cooperation between trading partners, and the main goal was to provide better and cheaper assortment in retail stores. As a result of several separate efforts to improve supply chain coordination and a desire to share their knowledge, the first "ECR" association was established in America in 1993. Led by American experience, in Italy, in 1994, leading enterprises in FMCG industry (Fast Moving Consumer Goods), have founded the organization "ECR Italy". After this step, the "ECR" movement has been wide accepted in Europe, which resulted in establishing the "ECR Europe" association in Brussels in 1997 (Kalinic et al., 2009).

After establishing "ECR Europe" association, in order to promote the idea of "ECR" concept in public, in many European countries national "ECR" commissions have been formed. In the organizational structure of "ECR Europe", beside management bodies (like General assembly, Board of Directors and Operational Board) there are different organizational units dedicated to supply chain, customer demand and "GS1" standard issues. In order to ensure an adequate environment for establishing connection between the "ECR Europe" association and the "ECR" organizations on national levels, the Operational Board consists of representatives of national "ECR" initiatives and the International Commerce Institute (ICI). On the other hand, the "ECR Europe" Board of Directors consists of leading executives of CEO's companies in the consumer goods sector in Europe, such as "Carrefour", "Procter & Gamble", "Coca-Cola", "Danone", "Metro Group", "L'Oreal", "Veropoulos "" Nestlé ", " Wall-Mart ", " Tesco ", " Johnson & Johnson "and others (Roland Berger Strategy Consultants, 2003).

BASIC CHARACTERISTICS AND PRINCIPLES OF ECR MODEL

"Efficient Consumer Response" is a strategy of "FMCG retailers", with which they try (together with their suppliers, on the principles of long-term business cooperation) to provide greater value to their customers, primarily by reducing inefficiencies in food supply chains (Bogetic, Acimovic, 2009). It integrates supply chain management and demand management.

The integration in marketing channels is reflected in partnership relations between retailers and manufacturers, based on mutual trust and full exchange of confidential business information and knowledge. Demand information, obtained by processed "POS" data determine the actions of all links in the supply chain. The result is a product flow, controlled by demand (Bogetic, Acimovic, 2009).

Certain information and products flow through a paperwork-free system, between production lines and points of sales in retail stores, with minimal interruptions and problems, both within the companies and between them. In order to increase the efficiency of these flows, supply chain partners must follow basic "ECR" principles (Kurt Salmon Associates, 1993):

- Delivering cost effectively the most relevant set of products and services that truly add choice and value to consumers;
- Managing "ECR" by dedicated business leaders, determined to replace traditional, "selfish" business model, with new mutually beneficial business alliances.
- Use of appropriate and accurate information to support effective marketing, manufacturing and logistics decisions. All information exchange between trading partners should happen in strict accordance with the applicable competition laws.
- Maximizing the process of value adding in order to optimize on shelf availability;
- Common, consistent measuring system, must be focused on the overall system effectiveness (e.g., greater value through reduced costs, reduced inventory and better use of resources),

clearly identifying the potential benefits (e.g. improved sales) and the promotion of equal benefit sharing between partners.

The principles of successful “ECR” strategy implementation emphasize the need of establishing a close business relations between trade partners. Their all activities and business processes are organized and designed to serve the interest of the consumer.

KEY COMPONENTS OF THE EFFICIENT CONSUMER RESPONSE CONCEPT

Supply chain optimization and the implementation of the “ECR” strategy are based on several business activities, including assortment management, continuous replenishment, promotional activities and new product development. In the realization of all these tasks, the focus is to reduce overall system costs and to fulfill the changing demands and requirements of the end-customer. Key components of the “ECR” concept, which determine the optimization of the entire chain, are (Harrison, Van Hoek, 2008):

- Category management,
- Product replenishment,
- Enabling technologies.

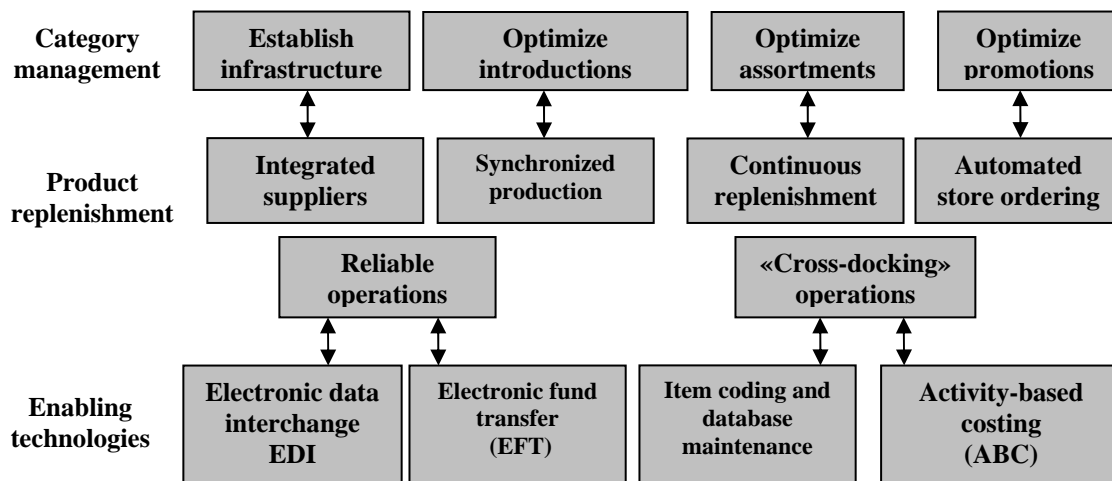


Figure 1: Main areas of the „ECR“ initiatives (Fernie, 1988)

These main components can be broken down into 14 areas that are presented in Figure 1. With their improvement and better coordination, the efficiency, not only of individual members, but of the entire chain, becomes greater.

Category management

Constant innovations in marketing channels, followed by technological improvements in procurement, manufacturing and distribution processes, have forced retail companies to establish long-term partnerships with their suppliers. In those relations, retailers have taken number activities that traditionally belonged to manufacturers and wholesalers. One of the main changes represents the replacement of the traditional procurement system with category management.

Category is a special group of products / services that can be managed in order to satisfy customer needs (Category Management Subcommittee, 1995). Initially led by retailers, category management is also accepted and established in many manufacturing companies. They are widely using tactical category management or space management, as an approach to customers with different importance. With an objective of preventing stockout situations and improving supplier-retailer relations, category management aims to balance retailers product volume and variety objectives.

Category management has become a pragmatic example of business improvements in many markets. It enabled organizations to utilize their joint resources to reduce supply chain inventory levels, streamline product flows, and use cross-dock options where appropriate. Also, it contributed to better decision making process that accelerated company reactions to consumer demand changes.

The process of continuous replenishment

Procurement management has evolved through several stages, from traditional, reactive to strategic approach. Unlike the first stage, based on functional organization principles and manual administration paperwork, the procurement process nowadays represents the mean of achieving competitive advantage. The implementation of innovative business solutions has significantly contributed to establishing new procurement organizational forms, which are based on the principles of continuous replenishment and close business relationships with suppliers.

The process of continuous replenishment (CRP) enables both retailers and their suppliers to manage their inventories in a more efficient manner (Mitchell, 1997). Each stage of the process represents the link that integrates the supply chain, from suppliers to end-customers. Effective implementation of this concept is based on development of the following strategies (Harrison, Van Hoek, 2008):

- joint inventory management,
- "cross-dock" operations,
- effective logistics strategies and product flows,
- quick response.

The implementation of "CRP" system should provide continuous, uninterrupted product flows in order to satisfy customer needs in the shortest possible time. The whole process consists of three phases (Bhulai, 2007):

- orders defining based on sales volume, recorded by POS terminals;
- orders processing,
- delivery.

One of the key factors of successful implementation of the continuous replenishment process is the supplier willingness for establishing cooperative relations and constant information exchange. Beside information about sold quantities, retail companies can forward their business partners inventory data too. With these information, the vendors themselves can suggest the amount of product orders.

The technological requirements

The whole efficient consumer response system is based on the use of modern technology tools. They include scanning data, data warehousing and data mining, which have facilitated our understanding of customer requirements. Other capabilities required by organizations in order to implement an effective "ECR" concept include (Harrison, Van Hoek, 2008):

- effective information sharing;
- automated order generation;
- bar-coding and the use of other scanning technology.

Among technological requirements that are necessary for successful "ECR" implementation, special place belongs to various software solutions, including enterprise resource planning systems (ERP), electronic data interchange (EDI), and special supply chain management software (SCMS). Beside these solutions, in order to improve the functioning of the entire chain, many companies are

well equipped with modern technological devices, like POS terminals, barcode scanners and modern storage and handling equipment (conveyors, high-shelf systems, robots).

Nowadays, in many supply chains, radio frequency identification (RFID) is used for product tracking. It uses radio waves to automatically identify individual products. An RFID device, often called a tag, can be attached to a piece of merchandise and inform a reader about the nature and location of what it is attached to. All information are sent wirelessly at exact frequency, so the physical visibility between the reader and the RFID tag isn't needed.

THE IMPLEMENTATION OF EFFICIENT CONSUMER RESPONSE CONCEPT

The implementation of "Efficient consumer response" concept is not easy at all. Even the "ECR" associations stand out that it is a multi-year process that requires radical changes in business operations and relations with other companies in the supply chain. Basic assumptions for this are (Kalinic et al., 2009; Hoban, 1998):

- data sharing (from POS terminals to the production line)
- coordination of logistics and other business processes between companies,
- the implementation and coordination of information (IT) support,
- involvement and personal commitment of top managers in manufacturing and retail companies,
- compliance with the standards of "ECR Europe" organization,
- start training programs,
- launch pilot projects with business partners.

The key assumption for the implementation of "ECR" concept is the establishment of trust between business partners. Retailers and their suppliers must be prepared to share information about their revenues and costs. Also, they should align their sales and production plans and establish a common measuring performance system.

BENEFITS OF APPLYING THE EFFICIENT CONSUMER RESPONSE CONCEPT

By connecting links in the supply chain, the "Efficient consumer response" system significantly shortens the length of the supply chain, and increase the efficiency of production and information flow. Cooperatively implemented "ECR" model provides growth, reduces costs, increases consumer satisfaction and provides a reliable income.

One of the biggest sources of cost reduction in the "ECR" system, derives from inventory and cycle time reductions from production line to consumer basket. A large number of analytical supply chain studies and numerous research projects concerning the establishment of partnership relations, suggest that cooperation in marketing channels, based on the "ECR" principles, reduces the average delivery time (from packaging lines to consumer basket) of the average alimentary product, for 40% (Kurt Salmon Associates, 1993). Also, after the implementation of "Efficient consumer response" concept, the amount of funds invested in food supply chain, has been decreased by 19% (from 64.2 to €52.1 in every €100 sale).

Beside benefits associated with the means engagement in food supply chain, implementation of "ECR" concept provides considerable cost savings too. This savings enable retailers to reduce their prices. Potential operating cost reduction of 4.8%, with a further 0.9% derived from inventory reduction make a combined potential impact of 5.7% of consumer prices. Also, by the implementation of the new business model, additional 1.2% of sales value could be saved by improving transport usage and vehicle fill. However, from total potential reduction of 6.9% (5.7% + 1.2%), only 3.6% of consumer sales value had been saved so far, which means that 3.3% of retail sales value is still "available to save" by full implementation, amounting to 28 billion euro (Hofstetter, Jones, 2005).

The implementation of "ECR" model brings a number of other significant benefits to retailers and their suppliers. It enables manufacturers (through cooperation with retailers) to analyze the behavior of end-customers, while they are buying their products. On the other hand, retailers can identify the strengths and weaknesses of the manufacturers, which significantly facilitates the coordination of product and information flow. Implementation of ECR model also provides the following benefits (Kalinic et al., 2009):

- forming range of goods accommodated to customer needs and requirements.
- more effective marketing communications,
- more effective new product development,
- provides accurate information for logistics management.

Marketing cooperation in supply chain can reduce the number of product returns and customer complaints, by increasing product availability in retail stores. It provides better facility and transport vehicles capacity usage, and offers faster delivery of fresh products.

CONCLUSION

"Efficient consumer response", as a form of operational linking, in the last few decades has become the essential factor in the various supply chains. Key components of the "ECR" concept are category management, continuous replenishment system and innovative technological solutions. The implementation of these business systems reduces the length of the supply chain and increases the efficiency of product and information flow. Cooperatively implemented "ECR" model rationalizes operations and increases consumer satisfaction. Beside the benefits and savings associated with means engagement, the implementation of "Efficient consumer response" concept provides considerable costs savings. By minimizing inventories and shortening product flows, retailers can reduce their prices and get better market positions. The implementation of "ECR" concept is of great importance in solving out-of-stock problems, by increasing product availability in retail stores.

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LOYALTY CARDS AS INNOVATIVE MARKETING TREND IN CREATING CUSTOMER LOYALTY

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ABSTRACT

Market competitiveness, technology progress, marketing messages and other influences have inspired companies to modulate their services with customer needs and demands. Companies around the world are finding innovative ways for retention and acquisition of loyal customers. Loyalty cards are one of the world's innovative marketing trends in creating customer loyalty and are becoming popular in Serbia as well. The purpose of these cards is building loyalty for the company and giving something in return to the customers for gathered information about their purchasing habits. Studies show that loyalty cards are one of the most favorable ways for building brand loyalty. These cards represent a bond between companies and customers and are used as a marketing tool with the aim of identifying frequent customers and reward them for their real and projected purchases. Sales promotion with loyalty cards is based on attractive offers and additional benefits for card users. Serbia represents a growing market for this type of loyalty programs where, for now, mostly loyalty trade cards are being used. We can conclude that in the future companies with different profiles will develop their own loyalty card programs in order to create satisfied and therefore loyal customers.

Key words: Loyalty cards, loyalty marketing, customers.

INTRODUCTION

Frederick F. Reichheld said that: "loyalty is one of the great engines of business success". Nowadays, due to increased market competition, innovative ways have to be found in order to obtain and keep customers loyal. One of the strategies is customer loyalty programs which are created with a goal to bond the customers to the company. However, today almost every retail company is building its own loyalty program and in order to stand out companies have to be very innovative with their offers. This paper explains loyalty card system with the emphasis on the use of database customer loyalty cards and the program of Mercator PIKA loyalty card, as an example of loyalty card in Serbia.

LOYALTY CARDS, USER TECHNOLOGY AND USER PROFILE

One of the ways for the companies to build customer loyalty is with the loyalty card program. The principle of loyalty cards is that the company gives something free to the customers and in return retains information about their purchasing habits. Studies show that loyalty cards are one of the most affordable ways to build brand loyalty. In marketing generally and in retail more specific, a loyalty card, reward card, point card, or club card is a plastic card, visually similar to a credit card or debit card that identifies the card holder as a member in a commercial incentive program (http://www.wordiq.com/definition/Loyalty_card 13.03.2012.). Loyalty card (can be in paper,

plastic or electronic format) is a relatively inexpensive marketing tool that helps the company to identify regular customers and reward them for their actual and projected purchases. Loyalty card represents a bond between consumers and companies and encourages customers to link themselves to the company. Loyalty cards are also known as smart cards whose user management technology is based on the appliance of different applications which enables usage of different types of cards. It includes (Foss and Stone, 2001, 242):

- Customer loyalty - one or more companies working together and using the same loyalty scheme, can use more common applications and benefits of the card, while providing more benefits for the cardholders as well.
- Greater ability to identify user needs – e.g., determination of prices and better deals for customers with loyalty cards.
- Greater ability to identify the card holders in order to purchase safer – e.g., prevention of abuse of the card and customer data.
- Local storage of cardholders, their purchases and etc. - especially when the primary user is interacting with many companies in different places and / or through multiple channels.

For many years companies have been developing a multifunctional system based on the use of "smart cards" in order to find relationships between marketing, sales, service and consumer experience, and disciplines based on the study of satisfying consumer needs. Marketing task is to deal with people's needs and find ways to meet those needs. The cards represent a marketing tool based on which companies can satisfy customer needs and provide them with a special kind of service with a future profit in mind. Marketing experts must know their customers and users of loyalty cards. For businesses to better understand their card users, that are primarily customers, they must have established and regularly updated data stored in the database that is uses by marketers to exercise leadership in dealing with trading cards, eligibility, services, product sales and to maintain good customer relations with the card users. The ideal marketing database of customers who are users of cards other than personal data (names, addresses, phone, e-mail address, etc.), demographics (age, income, family members and others.), psychographic data (activities, interests, etc.) and other useful information should include data on past purchases, the quantity of goods purchased, amount of purchases, etc. (Kolter, 2003, 163). Loyalty card besides this data must contain information about the activities of users in a variety of loyalty programs (number of collected points, the number of used points, participation in the competition, purchases made in cash, purchases made on deferred payment, installment purchases of goods, etc.).

Companies that are focused on meeting the individual needs of valuable clients, cardholders, become experts in the use of methods of customer relationship management (CRM). This skill requires construction of warehouse and data collection in order to discover new trends, segments and individual needs. Companies with extensive experience collect data as soon as the client comes into contact with some of their associates. Companies that give out cards require applicants to fill out forms (application for a card) and submit certain documents and on that basis the card is authorized, issued and delivered (Griffin, 1997, 56). In order to increase the number of loyalty card requirements, data is continuously collected, organized and analyzed. From all collected data useful information about individuals, trends, segments are extracted and then subjected to various statistical and mathematical analyses. Based on these data and analysis companies can gain competitive advantage.

The concept of CRM today often involves the same technology that manages relations with the user, and encompasses management solutions for marketing, selling and providing services to the user.

Selective method of acquiring a larger stake in dealings with clients is based on the assumption that the company is close to its customers (cardholders). From the companies and sales management perspective, among the major issues today is the problem of generating data and profiles of customers (customer base), and problem of their updates. There are different approaches, how the

organization can use systematized customer data. Kotler (2003) states five different ways of using this data:

1. To determine the potential clients commercial companies use advertisements for their products and services, which include the possibility of obtaining feedback from the customers. The database is defined on the basis of this information. Guest book and calling the contact center on toll free number is one way of collecting the necessary information. Based on the analysis of corporate data to identify potential customers, then contact them (via e-mail, telephone or other services in retail stores) in order to convert them into users of loyalty cards.
2. In order to decide which client should receive a particular offer, the database is used for determining the criteria of loyalty card users for a particular product or service. With data analysis company can determine the loyalty card customers who buy for cash, deferred payment or in installments, a group of products most frequently purchased, the days when the shopping is performed, etc., and thus define a special offer for a particular group of users of loyalty cards. Special offers for targeted loyalty card user groups are distributed in different ways (the home address, e-mail, SMS). Performance is monitored after the offer. In order to maintain loyalty the company sends thank you notes, offers additional discounts to the loyalty card users.
3. To strengthen loyalty of the customer loyalty card users, companies care about their preferences: they send appropriate gifts, coupons with discounts, interesting material to read.
4. In order to encourage repeat purchase, developed companies set up programs to automatically send e-mails (birthday cards, greetings, reminders for shopping, information about promotions) to their clients. The database is used for defining more attractive and 'right on time' offers.
5. In order to avoid errors related to customers, client database must be accurate and those who work with it must be well trained to provide accurate information. Improper use of the database may cause inconvenience to the loyalty card user (e.g. providing false information on the number of points collected, the amount available, etc.), additional costs for the company, providing only standard of customer service.

Marketing database of loyalty card users has its own shortcomings in collecting, using and maintaining data. Cards are commonly used by experts in the business market and service activities (hotels, banks, insurance companies, trading companies, etc.). One of the shortcomings of the loyalty cards is having inadequate data, because many users do not want to leave personal details that are essential for marketing analysis.

TYPES OF LOYALTY CARDS

Trading cards are also called loyalty and bonus cards, gift cards or club cards, depending on their functionality and loyalty programs that they promote. Retail chains use cards to give their customers easier use, purchase, collection and utilization of different bonuses, depending on the loyalty program.

The most used loyalty cards are plastic cards with a magnetic strip that are personalized and contain a chip and are easier to use in stores. Some chain stores use paper cards which are used to collect points, stickers, etc. Loyalty cards are designed in line with the company that issues them. The first page is designed in accordance with business policies, with a protective mark, logo or visual depending on the purpose of the card. On the back is a user's signature for protection from any types of abuse. There are many different types of business cards, depending on the goals, purposes, categories of credit worthiness and etc. Practices analysis show, that in order to improve sales in retail chains companies often use the following card types:

1. **Instant Cards:** Instant Card has emerged as a compelling way for retailers to boost loyalty card usage among customers. The world's largest trading companies use POS terminals installed in its sales network, which can print the card on the spot that is personalized and later converted to a real plastic card issued to a recipient. These cards are an opportunity for

retailers and customers to make a profit. Immediacy of instant card provides immediate opportunity to encourage consumers to start collecting points, and therefore spend money with them immediately.

2. **Gift Cards:** Gift cards are issued by retail chains that want to acquire a new loyal customer. They are limited to a certain amount that can be spent in a purchase of different product groups with certain discounts and the use of additional values depending on the loyalty program that they were intended. Customers using gift cards gain insight into the business cards and many of them decide to become members of various clubs and other users of loyalty cards. Companies use gift cards for various promotions, sponsorships, employee rewards, compensation, etc. Gift cards provide the companies with the ability to (Foss and Stone, 2001):
 - Increase traffic in their stores.
 - Increase the number of purchases (transactions).
 - Create an excellent program of purchase.
 - Increase the role of marketing.
 - Reduce the accounting and administrative cost.
 - Reduce the issuance of gift certificates, collecting stickers, printing vouchers (coupons).
 - Custom cards have more value than paper ones.
3. **Recharge cards:** By issuing gift cards, supermarket chains have introduced a new type of card (recharge card) which has taken a primary role in pre-paid cards of mobile phones. This card provides the ability to use a gift card for a longer period. A customer who has a gift card can purchase card addition (credit) in order to increase the available amount on his gift card or other card type given by a retailer. These cards are based on the different programs that also provide additional benefits to the customers.
4. **Bonus loyalty cards:** These cards function similar as banking cards. They are intended for customers who earn additional discounts based on various loyalty programs. These cards can be used as a way of payment based on the principle of bank credit cards. They are issued at the request of customers who want to become card users.

To become a card user applicants are required to enclose the required documentation according to the procedure prescribed for the card issuance. Cards can be addressed to the person making the request, the authorized person or family that can use the card for cash or deferred payments.

There are different types of standard cards that are differed by color, options, programs, etc. In addition to standard trading card company issued VIP cards - mainly gold and silver cards that were designed for a special group of loyal customers providing them with additional benefits.
5. **Business loyalty cards:** There are a number of loyalty cards that are available to legal entities which are based on special loyalty programs. Users of these cards are granted higher credit limits, because their income is higher, or depending on their annual profit. Many companies that give these cards offer online account management tools for business users. Customers also can benefit from the low interest rates. Many companies offer customers the ability to choose the card design (e.g. a company logo or pictures can be inserted on the cards).

AN EXAMPLE OF CUSTOMER LOYALTY CARD IN SERBIA




Due to market competitiveness almost every retail chain has its own loyalty card program, but one of the most developed is issued by Mercator Company. Mercator's loyalty card program is called Mercator PIKA and it was introduced to Serbian market in 2004, and has continued to grow and improve ever since. Mercator PIKA Card is a multinational Mercator trade loyalty card used by more than 1.27 million users (PIKA Club, 2009). PIKA users can use the card in all business units of the Mercator Group in four countries in the region: Serbia, Slovenia, Croatia and Bosnia and Herzegovina.

The card name “PIKA” comes from the word ‘point’ which is associated with the collection and usage of points. Card issuance is not charged. The card is sent to client home address by registered mail and membership fees and expenses are not charged. Strategy and the goal of Mercator PIKA Card is increasing the number of its users in all markets, increasing the value of purchases performed with Mercator PIKA card, increasing omnipresence of Mercator PIKA Card, the introduction of a unified and transparent system in all markets and business and building system of collecting, storing and analyzing information about the purchases of Mercator PIKA card users (Fratnik, 2007, 5). At the end of 2010, over 160,000 PIKA cards were issued (Mercator PIKA Club, 2010).

TYPES OF MERCATOR PIKA CARDS

According to information obtained from Mercator PIKA Club (2010) there are three different types of PIKA cards (*Table 1*).

Table 1: Types of Mercator PIKA Cards

	<i>Blue Mercator PIKA Card</i>	Used only for collecting points and discounts without the possibility to pay with it. Everyone above the age of 18 can apply for it.
	<i>Green Mercator PIKA Card</i>	It has the same features as the blue card but with an option to pay with it and/or pay in 12 installments. Only senior and employed citizens can apply for it.
	<i>Gold Mercator PIKA Card</i>	It is the intended for the most loyal customers without limitations with a delayed payment. In order to get it, applicant must be at least one year user of green or blue card with a purchasing value (in 6 months) over 330 000 RSD, and has to pay his PIKA bills regularly.

(Source: http://www.mercator.rs/pika/mercator_pika 10.03.2012)

MERCATOR PIKA LOYALTY CARD PROGRAM

The loyalty program is based on a system of collection and utilization of PIKA points during the two periods: 01.2. - 31.07., and 01.08 - 31.01. Depending on the number of collected points, cardholders can realize discounts of 3-6% (Mercator S, 2009). PIKA card users can buy products with discounts up to 50% in the promotion created especially for them. Points can be collected when purchasing: food products and products for everyday use, clothing and footwear, sports and equipment, etc. Each purchase that is above 500.00 RSD brings one PIKA point (e.g. purchases from 500.00 to 999.99 RSD are valued one point, purchases from 1,000.00 to 1.499.99 RSD are valued two points etc.). Points can be used only during the one out of two periods when they were collected, in accordance with the number of points collected (*Table 2*) (Mercator S, 2010). When a new collecting period starts point score returns to zero.

Table 2: Value of collected PIKA points

<i>Total value of purchases in RSD</i>	<i>Number of collected points</i>	<i>Total value of collected points in RSD</i>
45.000,00	90	1.350,00
125.000,00	250	5.000,00
300.000,00	600	15.000,00
625.000,00	1.250	37.500,00

Mercator PIKA Cardholders can cash in their points by the end of one collection period in selected shops where they choose goods in the value of their collected points and instead of paying, with money or credit cards, they use their PIKA points (Mercator S, 2009).

CONCLUSION

Today, loyalty programs are everywhere and if a company wants to stand out, its loyalty programs should reflect customer needs. Due to a fierce competition for customers, companies are using loyalty card programs with an aim to predict patterns in customer behavior. Data collected from loyalty cards should be used to influence future loyalty programs in the way that it is in customer benefit. If well designed, loyalty card programs can help companies to achieve market advantage. Mercator PIKA loyalty card is a perfect example of how retail chain, in today's market conditions, is influencing customers to be loyal to the company. In order to keep loyal customers innovative measures have to be taken and the same is with these loyalty card programs, which have to predict and respond to a very fickle market.

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SURVEYING AND EVALUATING CUSTOMER SATISFACTION USING A PRODUCTION COMPANY - INDUSTRIJA PRECIZNE MEHANIKE AD BEOGRAD - AS A MODEL

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ABSTRACT

The purpose of this paper is to structure and work out the method of surveying and evaluating customer satisfaction aimed at rating the customer satisfaction level based on collecting and reviewing customer-related information. As ISO 9000:2008 and ISO/TS 16949:2009 standards are customer-oriented, in particular regarding the customer satisfaction monitoring and measurement, then the methods for obtaining information on customer satisfaction should be treated as the common interest of both, the organization and the customer. Since the survey methodology is one of the most wide-spread ways to determine customer satisfaction as it includes numerous implementation possibilities, so the paper presents only practical experience and results achieved by the specific application of this method in the production company IPM AD Beograd, operating in the metal industry. The procedure of surveying and evaluating customer satisfaction as described below has been based on the principles set forth so as to allow their application to ensure continual improvements, while preventing the reoccurrence of the same or similar weaknesses, all of which is bound to contribute to considerably improving the level of customer satisfaction.

Key words: customer, customer satisfaction, improvement, survey and evaluation

INTRODUCTION

The business philosophy of our company says that a satisfied customer is the measure of success, which has proved to be one of the best and most cost-effective ways to promote the organization and build up a positive corporate image. To meet the customer requirements, the organization must continually monitor the information on customer observation and opinion in order to see what extent of customer requirements has been fulfilled, all of which is aimed at evaluating and if possible, improving the level of customer satisfaction by way of defining adequate corrective actions for improving the quality system management performance.

The organization gathers and reviews all data on the products delivered to the customer on which basis the customer satisfaction level is evaluated against their expectations concerning the product quality, time of delivery, etc., while taking care of presented complaints, remarks or suggestions. As the survey methodology offers numerous possibilities to determine the level of customer satisfaction depending on the effect of a large number of factors/causes, this data collection and processing methodology will be described in detail in this paper.

Due to the observed need to implement and continually improve the quality management system effectiveness, or to ensure the product conformity with customer requirements and relevant legal requirements, all aimed at increasing customer satisfaction, the company IPM AD Beograd plans and

implements the processes for monitoring, measuring, analysing and improving the level of the customer satisfaction, quality management system conformity, product properties, non-conforming product management, data analysis and defining the continual improvement actions.

ACTIVITY FLOW

Since the very customer satisfaction survey and evaluation base on the review of customer-related information, it is important that effective and efficient processes should be implemented for its collecting, analysing and using.

For the purpose of customer satisfaction monitoring, the marketing function within the company IPM AD Beograd, at a defined frequency, implements *customer survey* in order to obtain the customer opinion on fulfilling their requirements and the evaluation of the level of their satisfaction with the current (available) product/service line.

As additional sources of information on customer satisfaction, depending on their availability though, the following may be used: customer complaint, direct customer communication, various media reports, information as a result of product servicing, commendations, etc.

The method applied for gathering the customer-related information, evaluation method and product/service properties classification, followed by determining their effect on the level of customer satisfaction in the company IPM AD have been defined in the procedure QP 09-CUSTOMER SATISFACTION MONITORING AND MEASUREMENT, and the very activity flow is being implemented according to the Flow Chart as presented in *Figure 1*.

SURVEY METHODOLOGY

Data Collection

Customer survey is implemented by means of Questionnaire – "Customer Survey". The form and content of the document "Customer Survey" is presented in Figure 2. To get as objective and true answers possible we have endeavoured to pose simple, unambiguous and easily comprehensible questions in the Questionnaire. For the said ELEMENTS surveyed (1-10), as defined in the Questionnaire, the customer EXPRESSES their satisfaction rating by circling one of the offered answers: a, b, c or d.

Questionnaire Data Processing and Evaluation

The rating of requirement fulfilment, for each of the elements surveyed, is evaluated by the *QUESTIONNAIRE* Processor depending on the given answer (circled letter) with a relevant rating (score), in accordance with the rating criteria for elements surveyed as presented in *Table 1*. The results of the processed data are quantified for all rating elements observed in one of the following ways of processing:

- arranging the established value by ascending order
- statistical data analysis including the determination of relevant statistical indicators
- graphic data presentation, etc.

For each element surveyed, individually and aggregately, a relevant fulfilment level per surveyed requirement is calculated.

CUSTOMER SATISFACTION LEVEL MEASUREMENT - PROCEDURE QP 09

Based on the calculated requirement fulfilment level (**Z**) by applying the defined criteria for evaluating surveyed elements, while honouring the criteria defined in *Table 2*, CUSTOMER SATISFACTION LEVEL is determined (DESCRIPTIVE RATING).

ANALYSIS AND REVIEW OF OBTAINED RESULTS

The analysis of processed data on customer satisfaction is done in order to determine adequate proposals for improving the quality management system performance. Marketing in coordination with other functions (R&D, Production, QC, Technology, etc.) conducts the required review of obtained results in customer satisfaction. When a need arises, in the given circumstances all business functions within the organization jointly define and plan adequate actions to be implemented. When the calculated value of the requirement fulfilment level Z is equal to or less than 75%, the required corrective actions must be urgently implemented.

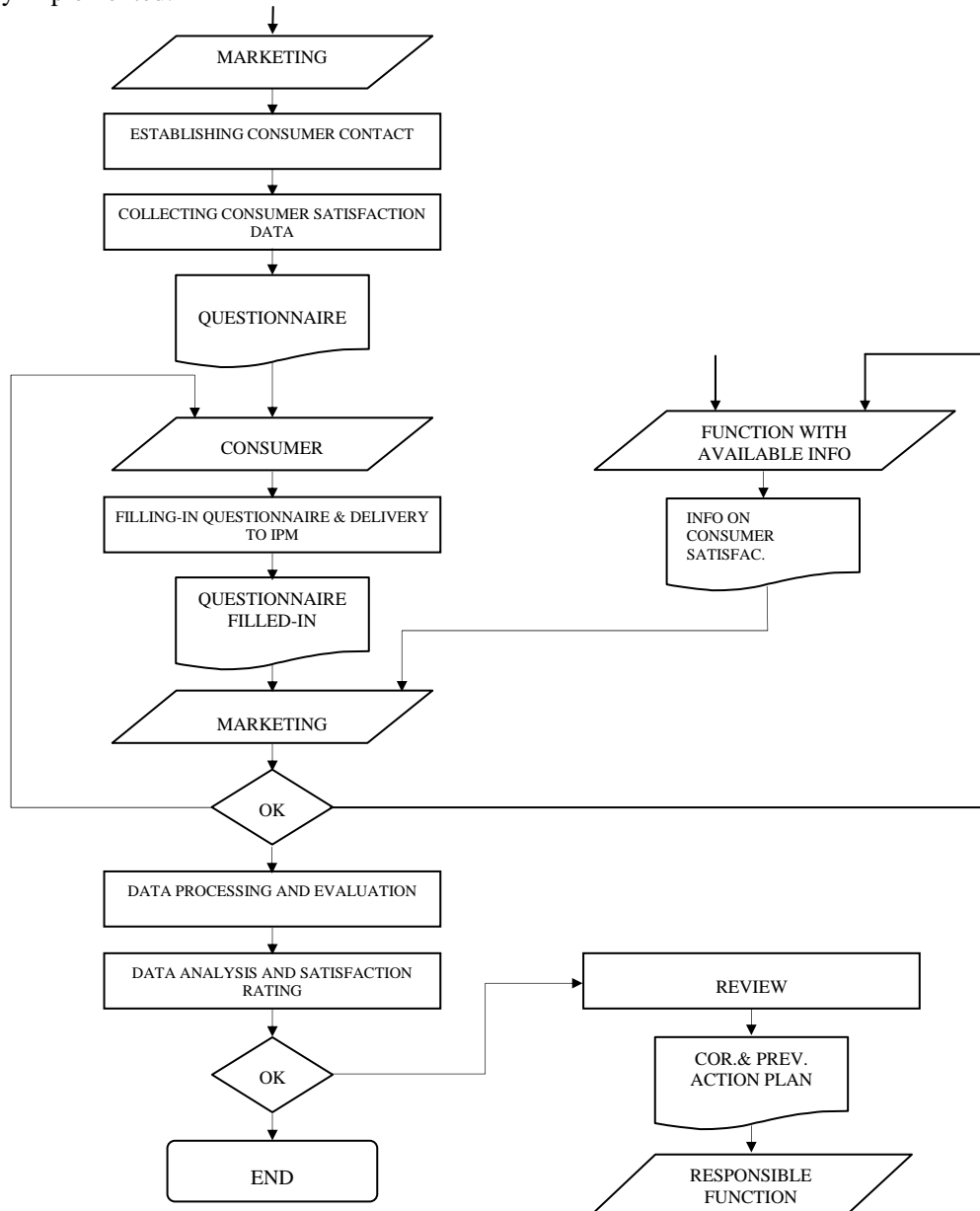


Figure 1. Flow Chart

EVALUATION OF ECONOMIC JUSTIFICATION OF IMPROVEMENT PROCEDURE

Our past experience has shown that survey, as the selected method for data collection, can be sometimes not only time consuming, which is for some decisions either too slow or too late, but it may also require considerable funds. This method is cost-effective only if a large number of respondents do the questionnaire. Otherwise, it can be quite expensive if the turnout rate is low. Besides, companies need to include and analyse all relevant procedure benefits and costs before they start implementing the customer satisfaction improvement procedure. When doing the analyses and making decisions on

customer satisfaction level, the Company Top Management must be cautious as some costs are often hidden and cannot be easily estimated since they are not clearly or precisely stated in the basic or derived financial statements. In practice, it often happens that the time between the procedure implementation (taken actions) and the actual benefit is relatively long and that is why it is unreasonable to implement any additional corrective actions to achieve customer satisfaction. However, at the same time we need to look at a series of factors in favour of the argument that the improvement of customer satisfaction level sets up a base for raising the selling price of a product/service resulting in higher profits for the organization. Namely, the point is that satisfied customers are less sensitive to changes in prices and they remain loyal to the organization for a long period of time. As time goes by, satisfied customers start buying kindred products too, having direct effect on higher productivity and on their positive opinion on the company and its products. From the aspect of cost optimization, the same procedure brings about further cost-cuts meaning that it is less costly to preserve and retain the current customers than to attract new ones. Also, the continual improvement of customer satisfaction level moves in the direction of multiple cost optimizations achieved through lowering the number of customer complaints, objections or protests.


		CUSTOMER SURVEY		No
1. Type of Market				
<input type="checkbox"/> Local Market		<input type="checkbox"/> INTERNATIONAL MARKET		
2. Type of Process Results				
<input type="checkbox"/> Semi-product		<input type="checkbox"/> Product		<input type="checkbox"/> Service
WITH A VIEW TO MONITORING AND RAISING THE QUALITY LEVEL OF OUR PRODUCTS/SERVICES, PLEASE FILL IN THE QUESTIONNAIRE IN A WAY WHICH REFLECTS YOUR ACTUAL VIEWS OR EXPECTATIONS.				
3. Customer Info				
<input type="checkbox"/> Regular		<input type="checkbox"/> Periodical		<input type="checkbox"/> Occasional
Customer name _____				
Customer address _____				
Customer telephone _____			Customer fax _____	
Customer person for _____				
4. Customer Satisfaction Rating Elements				
1. Satisfaction with the properties of the delivered semi-product, product or service				
a) Fully satisfied		b) Satisfied		c) Partly satisfied
				d) Unsatisfied
2. Satisfaction with the quality of the delivered semi-product, product or service				
a) Fully satisfied		b) Satisfied		c) Partly satisfied
				d) Unsatisfied
3. Satisfaction with the quality of packing for the delivered semi-product, product or service				
a) Fully satisfied		b) Satisfied		c) Partly satisfied
				d) Unsatisfied
4. Satisfaction with the reliability of the semi-product, product or service within the warranty				
a) Fully satisfied		b) Satisfied		c) Partly satisfied
				d) Unsatisfied
5. Satisfaction with the time of delivery for the semi-product, product or service				
a) Fully satisfied		b) Satisfied		c) Partly satisfied
				d) Unsatisfied
6. Satisfaction with the price of the semi-product, product or service				
a) Fully satisfied		b) Satisfied		c) Partly satisfied
				d) Unsatisfied
7. Satisfaction with the number of observed complaints within the warranty				
a) Fully satisfied		b) Satisfied		c) Partly satisfied
				d) Unsatisfied
8. Satisfaction with resolving the complaints within the warranty				
a) Fully satisfied		b) Satisfied		c) Partly satisfied
				d) Unsatisfied
9. Satisfaction with the received brochures and catalogues				
a) Fully satisfied		b) Satisfied		c) Partly satisfied
				d) Unsatisfied
10. Satisfaction with the level of cooperation				
a) Fully satisfied		b) Satisfied		c) Partly satisfied
				d) Unsatisfied
5. Customer Proposals or Suggestions				
Date		Filled-in by		Verified by

Figure 2: Questionnaire - "Customer Survey"

Table 1: Rating (evaluation) criteria for the elements (areas) surveyed

LETTER RATING	RATING CRITERIA		
	DESCRIPTION OF EXPRESSED SATISFACTION (BY ELEMENT SURVEYED)	SCORE	CONCLUSION (based on answers in QUESTIONNAIRE)
A	FULLY SATISFIED	5	Activity fully performed
B	SATISFIED	4	Activity in line with the
C	PARTLY SATISFIED	2	Activity not fully performed
D	UNSATISFIED	0	Activity not performed

For each element of customer satisfaction rating, and aggregately for all elements surveyed (sum), a relevant **requirement fulfilment level (Z)** is calculated according to the formula:

$$Z = \frac{O}{M} \times 100\%$$

O – Actual Score (based on customer LETTER rating)
M – Max. Possible Score

Table 2: Criteria for establishing CUSTOMER SATISFACTION LEVEL (DESCRIPTIVE RATING), and the required CORRECTIVE actions, depending on the requirement fulfilment level (Z)

CRITERIA FOR EVALUATING SATISFACTION LEVEL		PROPOSED CORRECTIVE ACTIONS to be implemented to improve customer satisfaction level
FOR CALCULATED VALUE OF Z (RANGE)	CUSTOMER SATISFACTION LEVEL (DESCRIPTIVE RATING)	
> 95 %	FULLY SATISFIED	No corrective actions required
> 75% ÷ ≤ 95 %	SATISFIED	Corrective actions required in order to maintain the current satisfaction level
> 50% ÷ ≤ 75 %	PARTLY SATISFIED	Corrective actions required in order to achieve the full satisfaction
≤ 50 %	UNSATISFIED	Overall corrective actions required

Apart from all the aforementioned, one must have in mind the fact that the factors determining the customer satisfaction level are quite dynamic and volatile, so that they can cause even the satisfied customers to defect to competitors due to changes in their needs/standards or the introduction of some alternative products.

APPLICATION OF QP 09 PROCEDURE ON A SPECIFIC CASE

As the company IPM AD Beograd places the major part of its output (75%) into the international market, our case shows the performed procedure for surveying international customers. That is how a representative sample of customers is allowed to express their positive or negative impression, on the basis of which our organization comes by the information to serve for drafting adequate proposals for new improvements and raising the customer satisfaction level.

The survey covered 15 customers (K1-K15) from different countries, whose volume of finished products purchases by product structure and in value exceeds 80% of total exports.

The results obtained by processing the questionnaire "Customer Survey" are classified per customer and per determined values depending on expressed customer satisfaction by rating element, and as such shown with their values in Table 3.

Based on received and processed "Customer Surveys" (15), it has been established that the average value of requirement fulfilment level (Z) for surveyed elements is 78.8 %, or based on the established criteria for evaluating satisfaction level (Table 2), equal to the descriptive rating "SATISFIED".


Aiming to maintain the current satisfaction level, corrective actions have been defined for improving the surveyed requirements where unsatisfied customers have been observed. In our case, it is specifically requirement 9 in Questionnaire (Satisfaction with the delivered brochures and catalogues), which

resulted in a corrective action pertaining to producing and printing new catalogues and brochures delivered to customers.

CONCLUSION

The core problem observed in surveying and evaluating customer satisfaction level is the identification of the required quality level, or establishing the customer expectations from a relevant product/service. On the other hand, it is necessary to define the projected quality, that is, to determine the product and/or service properties to meet the customer needs. That is why we can say that the continual survey and evaluation of customer satisfaction directly determines any future course of action that the Management may take regarding an observed product and production processes. It means that the Management is under obligation to continually rate the customer satisfaction level versus the expected product/service quality and consequently use the obtained results to act in accordance with the company's quality policy and business policy in place. In general, the product realisation process starts with identifying the customer requirements and ends with the customer satisfaction monitoring and measurement. The communication results based on the customer feedback are analysed and discussed as opportunities for improving customer satisfaction levels by defining types and scopes of actions to be implemented in order to achieve such improvements.

Table 3 – Results of processed "Customer Surveys"

		CUSTOMER RATING FOR 15 CUSTOMERS (K1-K15) BASED ON PROCESSED CUSTOMER SURVEYS														No: 14/12	
		<input checked="" type="checkbox"/> International market					<input type="checkbox"/> Local market					<input type="checkbox"/>					
Rating	CUSTOMER (K1-K15)															TOTAL	
	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	K11	K12	K13	K14	K15		
A	4 (20)	2 (10)	6 (30)	10 (50)	2 (10)	2 (10)	8 (40)	1 (5)	5 (25)	1 (5)	3 (15)	2 (10)	7 (35)	8 (40)	5 (25)	(66) 330	
B	3 (12)	6 (24)	3 (12)	-	3 (12)	8 (32)	1 (4)	5 (20)	4 (16)	7 (28)	5 (20)	5 (20)	2 (8)	1 (4)	4 (16)	(57) 228	
C	2 (4)	2 (4)	-	-	2 (4)	-	1 (2)	3 (6)	-	1 (2)	1 (2)	2 (4)	1 (2)	1 (2)	1 (2)	(17) 34	
D	1 (0)	-	1 (0)	-	3 (0)	-	-	1 (0)	1 (0)	1 (0)	1 (0)	1 (0)	-	-	-	(10) 0	
Σ	36	38	42	50	26	42	46	31	41	35	37	34	45	46	43	(150) 592	
Z (%)	72	76	84	100	52	84	92	62	82	70	74	68	90	92	86	78,9	
$Z = \frac{O}{M} \times 100\%$		Z - Requirement Fulfilment Level O – Actual Score (based on customer LETTER rating) M – Max. Possible Score															

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VISUAL IDENTITY AS AN INSTRUMENT OF TOURIST DESTINATION BRANDING CASE STUDY: THE VINČA ARCHEOLOGICAL LOCALITY

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ABSTRACT

At the time of fierce competition in the market, only a recognizable brand brings profit. Due to the rapid development of tourism, branding of a tourist destination becomes a very important activity. Brand creation is a very complex work as it is vital to include all those contact points with the consumer on which impressions are being formed. For the purpose of positioning a tourist location it is necessary to provoke emotions, associations and images in the visitors' minds. What attracts most attention when a brand is mentioned are the logo, colour and the emotion which is being released on mentioning a brand name, so it is not unusual for a visual identity to represent the key factor when deciding on a particular brand. This paper considers the potential the Vinča archaeological locality has in terms of this tourist destination branding. The colours, characteristic of the Vinča period, as well as the font, inspired by, still indecipherable, the Vinča indentations, have been used as the instruments of branding.

Key words: brand, colour, emotions, tourist destination, itinerary

INTRODUCTION

In the contemporary business environment, tourism represents an important economic activity which shows constant growth. Regarding the manifold offers of different tourist sights, their branding becomes unavoidable. Tourist destinations are complex unities which consist of an aggregate of attractions, convenient tourist facilities and services, various natural characteristics, cultural, anthropogenous and historical values (Pike, 2004). Thus, it can be concluded that tourist destination branding has its own specifics in comparison to concrete product branding.

A destination brand is a name, a logo, or some other graphic mark which both identifies and distinguishes the destination. Moreover, it makes a promise of an unforgettable experience which is uniquely linked to the destination. Furthermore, one uses it to revive the memory of a pleasant experience of the visit to a destination (Goeldner et al., 2002, p. 21). Branding activities try to change the current picture which inhabits consumers' minds and to form a brand identity, which is the desired image. Therefore, the primary task of a brand is differentiation with respect to competition and positioning of a specific tourist destination in the minds of consumers – tourists. A brand ought to create an impression and make a promise so that consumers would attach themselves emotionally to a place. Apart from that, while choosing a brand consumers try to tell a story about themselves. A consumer chooses a brand which relates to their image and that is exactly the way they define their identity and prove their belonging to a group, and often their own social status. In terms of this, one can say that a person's characteristics determine the choice of

certain tourist destination brands. Travel with the aim of relaxation permeates everyday life and encompasses the experience dimension, i.e. journey planned in detail, heightened expectations, and reminiscing afterwards with the help of souvenirs, postcards, maps, photos, logos which point out that “I was there and I did that“ (Morgan et al., 2002, p. 4).

From everything mentioned above one can conclude that creating a brand of a tourist destination identity which emphasizes uniqueness, is of the utmost importance. Therefore, it is necessary to deliver a clear message with a central theme which should help relive an experience. The things that attract most attention when a brand is considered are the logo, font and colours. Nowadays, when tourism keeps moving toward “the tourism of experience“, branding of Vinca as a tourist locality represents an important, so far unused potential. When creating a brand it is significant to do certain research which would lead to the relevant data important for the creation of the visual identity. This paper presents one modern and realized methodology.

THE IMPORTANCE OF VINCA CULTURE, THE VINCA LOCALITY AND THE NEED FOR ITS BRANDING

Ever since Miloje M. Vasic discovered it in 1908, the Vinca culture keeps surprising the scientists with its accomplishments. Developed in the valley of the great river Danube and its tributaries (the Tisa, the Drava, the Sava, the Morava and the Tamis), which enabled communication and interaction on the vast territory, it represents the most developed Neolithic culture in Europe. The first cities with thousands of inhabitants on the old continent were formed in the Vinca culture. The area which we inhabit did not manage to reach the size of their cities and number of inhabitants up until the Roman age. The people of Vinca were engaged in agriculture, animal husbandry, hunting, fishing, gathering crops, craftwork, mining and trade, which formed the basis for social division (Crnobrnja, 2010). Vinca is the first culture which introduced the industry of polished stone, i.e. an organised acquisition of the raw material and an organised manufacture of tools (Antonović, 2001). They were also the first to discover the refinement of copper ore, so we tend to connect the first metallurgy to the Vinca culture (Antonović, 2002).

The excess of craft and agricultural products, work specialization, technology development, developed metallurgy and mining, the industry of polished stone, along with the good geographical location conditioned the exchange with the neighbours from the Black Sea in the east and Slovakia in the north to Croatia in the west and northern Greece in the south (Radivojević, 2006). Economic prosperity enabled the development of culture and art. The work of the Vinca's sculptors represented the model to their neighbours, and various artefacts never cease to amaze artists and archeologists worldwide even today. Apart from the artefacts, Vinca people devoted attention to jewellery made from marble, bones, different types of shells etc. Besides the classical exchange of goods, there was probably the exchange of creative products in Vinca (artistic and ritual), and some scarce raw materials such as alabaster, marble, obsidian and marine shells (“exotic goods“). They exchanged both ordinary and creative goods. That is why we can find the early beginnings of protocreative economy in Vinca (Rikalo, 2011).

On the occasion of 100th anniversary of the locality of Belo Brdo near Vinca in 2008, an important jubilee was celebrated and there was an exhibition called “Vinca – the prehistoric metropolis“ organised in SANU gallery which greeted 45,000 visitors. Bearing in mind that about 620,000 tourists visited Belgrade in 2011, a discussion about the possibilities of the locality of Vinca as a tourist attraction seems worthwhile.

Up until two years ago about 5,000 tourists visited the locality per year, while nowadays that number has drastically decreased due to landslide and the closing of the locality for group visits. The locality is not under the protection of UNESCO because there is no regulation of its ownership yet, which is one of the main criteria of this organization. Ever since the talks over the creative sector in Serbia, and over Serbia in the European culture routes, there has been a mention of the potential of Vinca as a locality of the utmost importance (Rogač, 2010). Making an offer which has

rich cultural inheritance in the first place, with the possibility of creating a visitor centre, and with the development of ecology are the chances which should be grasped.

Vinca is located on the banks of the river Danube, where the close proximity of the capital city to it and its position on the river enable an easy access to the site. Its favourable geographical position marked this location as the crossroads of the large region, being a part of the great hydrographic system the Rhine–Main–Danube Canal. Even though the access to all the means of transportation is easy, the quality of the transport network and its infrastructure are not at the adequate level.

The Tourist Organizaton of Belgrade (TOB) used to advertise and sell the programme of visits to the archeological site of Vinca (until it was closed due to landslide). Following the reconstruction, in agreement with the mission of TOB, the mission of the Vinca locality would be harmonized as well because it would contribute to the creation of an authentic image of Belgrade as a leader in the region. With the use of an attractive tourist offer based on the principles of the sustainable development and by connecting all the services, products and activities, directly and indirectly connected to tourism, we could strive for the aims of the sustainability of the European tourism which are: economic growth, social equality and cohesion, protection of the environment and cultural inheritance. There are six key products for Belgrade as a tourist destination (Tourism development strategy for the city of Belgrade, 2008) and following the reconstruction, the Vinca locality could be included in five of them¹.

POSSIBLE OPTIONS OF THE POTENTIAL ITINERARIES BRANDING

Within the development of Vinca locality as a tourist destination, we could enliven different forms of cultural tourism: Heritage tourism, Arts tourism, Creative tourism, Indigenous tourism. Launching different thematic itineraries (latin: Itinerarium – the plan of a journey) within the limits of Vinca complex, would require their branding (Education, culture and art routes, Adventure routes, Food routes) which would request the production of logos, catalogues and prospectuses, i.e. the production of their visual identity.

Before the creation of a visual identity of a cultural and tourist brand, it is necessary to decide on the most convenient colours for a destination's image, i.e. the colours which would represent the identity of a destination, its authenticity and cultural heritage. There has been a research done for the purposes of branding an archeological site, which ultimate goal was finding the most suitable colours which could be used for branding the locality of Vinca (see picture 1). We have assumed that the perception of colours which could be used in branding the archeological tourist itineraries does not differ much in relation to the age and gender of the interviewees. According to the frequency of occurrence of certain colours in the interviewees' answers, we have reached the conclusion about the colours which are the most appropriate for the purposes of itinerary branding and we have noted certain exceptions. The basic reseach conducted was related to the associations between certain concepts and colours of artefacts from Vinca locality. The interviewees could choose a colour which they mainly associated with a certain concept, a colour they would expect to see on the promotional material. By means of associations, we managed to find out the colours that associate the interviewees with food, adventure, religion, craft, art.

The subject of research which was used as a sample was the population of the city of Novi Sad. 276 people of both sexes, aged 10-60, were interviewed. The sample was divided according to gender and age based on their proportions in the whole population². The research was conducted in the period 1st-5th March 2012 in similar lighting (in the period between 10-15h).

¹ City breaks, Round trips, Events, Special interests and Navigation

² The citizens used in the research according to their features were chosen at random (because every individual had equal possibility to be chosen for the group), and proportionally (those parts are in direct proportion with the territory of the city). Stratification was done according to the territorial arrangement of citizens.

Table 1: Gender and age structure at the territory of the city of Novi Sad

GENDER, AGE	PARTICIPATION IN THE TOTAL NUMBER OF CITIZENS[%]	GENDER, AGE	PARTICIPATION IN THE TOTAL NUMBER OF CITIZENS [%]	PARTICIPATION ACCORDING TO THE AGE STRUCTURE IN THE TOTAL NUMBER OF CITIZENS[%]
M 10 - 19	4,76	F10 - 19	4,25	9,01
M 20 - 29	7,04	F 20 - 29	7,73	14,77
M 30 - 39	7,91	F30 - 39	8,41	16,32
M 40 - 49	6,91	F 40 - 49	7,28	14,19
M 50 - 59	6,91	F 50 - 59	7,28	14,19
M 10- 59	33,82	F 10- 59	35,2	69,56

Since branding is all about subjective estimation and perception of the consumer, instead of measuring the realistic value of the colours of the Vinca objects, it was decided that representatives of different target groups should choose the most acceptable colours according to their opinion and point of view. They chose the colours which would be used for branding the logo, catalogues, monographs, labels etc. Even though people of all ages and backgrounds were interviewed, certain target groups are to be emphasized, such as children and teenagers who would be visitors (within school trips), aged 10-19, and youth aged 20-29, as a target group which travels the most, and educated people aged 30-60 (people interested in archeology, prehistory, and cultural heritage as well).

Art, culture and religion routes would above all be meant for adventurers regardless of their age. Within an itinerary some would fish, other could go rafting, hunting, make clay souvenirs, weave, spin wool, feed cattle, milk she-goats, treat the wool, hit copper, dance, play instruments, sing, basically, feel the spirit of the Neolithic Vinca.

Food routes are an itinerary which is, as its name suggests, mostly focused on food. People would come to Vinca to have a meal made in a similar way as it used to be made in Neolithic Vinca. The colours used for branding this itinerary are the ones which associate with food the most and rise the appetite. The target group for this itinerary are people aged 30-60. The test card showed Vinca dishes and objects of various colours, the plants which could have been found in Neolithic Vinca, fish and meat of the animals which lived in Neolithic Era, and there were also colours of the Danube and the sky (even though it is quiet probable that the colour of the Neolithic Danube was a lot different from the one today). Therefore, the colours offered were the colours of objects which had sacred, artistic and useful function, together with the colours of nature that surrounded them. The colours on the test card are actually certain shades picked out from the photos of Vinca objects. The first part has mostly warm earth colours, but a bit colder achromatic grey shades as well, whereas the second part of the card includes bright and cold colours of water and different shades, from light to dark greens, cheerful yellows, and colours of meat, too.

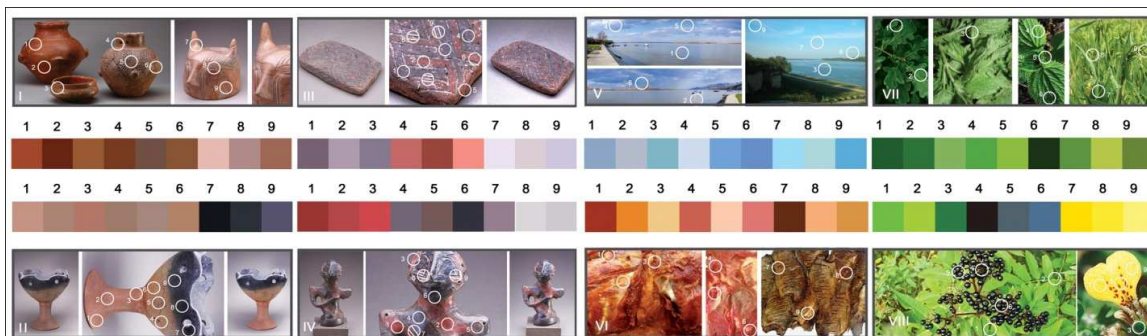
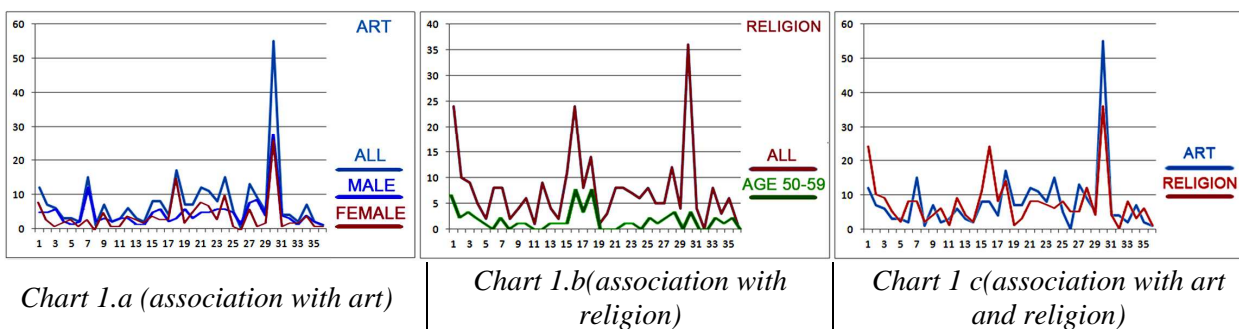


Figure 1: Test card used in the research

The task assigned was to pick colours through associations item-colour out of the array of Vinca colours (which could be found in prehistoric Vinca), in order to brand theme itineraries which will be connected to the Vinca location. In order to brand the itineraries, the interviewees were given the option to pick what colour reminds them the most of religion, art, crafts, appetite and adventure.

CHOICE OF COLOURS FOR BRANDING OF POSSIBLE ITINERARIES

In search for the colour which would brand the itinerary Culture, Art and Religion Routes, we have assumed that once upon a time, as well as now, art and religion were firmly bound and the response (association) of most interviewees should be relatively similar. The colour which associates with art the most is IV3 (the one that was picked out by 20% of the interviewees). It is interesting to note that as the second most picked out colour by men was number 17 (9% of men chose this colour, whereas only 1.5% women picked it). On the other hand, women chose colour number II9 (10.4% of women, and only 1.5% men chose that colour, Chart.1a). As expected, the colour which associated most of the interviewees of religion is under number IV3 (13% interviewees chose that colour), which is the exact colour which most interviewees chose to describe art (Chart 1.c). In the second place, there are colours number II1 and II7 which were chosen by 9% interviewees. Therefore, around 30% of the interviewees picked out three colours. It is an interesting fact that colour number IV3 (the most chosen one) was picked out by only 5% of the interviewees aged 50-59 (Chart 1.b). Most commonly picked colours for this age group were II9 and II7. Furthermore, many interviewees said that they were not religious and that dark colours associated them with religion.



In order to give a brand to Adventure Routes itinerary, we did a research on the colours which remind of adventure and crafts (the reason being that tourists can do different crafts within this itinerary). Most part of the interviewees, about 23%, responded that colour number II1 reminds them of crafts. It is worth mentioning that less than half of the female interviewees chose one of the first four colours in the first scale, whereas the answers of male interviewees were placed all over the scale. The cause may be in the fact that the offered pottery associated with crafts most women, while men have much wider span of associations connected with crafts. However, in search of colours which associate with adventure, generally equal answers were given, regardless of gender and generation of the interviewees. In choice of one between two colours which associate with adventure there were 7 colours offered with rather equal participation in choices, and altogether they made 77% of the most chosen colours, and these are colours: VII1, VI2, VI6, VIII1, VII2, VII4, VII7 (picked out by 12% interviewees). It occurs that Culture Routes itinerary is meant for all generations, i.e. adventurers and that people gave answers which were quite alike, regardless of gender and age structure.

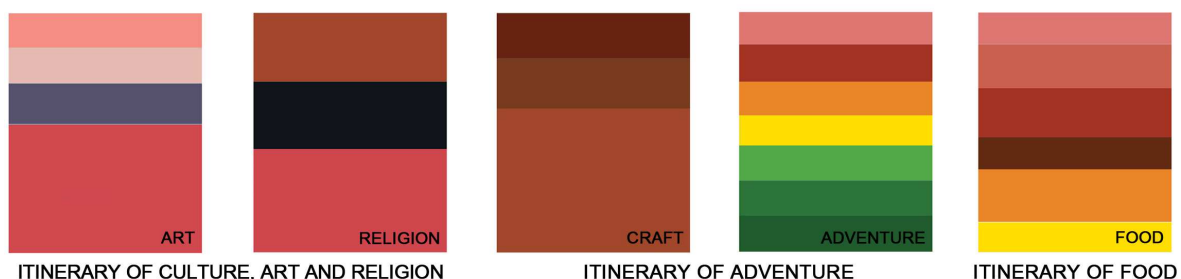


Figure 2: Array of colours suggested for possible branding of different tourist itineraries for Vinca site

In search of colours which would be the best for branding Food Routes itinerary, the test card shows colours of meat which may have been consummated by the Vincan people, and which is still available. Furthermore, there are also various plant species which can be used for making a dish or salad, and the yellow colour of a flower which associates with food. We wanted to determine which

shades of those colours are the most suitable since this combination of greens, yellows and colours of meat is common in the national cuisine. The colour which associated most men with appetite (VII) is but in the 5th place in women's list. That colour was chosen by only 12.5% women, whereas 27.3% men chose that one. Nevertheless, the colours that both men and women preferred, regardless of their age, are VI2 and VI4. It is an interesting fact that colour VIII7 was picked out by almost 20% of people aged 40-49, and that percentage is only 5% for people 10-19, especially if we take into consideration that the younger population prefers cleaner and more saturated colours. Since the Food Routes itinerary is meant for the elderly in the first place, their choice of colour, i.e. colour VIII7 is going to be used for its branding.

CONCLUSION

In creating a visual identity of a cultural and tourist brand it was necessary to determine the most acceptable colours for image building of the destination, i.e. colours that would represent the identity of the destination, its originality and cultural heritage. This research has determined the most suitable colours for branding of tourist itineraries of Vinca archeological site. The crucial colour in branding of itineraries of culture, art and religion could be the colour purple which is found in ritual dishes and figurines, and it is also the colour chosen by most interviewees. This is also the colour which was very appreciated in the culture of Vinca (it was a symbol of luxury and wealth). As it was expected, one and the same colour associates with art and religion with most interviewees (even though it was unpredictable which exact colour it would turn out to be). The combination of purple and achromatic colours, black and grey, can also be very effective.

Association with adventure is a variety of colours, but three shades of green and three shades of somewhat warmer colours with lots of red emerge from the multitude. That is exactly what has been found very surprising. It was expected that the shades of green would be much more prominent and that they would push the other colours aside, but that did not occur. The expectations were not realized in the choice of colours which associate the interviewees with appetite either. At least one green shade was expected to appear in the top five, but it did not occur. The reason may be the environment, since the first association with food is meat, for most people, and not a plant. Orange and pink shades are the most appropriate for branding this itinerary, though yellow and brown could add to the great contrast and stress them even more. Considering that it is sub-consciousness and instinct what makes us decide, this method could be relevant in the choice of colours for branding. No matter how experienced one may be, some associations cannot be predicted. It has been shown that many expectations proved to be wrong, and therefore going out on the field and conducting research represent the real solution.

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INFLUENCE OF CUSTOMER EXPERIENCE ON SATISFACTION WITH MOBILE PHONES

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ABSTRACT

Global usage of mobile phones initiated a large number of researchers to devote their attention to the field of customer satisfaction and to implement postulates of customer behavior in the mobile phone industry. As there are not many relevant studies conducted in Serbia, in this study we examine the influence of the customer experience on satisfaction with mobile phones. Online survey was used as a method of collecting data from 340 randomly chosen respondents. The findings confirm that customer experience is in fact a significant determinant of customer satisfaction. There are significant differences according to the types of mobile phones that customers use, as well as the frequency of their usage. Furthermore, higher levels of customer satisfaction are found if the customers are more familiar with current models of mobile phones and if they are following mobile trends.

Key words: customer satisfaction, customer experience, mobile phones

INTRODUCTION

Since the launch of mobile phones, there has been a remarkable development in both, their product sophistication, and their fast and global adoption (Bayraktar et al., 2012). Over the past decade, the mobile phone industry has increasingly recognized the meaning of customer satisfaction and experience. In rapidly changing business environment, customer satisfaction is a critical factor for mobile phone industry to maintain and improve their profitability. Prior studies have found that customer satisfaction contributes to company's profitability and customer loyalty (Fornell, 1992; Fornell et al., 1996), claiming that higher customer satisfaction can lead to higher market share (Fornell, 1992). Consumer satisfaction is central to customer behavior concept and it is now common to find customer satisfaction as one of important goals in company politics (Fournier & Mick, 1999). Customer satisfaction is generally assumed a significant determinant of repeat sales, positive word-of-mouth, and customer loyalty. Satisfied customers return to buy more, and they tell other people about their experiences, both positive and negative (Fornell et al, 1996). Many other researchers have recognized the need for investigating the customer satisfaction, experience, and loyalty in the past (Deng et al, 2010; Verkasalo, 2010; Lee, 2011; Lee et al, 2011).

Customers engage in a constant process of evaluating the things they buy as they integrate these products into their daily activities (Fournier & Mick, 1999). Oliver (1981) defined customer satisfaction as "the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience". Customer satisfaction or dissatisfaction is determined by the overall feelings, or attitude, a person has about a product after it has been purchased (Solomon, 2004). The concept of

customer satisfaction is a function of customer expectations (Schiffman & Kanuk, 2004). A customer whose experience falls below expectations (e.g. mobile application does not work fast enough) will be dissatisfied. Customers whose experiences match expectations will be satisfied. Moreover, customers whose expectations are exceeded will be very satisfied or delighted. Therefore, we can define customer satisfaction as the individual's perception of the performance of the product or service in relation to his or her expectations. Customers will have drastically different expectations of a new expensive mobile phone and a five-year-old model.

Creating satisfied customers, and thus future sales, requires that customers continue to believe that the brand meets their needs and offer superior value when they use it. Companies must deliver as much value as customers initially expected, and it must be enough to satisfy their needs (Hawkins, Best, & Coney, 2004). It is generally more profitable to maintain existing customers than to replace them with new ones. Retaining current customers requires their satisfaction with purchase and use of the product.

RESEARCH HYPOTHESES

The focus of this paper is on evaluating the customer satisfaction by analyzing the influence of previous customer experiences while using different mobile phone brands in Serbian mobile phone sector. The general hypothesis of this research is:

H1: Customer experience influences their satisfaction with mobile phones.

From the general hypothesis, and according to a research subject, we extracted two specific hypotheses:

H1.1: There is a difference in customer satisfaction with mobile phones according to the characteristics of mobile phones.

H1.2: There is a difference in customer satisfaction with mobile phones, according to the customer experience.

In order to clearly define the research and separate these hypotheses into component parts, we defined four individual hypotheses:

H1.1.1: The difference in customer satisfaction with mobile phones, according to different types of mobile phones they use, is statistically significant.

H1.2.1: The difference in customer satisfaction with mobile phones, according to how frequently they use their phones, is statistically significant.

H1.2.2: The difference in customer satisfaction with mobile phones, according to their familiarity with current models of mobile phones, is statistically significant.

H1.2.3: The difference in customer satisfaction with mobile phones, according to how often they follow mobile trends, is statistically significant.

SAMPLING AND METHODOLOGY

The study was conducted in Serbia, using the online survey. The survey was anonymous. It was conducted using random sampling methodology. Collected sample consisted of 340 respondents.

Instruments

The questions used in the survey were grouped in three parts. The first part addressed demographic data, including data on age, sex, education level, average mark on studies and the employment. The second part of the questionnaire was related to the mobile phone usage frequency and foreknowledge. It included questions on how often do customers follow trends related to the mobile phones and mobile OS, are they familiar with current models of mobile phones, which mobile phone do they use, for which purpose do they mostly use their mobile phones, do they use multitasking and how frequently do they use mobile phone.

The third part of the questionnaire was related to customers' opinion on quality characteristics of mobile phones:

- Shape and form
- Keypad
- Screen size and resolution
- Camera resolution and image quality
- Quality of conversation
- Quality of sound
- Additional equipment

Customer satisfaction with mobile phones was measured using a variable created in this research: *Phone Satisfaction*. This variable measures customers' satisfaction with mobile phones, consisting of the questions from the third part of the questionnaire. To create this variable, we used 5-point Likert scale. It consisted of seven items in a construct. A Cronbach's alpha coefficient for internal consistency of the scale was 0.865, pointing out on a good internal consistency (Cronbach, 1951; George, & Mallery, 2003).

Sample

Respondents were mostly aged from 20 to 25 (65%), and 25 to 30 (24%). Regarding the education, 48% were graduates, while 24% have finished high school, 17% were bachelors and 11% have finished postgraduate studies. The percentage of males was 41, and females 59. Respondents were mostly employed (59%), while 13% were unemployed, and there were 26% of students. There were 10% of customers, who use a phone for business purpose, while 46% use it for private and 44% for both private and business purpose. Information on customers' foreknowledge and experience with mobile OS and phones, collected in the survey, is presented in Table 1.

Table 1: Customer experience on mobile phones

Groups	Customers' experience (%)		
How often do customers follow trends related to the mobile phones?	Rarely 27	Medium 21	Often 52
Are customers familiar with current models of mobile phones?	Not at all 7	Partly 68	Completely 25
How frequently do customers use mobile phones?	Rarely 5	Medium 21	Very often 74

Methods

In order to establish the accuracy of our assumptions appropriate parametric tests were performed. We used parametric independent samples t-test in order to establish the difference between two groups, and accordingly the ANOVA test (Lilliefors, 1967), to establish the difference among three or more observed independent groups. To track statistically significant differences, we used Tukey multiple comparisons test. The means were calculated in order to locate the differences (among which groups do the differences occur).

RESULTS AND DISCUSSION

Central part of the research is related to the *Phone Satisfaction*, which is directly associated with our initial assumptions. Table 2 presents the results of confirmatory data analysis. Leven's Homogeneity of variance test had confirmed that the assumption on homogeneity of variances among the groups was not disturbed in any of the assumptions. We used parametric ANOVA test to establish whether there was a statistically significant difference among specified groups.

Table 2: The results of the ANOVA data analysis

Hypothesis	Test value	Acceptance
H1.1.1: The difference in customer satisfaction with mobile phones, according to different types of mobile phones they use, is statistically significant.	2.680*	Accepted
H1.2.1: The difference in customer satisfaction with mobile phones, according to the frequency of phone usage, is statistically significant.	10.826**	Accepted
H1.2.2: The difference in customer satisfaction with mobile phones, according to their familiarity with current models of mobile phones, is statistically significant.	15.248**	Accepted
H1.2.3: The difference in customer satisfaction with mobile phones, according to how often they follow mobile trends, is statistically significant.	28.133**	Accepted

* $p < 0.05$, ** $p < 0.01$

H1.1.1: The first hypothesis presumes that difference in customer satisfaction with mobile phones, according to different types of mobile phones they use, is statistically significant. Customers were divided into the groups according to their mobile phone type. The results of parametric ANOVA test showed that the difference in satisfaction among the specified groups is statistically significant at 0.05 level. The value of F statistics was 2.680, $p=0.022$, which proves that these groups are not equally satisfied with mobile phones. Influence of the difference expressed by η^2 (eta-squared) indicator is 0.038, which indicates that the influence is medium (Cohen, 1988). From the Figure 1(a) it is evident that customers are most satisfied with iPhones, followed by HTC and others, while they are less satisfied by Sony Ericsson, Nokia and Samsung.

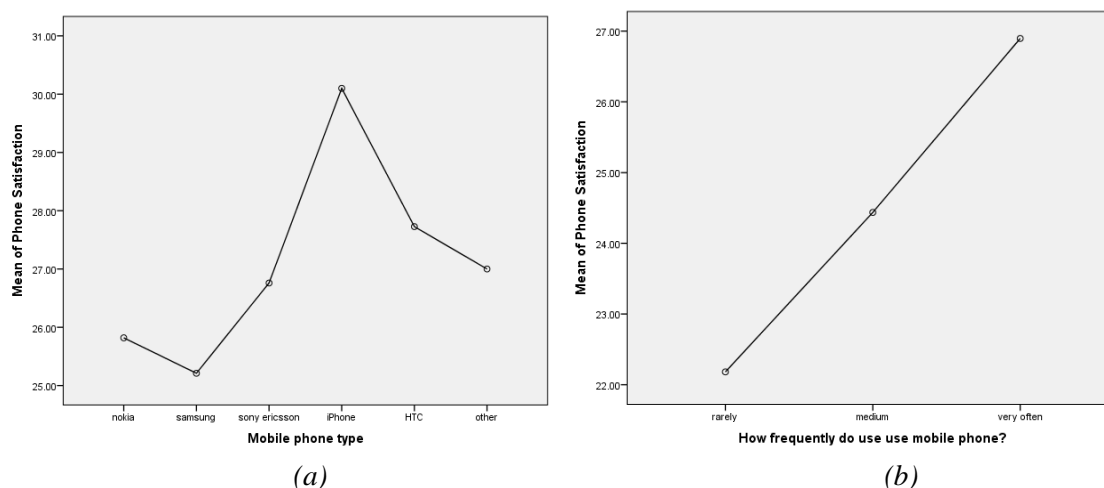


Figure 1: Differences in customer satisfaction among users according to (a) mobile phone type and (b) mobile phone usage frequency

H1.2.1: Our next assumption was that the difference in customer satisfaction with mobile phones, according to the frequency of phone usage, is statistically significant. The groups of customers according to this criterion are customers that use phone: *rarely*, *medium*, and *very often* (Table 1). The results of ANOVA test show that there is a statistically significant difference in satisfaction among these groups at 0.01 level of significance. The value of F statistics was 10.826, $p<0.001$, proving that these groups are not equally satisfied with mobile OS. The η^2 (eta-squared) indicator is 0.06, reporting on the medium influence (Cohen, 1988). The results of Tukey HSD test, showed that the differences occur among the group that uses phone *very often* ($M=26.897$, $SD=4.9$), and two other groups (*rarely*: $M=22.182$, $SD=5.4$; *medium*: $M=24.437$, $SD=5.58$). Other two groups

(rarely and medium) do not differ from each other with statistical significance. Differences are shown in Figure 1(b).

H1.2.2: This hypothesis says that the difference in customer satisfaction with mobile phones, according to their familiarity with current models of mobile phones, is statistically significant. There were also three groups of customers according to their answered the question about their familiarity with current models of mobile phones: *not at all*, *partly*, and *completely* (Table 1). The results of parametric ANOVA test showed that the difference in satisfaction among the specified groups is statistically significant at 0.01 level. The value of F statistics was 15.248, $p < 0.001$, which proves that these groups are not equally satisfied with mobile phones. Influence of the difference expressed by η^2 (eta-squared) indicator is 0.083, which indicates that the influence is medium (Cohen, 1988). The subsequent analysis with Tukey HSD test, showed that these differences occur among all three groups (*not at all*: $M=22.976$, $SD=5.795$; *partly*: $M=26.078$, $SD=5.05$; *completely*: $M=28.673$, $SD=4.312$). The differences are presented in Figure 2(a) and we can see that customers, who are not familiar with current models of mobile phones, are less satisfied with it than other groups. Customers that are partly familiar are more satisfied and customers that are completely familiar with current state of the market are most satisfied with their choice of mobile phone.

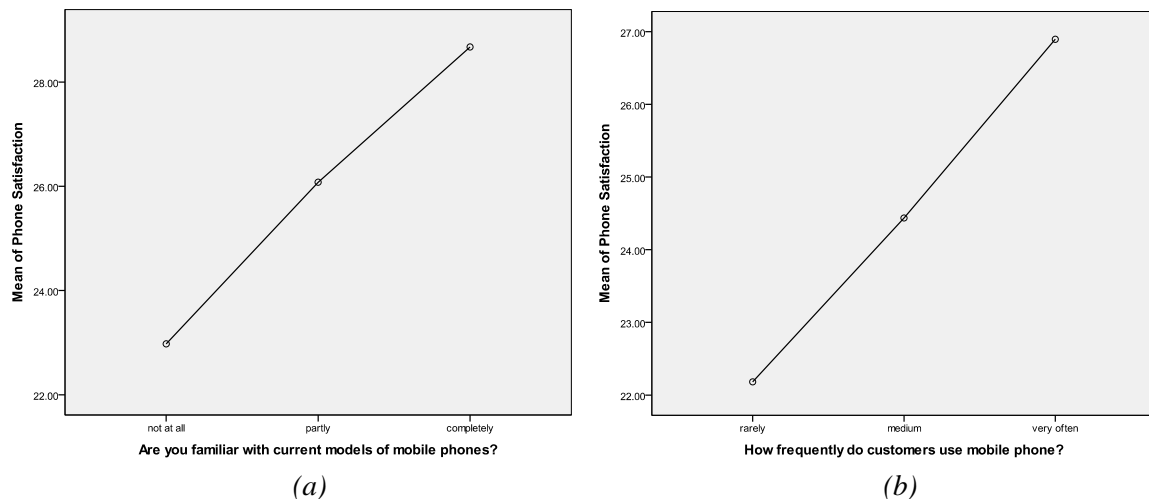


Figure 2: Differences in customer satisfaction among users according to (a) familiarity with current models and (b) following mobile trends

H1.2.3: Finally, we assumed that the difference in customer satisfaction with mobile phones, according to how often they follow mobile trends, is statistically significant. Customers were divided in three groups: *rarely*, *medium*, and *often* (Table 1). The results of parametric ANOVA test showed that the difference in satisfaction among the specified groups is statistically significant at 0.01 level. The value of F statistics was 28.133, $p < 0.001$. Influence of the difference expressed by η^2 (eta-squared) indicator is 0.143, which indicates that the influence is large (Cohen, 1988). Tukey HSD test, showed that these differences occur among all three groups (*rarely*: $M=23.337$, $SD=5.11$; *medium*: $M=26.366$, $SD=4.678$; *often*: $M=29.014$, $SD=4.13$). It is evident, from Figure 2(b), that customers, who often follow trends related to the mobile phones, are most satisfied with it, followed by customers that *medially* follow trends related to the mobile phones and customers that *rarely* follow trends related to the mobile phones.

CONCLUSION

This paper explores aspects of customer experience and market perception, and analyses its influence to the customer satisfaction with mobile phones. Introducing hypothesis H1.1.1 gives the overall picture of the customer satisfaction with mobile phones, presenting the current issue on the mobile market. Research results strongly endorse the general hypothesis and the main idea of our paper.

Regarding the influence of customer experience on their satisfaction with mobile phones, each of our individual hypotheses upholds this assumption. Research hypothesis H1.2.1 have proven that the customers that more frequently use their mobile phones are more satisfied by it. This can be indirectly connected to customer experience. It is obvious that customers who frequently use their phones would choose them more carefully, meaning that they would thoroughly inquire all aspects of market offer and carefully consider their needs. This is what makes the customer experience and it is directly connected with hypotheses H1.2.2 and H1.2.3. They precisely measure the differences in customer satisfaction, according to their familiarity with current models of mobile phones and mobile trends.

In conclusion, we can say that customer experience builds their loyalty, which will have the positive impact on their satisfaction with mobile phones. Therefore, the key point in managing customer satisfaction is to discover satisfaction determinants from the user's perspective and then to assess the company's performance. Mobile phone companies must strive to improve product quality so that the customer experiences with mobile phones could leave more positive affect.

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SOCIAL NETWORK MARKETING

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ABSTRACT

Internet in the last 10 years has shown tremendous growth in the number of users, and for a short time in some developed markets managed to become the medium with the highest percentage of money spent on advertising. In the period of recession there has been a different allocation of resources in advertising, rapid and measurable results are expected, cheaper investments, and the possibility of targeting a narrow group of users. Users of social networks constantly communicate about products and services of different companies, and it is reflected in the fact to their advantage. One of the best opportunities that social networks provide is the realization of real-time interaction with stakeholders. Thus the social networking sites turn into a so-called customer service, a place where users can continue to inquire, to make a complaint or get live support from a particular organization. This paper will discuss the use of social networks in marketing of companies in the 21st century.

Key words: marketing, social networks, examples from practice

INTRODUCTION

Social networking sites have become a powerful force in shaping public opinion on virtually every aspect of commerce. Because they amplify word-of-mouth marketing, they are becoming increasingly important in consumer's purchasing decisions. To keep up, marketers must learn to leverage these sites. Social media may become more important than advertising as a trusted source of information; and, because consumers provide much of the content, marketers have less control over messaging and positioning.

Social media site brings a revolution in the overall sale and traffic, if marketed properly using some best "search engine optimization" (SEO) techniques. And the most important fact is that, key to every site's success is through good marketing or advertising. Even if companies have really good and considerable content on their sites, they still need to promote it to avoid getting missing at the back of the competition. If we talk about the internet society, the best way to accomplish an augment in website traffic and revenue is to take advantage of social media sites. When used correctly, this tool can give a stage for product or service awareness, publicity, networking, and an enormous increase in traffic & sales.

The success of social networks marks a dynamic shift in how people are using the Internet. We've evolved from just searching for information to creating and participating in social spaces with other individuals through the Internet. This model is based upon the hive mentality where people identify

themselves as part of a group with similar likes and interests that draw them together. This is easy to do online because the traditional communication barriers of physical locations no longer exist. Social networks make viral marketing and word-of-mouth marketing much easier than before. The best use out of social networks is not to make money 'directly' off them, but to harness their marketing potential and to use them to market their own business.

ABOUT MARKETING

Marketing deals with identifying and satisfying individual and social needs. One of the shortest definitions of marketing is "meeting needs profitably." As defined by the American Marketing Association "Marketing is an organizational function and set the process of creating, communicating and delivering value and customer relationship management with customers in a way that benefits the organization and its stakeholders". (Kotler & Keller,2006). People in marketing deal with the placement of the ten different areas: goods, services, experiences, events, personalities, places, property, organization, information and ideas.

Marketing is everywhere. Formally or informally, people and organizations participate in many activities that can be called marketing. Good marketing is becoming an increasingly important part of business success. Marketing profoundly affect our daily lives. It is involved into everything we do-from the clothes we wear, web pages that open up, ads we see. Good marketing is not a coincidence but a result of careful planning and implementation. Marketing practices are continually improving in all industries in order to increase the chances of success. However, marketing excellence is rare and difficult to be realized. Marketing is the art and science. (Kotler & Keller, 2006)

Marketing communication is the way by which companies are trying to inform, persuade and remind consumers about the products and brands they sell. Marketing Communications are "brand voice" and the means by which to establish dialogue and build relationships with consumers. Marketing communications mix consists of six basic models of communication. Modern marketing requires more than developing good products, attractive prices and the formation of the commitment for the products availability. Companies need to communicate with existing and potential stakeholders and the public. Companies need to choose what to say, how to say, to whom and how often. Communication becomes more difficult, because an increasing number of companies are struggling to attract consumers' attention.

SOCIAL NETWORKS

New social media enables the "global conversation" in which everyone can participate, share opinions, knowledge, ideas without time and geographical constraints, bypassing traditional means of communication (Locke, Levine, Searls & Weinberger, 2000).Social networks on the Internet today are the contents which are very popular among Internet users. According to Weber „social networking sites are places where people are with common interests, they tend to find and meet other people or to express themselves“ (Weber, 2007). In addition to being given some kind of trend, which contributes to their popularity, they bring new opportunities to communicate, and facilitate making contacts, as well as use and exchange of different content, which makes them attractive. Although there is no exact number, it is estimated that there are many social networking sites whose popularity is growing rapidly worldwide and that are constantly multiplying, which affects many organizations to invest their time and money into creating a completely new environment (Boyd & Ellison, 2007) .

The most popular social networks are:

- Facebook –With 750 million members (as of August 2011) Facebook is a tremendously popular social networking site. Its massive reach provides compelling opportunities to connect with customers, both current and future, through fan pages, news feeds, groups, and throughout the site.

- YouTube – A well executed video with the right title and content, can have huge viral impacts for brands, especially if the video reaches the most viewed pages. There are also numerous other ways to optimize videos, but coming up with an interesting concept and being aware of title, tagging, and thumbnail image, should each be key components of strategy.
- Twitter - Twitter has quickly become a popular platform for consumers and advertisers alike. For brands looking to communicate with customers in real time, the micro-blogging service is a great way to carry on conversations in 140 or fewer characters.
- MySpace- Though rapidly losing market share to Facebook, MySpace remains a highly trafficked social media site that can be effective for marketing. In addition to creating profiles and getting friends, connecting with groups interested in relevant topics and using group bulletins can each be great ways to connect with both customers and potential customers.
- LinkedIn- LinkedIn could be a very effective resource for companies. In addition to setting up a basic profile companies can also utilize groups, events, and answer to connect with a large online network.

Internet has definitely made a revolution (in many respects), and social networks have made their revolution on the internet. When it comes to social networks, the first association is related to Facebook (Facebook), the largest and most popular virtual community of this kind in the world. Popularity of Facebook and its impact on society is and how great they made (and will work), many research studies, as well as serious sociological analysis. Social networks, especially the popular Facebook represent a new model of behavior on the Internet, but also in society, and the impact on young people is the greatest. This web service is free for all users and generates revenue from advertising and sponsors through advertising.

Social networks are increasingly popular among people. Internet sites such as Facebook, Twitter, Myspace and the opportunities they offer, have made them becoming an integral part of our lives. Statistical Office of Serbia issued a statement in which 91.8% of internet population between the ages of 16 and 24 have opened accounts on Facebook or Twitter. According to the research, definitely the most popular network is Facebook and Serbia has more than three million users. This number is in the first place in the region by the number of users. It is assumed that 70 percent of those who use the internet in Serbia have an account on Facebook. Statistics show that the average Serb, visit Facebook daily to 16 times, and spends 25 minutes.

Social networks are currently the focus of interest. Today, these networks are not only used for the interconnection of friends, but also companies use them in trade and scientific institutions. Companies use social networks to present their products and services. This online network is great for marketing products or services, publishing news.

MARKETING ON SOCIAL NETWORKS

Social media marketing refers to the process of gaining traffic or attention through social media sites. In addition to monitoring the changing marketing environment, marketing professionals must develop specific knowledge of certain markets. A good marketer wants information that will help in the interpretation of future operations and activities. Marketers need to have timely, accurate and useful information about customers, competitors and their brands.

With the appearance of social networks and their growth, there is a change in communication with the targeted markets. Marketing programs are transformed and directed with a view to its content, "design" become the subject of voluntary mutual exchange of multiple users via social networks. The advantage of marketing through social networks is that the company in a very short period of time can get feedback on their products, services, real-time and that in the short term may include a specific target group.

The benefits to marketing via social networks are numerous and largely gained at a very low cost. Through social networks, people can:

- Increase product and brand awareness
- Increase web traffic
- Improve SEO
- Increase customer loyalty
- Increase success of new product launches

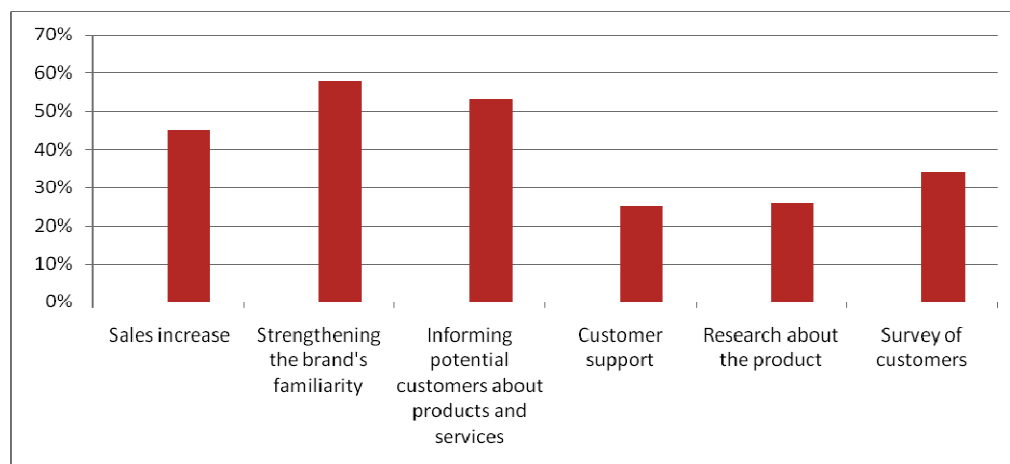
Researches by social networks are not set. The costs of gathering information through social networks are much cheaper than traditional means of research. Poll by social networking costs half the price of conventional survey, the rate of feedback information is up to 50%. Further, on-line surveys can be filled quickly. One estimate is that 75 to 80% of collected responses can be done within 48 hours using social networks. Another advantage is that people are more honest online than during personal or telephone surveys. People are more open in their private thoughts when responding to questions and do not stand next to people that they might be condemned when they say a word about sensitive topics.

According to a research, the global sample, Consumer Trust, published in Brand Strategy, 78% of respondents said they trusted the recommendations of others in terms of specific products or services more than any media.

Social networks provide a number of marketing activities:

- The application of marketing by word of mouth
- Market Research
- Creating and testing ideas
- Development of new products
- Improving customer relations (CRM)
- All forms of promotion and communication
- Generally all marketing activities

Figure 1 shows the various business goals companies are hoping to achieve with their social media marketing efforts.



*Figure 1. The most common targets of marketing through social networks
Source: Red Bridge Marketing, 2010. (www.redbridgemarketing.com)*

EXAMPLES FROM PRACTICE

Nowadays, companies use social media tool to launch a product and also to interact with its customers. In fact, many companies have used social media to promote their brand, to improve and

some of those companies have achieved remarkable success. In order to list out some of those brands 10 examples are presented.



Coca-Cola social media case study is one of the best examples available. The company was also named by Slate's The Big Money as the brand "making the best use of Facebook," and their well-publicized Expedition 206 campaign is billed as the company's largest social media project ever. Coca-Cola has used several ways such as blogging, sharing photos/videos, tweets, social media apps to promote their brand and achieves huge success.

X-Men - During the movie release of the X-Men-3, "Last Stand", it used the social networking site to promote itself. It added that all the users who will add the X-Men profile as a peer can use certain exclusive functionality. As a result of this media plan, almost 3 million members of the myspace.com community added X-Men as peer in just 1 month. The movie got a huge opening and it became the fourth-biggest movie in box office history.

British Airways - The airways launched the program Open skies. This program used social media and community marketing to promote itself. It created a corporate blog to influence the globe trotters. Managing Director Dale Moss even shared a blog with the common people so that they get to know about Open Skies development. Then he discussed about the meal service and showed people the cabin classes.

Dell - Dell is usually known for its cost-effective methods that it uses and so it jumped in social media to reach people. Back in December, Dell reported that offers from its Dell Outlet Twitter account has booked more than \$3 million in revenue attributable to its Twitter posts. It might sound like a small percentage for a company that books \$16B in revenue annually—but a nice number however, especially in a dreary economy.

SAP - This third largest software company in the world faced a challenge in the year 2002. It wanted to become a platform company using Net Weaver. The company had to open its platform and allow the other developers to use the platform in order to solve their business problems. The company had to interact with several developers across the globe. As a result of which, the company gained global collaboration and adoption of new SAP products increased.

SeaWorld - The main aim of the Journey to Atlantis social media program was to develop contact with the coaster community and bring about alertness regarding Journey to Atlantis. Influential people said that social media will give a chance for SeaWorld to make inroads. So, 22 coaster enthusiast blogs and forums were recognized during its beginning period.

British Telecom - Corporate intranets use social media tools to promote their interests. Unlike other companies, BT has completed web liberalization project. The company wanted all its employees to excess social media sites. According to the company, these networking sites, gives a chance to change the way our employees relate with one another, with the customers, partners and also with the suppliers.

Starbucks - Mystarbucks.com got to know about the company and their customers through various social sites. They also used social media in order to promote their ideas. Moreover, the company has forums where the customers can directly interact with Starbucks representatives.

HP - HP social media case study is another good example, HP social media managers engaged experts who work daily with customers to develop relevant marketing content grounded in true client need and real-life business issues. By combining podcasting with blogging and traditional tech-media syndication, HP now validates its messaging via an extensive buyer audience review process that yields vetted, relevant content that HP marketing can deploy in its ongoing sales and marketing efforts.

Stack Safe - Marketing professionals use social Computing technology in order to startup a community conversation platform. It resulted in better understanding between the company and its customers.

CONCLUSION

Unlike traditional PR and advertising, which can be costly, the main cost associated with social media is time, not cash. Any business willing to spend some time on social media/networking sites, building a community or fan base can benefit. Social media also fosters closer and better company-customer/prospective customer interaction “Word-of-Mouth“ than do the more traditional print advertising and PR.

To understand why the future of social network marketing is important, how it is so powerful, and what companies need to do to integrate it into their online business, an understanding of the mechanics behind it is necessary. Once people understand the mechanisms at work, they will gain a greater appreciation for how to profit from the existing social networks, as well as how to use them to create their own social networks built around various topics.

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ZRENJANIN - CREATIVE CITY

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ABSTRACT

The world economy has changed significantly over the past decade, thanks to the implementation of the concept of „creative industries”. The concept is based on „tangible” resources, as opposed to real and financial. Model creative cities in the center of this concept. Thus, the artistic and creative equated with profitable and creative cities become pillars of social development. This work was able to try and find the way which should go Zrenjanin, a town in the heart of the Banat, in order to become a city of cultural tourism.

Key words: creative industries, creative city, creativity, culture, cultural tourism

INTRODUCTION

The trend of "creative industries" for over a decade of significantly changing global economy. This concept, which was launched in the UK in the nineties, based on intangible resources - nasporam "real" and financial, become a feature of development of national economies, fostering the artistic and creative, both in production and in the services sector. Thus, the artistic and creative equated with profitable and creative cities become pillars of social development. Trend „creative industries” for over a decade of significantly changing global economy. This concept, which was launched in the UK in the nineties, based on intangible resources – compared to „real” and financial, become a feature of development of national economies, fostering the artistic and creative, both in production and in the services sector. Thus, the artistic and creative equated with profitable and creative cities become pillars of social development.

Creativity is a mental process involving the creation of new ideas, concepts, and solutions to problems, or new connections between existing ideas or concepts (Wikipedia). The scientific attitude is „how the products of creative thought (sometimes called divergent thought), contain originality and appropriateness” In everyday life, the concept of creativity is equated with the creation of something new.

Complex phenomenon of creativity, although it seems simple, but has long been studied in behavioral psychology, social psychology, psychometric, cognitive science, artificial intelligence, philosophy, history, economics, management. The research covers both everyday creativity, exceptional creativity and even artificial creativity. In science there is no single, authoritative perspective or definition, or creativity. There is no standard technique for measuring creativity.

Literature devoted to the psychology of more than sixty different definitions of creativity. The etymological roots of words in Serbian language, as in most European, comes from the Latin word „Creatus”, which literally means the one „who has risen”.The broadest conception of creativity in the scientific literature is that „creativity is manifested in the creation of any creative work, whether it is a new art works or scientific hypothesis, which is simultaneously an original and useful”.

In every day communication, definition of creativity arises from activities which result in: creating or proposing something new or partially new; making existing objects with new properties or characteristics; imagining new possibilities that no one has yet devised; by looking at or doing something completely different way than before considered natural, normal or possible.

Rhodes, J.W. (1981) points to the four key factors: the creative person, creative product, creative process and creative environment. Each of these factors is usually present in creative activity.

Johnson was later elaborated by this division, setting the thesis that creative activity can contain several meanings, including sensitivity to problems, originality, ingenuity, the strangeness, the usefulness and appropriateness, which refers to the creative product, and intellectual leadership that refer to a creative creator.

Creativity in the past very often attributed to a miracle. Tied to the cognitive processes, social environment, personality traits, and chance. Is associated with genius, but also with mental disorders, as well as humor.

However, as with other phenomena for which there are reliable and valid indicators of the practice, and creativity is, until today, according to the scientific point of view, regarded as a feature with which a person is born, but also for the ability or skill which is can learn, using simple techniques.

Creativity and innovation are not the same. Creativity is a term commonly used for the activity of creating new ideas, approaches or actions, while innovation is the process of creating and applying these ideas in a creative context.

In organizations, the term refers to the whole innovation process in which an organization creates new creative ideas and turn them into new, useful and viable commercial products, services and business processes, while the term creativity is used to create a very original idea of an individual or group, or an essential step in the innovation process.

Every innovation, according to Amabile (1996). „Begins with creative ideas” ... „Creativity by an individual or group is the starting point of innovation”. However, the term „creativity” and the concept of creativity, change the Subject to the community, society and the people who formulated or use it, as well as of the time in which they originated.

The Greeks, also believe that there is no inspiration, without the help of her muse At that time there was *tremina* that would correspond to what is now meant by "creating" or „creator” and the term „*poiein*” is the term used for „make”. In Latin, the „creation” and „creator” meant the term „*creatio*” and the verb „to do” were used „*facere*” and „*creare*”.

Today, however, talk about creative works written by the ancient Greeks and Romans - the architecture, visual art, music, and the numerous discoveries of the time, survived the centuries thanks to the talent and creativity, and ingenuity.

In the era of Christianity „*creatio*” meant God's „creation out of nothing.” Today, individuals believe that art is connected with the divine and not human. People of the Renaissance had the memory of its own independence and creativity.

Until the 18th century and the Enlightenment, the concept of creativity is increasingly encountered in the theory of art and is commonly associated with the concept of imagination. While in Eastern philosophies and religions, Hinduism, Confucianism, Buddhism and Taoism to create generally considered a kind of discovery or mimicry, had opposed the Western stance and supported the idea of „creation of nothingness“.

In psychology theory starting point for the scientific study of creativity is considered Guilford's the addressing the American Psychological Association. This has contributed not only to popularize themes, but also taking a scientific approach to spreading the concept of creativity in design and measurement of its meaning through the test of psychometric

In the section „The Act of Creation”, Arthur Koestler said three types of creative individual - Artist, Philosopher and Humorist. It turned out that this „trinity” is successfully applied in the management and can be identified in the companies which are considered creative.

During the 1990s, recorded the various approaches to cognitive science in order to arrive at an integrated approach to the study of creativity in science, art and humor, called conceptual blending. In the book „A Whole New Mind” Daniel Pink has gathered arguments of scientists and theorists 20th century, hearing and enter a new age where creativity is becoming very important. In this conceptual time, his conviction of the need to nurture the right-oriented thinking (creativity and emotion) over lieve oriented thinking (logical and analytical thinking).

While in the early period of creativity associated mainly with painting, literature, music, dance, during the last decade was a widespread perception that is an integral part of many activities and areas, such as management, economics, civil engineering, industrial design, engineering, science in general.

Despite the ambiguous nature of the phenomenon of creativity, entire industries have been lifted from the pursuit of creative ideas and creative development techniques.

CREATIVE ECONOMY

The definition of „creative economy” was first used 2001th year. The „creative economy” is one of 15 creative industries „that extend from art to broader areas of science and technology”. Contemporary forms of media, such as Internet and mobile technologies are now driving „creative economy”.

The successful development of creative industries testifies to their more significant impact on the growth of world gross domestic product - BDO. The share of creative industries in the formation of world gross domestic product now exceeds 7 percent. The total world exports of creative industry of China and Hong Kong participate even with a 26 percent along with the United States, Germany, Italy and the UK accounts for half of world exports, more than 300 billion dollars.

While the country's creative industries exports increased profits, as long as countries in transition such as Serbia, exporters free creativity, letting go of creative workers and the „brain drain”, which is invested in valuable capital - time, money and effort.

Although it is certain that there is no competitive economy, without the creative industries as the backbone of the new economy, in Serbia there are no significant steps to curb the emigration of young, educated, creative people, who in the world are more favorable environment for working and living there and plan for the future. Not so, neither the following indicators would look like this: According to the World Bank, presented at the World Economic Forum - Serbia in 2010. a year to 93 place out of 133 countries in the world, the competitiveness of national economies. At the same time, Serbia is on the 88th place the (un)suitability of the climate for business development and the 132nd or last in, the largest outflow of creative artists and professionals from the country.

Cities are the cradle of innovation - they can connect and combine knowledge, culture and government. Although the first towns created 6,000 years BC, in them is 1800. lived only 3 percent of world population. For the next hundred years, that number is upetostručen and was 14 percent

At the turn of centuries of living in cities is almost half the world population and an estimated 2025. The amount to 75 percent. Therefore, the ability of cities to solve their problems in a creative way more important than ever.

„Creative economy“, one that emerges from the stereotypes of tradition, created in 2010. year, income of 600 million dinars. According to the UNDP (UN Development Program) - Program development, called "Creative economy - a viable development option (Creative Economy - Development Option A feasible) since 2008. , when the global world economy experienced a breakdown of which has not yet recovered, recording a decrease of about 12 percent a year, the creative economy is growing and 2010. year has reached 14 percent. At the same time, the share of the creative economy in the planet's overall economic growth has increased more than 40 percent, from the 202nd year.

Cities are like family. And all that zamaruju creativity, do not notice it and not allow it to develop, resemble each other. And every creative city, creative in its own way. One thing is for sure, the rise of cities, the focus of economic development of every country in the world is set in an urban environment, which, attracting human capital, becomes a single market and the kind of economic system with laws that differ from the regularities of national economy development and characteristics of economic systems of other cities.

The thesis of Richard Florida, „The Rise of the Creative Class“, that the development of a city needs three key personalities: tolerance, talent, technology in the practice of creative cities shows its full justification. Florida's 3T suggests that successful cities are tolerant of diversity, attracting talented people - human capital and infrastructure are secured by the modern age that is necessary for the quality of life and business development.

ZRENJANIN TOWARDS A CREATIVE CITY

In order to evaluate the possibility of forming Zrenjanin as a destination of cultural tourism was carried out, research experts and cultural workers in the period January - March 2012. year.

Survey of experts was conducted to survey and model of creative understanding of the function of culture and creative cultural tourism. The study was conducted Jelena Jajić. It includes the following participants.

- Local government - the mayor of Zrenjanin Local government - Mayor Dr. Mileta Mihajlov
- City Council President – Aleksandar Marton
- Center for Regional Development Banat - Zrenjanin - director Irena Živković
- National Theatre "Tosa Jovanovic" - director Tatajan Paskaš and director of art Ivana Kukolj
- National Public Library "Zarko Zrenjanin" – Jelena Đorđević, public relations
- National Museum of Zrenjanin - director Božidar Vorgić
- Contemporary Gallery of the Art Colony Ečka - Zrenjanin – director Radovan Živankić
- Cultural Center of Zrenjanin - program editor Vladimir Djurić
- Historical Archives of Zrenjanin – director Nada Boroš
- Association Photo - Expo - manager Ivana Brankovic
- The European Movement in Banat – Zrenjanin - President Nicola Šlajh
- Association Tourismologists Zrenjanin – Gordana Beženar Vasiljevic, a member of the Executive Board
- Tourist center of Zrenjanin – Tajdić Dijana, manager of Tourism
- Theatre Club "Green bell" - General Manager Branislav Grubački and Marina Davidovac - PR
- Individual creative person – in the local - Olivera Skoko, art historian, curator
- Individual creative person - a stranger, Fani Burla, slikar, dizajner i restaurater - France
- Media scene - group of journalists

The interview process is based on seven principles of integrated design: to determine the context, create a comfortable space to explore every important issue, encourage contributions from all, to connect different perspectives, listen to others and to perceive patterns, share collective discoveries. Of particular importance is the cross-intersection and interaction of ideas.

This method is used more and more researchers, managers, executives, groups, organizations and networks, has led to the discovery of innovative approaches in different areas, conflict resolution, sustainable development.

The positive side of the method: it can make visible the collective intelligence of groups, increase capacity for useful action towards achieving common goals, the broad applicability (group of authors who push the boundaries of cities, 2009).

On the question of how to understand the model of the creative function of kulture Vladimir Djuric said this: "The city is as much a creative people and how governance structures that allow for creative and able to be in managerial positions. Need a course and financial stability that would enable the implementation of creative solutions. One sentence: The model of creative people are creative in a position from which they can improve in all areas of the city, a city economy that is able to isfinansira.

„Zrenjanin is a city that is creative in its development relies on kreativnost and enthusiasm of young people by supporting their efforts and desire to help the cultural life of the desire to develop the active participation of all the factors that may contribute to its development, such as nongovernment organizations, businessmen, artists' associations ... with maximum help and support of all the institutions.“ (Mayor Dr. Mihajlov). Model creative city Aleksandar Marton seen as providing opportunities for young people and those with ideas to enrich the cultural and tourist offer of the city and region.

Irena Živkovic explained: „The achievement of existing tourism resources, and converting comparative into competitive advantages, with an effective marketing program, Zrenjanin could be a very competitive and recognizable city, with the ability to meet the new demands of tourists as well as a new experience (Experience for Money) new or valuable emotion (Emotion for Money), which may be experienced in a particular tourist destination”.

„A creative city is able to pool their existing cultural resources and their cultural heritage. Combining traditional and modern in a new and different way, one can make that city a desirable destination”- Jelena Djordjevic from the Library. Director of the Museum, Bozidar Vorgić, believes that a creative city should develop the City Administration, together with the cultural institutions and to the competent experts of tourism, but is essential sincere desire.

Ivana Brankovic this model explains the following way: „It is a sustainable model that works, managed by a team of experts in the field of urban planning, architecture, economics, culture, media, sustainable development ... uključivanju working on all the actors on the city scene and the audience engaged in the development and regular updating of the database of available content and actual production on the Internet in public areas of both print and electronic media” .

Creativity with no financial support was short of breath - Nikola Šljah claims and recalls that the European Movement have a ready historical monograph of the city but have no means to print, and „we as a city of only 2 of the monograph (monograph does not) in the last 100 years (Timisoara over 20!)”.

For Gordana Vasiljevic Beženar creative city means „listen to the ideas of young people living in the city, new proposals to convert the projects, cultural institutions and tourism cleaned by unskilled, political and lazy people” ... For example - use the fact that Liszt played in the Castle - an international competition of young people make in the performance of his works ... a festival-

type tamburice, tambura orchestras and the like, which has several, consolidate into one high quality, recognized in Serbia ...

Branislav Grubački Guta from "Bells" is convinced that „Zrenjanin has the creative potential - the exceptional," Attitude is a tourist center Zrenjanin that "without adequate formation of the team and the lack of adequate project for the promotion of culture and cultural tourism, it all comes down to individual low perceived cultural activities“, only the „will and the necessary support to them and realized." "The successful model of each city are successful, professional, creative people. Such people should serve to improve the culture and cultural tourism, as most potential“-says Olivera Skoko. „The model as such should be the role model, for example. All segments of the life of a city as a small company should be as much as possible or as active creators or as support or as an audience“-says Fanny Burla.

Nada Boros from the Historical Archives of the creative city model as' the involvement of all relevant cultural factors in the creation of programs for different age and interest groups of tourists, visitors center, and taking creative programs in other urban and rural areas, while using the above potentials of Zrenjanin."

Reporters reminded that the Universal Declaration on Cultural Diversity adopted by UNESCO, 2001. , defines culture as 'a set of special spiritual, material, intellectual and emotional features of society and social groups, and this includes, in addition to art and literature, lifestyles, ways of living together, value systems, traditions and beliefs.' unique cultural pattern defines each environment and produce urban space. In the process, as shown, the modern practice, the equal importance of local communities, authorities and experts. Each user in a creative way to integrate the current needs and habits of the past to create a cultural identity. It is necessary to activate creativity, recognize and translate the appropriate medical treatment. Innovations continue to encourage involvement in the construction of cultural meanings specific to the community that the chain transfer to economic gain. Some cities are well-realized through the development plans of artistic and cultural heritage networks have become an inspiration for future creative cities. Significant role in this game of awareness of citizens who, through various actions, uniting the creative efforts and opens the way for new investment in culture. Representatives of the Theatre, however, are not familiar with the model of the creative city. Neither the Contemporary Galleries on this question has no answer.

INSTEAD OF CONCLUSION

If you want to become a creative city, Zrenjanin will primarily have to deal with informing the njegovojh concept, educate and promote the idea of teams, recognizing the creative and creates that young, talented and creative people stay here and accept those who come and synergy of knowledge , will and creativity, come, step by step in a process that brings the joy of creation, to the desired goal.

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Session E: OPERATION MANAGEMENT

Papers (pp. 349-432):

Zdeněk Říha, Marek Honců EXTERNALITIES OF TRANSPORT AND THEIR RELATION TO ECONOMIC OUTPUT	...349
Eva Sventekova, Zdenek Dvorak PERFORMANCE TESTING OF CRITICAL TRANSPORT INFRASTRUCTURE ELEMENTS	...354
Branislav Tomić, Vesna Spasojević Brkić, Milivoj Klarin INTEGRATED SIX SIGMA METHODOLOGY	...359
Vyara Pozhidaeva, Dragan Živković INFORMATION SYSTEM AND TQM AS A MEASURE OF MAINTENANCE OF UNIVERSAL LATHES QUALITY	...365
Kristian Bereš, Paun Bereš IT AND NEW MODELS OF EDUCATION IN MANAGEMENT OF EDUCATIONAL PROCESS BASED ON ALTERNATIVE ENERGY SOURCES	...371
Jasmina Vesić Vasović, Miroslav Radojičić, Zoran Nešić STABILITY INTERVALS OF THE CRITERIA IN MULTI-CRITERIA DECISION MAKING	...377
Dejan Stojković, Ratko Đuričić REVIEW OF THE E-CRM CONCEPT IN THE ADVANCED TELECOMMUNICATIONS COMPANIES	...383
Dejan Stojković, Ratko Đuričić MOBILE CRM CONCEPT IN THE TELECOMMUNICATIONS INDUSTRY	...389
Slavoljub Milovanović SOFTWARE SUPPORT TO SUPPLY CHAIN MANAGEMENT	...395
Ljiljana Tanasić TOTAL PRODUCTIVE MAINTENANCE – A SOLUTION FOR OPTIMIZING THE PRODUCTIVITY OF MANUFACTURING EQUIPMENT	...401
Milan Pasula, Branislav Nerandžić, Milan Radosević INTERNAL AUDIT OF THE SUPPLY CHAIN MANAGEMENT IN FUNCTION OF COST REDUCTION OF THE COMPANY	...407
Nataša Aleksić INFORMATION MANAGEMENT IN LOGISTICS	...413
Miroslava Marić, Violeta Jovanović APLICCAION OF ISO 14000 SERIES STANDARDS IN MANUFACTURING COMPANIES – THE ROLE AND IMPORTANCE	...419
Sanja Stanisavljev, Sajfert Vjekoslav, Đorđević Dejan, Čočkaló Dragan, Vesna Spasojevic Brkić, Jovanovski Bojan A STOCHASTIC MODEL TO DETERMINE THE ELEMENTS OF PRODUCTION CYCLE TIME IN TEXTILE INDUSTRY	...425

EXTERNALITIES OF TRANSPORT AND THEIR RELATION TO ECONOMIC OUTPUT

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ABSTRACT

The transport system has a strong relationship to life quality and above all to environmental problems. The transport externalities, esp. the external costs, have been studied for a long time. This paper tries to discuss also the positive externalities of transport. We particularly examine the relationship between emissions from road transport in 16 European countries and their economic output expressed by the GDP. This relation is known as the Kuznets environmental curve and it claims that from a certain level of welfare the human impacts on the environment decrease.

Key words: Externality, transport system, environment, emissions, GDP, environmental Kuznets curve.

INTRODUCTION

The transport system substantially affects life quality, especially in towns. The life quality is of course very questionable concept, due to many factors (partly highly subjective), affecting finally the resulting life quality. From many approaches and models we can demonstrate the complexity of the problem on the approach of Ruut Veenhoven (Veenhoven, 2006) that divided the life quality on inner and outer one and classified this concept according the following Table 1:

Table 1: The four qualities of life (Veenhoven, 2006)

Four qualities of life	Outer qualities	Inner qualities
Life chances	Liveability of environment	Life-ability of the person
Life results	Utility of life	Appreciation of life

From the indicated approach it unambiguously follows (and other models would confirm it) that the influence of economic factors and other hard ones will be limited and the life quality will be affected by many other, subjective impacts. From the viewpoint of the transport system the link to the first quadrant will be interesting – thus how the transport system influences the environment that afterwards affects the life quality. The externalities will have a significant influence, whether the negative or positive ones. The relation between the output of the transport system and gross domestic product will be also important.

A separate problem will be also the influence of the quality of the actual transport process. If we consider the transport system as a whole (transport quality is usually associated only with public transport), we can also distinct the inner quality that is a set of constituent quality factors, i.e. accessibility, accuracy, comfort, information availability etc. and that can be expressed by the final utility of a passenger. This inner quality will be limited by the GDP indicator that influences the living standard and indirectly the quality of transport means and infrastructure. As outer quality we will

call the influence of the transport system on its neighbourhood and thus also on its indirect users. This influence is represented by externalities. This relationship can be represented in a simplified way by the following scheme in Figure 1.

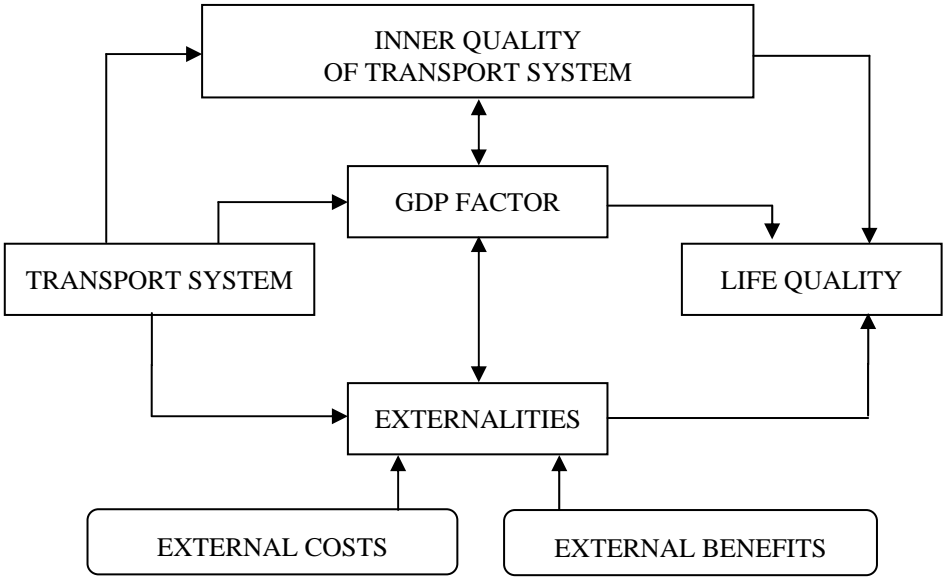


Figure 1: Relation between transport system and life quality (authors)

The negative externalities or external costs are often mentioned in connection with transportation. However it is also important to be concerned with the positive externalities that cause external revenues. Above all we can mention the influence of the transport system on the economic output of a territory. This problems have been studied in economy since the improvement of the GDP measuring thus since the half of the 20th century. They are connected mostly with the name of the American economist Simon Kuznets.

ENVIRONMENTAL KUZNETS CURVE

The environmental Kuznets curve (EKC) was introduced by the economists Grossman and Krueger (Grossman & Krueger, 1995). It states that the environment begins to improve with the growth of GDP per capita, as e.g. better technologies start to be used after some level of welfare had been reached. Its general shape is shown in Figure 2.

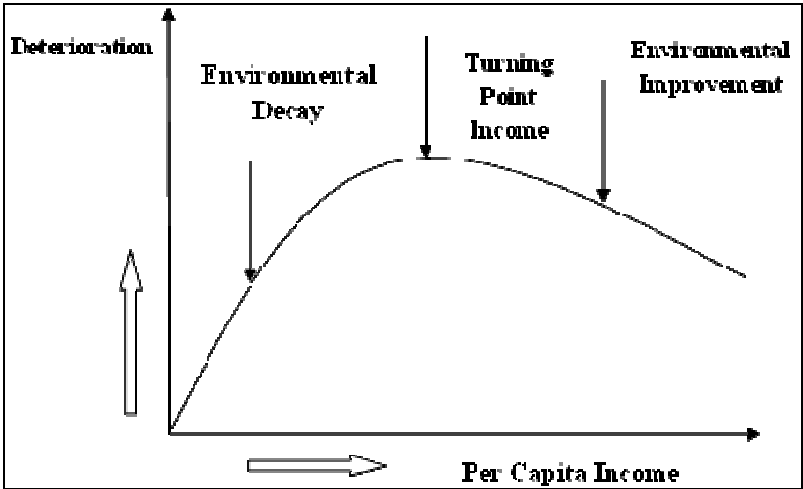


Figure 2: Environmental Kuznets curve (Grossman and Krueger, 1995)

Such function can be is modeled by a maximum third degree polynomial in the regression

$$z_{it} = \beta_0 + \beta_1 y_{it} + \beta_2 y_{it}^2 + \beta_3 y_{it}^3 + \beta \cdot X_{it} + \varepsilon_{it} \quad (1)$$

with emissions per capita z_{it} in locality i at time t , coefficients β_i , independent variable average GDP per capita y_{it} , other explaining factors X_{it} and error term ε_{it} .

Various empirical studies verify the applicability of the EKC (Bhattarai & Vijayaraghavan, & Yandle, 2004), but it is necessary to interpret this dependence and to look for the reasons why the environmental deterioration decreases with the economic growth. These reasons can be divided into 5 groups:

- The transition from agricultural character of the society to the industrial one during the industrial revolution was followed by the increased environmental deterioration. This is the explanation of the growing part of the EKC. This development can be today observed in the developing countries like China and India.
- The decreasing shape of the EKC can be explained by technological changes. Innovation has usually been decreasing the energy consumption rate as well as emission factors.
- The demand for better environment has been increasing with the growing wealth. People that had satisfied their basic needs (Maslow's pyramid) have been increasing the pressure on producers to get environmentally cleaner products.
- More wealthy society has been asserting through its public representatives more strict environmental legislation and incentives (of economic character, i.e. consumption and environmental taxes etc.) towards behavior less harming the environment.
- The last reason relates to the transfer of production to poorer countries with lower labour cost, more wealthy countries have been concentrating to the production of services that damage less the environment. This is of course only the case of a local transfer among countries that does not decrease the total environmental damage.

EKC IN ROAD TRANSPORT

For the verification of the EKC in road transport we have analysed the emissions as function of the GDP of 16 countries of the European Union (Bulgaria, Czech Republic, Slovakia, Slovenia, Hungary, Estonia, Lithuania, Latvia, Belgium, France, Germany, Netherlands, Portugal, Austria, Sweden and UK). The emissions are averaged (per capita) in population for the purpose of comparison and the use of data from various countries.

Carbon dioxide emissions show in general (regardless the source activity) a strong linear correlation with GDP (Duchoň, 2010; Duchoň & Faifrová & Říha, 2011). Some authors state that the EKC concept may be inappropriate to describe the relationship between economic growth and carbon dioxide emissions (Kaika & Zervas, 2011). The reason can be that carbon dioxide has been considered as a pollutant recently in connection with the problems of global warming.

In the road transport, the emissions of the carbon dioxide also show an almost linear growth with GDP per capita, as shown in Figure 3.

The situation of emissions of nitrogen oxides is more interesting. A final regression with a quadratic function was used that corresponds to the theoretical shape of the EKC:

$$z_{it} = \beta_1 y_{it} + \beta_2 y_{it}^2 + \varepsilon_{it} \quad (2)$$

with yearly NO_x emissions (in kg) per capita z_{it} in country i in year t , coefficients β_i , independent variable average yearly GDP per capita y_{it} (in PPP) and error term ε_{it} .

The values of coefficients β_i are

$$\beta_1 = +1,32 \cdot 10^{-3}, \beta_2 = -3,34 \cdot 10^{-8}, \quad (3)$$

Both coefficients are statistically significant at the 5 % level, the regression $r^2=0,94$. The graph is shown in Figure 4.

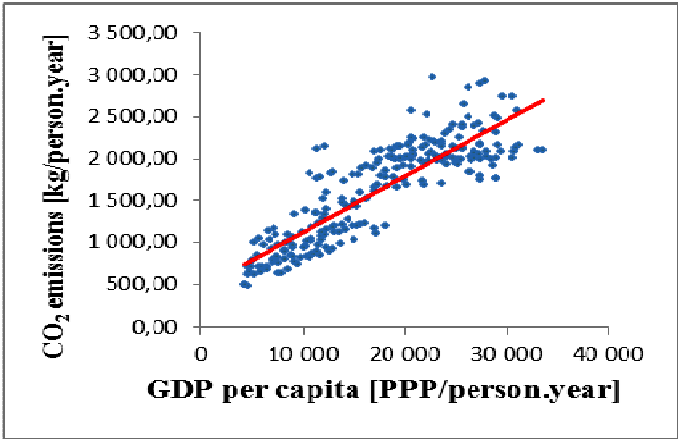


Figure 3: Road transport CO2 emissions as function of GDP per capita, (source: Eurostat, own calculations)

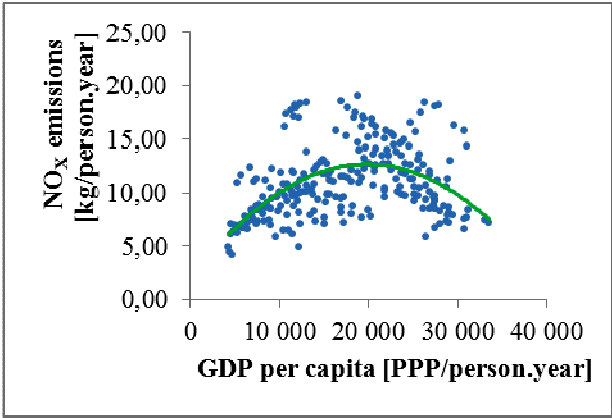


Figure 4: Road transport NOx emissions as function of GDP per capita (source: Eurostat, own calculations)

ENERGY CONSUMPTION IN ROAD TRANSPORT

The consumption of energy in road transportation (in the same group of countries) is almost proportional to GDP per capita, as shown in Figure 5.

The energy consumption (e.g. in road transport) per capita can be expressed as follows:

$$\frac{E}{P} = \frac{E}{Y} \cdot \frac{Y}{P} = \frac{E}{Y} \cdot y = \rho \cdot y \tag{4}$$

with energy consumption per capita E , population P , GDP Y , GDP per capita y and road transport energy intensity of GDP ρ . It means that the proportion of energy consumption in road transport to GDP (road transport energy intensity of GDP ρ) is almost constant. The emissions per capita can be then expressed as follows:

$$\frac{X}{P} = \frac{X}{E} \cdot \frac{E}{P} = e \cdot \rho \cdot y \tag{5}$$

with total emissions X , population P , road transport energy consumption E , emission factor of transport energy consumption e , road transport energy intensity of GDP ρ , and GDP per capita y . Thus the decrease of emissions per capita can be explained only by the decrease of emission factors that means

mainly by the more strict emission standards EURO 1–6 for vehicle producers and emission controls of vehicles.

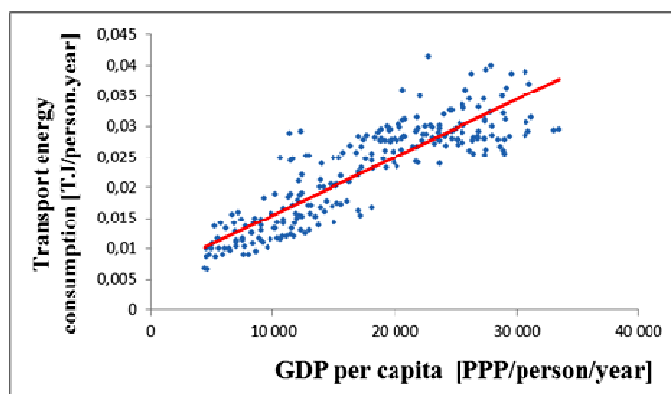


Figure 5: Road transport energy consumption as function of GDP per capita (source: Eurostat, own calculations)

CONCLUSION

The data show that except for carbon dioxide, the emissions per capita from road transport decrease with the growing GDP per capita, i.e. the environmental Kuznets curve could be valid for the emissions from road transport. According to our simple analysis the explanation could be only the successful control of emissions, e.g. by the EURO standards. Other factors like lower consumption vehicles, better transport technologies etc. seem not to contribute at the total to this decrease, because the road transport energy intensity of GDP seems to be constant.

The possible decrease of some types of road transport emissions can be seen as indirect positive external effect of the economic growth. However these effects shall be studied in a more detailed way, what is our challenge for the following research.

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PERFORMANCE TESTING OF CRITICAL TRANSPORT INFRASTRUCTURE ELEMENTS

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ABSTRACT

Authors in the paper deal with the role of road transport in terms of critical infrastructure and they also deal with criteria established to ensure the required level of connection of critical infrastructure elements by road transport. Attention is paid to the influence of constraints on the quality of traffic flow as permissible traffic intensity, the influence of the proportion of heavy vehicles, reserve capacity, waiting times. The contribution deals with transport and technical management of highway segments.

Key words: critical infrastructure, permissible traffic intensity, transport management

INTRODUCTION - CRITICAL INFRASTRUCTURE

Protecting critical infrastructure is essential for internal security and safety of other European Union Member States. Disruption or destruction of critical infrastructure, or part of the elements can result in fatalities, serious damage to human health, property damage, environmental degradation and long-term disruption of public confidence in public authorities and other legal entities.

Critical infrastructure is that part of the national infrastructure (selected organizations and institutions, structures, systems, equipment, services and systems), in which the destruction or disablement as a result of risk factors may cause danger or disruption of political and economic operation of state or threat to life and health. The critical infrastructure parts are also objects of defense infrastructure.

Element of critical infrastructure is such an element of national infrastructure, which has been designated as an element of critical infrastructure, as the destruction or disruption due primarily to a terrorist attack can affect any area of national security, for example:

- the political operation of the state including the functioning of public administration,
- defense,
- operation of the economy of the state
- life, health or property of the population,
- transportation, information and communication systems,
- environment.

The criteria for determining critical infrastructure elements are:

- unacceptable risk unique element,
- a potential target of terrorist attack,
- the generalization,
- an exclusivity.

CRITICAL TRANSPORT INFRASTRUCTURE IN THE SLOVAK REPUBLIC

The Slovak Republic maintains approximately 18 thousand kilometres of streets, roads and highways, over 7800 road bridges and over 2280 rail bridges, 3500 km of railroads, 13 public airports and 14 private airports. While each of these facilities provides much-needed travel and economic links to local communities, the vast majority supports primarily local movements of persons and goods. Only a small subset of the entire transportation infrastructure can be considered of major national interest.

Although no universally agreed upon definition of or criteria for the critical transport infrastructure (CTI) exists, most observers would agree that the CTI is composed of those transportation facilities whose removal from service would significantly affect public safety, national security, economic activity or environmental quality. Some experts suggest that only those facilities that are essential to national defence or global economic activity be designated as “critical.”

Any facility falling short of these measures can be labelled “important”. In the absence of a formal CTI designator, federal, state and local officials have the latitude to designate CTI facilities of varying degrees of importance. That is, what is deemed critical to a particular state or city may not be critical from a national perspective and vice versa. A related but distinct concept involves “transportation lifelines,” transportation facilities providing essential accesses for emergency services to disaster sites and allowing for the evacuation of at-risk persons and property from those sites. Transportation lifelines are primarily local in nature and are defined by the location, type, and severity of the disaster and by the demographics and land use of the region in which the disaster occurs. Again, designated local and regional lifelines may not coincide with national ones.

Critical infrastructure elements in road transport are ways of I. class and bridges on them. Their disruption or destruction would affect the planned transfers forces, as well as supply and transportation during the war. National Highway Company, Ltd. managed and maintained operating highways, roads for motor vehicles and first class roads in the area of roads. It is also an investor, which provides for the construction of highways. As elements of critical infrastructure may be under the motorway and road network selected some road tunnels and bridges and cable network. These objects in the protection of critical infrastructure elements in the sub-sector of road transportation require a specific approach involved is often part of the black spots.

The tunnels would need to increase repression prevent shipments of dangerous goods because the signs are excluded, but unfortunately not respected. The fact could lead to incidents during normal transport and possibly be used for preparing a terrorist attack.

In terms of peace is hard to identify objects and roads covered by the Slovak Road Administration, that would be included in critical infrastructure and their removal should a major impact on activities of the organization. Evidence of this, there is relatively common serious accident, which rejected a way of operation, to prevent passage, or it partially difficult. In a relatively short time adopted the solution by diverting traffic to other communication.

Functional level of road transport needs KDI determine:

- the desired running speed,
- achievable travel speed,
- composition of traffic flow,
- maneuvering options
- wideness category of communication
- horizontal and vertical line of communication.

The role of road transport in critical transport infrastructure is:

- to maintain safe and accessible way,

- to operate and maintain traffic flows on the move
- to provide active support to the driver and provide travel information and services.

For the proper functioning of road infrastructure are all residents in need every day. In the future, defined critical infrastructure in road transport is very important for the state. Disruption of element of critical transport infrastructure has a negative impact on the functioning of the transport system. These consequences are more severe, more complex infrastructure system is disturbed. It is necessary to eliminate or at least mitigate the impact of potential risks. It is necessary to analyze risks, weaknesses and level of their own capacity. It is necessary to establish and consolidate minimum standards for protection of critical infrastructures, reduce vulnerability, to protect people and critical resources and systems on which depends the existence of society at the national level to harmonize rules for transporting hazardous substances, put great emphasis on a key transport points such as bridges, tunnels, intersections, or equipment designed to load or unload goods.

THEORETICAL BASES IN PERFORMANCE TESTING OF HIGHWAY SECTION AS AN ELEMENT OF CRITICAL ROAD TRANSPORT INFRASTRUCTURE

To calculate the performance of highway sections is necessary to know the traffic load of each direction and the percentage of heavy vehicles. Both directions of the highway section are addressed separately.

Some quantities affect the traffic and thereby achievable rate and capacity of the highway section.

The slope of the highway has a significant impact on traffic flow. The routes, which are kept in a steep (more than 2%) partially reduces the speed of heavy vehicles, which in turn affects the speed of passenger cars. Traffic flow analysis shows significant differences depending on the *function and position* of highway section. *The impact of heavy vehicles* on the quality of traffic flow is expressed as a percentage of total heavy vehicle traffic flow and the calculation of capacity and permeability must be taken into account.

Incident may adversely affect the capacity of highway sections, included among the elements of critical infrastructure. Capacity of the highway sections with speed limits is given in table. 1.

Table 1: Capacity of the highway sections with speed limits

Number of lanes	Speed limits	Capacity (vehicles/hour)		
		percentage of heavy vehicles		
		0%	10%	20%
3	120	5700	5400	5100
	100 / 80 / tunnel	5800	5500	5200
2	120	4000	3800	3600
	100 / 80 / tunnel	4100	3900	3700
2	Work on the road	-	3300	-

Crucial in assessing the performance of the highway section as an element of critical transport infrastructure may have a slope of highway section.

Table 2 shows the allowable values of traffic intensity for the agglomeration of the highway with speed restrictions in force on the plane, for fall and for max. 2% slope for percentage of heavy vehicles 10%.

For resolution of traffic flows grades from A to F is valid the tolerance between the degree of saturation according to Table 3.

The table 3 deals with the binding level of quality of traffic flow with a median duration of travel by car, with a mean travel speed, traffic density and degree of saturation for a 2 lanes highway on a flat route with no speed limits outside agglomerations.

Table 2: Permissible intensities at reduced speed

Quality	Permissible intensity of direction (vehicles/hour)				
	3 lanes		2 lanes		
	120	100/80 + tunnel	120	100/80 + tunnel	Work on the road
A	1620	1650	1140	1170	990
B	2970	3025	2090	2145	1815
C	4050	4125	2850	2925	2475
D	4860	4950	3420	3510	2970
E	5400	5500	3800	3900	3300
F	-	-	-	-	-

Table 3: Quality of traffic flow

Quality	median duration of travel (min/100km)	mean travel speed (km/h)	traffic density (vehicles/km)	degree of saturation (-)
A	≤46	≥130	≤8	≤0,30
B	≤48	≥125	≤16	≤0,55
C	≤52	≥115	≤23	≤0,75
D	≤60	≥100	≤32	≤0,90
E	≤75	≥80	≤45	≤1
F	>75	<80	>45	-

The quality grades mean:

- **Degree A** – The driver is very rarely affected by other drivers, the degree of saturation is very low, the driver does not have his speed limit in response to road permits, and the traffic flow is free.
- **Degree B** – The minor influences from other drivers operate to driver, these effects are not serious, the degree of saturation is minimal, the speed can reach the desired level, and traffic flow is almost free.
- **Degree C** – The presence of other road users is felt, the individual freedom of movement is already restricted, the degree of saturation is approximately in the middle, speed is no longer entirely optional, and traffic flow is stable.
- **Degree D** – There is always the reciprocal influence of road users, leading to conflict and mutual constrains, the degree of saturation is high, the possibility of individual choice and speed lane is heavily restricted, traffic flow is still stable.
- **Degree E** – Cars are moving in columns, the degree of saturation is very high, small or short-term increase in the intensities can cause traffic congestion, there is a danger of traffic flow collapse, traffic flow is changed from stable to unstable, flow capacity is filled.
- **Degree F** – The intensity of the incoming traffic exceeds capacity, transport collapses, there are congestions, which alternate with “stop and go” nature of traffic, and highway section is overloaded.

In the case of the inclusion of highway section between the elements of critical transport infrastructure is the task for responsible to maintain a minimum grade C in all situations.

Procedure for performance testing

For testing the performance of highway section as a potential element of critical transport infrastructure is recommended to follow the following procedure:

- to determine the required travel speed,
- to choice of cross-sectional,
- to set the lines and elevation maps,
- to define the desired level of quality,
- dimensioning and calculation of the current share of heavy traffic,
- to affect inventory quantities as longitudinal slope, number of lanes, section position, speed reduction.

CONCLUSION

Taking into account the density of road network, it is possible to conclude with situation, in which if it is not very widespread disruption to roads in the Slovak Republic is in principle possible to set a diversionary routes for the remaining land communications. It seems that the transport processes will be provided but with a time delay, which should not harm the operation of the national economy.

To critical transport infrastructure should include only those transport systems, whose loss, damage or destruction could result in loss of human life, serious damage to human health, property damage, or deterioration environment. The measures used to protect transport infrastructure should be to reduce the possibility of failure and to limit the effects of these failures.

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INTEGRATED SIX SIGMA METHODOLOGY

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ABSTRACT

Six Sigma, Design for Six Sigma (DFSS), and Lean Manufacturing methodologies have been developed in order to enhance the final output from the organization. Six Sigma methodology reduces the variations from different processes and therefore by producing the better quality saves the money to the companies; DFSS creates better processes and therefore final output is more capable to satisfy customers / end-users needs; Lean Manufacturing methodology aims elimination of any type of waste and creates continuous production flow and optimizes organization's processes. By integrating Six Sigma, DFSS and Lean Manufacturing many synergic effects could be reached. Together, these three methodologies create a new way of working that is more powerful and effective than any of the three concepts individually. This article has intention to highlight the most important facts from each methodology, their comparison and strategies for their integration into, so called Integrated Six Sigma Methodology. The article presents how elements of all three methodologies can be effectively integrated to create an effective Integrated Six Sigma production system.

Key words: Six sigma, Design for Six Sigma, Lean Manufacturing, Integration

INTRODUCTION

Today, traditional Six Sigma, Design for Six Sigma (DFSS) and Lean Manufacturing are three most used methodologies for continuous improvements and process development. Most major world-wide companies are utilizing all of them in their full capacity and latitude. Conventionally in some companies, this has been conducted as separate programs; one program for Six Sigma, one for DFSS and one for Lean Manufacturing. This is not usually successful. Many of the possible synergic effects between these three methodologies have been missed and often conflicts arise between programs. Due to the fact that all three different approaches work toward improvements in the companies but having different goals, there is a dilemma how to optimize all three methodologies to work together or simply how to integrate Six Sigma, DFSS and Lean Manufacturing successfully? The answer could be – Integrated Six Sigma Methodology. Integrated Six Sigma, looking from the global perspective, is the combination of traditional Six Sigma variation reduction deployment, sophisticated Design for Six Sigma approach and waste reduction efforts from the process streamlining methods of lean enterprise deployment. Lean enterprise covers waste and cycle time reduction in all processes, including those in manufacturing and business. Similarly, the Six Sigma strategy spans all processes from supply chain, revenue chain, product design, marketing, growth and manufacturing covering both – improvement and new design.

SIX SIGMA

Six Sigma represents the quality methodology which aims to improve the quality of process outputs by identifying and removing the root causes of the problems and to reduce the variability in organization's processes. It uses a set of quality management tools and methods and follows a predefined sequence of steps how to achieve the certain projects. Every six sigma project has to have quantified financial targets either in cost reduction or profit increase. Six Sigma methodology emphasizes:

- continual efforts to achieve stable and predictable process results by reducing the process variation,
- that processes have characteristics that can be defined, measured, analyzed, improved and controlled
- Achievement of sustained quality improvement that requires commitment from the entire organization, particularly from top-level management including financial results.

This methodology which is used for projects aimed at improving an existing business process, comprising five phases, bears the acronyms DMAIC:

1. Define
2. Measure
3. Analyze
4. Improve
5. Control

Six Sigma is also a strategy for cost reduction and growth via a focus on variation reduction in processes. It is also a metric. A process that yields only 3.4 defects per million opportunities (DPMO) rolled through all its steps is referred to as a Six Sigma process. This involves an extensive effort to identify and eliminate the sources of variation.

Six Sigma projects follow two project methodologies inspired by Deming's Plan-Do-Check-Act Cycle EFQM (2009):

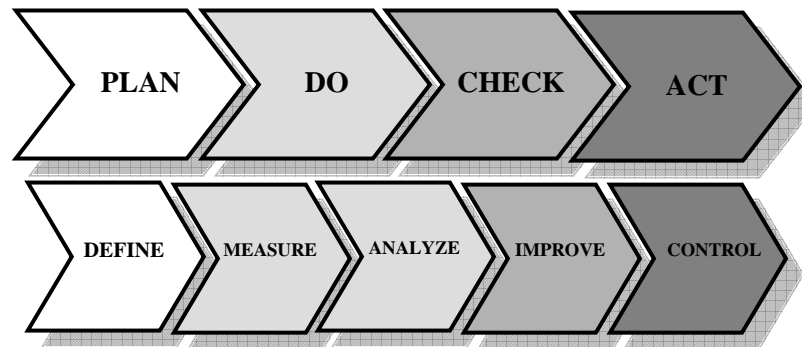


Figure 1: Analogy between PLAN-DO-CHECK-Act and DMAIC Methodology

Six Sigma's goal is the near elimination of defects from any process, product or service, far beyond where virtually all companies are currently operating. The numerical goal is 3.4 defects per million opportunities (DPMO) while higher levels of defects are associated with lower sigma levels. The identification of Critical to Quality (CTQ) variables is one of the first steps carried out after a Six Sigma project is identified. The use of DPMO also avoids the technical point that the Six Sigma goal of 3.4 DPMO is actually the 4.5 sigma one-tailed probability for a normal distribution. Experts in Six Sigma explain this as a typical shift in the mean that happens for most responses. Due to common experience developing and implementing a product quality management system that recognized and estimated both long-term and short-term variability, 4.5 versus 6 sigma difference is as a simplification that recognizes long-term variability.

The immediate goal of Six Sigma is defect reduction. Reduced defects lead to yield improvement; higher yields improve customer satisfaction. The ultimate goal is enhanced net income (Raisinghani, 2005). Six Sigma implementation is top-down. The CEO is usually the driving force, and an executive management team provides the Champion for each project. The Champion is responsible for the success of the project, providing necessary resources and breaking down organizational barriers. On the end, all Six Sigma projects are rigorously evaluated for financial impact they create.

DESIGN FOR SIX SIGMA (DFSS)

Design for Six Sigma (DFSS), or the Six Sigma DMADV process (Define, Measure, Analyze, Design, Verify), is an improvement system used to develop new processes or products at Six Sigma quality levels. It also can be employed if a current process requires more than just incremental improvement.

DFSS is a systematic and structured approach to new products or processes design that focuses on problem prevention rather than correction. This is done with the aim of meeting or exceeding all the needs of the customer and the CTQ output requirements when the product is first released. The major objective of DFSS is to design products / services right at the first time. System consists from the set of tools, engineering and statistical methods to be used during the product’s development. DFSS requires the rigorous use of tools and best practices to fulfill customer requirements and brings financial benefits by satisfying those. One fundamental characteristic of DFSS is the verification, which differentiates it from Six Sigma. The DMAIC methodology, instead of the DMADV methodology, should be used when a product or process is in existence in the organization but is not meeting customer specification or is not performing adequately. The DMADV methodology, instead of the DMAIC methodology, should be used when a product or process is not in existence in the organization and one needs to be developed or the existing product or process exists and has been optimized (using either DMAIC or not) and still doesn't meet the level of customer specification or six sigma level (Tomic, 2009).

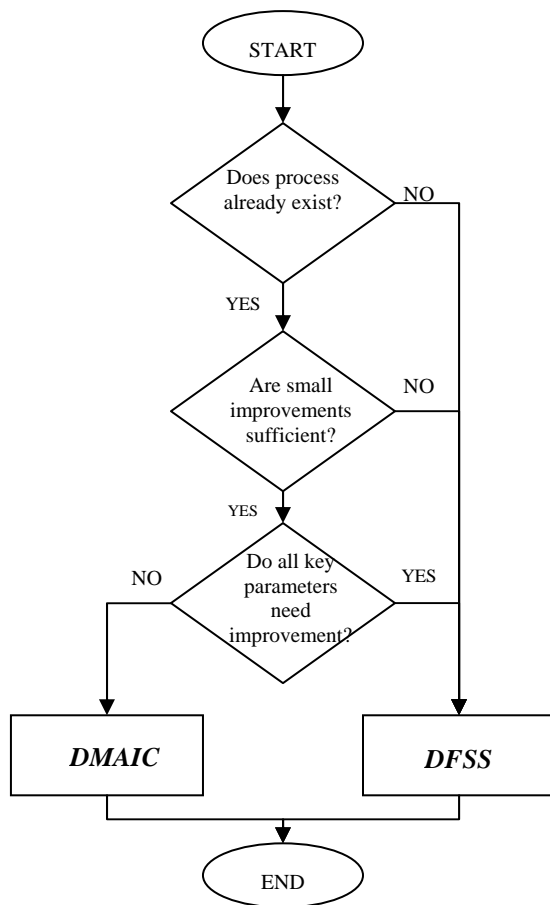


Figure 2: Algorithm when to apply DMAIC or DFSS Model

DFSS is a systematic methodology utilizing tools, training and measurements to enable the organization to design products and processes that meet customer expectations and can be produced at Six Sigma quality levels. The goal of DFSS is to achieve minimum defect rates, six sigma level, and maximize positive impact during the development stage of the products. It is used to develop new products or services with a six sigma criteria, capability, and performance. It utilizes variety of quality oriented tools and techniques to meet customer requirements and has shown an increase in life cycle profits. Essentially, the DFSS process is focused on new or innovative designs that yield a higher level of performance which drives the customer-oriented design process with six sigma capability, predicts design quality and monitors process variances to verify that

customer requirements are met (Kwak and Anbari, 2004).

LEAN MANUFACTURING

Lean manufacturing is a methodology or production practice that considers the use of resources for any goal other than the creation of value for the end customer to be wasteful, and thus a target for elimination. Working from the perspective of the customer who consumes a product or service, "value" is defined as any action or process that a customer would be willing to pay for. Basically, lean is centered around creating more value with less work.

Lean manufacturing is a concept based on optimizing flow. Lean Manufacturing utilizes the set of tools that assist in the identification and constant elimination of waste. As waste is eliminated quality improves while production time and cost are reduced. Examples of such tools are Value Stream Mapping, 5S, Kanban or Pull System, and Poka-Yoke (Error-Proofing).

Lean implementation is therefore focused on getting the right things to the right place at the right time in the right quantity to achieve perfect work flow, while minimizing waste and being flexible and able to change. More importantly, all of these concepts have to be understood, appreciated, and embraced by the actual employees who build the products and therefore own the processes that deliver the value.

The original seven wastes are defined as (Womack and Jones, 2003):

- Over-production
- Waiting time
- Transportation
- Processing
- Inventory
- Motion
- Scrap in manufactured products or any type of business.

Later an eighth waste was defined by Womack as manufacturing goods or services that do not meet customer demand or specifications. Many others have added the "waste of unused human talent" to the original seven wastes.

Lean Manufacturing is therefore the methodology that is about more than just cutting costs in the factory but to provide the real value to the customer / end-user.

INTEGRATED SIX SIGMA

Integrated Six Sigma is an overall strategy to accelerate improvements in all processes, products and services, and reduce the punitive cost of poor quality through elimination of waste and reduction of defects and variations. One of the ultimate aims of the Integrated Six Sigma Methodology is providing maximum value to customers by applying a logical and structured approach to all business processes.

Integrated Six Sigma is a highly respected measure of excellence. It combines traditional Six Sigma, DFSS and Lean Manufacturing in their synergetic effect, expecting benefits that all three approaches usually deliver.

The power of integrating Six Sigma, DFSS and lean principles becomes evident when a process produces a lot of waste, thereby congesting the factory or business environment. High levels of variation are hard to identify, and defectives that need to be reworked or disposed of are sometimes not found until later steps in processing or final inspection. Also, the need for redesign can not be recognized due to ambiguous system performance. Resources that are highly capable in Six Sigma, DFSS and Lean are extremely valuable.

Integrated Six Sigma combines the best practices of all 3 methodologies:

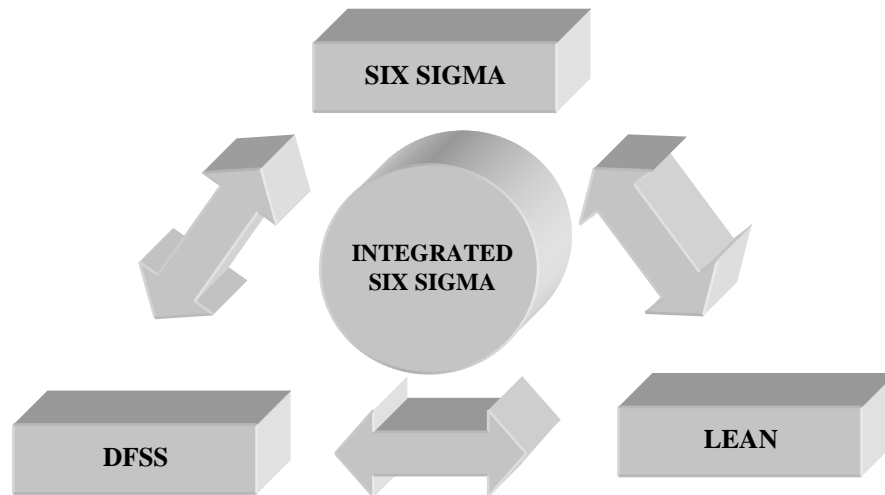


Figure 3: Integrated Six Sigma Methodology

Integrated Six Sigma benefits from the following characteristics of these three methodologies:

Table 1: Key Characteristics of Six Sigma, DFSS and Lean Manufacturing Methodologies

Characteristics	Six Sigma	DFSS	Lean Manufacturing
Improvements	<i>Reduction of Variation</i>	<i>Redesign of product / service</i>	<i>Elimination of Waste</i>
Results	<i>3.4 defects per million chances</i>	<i>Robust Design</i>	<i>Smooth flow</i>
Cost Reduction	<i>Cost of poor Quality</i>	<i>Cost of Poor Quality</i>	<i>Operational Costs</i>
Learning Process	<i>Long</i>	<i>Very Long</i>	<i>Short</i>
Project Selection	<i>Different Approaches</i>	<i>New process, variables - number</i>	<i>Based on Optimal Flow</i>
Length of Project	<i>Up to 6 months</i>	<i>Up to 9 months</i>	<i>Up to 3 months</i>
Initiator	<i>Data</i>	<i>Design</i>	<i>Demands</i>
Complexity	<i>High</i>	<i>Top</i>	<i>Moderate</i>

Integrated Six Sigma strategy places a clear focus on achieving measurable and quantifiable financial returns to the bottom-line of an organization, unprecedented importance on strong and passionate leadership and the support required for its successful deployment, it integrates the human elements, utilizes the tools and techniques for fixing problems in business processes in a sequential and disciplined fashion, emphasizes the importance of data and decision making based on facts and data utilizes the concept of statistical thinking and encourages the application of well proven statistical tools and techniques for defect reduction through process variability reduction methods (Fiju, 2004), it considers the optimal expenditure of resources, it eliminates wastes and creates value for the customer.

All quality improvement occurs on a project-by-project basis and there is no other way (Juran J., 1964). This statement can be considered an essential element in the foundation of Integrated Six Sigma Methodology. Finances spent on Integrated Six Sigma projects should not be considered as cost; they rather be considered as investment due to their long-term effects (Bisgaard and Freiesleben, 2004).

CONCLUSION

Integrated Six Sigma, DFSS and Lean Manufacturing have much to offer to each other. There are many similarities, but also differences. By integrating the best parts from each concept, a new and

much better concept could be created. This has to do with the tools and techniques that are associated with each concept and with the working methodology advocated by them. It is very important to integrate them on a very deep level. Putting them on top on each other is usually not successful. In some situations it can become worse; with conflicts arising between them. Instead, Six Sigma, DFSS and Lean Manufacturing have to be integrated into a common competence where tools, techniques, and working methodologies are combined and mixed in the best possible way.

Integrated Six Sigma is becoming a cornerstone philosophy among the world's leading corporations because it has proven itself by generating substantial business returns. Integrated Six Sigma is also seen as a great framework for twenty-first century leadership.

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INFORMATION SYSTEM AND TQM AS A MEASURE OF MAINTENANCE OF UNIVERSAL LATHES QUALITY

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ABSTRACT

Modern markets require continuous, never ending improvement of product and services quality. In order to achieve that, it is necessary to provide a good, documented system, including all business functions of an enterprise. TQM (Total Quality Management) is an organizational structure that includes responsibility, procedures, processes and resources for control of an information system and quality system, and defines the principles on which most functions within a enterprise are carried out. There are several criteria on base of which the effects of TQM implementation may be evaluated. One of the criteria, not the only one, and not the most important one, is the readiness of manufacturing equipment. This paper considers the possibility of measuring the effects of TQM implementation in maintenance of universal lathes. Correct maintenance and keeping with appropriate procedures in the system of maintenance of universal lathes may help a lot to reduce the number of not expected failures. Reducing the number of failures increases their efficacy, and reduces the production losses due to standstill of manufacturing activities, waiting for the repair to be carried out and the lathes put into function again. TQM should prevent the occurrence of an error in control and maintenance of universal lathes.

Key words: TQM, information system, quality system, maintenance, universal lathes

INTRODUCTION

At the end of the 18th century, the first lathe was constructed, and this tool, with further improvements, became the cornerstone of other machine tool development. Now, lathes are among the most widespread machine tools that have found their place in all workshops. If we look at the number of installed machine tools, e.g. in the USA, we see that grinding machines make 22 %, lathes 21%, followed by drilling machines 19%, milling machines 12%, internal milling machines 8%, while all other types make 18% (*figure 1.*).

Today it is hard to imagine any machining workshop without this type of machine tool. Up-to-date construction and high quality of fabrication, make universal lathes one of the most perspective machine tools. Their capabilities allow them to be used in single, low series and high series manufacturing. Such all-round capability widens the field of application of universal lathes. The revolver head multi tool mounting capability enables the fabrication of highly complicated parts. With appropriate adjustment, applying different tools, various operations can be performed: coarse and fine machining, undercutting, cutting of, drilling, widening, indentation, makes internal and external threads, etc.

Universal lathes should be, as any other machine tools that are involved in manufacturing, to be part of the working process as long as possible. In order to achieve this, it is very important to give them maintenance as good as possible, to reduce the possibility of failure. Statistical analysis shows that the capacity of these lathes is reduced by about 10%, due to failure.

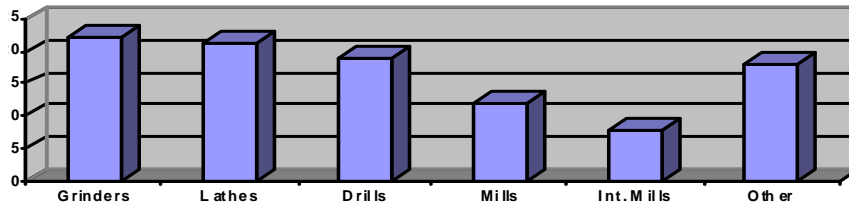


Figure 1: Percentage of machine tools, per type, in the USA

TQM

By integrating an information system and quality system based on ISO 9000 standards, a maximum of quality is achieved, and the necessary pre-conditions for development of TQM (Total Quality Management) are established (figure 2.). TQM ensures the highest level of product quality. TQM is based on continuous improvements and enhancements of both quality system and information system within the enterprise. The ISO 8402/94 standard defines TQM as: "management philosophy focused on quality, with active participation of all employees, oriented towards long-term successful satisfaction of consumer requirements, with special attention to benefits for employees and society in general." The definition of management may be defined as control of individuals and processes in conditions given, in order to achieve the objectives set. In Russia, for example, management is translated as administrative control. When implementing a quality system or information system in an enterprise, both systems should be implemented at the same time. This approach only leads to TQM.

QUALITY SYSTEM

The quality system is an organizational structure comprising responsibility, procedures, processes and resources for management of quality, and defines principles on which most of the functions within an enterprise work. Quality needs to be made part of a product.

That may be achieved only by introduction and consequent use of a quality system that should include all manufacturing processes, from product design to product service. Implementing a quality system in maintenance of ploughs and sowing machines, should result in reducing malfunction, and prevent the possibility that a malfunction occurs at all. In order to achieve this goal, it is necessary that appropriate precise procedures, providing for accurate instructions referring to: WHO is responsible for doing a job, WHAT needs to be done, WHEN it needs to be done, WHERE it is done, HOW it is done, WHAT it is done WITH, and WHAT it is carried out ON, exist.

INFORMATION SYSTEM

Implementation of information systems in management of the maintenance, respectively into the process of planning and providing spare components together with modern diagnostic methods are essential conditions for successful and efficacious preventive maintenance of equipment used in open-pit coal mining. Crucial task of every information system is to provide business system with relevant information about the condition of the observed business system thus enabling management to make decisions and manage the system. For the correct operation of the information system, considering the large number of the participants, it is very important that all the participants, without exceptions, strictly follow the same work methodology and timely provide information crucial for own tasks and tasks of the other participants with common tasks. In such view of the information system development, it is necessary to observe and guide it as a group but continue developing some components together and some individually with every participant with respect to requirements of the information system.

Software engineering considers engineering and development of the information systems structured and well-defined process that employs well defined methods and techniques. CASE (Computer Aided Software Engineering) is software solution for modeling business organizations, their activities and information system development. CASE includes use of computers as a development tool for constructing models which describe certain processes, environments for those processes, respectively

models that aid in planning development of organization's growth and information system development-from planning to implementation. With the assistance of BP Win-a the following diagrams could be assembled.

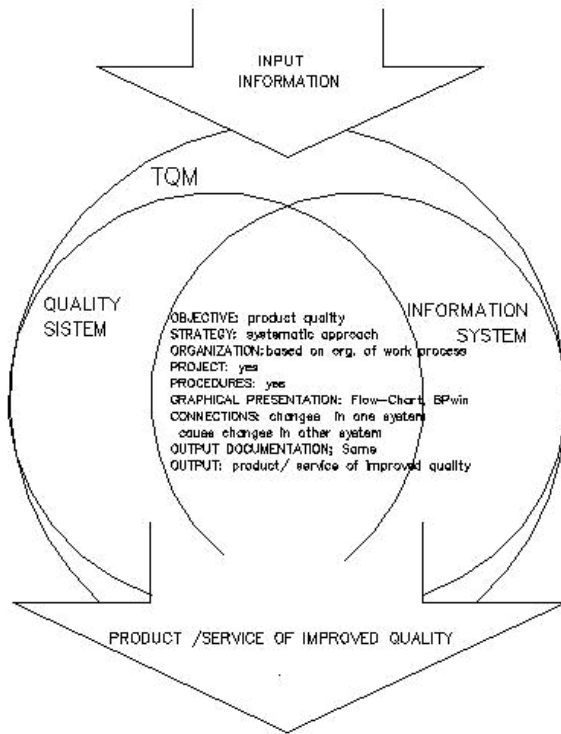


Figure 2: TQM flow chart

Contextual diagram - Figure 3, shows the basic flow of data and is presented by a process and its links to the surrounding. On it we can see input information flows for a observed process, the output information flows from the observed process, control functions which act upon the observed process and resources necessary for processing incoming information. The contextual diagram is a more general diagram of data flow.

Data flow diagram - Figure 4, is an assembly of parallel processes and links between them with data flow and data files (archives). It is more detailed than the decomposition diagram and is used where it is possible to define processes, inputs and outputs from the process, , archives and links to other processes and other adjacent data diagrams.

Decomposition diagram - Figure 5, is a graphical presentation which hierarchically describes a process or object which consists of more sub-processes of the same type, and these again divide into sub-processes of the same type e.g. a complex process develops into a hierarchy of sub-processes having the shape of a tree. The root of the tree is a starting process and the last branches present the most simple processes which cannot be further divided into sub-processes

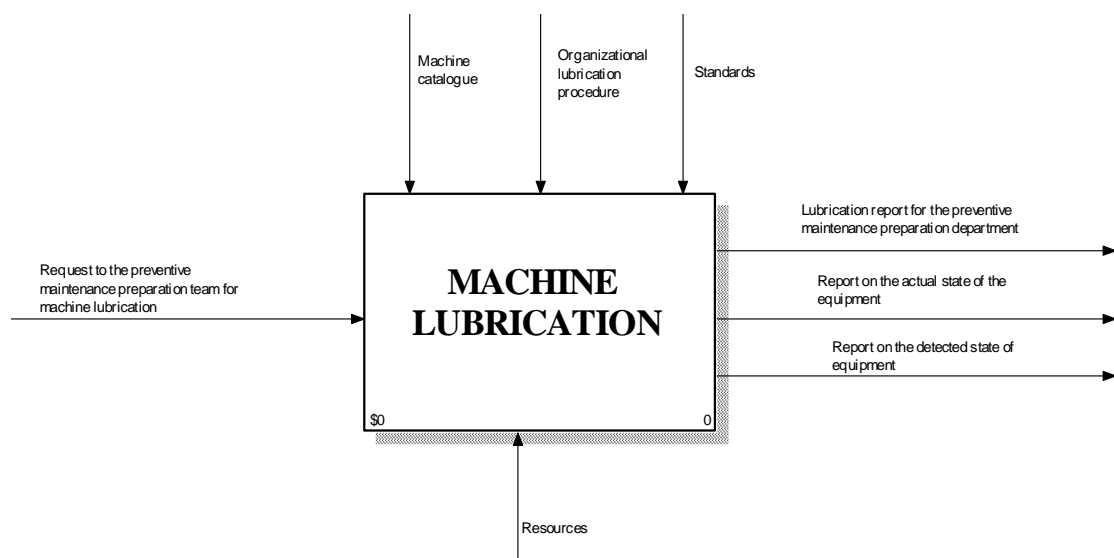


Figure 3: Contextual diagram

CRITERIA FOR EVALUATING TQM

Measuring of evaluating TQM is not always an easy task. However, to be able to establish quality, we must define certain, based on which we be able to evaluate the TQM of a product or service, in advance.

Some criteria for the evaluation of TQM, could be: reliability of a technical system, failure frequency, operating readiness, availability of equipment, functionality, correspondence, usability, appearance (design), documentation.

MEASURING THE EFFICACY THE TQM

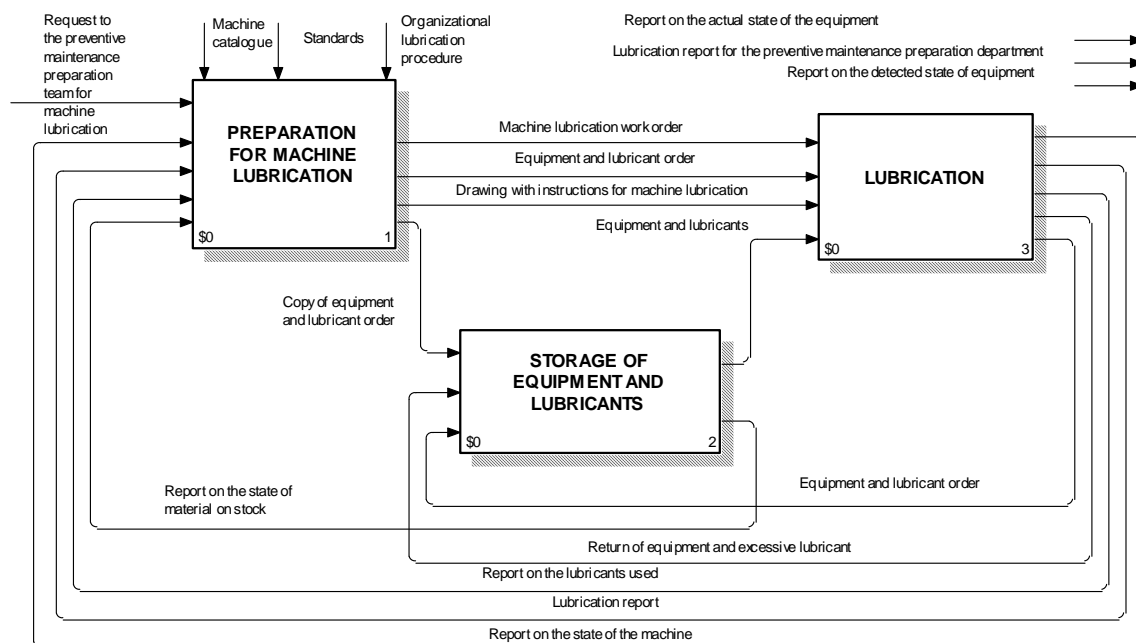
Availability of manufacturing equipment is one, not the most important, from a number of criteria for evaluating efficacy of the TQM. By comparing statistically recorded values of availability from two different periods, we can come to an adequate evaluation of the TQM level, i.e.

$$O_{SK} = R(t_1) - R(t_2)$$

where:

- O_{SK} - TQM evaluation between two periods of time, t_1 and t_2
- $P(t_1)$ - Availability of manufacturing equipment at t_1
- $P(t_2)$ - Availability of manufacturing equipment at t_2

It is obvious that, by implementing the procedures and principles of the TQM in the maintenance sector of the agricultural machines factory, there is an increase of their availability, which, in a quantified way, speaks of the effects of implementing the TQM.



Resources

Figure 4: Flow diagram

RESEARCH RESULTS

At the "Zmaj" agricultural machines factory in Zemun, quality and information system were implemented simultaneously. One of the segments of this projects are the Contextual diagram, data flow chart and structural diagram of the manufacturing equipment maintenance section.

At "ZMAJ" factory observed were time intervals of maintenance duration on a certain number of universal lathes, i.e. the time these machines spend in maintenance (preventive, corrective), and following average values have been determined and are shown in table 1.

Observed was a sample of 54 lathes, average age was 34 years. The most frequent types of failures occur on: support screw spindle, nut for moving lateral support, front bearing of revolver head, front bearing of operating spindle, cooling pump, gear change coupling, main drive belts

Average repair time for universal lathes is: for bearing replacement, 5 workdays, fabrication of screw spindle, 7 work shifts, electrical failure, 0,5 hour, belt replacement, 2 hours, pump replacement: 1,5 hours (without motor repair), 3 shifts (with motor repair)

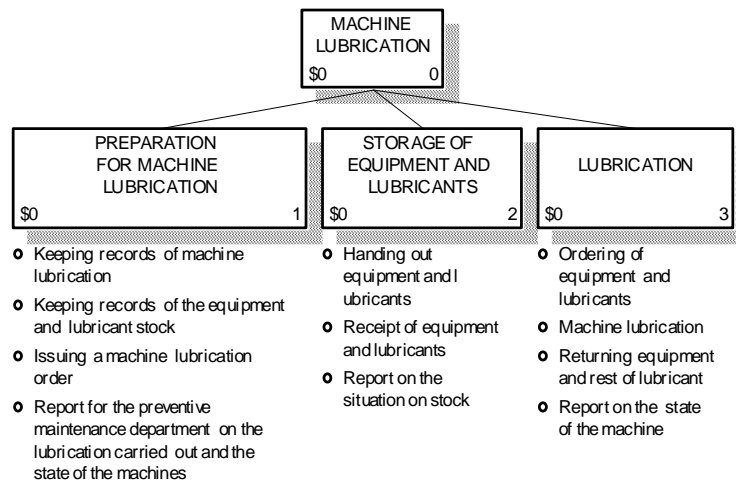


Figure 5: Decomposition diagram

Table 1: Average failure time for universal lathe

	Failure time of universal lathes (h)				
	1996	1997	1998	2000	2001
electrical failures	7	7	6	7	8
hydroinstallation failures	16	14	13	14	13
mechanical failures	152	143	135	139	132
total	175	164	154	160	153

Possible manufacturing capacity of the "Zmaj" combine production facility per one shift is 1725 h/year. We analyzed the work in one shift, with an amount of 1725 h/year. (365 days- 52 sundays-52 Saturdays-8 holidays -20 days off) x 7,5h = 230 days x 7,5h = 1725 h/year)

Operating availability is a suitable criterion for evaluation of effects of implementation of quality system and information system in the maintenance section of "Zmaj" factory. Operating availability of universal lathes may be determined by using:

$$Ro = t_k / (t_k + t_z)$$

where:

- t_k = Km - t_z - time in operation,
- t_z - failure time (table 1.)

The calculated values of Ro are shown in table 2.

Table 2: Operating readiness of universal lathes

	Operating readiness of universal lathes (%)				
	1996	1997	1998	2000	2001
electrical failures	0,9959	0,9959	0,9965	0,9959	0,9954
hydroinstallation failures	0,9901	0,9919	0,9925	0,9919	0,9925
mechanical failures	0,9119	0,9171	0,9217	0,9194	0,9235
total	0,8985	0,9049	0,9107	0,9072	0,9113

If the results obtained from table 2 are shown in the form of a diagram, we get a curve that can be approximated by the curve shown in figure 6, according to the following equation:

$$y = a + bx^{1,5} + cx^{2,5} + dx^3$$

where the equation parameters are:

$$a = -3210635; \quad b = 179,64366; \quad c = -0,16178; \quad d = 0,002$$

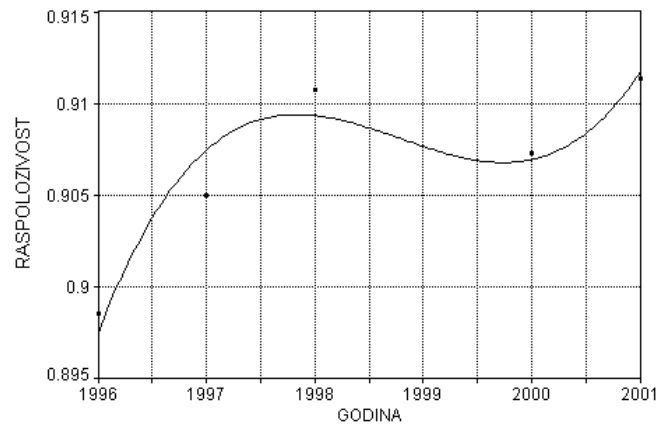


Figure 6: Operating readiness of universal lathes (curve)

Operating readiness of universal lathes is one of a series of criteria for evaluating effects. Comparing statistically recorded readiness of universal lathes in two different periods of time, we get the following evaluation of success:

$$O_{SK} = Ro(t_1) - Ro(t_2) = 0,9113 - 0,8985 = 0,0128$$

From figure 6, we see that implementing procedures and principles of a quality system and an information system in the maintenance section of "Zmaj" agricultural machines factory, taking the example of universal lathes, leads to an increase of their operating readiness, which tells us in a quantified way about the effects of implementation of these two systems. From the diagram in figure 6 we see that for years 1998 and 2000, there is a certain reduction of operating readiness, which was due to political circumstances in country.

CONCLUSION

The evaluation of implementation of quality system and information system offers a possibility to assess all the work and recognize errors and undertake appropriate actions to eliminate them. Readiness is only one of many criteria. The research results show that implementing quality system and information system, and adopting TQM philosophy for maintenance of manufacturing equipment leads to a higher level of readiness.

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IT AND NEW MODELS OF EDUCATION IN MANAGEMENT OF EDUCATIONAL PROCESS BASED ON ALTERNATIVE ENERGY SOURCES

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ABSTRACT

The aim of this paper is to present the distance learning and heuristic model of learning as a methodical innovation with a emphasis on individual learning, where every team member has to be aware of the significance of his work, must know and apply certain methodology and new IT technologies in teaching. Heuristic approach to the problems of teaching in technical and IT fields of education should enable the team member the ability to creatively solve problems and acquire new knowledge, to learn, think and develop the capacity for learning with new information technologies (Internet and mass use of electronic resources knowledge). It is, therefore, such an approach that is not based on passive observation of phenomena and impersonation performed by a teacher, but establishing an active relationship with the phenomena of thought and introduces team member (pupil, student, PhD student) in independent research heuristic conceived of the problem (the problem with width range of solutions - in this case "Distance learning with heuristic model of education and alternative Energy from liquid accumulator" in function of education in Emergency situations. The attempt of this paper is to use the heuristic models of teaching and distance education, for increasing the effects of learning and teaching in Technical and Information fields, and how can these models more effectively contribute to the training of personnel in emergency situations. With the research of this innovation, the hypothesis is confirmed. The application of heuristic model of teaching in Tehnical and IT Education allows to achieve greater effects of teaching and learning, and their application in practice in education for action in emergency situations.

Key words: Heuristic model of education, methodological innovation, teamwork, Information technologies, management of educational process.

INTRODUCTION

In the contemporary world of future (post-industrial, technological, informational, global) will require people trained, ready and able to use the new complex tools, quickly and efficiently adopt, build and implement a variety of knowledge, active and responsible participation in complex social and economic relationships and processes in everyday life, especially in emergency situations.

Starting from the framework of joint education and training projects designed for the European Union in 21 century, which contains basically: education for life, education, learning in a democratic society, education to develop creativity, critical thinking and discovery of talents, education for autonomy and freedom to work, as well as for self-education, and training for civil society with wide skope of educated, to the successful design of technological information and education through teaching Polytechnic science (technical, technological and IT education in primary, secondary and higher education, free technical activities of students, elective programs, and extracurricular activities through amateur radio clubs, voluntary fire brigades, dive clubs and other organizations concerned with education in the protection and rescue of people and material

goods) and the creation of continuity in monitoring, training and future training of personnel necessary reformed Civil Defence, as part of the defense system of Serbia and Civil Protection within the Emergency Department, trained in institutions of civil society with new trends in Europe (education for democratic and civilian control of the army, as well as training of personnel of the existing system and future integrated system 112), we approached this study that was just in that scope.

This approach provides a new quality and continuity in monitoring, training, training and education of future employees that will be necessary for future reformed Civil Defense, as well as to prepare them for further education in specialized military institutions if they wish.

In a world that is changing rapidly and in which knowledge is expanding on a daily basis and unsuspected sources of information multiply, data, information and facts can become irrelevant and outdated even before they are used. With the heuristic approach to the problems of planning and designing future systems in the function of emergency situations, we tend to overcome these problems.

DISTANCE LEARNING EMERGENCY

The breakthrough of new information technologies, integration and concentration of electronic media in one system is the essence of multimedia systems for a new type of computer connected television, interactive video, teletext, telephone, sound and photography, computer networks and reprography will allow teaching and learning at the individual level and differentiated according to their abilities and capacities.

IT Opportunities in overcoming emergency situations

The aim of this work from the point of IT is to present the possibilities of education through information technologies in emergency: Severe epidemics of influenza and pandemic situation, which could cause the closure of educational institutions and quarantine. Designing and creating a model in the case of an emergency pandemic include: Assessing readiness; Formulating a plan to use e-learning; Creating a model for online learning; Short run solution; Long run solution

E-learning solutions

Creating a totally online learning mode demands much dedication and effort in order to reach or exceed face-to-face effectiveness, so expectations of eLearning have to be tempered. Administration (Online curriculum, information via SMS, email, Twitter-like sites ..., LMS / CMS) Teaching (Webcast & podcast, screencast ... Slideshare.com, Scribd.com) Communication and Collaboration (Skype, Blogs, Wiki, Google Docs, Chat room, Forum ..)

Preliminary E-learning

Preliminary usage of E-Learning in schools, in terms of blended learning, meaning that some aspect of learning is conducted via IT-based methods of learning and conventional face-to-face teaching will certainly raise the level of preparedness and easier transition to a full online IT-based education in pandemic emergency situations.

Preliminary E-Learning will include conventional methods of teaching backed up by Information Technologies in interaction with students, such as: Exchange of materials in digital form; Research during the lecture; Exercises, showcases; Tests, etc.

Blended e-learning offers the possibility of changing the attitude on where and when the learning will take place and in terms of what resources and tools can be used. It offers the integration of different "spaces", for example, we can use e-learning environments within physical teaching spaces. The potentials offered by online learning using the Internet to deliver or support learning activity, has been long recognized as offering important advantages in transition to full Online Learning of fully computer mediated courses.

Keys to the success of any Web-based Online Learning experience are the design and planning behind the program. Though the students do not necessarily realize it, the instructor's creative thinking and organizational skills become even more important when there is no face-to-face interaction. The core content does not change, but new strategies as well as additional preparation time are required for developing effective communication techniques and building an environment conducive to learning from a distance. Despite the fact that students have less encounters with the instructor, the instructor is still responsible for focusing on the learning objectives and determining the best ways to express the course concepts. The instructor must gauge student progress without any of the visual clues observed when working with a student face to face. To accomplish this, the instructor must construct the right combination of flexible, independent learning and guided instruction.

In order for all methods of instruction to be efficient and effective, more resources and training should be encouraged while proper integration of traditional distance education, face-to-face contacts, web-based delivery and formal systems should be regarded as complementary with each other.

HEURISTIC AS A TERM

While the term "heuristic" means "science of finding new ways of scientific knowledge. Heuristic approach to the problem of the empirical search or optimization method usually solves the problem, but there is no evidence that mathematicians and physicists accept. No one knows whether it will always give the best answer (solution).

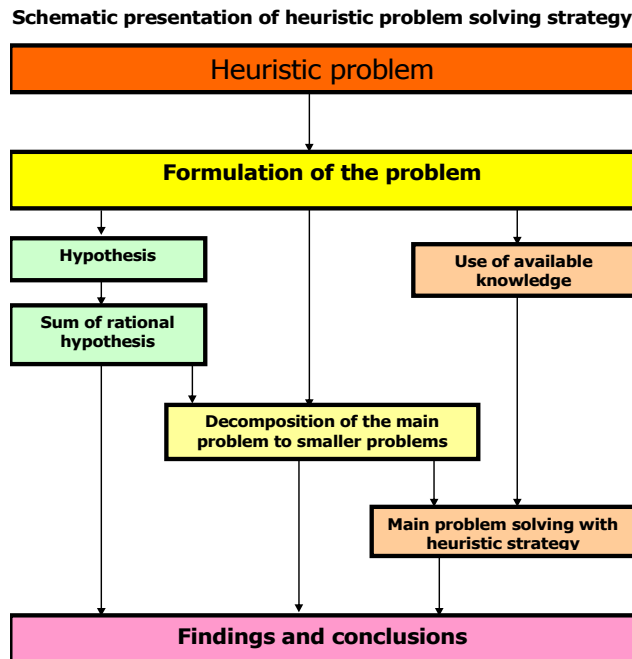


Figure 1.

Under the heuristic modeling involves the creation of such a heuristic model that has meaning and represents more originals in one model, ie.a model allows the identification of new knowledge and develop the creativity of students requiring this or that level of independence while respecting each student's individual knowledge (Example: hybrid generators of renewable energy-wind, solar, water, etc.). The heuristic model is determined by very few actions during problem solving so that leaves a team member (staff for emergency situations) the possibility of finding one or all possible solutions depending on the knowledge, degree of autonomy and his creative abilities. This approach to problem solving allows each team member (staff for emergencies) to achieve their best, as weak, average, and above-average, for talented team members. Installation problems heuristic strategy means that a member of the team put in a position to identify, using old experiences in new situations, knowledge is known to lead to a new situation (function), discovers new ways of creative problem-solving.

TEACHING TOPICS

Distance learning, heuristic model education and alternative energy sources with liquid battery

We chose to implement a number of teaching units within the chosen teaching subject, which contribute to the development of logical-dialectical thinking of the respondents, while teaching the technical and IT education provides scientific and dialectical character and orientation of the Polytechnic as a pedagogical-didactic categories derived from the goal of teaching the above topics.

Special attention was paid to the didactic-methodical approach to the class organization and creation of heuristic problem situations and the formulation of problems with the heuristic property of distance learning in the function of looking at the newly-defense system in emergency situations. Special emphasis is placed on the possibility of education through information technologies, for example, using alternative sources of energy in emergency situation: Severe epidemics of influenza and pandemic situation, which could cause the closure of educational institutions and quarantine. (instructions are given to educational leaflets).

HYBRID GENERATORS

This general overview of hybrid networks showing the basic layout and connectivity of each component.

Although most systems have only one or two sources, in this case three renewable energy sources (wind, micro hydro and solar module generator) battery-powered liquid accumulator. Energy from liquid battery powered inverter that converts DC power into AC, suitable for household outlet. The controller battery - cordless power boiler and heater provides battery against overcharging. The meter displays system status. auxiliary generator is used as a complementary tool in cases where renewables do not have enough power to recharge the battery ie. maintenance.

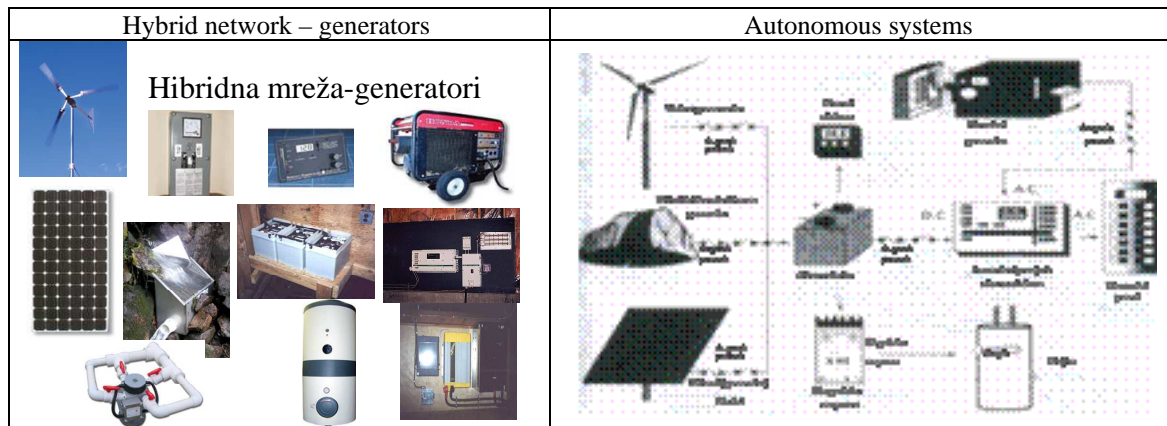


Figure 2

LIQUID ACCUMULATOR

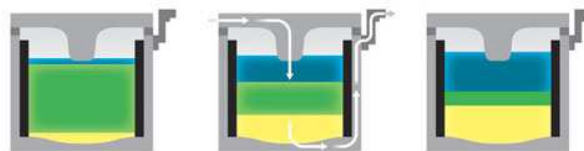


Figure 3.

The figure 1 shows the operation of the new battery. Left: Molten active component (blue - magnesium, green - an electrolyte, yellow - antimony) new types of batteries. Battery is ready for filling, with positive and negative magnesium ions antimoniskim dissolved in the electrolyte. Midfielders: Electric current flowing through the cell, the magnesium ions in the electrolyte and the electrons create appropriate the magnesium metal that is combined with the magnesium electrode. Right: The electrolyte is more expensive, and electrode growth.

Conventional batteries are using at least one solid active material. In the lead-acid battery in the figure 1, the solid plate electrodes are immersed in liquid electrolyte. Solid materials limit the conductivity and hence battery power supply that can circulate. They are also susceptible to cracking, decay and decline in performance over time, which reduces the time of use.

Without a suitable way to store electricity on a large scale, solar energy is wasted at night. One option that promises a new type of battery - the liquid battery, which is completely made of a liquid active materials. The prototype provides a cost that is only a third of today's best prices akunulatura, and provides much longer life.

The first prototype consists of a casing surrounded by insulating material. The researchers added melted pure materials: antimony at the bottom, an electrolyte such as sodium sulfate or magnesium in the middle to the top. As each material has a different density, naturally remain in separate layers, which simplifies production.

Materials are cheap, and the design makes it easy to create.

Battery is not similar to any existing. The electrodes are molten metal and an electrolyte that conducts electricity between the molten salt. This results in unusually flexible device that can quickly absorb large amounts of electricity. The electrodes can operate with electric currents, "tens of times larger than ever measured (on batteries)" - a prototype of a team of scientists led by professor of materials chemistry at the prestigious Massachusetts Institute of Technology (MIT), Donald Sadovej. These liquid batteries have the advantage of the cheaper, longer lasting and more useful in a wide range of applications.

After prototyping, Sedvej and his team experimented, experimenting with other metals as the electrodes, according to their estimates, the battery with liquid metal to the market appears to be the 2014th year.

CONCLUSION

Strengths and oportunities of IT and heuristic model of training in terms of problem solving in the field of emergency situations

- Team work in solving problems in emergency situations.
- More people will bring different skills into the team, which improves efficiency.
- More knowledge and information
- Heuristic prediction problems
- Greater understanding and commitment to extraordinary problems, situations.
- Focus on problem
- Decision-making in stages with the corresponding activities. Phase of decision-making is a decision-making process and includes the following activities: problem analysis and definition of objectives, risk analysis, development strategies, development of models and simulations of behavior and decision-making and its transfer to the subjects.
- Application of heuristic techniques to solve combinatorial problems in emergency situations.
- The application of heuristic methods is focused in two directions: (1) to solve complex problems that can be presented in quantitative form but are so complex that their solution can not be found by using rigorous analytical techniques and (2) problems that can not be represented matemetičkim model because the variables in the model of quantitative nature. Heurističke goal is to provide methods of finding acceptable solutions to complex problems that can not be solved by classical methods.
- Solving problems heuristically conceived (the term means: the relative skill of using knowledge to achieve this objective, the transformation of the situation obtained in the desired or predefined by the problem of understanding and implementation of appropriate management actions. The term means razumvanje troubleshooting events and transformation of knowledge into appropriate action. Solving problems can be achieved in two ways: using heuristic methods (solving the problem in terms of data management) and application of analytical methods (solving the problem in terms of governance models).
- Develop models and methods that would improve the quality of quantitative decision-making means (software support), and for more rational use of resources (energy, money, time, labor, food, etc..) In all emergency situations.
- Proposing original solutions to be competitive and leading research in the field of emergency situations.
- Involving young researchers and train them in the future to be the leading national and world experts in the field of emergency situations.
- Preliminary use of models in which the use of information technology during conventional lectures can have positive effects on:
 - The willingness of students / pupils and teachers in potential pandemic situations,
 - Easier transition to fully learning via the Internet or lectures that are supported by information technologies.
- Such a model can be used for classes and education in rural areas where there are difficulties in transport / carriage or insufficient numbers of students.

Effects of education trough problem solving with heuristic in terms of increasing educational outcomes

The experimental problem was realized on the selected syllabus of tehcnical, technological and IT education, suitable for processing heuristic approach that is conditioned adequate teaching methods, forms and means of work and constant learning. Implementation of work in experimental group E1 was carried out through the intense work of student thinking, respect for certain stages of work and increased cognitive effects.

The survey was conducted in classes V, VI, VII and VIII grade "Djura Jaksic" in Zrenjanin. The experiment included four classes of fifth to eighth grade and make an experimental group, "The experiment with one experimental group," where we want to determine how the students' progress in adopting the technical education curriculum using a heuristic model of these themes. The experimental program content selected classes were implemented using the heuristic model as a

guide (guide) in the implementation.

Dependent variable of experimental studies have been defined as "increased effects of teaching technical education through the use of heuristic models."

The impact of using a heuristic model on the effects of teaching technical education is reflected in the results of testing students' knowledge.

By studying heuristics in teaching, analysis and selection was performed with the most appropriate choice of content, which ensures optimum use of the effects of teaching technical education in terms of combining frontal and individual work.

The results of experimental action factors obtained on the basis of the testing of pupils at the end of each lesson or a specific topic. To determine the effect of experimental factors clear from the results of the final state, ie. quantity of acquired knowledge, we took the initial state (what the students already knew) that. the results of the initial conditions which were identified at the beginning of subject testing these students. The experiment included 84 students, the arithmetic mean of the final state of all students $X_f = 4.29$, the arithmetic mean of the initial state of all students $X_i = 3.45$, therefore, the average efficiency factor of the experimental $XF = X_f - X_i = 4.29 - 3.45$, or 0.84 percentage = $XF\% = 17\%$. Of course, we did not manipulate the results of individual pupils, but we considered the mean. Based on this we can conclude that the pure effect of heuristic models about 17%, which means that the level of knowledge of students increased at the end of the implementation units, ie. block hours by 17% compared to the knowledge that students had at the beginning.

These results are used to design and draft curriculum for training of personnel to act in emergency situations, in order to create continuity in monitoring, training and future training of personnel necessary reformed to act in emergency situations in order to educate youth in the spirit of rational use of energy, through team work on a joint project that combines different ideas of team members for example - Hybrid generators in the production function using alternative energy sources (wind, solar, hydro miko, biogas, etc..), making these systems operational emergency and the transition to distance education .

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STABILITY INTERVALS OF THE CRITERIA IN MULTI-CRITERIA DECISION MAKING

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ABSTRACT

This paper presents an approach in analyzing a structure of preferences of decision maker, in order to better expression of subjective assessments of the decision-maker in the selection of criteria which are included in a multiple criteria base and determination of their relative importance. Multiple-criteria ranking of alternatives was carried out by the widely applied PROMETHEE method.

Keywords: multi-criteria decision making, PROMETHEE methods, preference of decision makers

INTRODUCTION

At making business decisions, there is a strong tendency that the decision-making process becomes more efficient. At this respect are increasingly applied different methods for comparison of multiple criteria alternatives. By applying methods for multi-criteria ranking, it is possible objectively comparison of a number of alternatives, evaluated in a number of different systems of various criteria, given in different units, with different relative importance, and with a different request for minimization and maximization. Several considered alternative solutions are compared to enhance the probability to obtain a better final result - better decisions and selection of the best solution, in accordance with established requirements, stated by quantitative and / or qualitative criteria.

The multi-criteria decision aid method provides the DM with tools that make it possible for him or her to solve problems taking into consideration different points of view, which are sometimes contradictory (Vincke, 1992). Many studies have been published on MCDM methods (Triantaphyllou, 2000), (Brans et al, 2002), (Figueira et al, 2005), (Belton, Stewart, 2001), (Radojicic, Zizovic, 1998).

At solving a problem of multiple criteria, one of the key questions is just the choice of criteria which constitute the basis for a multiple criteria decision making and defining the structure of preferences of decision maker. In the selection of criteria, which are included in a database for multi-criteria decision making, efforts should be directed to the choice of the lowest possible number of different criteria, which gives a comprehensive and objective picture of the overall benefits of an alternative. This means to insist on the use of selective criteria. Defining structure of preferences, of decision maker, is a particular problem at multi-criteria decision making.

Depending on used methods there are different ways and possibilities of subjective influence. Methods of PROMETHEE type (Brans, Vincke, 1985; Brans et al., 1986; Mareschal, 1988)

introduce non-linearity of preferences and give more possibilities for expressing subjective preferences, by selecting a type of preference function and values of parameters. The used PROMETHEE method bases on additive value functions, (Bouyssou et al, 2006). The PROMETHEE family of outranking methods and their applications has attracted much attention from academics and practitioners. In the paper (Behzadian et al, 2010), a classification scheme and a comprehensive literature review are presented in order to uncover, classify, and interpret the current research of PROMETHEE methodologies and applications. One presentation of the applicability of this method is given in (Radojicic et al, 2011; Vesic-Vasovic et al, 2011).

PREFERENCE STRUCTURE OF DECISION MAKERS

The problem of multi-criteria decision making, in most cases of solving practical problems, is reduced to the task of determining a final ranking of alternative solutions, evaluated in a system of different criteria, using appropriate methods.

By a global comparison of two alternatives a_i and a_k , based on the preferences of a decision maker, can be obtained one of the following situations:

- $a_i I a_k$ – there is an indifference between alternatives a_i and a_k ,
- $a_i P a_k$ – a_i is strictly preferred in relation to a_k ,
- $a_i Q a_k$ – a_i is less preferred in relation to the a_k
- $a_i R a_k$ – alternatives a_i and a_k are not comparable
- $a_i S a_k$ – a_i is generally better than a_k , $S = I \cup Q \cup P$

The main preference relational systems are (Bana e Costa, 1997): $\{P,I\}$, $\{P,I,R\}$ and $\{S,R\}$. Generally, in case of comparing two alternatives a_i and a_k , according to the criteria j , preferences are related as:

$$\begin{cases} a_i P_j a_k \Leftrightarrow e_j(a_i) > e_j(a_k) \\ a_i I_j a_k \Leftrightarrow e_j(a_i) = e_j(a_k) \end{cases}$$

The possibility of using constant thresholds for determining the preference relation is shown in Figure 1 and includes the following cases:

- if the $p_j=q_j$ then the pseudo criterion becomes a quasi criterion;
- if the $q_j=0$ then the pseudo criterion turns into a front criterion;
- if the $p_j=q_j=0$ then are applicable realistic criteria.

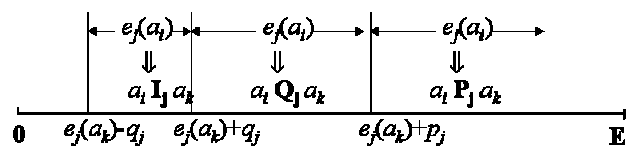


Figure1: Thresholds of preference relation (Bana e Costa, 1997)

The relative preference scales will be illustrated. These are simply scales anchored at their ends by the most and least preferred options on a criterion. The decision maker distributes its preferences by individual criteria along the unnamed scales 0-1 which solves a problem of normalization of criterion values. The most preferred option is assigned a preference score of 1, and the least preferred a score of 0. Scores are assigned to the remaining options so that differences in the numbers represent differences in strength of preference. The values of considered alternatives, for each of the established criteria, may be expressed quantitatively or qualitatively.

In the paper (Wolters and Mareschal, 1995) are considered three approaches: 1) the use of weaker information on the criteria; 2) the use of weight specification methods; 3) the use of sensitivity analyses to study the consequences on the results of modifications of the initially specified weights.

In the paper (Podinovski, 2008) a set of interrelated methods is presented for analyzing multicriteria decision-making problems on the basis of an information on the criteria importance and change of the preferences along their scales. The paper (Mareschal, 1988) study the stability of the results given by a wide class of MCDA methods to changes of the weights of the criteria. The philosophy of preference disaggregation (Jacquet-Lagrèze and Siskos, 2001.) in multicriteria decision-aid systems is to assess global preference models from the given preferential structures and to address decision-aiding activities.

Sensitivity of the final results changes of multi-criteria ranking on changes of input parameters is an important issue in the final discussion of the results of the MCDM analysis. The authors (Wolters, Mareschal, 1995) presented three types of sensitivity analysis:

1. to determine the sensitivity of a ranking to changes in the data of all alternatives on certain criteria;
2. to determine the influence of changes in the scores of a specific alternative on certain criteria;
3. to determine the minimum modification of the weights required to make a specific alternative ranked first.

The type of weight sensitivity analysis proposed in this paper (Wolters and Mareschal, 1995) supports decision makers in gaining this insight, by exploring the total weight space, meanwhile taking into account specific requirements on the variations of the weights.

THE MULTI-CRITERIA RANKING BY APPLICATION OF THE PROMETHEE METHOD

The selection of the most favourable investment alternative out of 6 estimated ones (IP_1, IP_2, \dots, IP_6) in the system of 6 various, diverse criteria (c_1, c_2, \dots, c_6): economic-financial criterion (internal rate of return, economy, payback period) and technical-technological criterion (installed capacity, the number of needed workers, ecological suitability) was made by applying PROMETHEE method with proper software support.

Design of multi-criteria base (Table 1) has been performed by defining potential alternatives and criteria systems for their assessment, with appropriate relative importance. For each of the criteria, the relative importance was determined by applying expert evaluation methodology; also, the requirements for minimization and maximization per each criterion were established.

Table 1: Multi-criteria base for ranking the alternatives

Criteria				Alternative investment projects					
c_i	Name	Relative importance	Request max/min	IP_1	IP_2	IP_3	IP_4	IP_5	IP_6
c_1	Production capacity	0.3	max	184	143	180	163	160	154
c_2	Internal rate of return	0.3	max	22	20.3	21.5	18.8	22.4	18
c_3	Number of workers needed	0.1	min	83	80	97	65	90	70
c_4	Economy	0.1	max	1.4	1.3	1.6	1.47	1.27	1.33
c_5	Payback period	0.1	min	6.4	7.9	6.8	8.4	8.9	7
c_6	Ecological level	0.1	max	0.7	0.6	0.9	0.8	0.67	0.64

To each of the reviewed criteria, Gaus' criterion was joined with relevant calculated values of standard discrepancy. Based on distribution of values of alternatives under each of the criteria, the programme performed the calculation of parameter σ for each reviewed criterion (table 2).

In this way, particular preferences are expressed per criteria and conditions are made for application of PROMETHEE method. Due to the selection of the preferential function and proper parameters values, the decision maker can express his/her preferences per particular criteria. In this way, the decision-maker can obtain one arrangement of alternatives set according to which he/she would act, i.e. make decisions based on compared alternatives rank.

Table 2: Parameter σ

Criteria	c_1	c_2	c_3	c_4	c_5	c_6
Parameter σ	14,22	1,64	10,95	0,11	0,90	0,10

The designed multi-criteria base presents the foundation for the continuing of the process of multi-criteria ranking by applying PROMETHEE method, with relevant support of the software Visual PROMETHEE (Mareschal, 2011). A new PROMETHEE-GAIA software named Visual PROMETHEE is developed by Bertrand Mareschal at ULB (Mareschal, 2009).

Using multi-criteria ranking of reviewed alternatives the advantage of alternative IP_3 - is emphasized as regards to other compared ones. On the second place there is investment project IP_1 which presents a less efficient solution, and then there follow IP_5 , IP_6 , IP_2 .

SENSITIVITY ANALYSIS

The sensitivity analysis is a stage in the model evaluation that examines the extent of output variation of a model when parameters are varied over a range of interest. Sensitivity analysis provides a means for examining the extent to which vagueness about the inputs or disagreements between people makes any difference to the final overall results.

When the weights of the criteria are modified, the position of the decision axis changes in the GAIA plane. It reflects the type of compromise that is proposed by PROMETHEE. To better appreciate the robustness of the PROMETHEE ranking sit is also possible to represent the area in the GAIA plane where the tip of the decision axis moves when the weights are changed with in specified limits. (Mareschal, De Smet, 2009). In the example, the «brain» is large and overlaps the origin: the decision axis can point in any direction and the PROMETHEE ranking could be quite sensitive to weight variations (Figure 2).

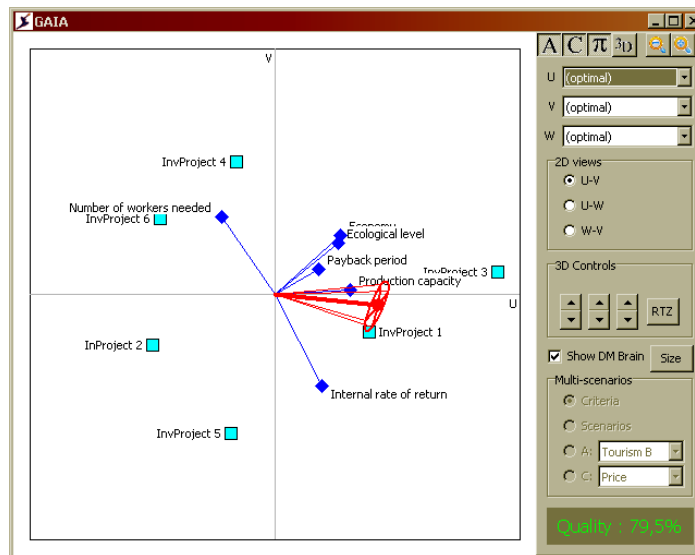


Figure 2: The GAIA plane

The quality of the GAIA plane is an important factor to consider. It is measured by D (the percentage of information retained in the GAIA plane). The GAIA plane provides the decision maker with reliable information when D is sufficiently large, for instance larger than 80% (Mareschal, 2009).

Using the model sensitivity analysis is possible to see how a change in the relative importance, weights of each criterion influences the change of the representation of alternatives. Each criterion provides specific, partial characteristics of considered alternatives (Figure 3).

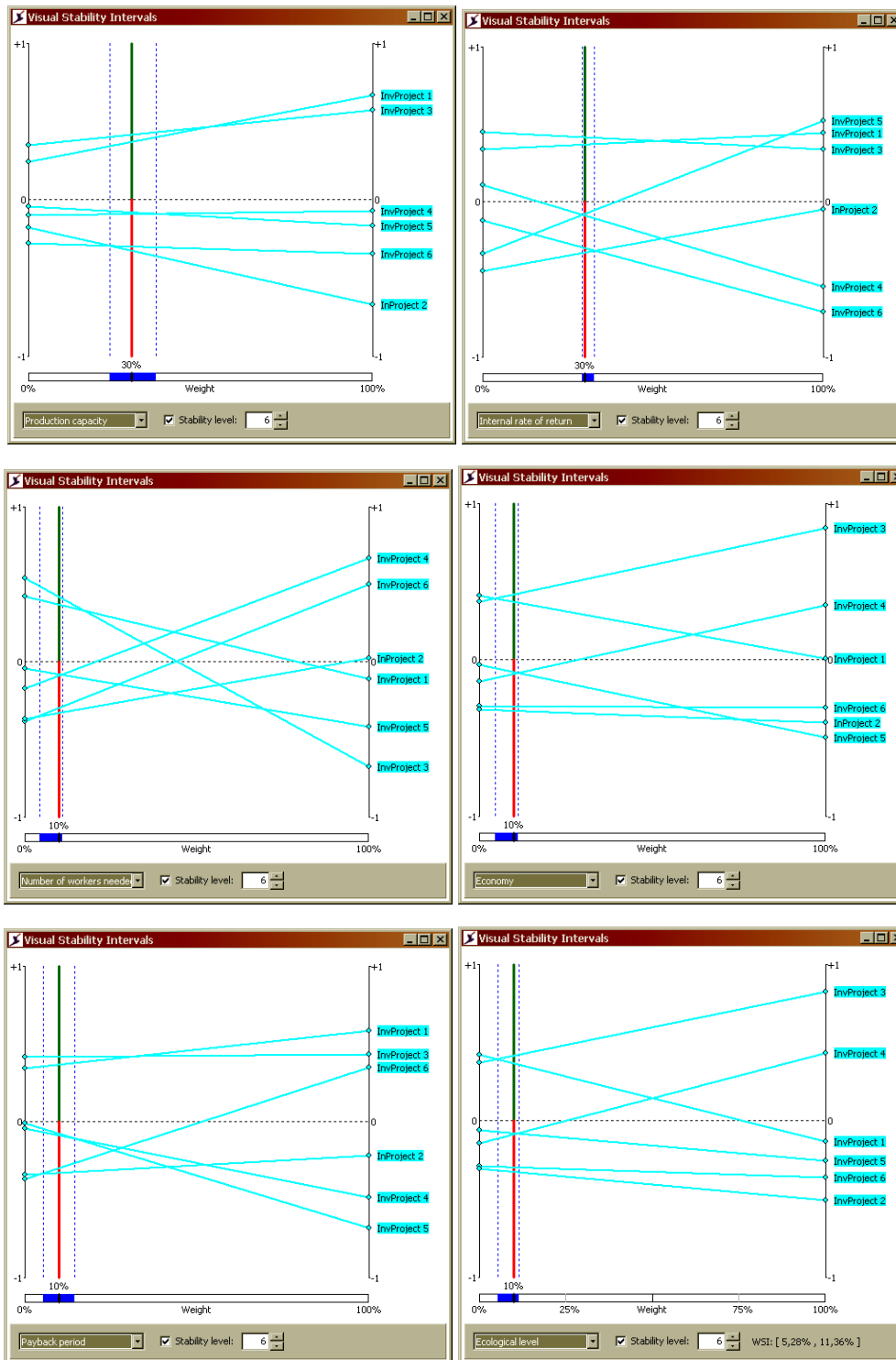


Figure 3: The stability intervals of the criteria

By analyzing the results of sensitivity to change of preferential functions and parameters types and relative significance in relation to the adopted ones, almost negligible differences in pure flows values for simulated variants were established, which confirms the selection of alternative InvProject3 (IP₃) as the most favorable one (Figure 3).

Using the model to examine how the ranking of options might change under different scoring or weighting systems can show that two or three options always come out best, though their order may shift. According to these definitions every judgement about criteria importance induces an indifference or preference relation in criteria space.

CONCLUSION

The main role of decision maker, in solving a problem of multi-criteria decision making, is reflected not only in the final decision, but in a multi-criterion definition, selection of preferential functions, determination of relative importance of criteria and appropriate parameters. This is the most delicate point in solving a problem of decision making. At this sense, this paper points to some possibilities of a decision maker, to control the process of multi-criteria analysis and participates in the selection of the final solution. By selection of appropriate preferential functions, decision-maker expresses the specificity of available criteria, and its own preference for particular criteria.

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REVIEW OF THE E-CRM CONCEPT IN THE ADVANCED TELECOMMUNICATIONS COMPANIES

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ABSTRACT

The telecommunications sector is testifying a cruel competitive market, where customers enjoy the privilege of switching from one service provider to another because customers want quality services at lower price. Nowadays, modern telecommunications companies have realised the fact that their ability to compete in competitive marketing environment is solely dependent on their building and thereby maintaining relationship with their target customers through Internet and other electronic technologies and electronic channels. Electronic customer relationship management (e-CRM) concept can be seen to originate from the consolidation of traditional CRM concept with the electronic business applications marketplace. This paper deals with e-CRM concept in telecommunications industry and explores the some possibilities offered through this concept for domestic telecommunications companies.

Key words: CRM concept , e-CRM concept, possibilities of e-CRM concept, e-business

INTRODUCTION

There are few causes that support the importance of adopting e-CRM practices in the telecommunications industry. The cruel competition, new technologies, market changes forced telecommunications organizations to reposition themselves in order to survive. Many telecommunications organizations realized the value of retaining customers and benefits of customer loyalty.

The survival of any modern business is based on its ability to retain customers. The telecommunications sector is testifying a cruel competitive market, where customers enjoy the privilege of switching from one service provider to another because customers want quality services at lower price. The telecommunications industry is experiencing an average between 10 % and 67 % annual churn rate, which can be informally defined as the process of customer turnover (Hughes, 2007), and it costs 5-10 times more to recruit a new customer than to retain an existing one (Lu, 2002).

Recently it has been acknowledged that company relationships with customers can be greatly improved by employing information technology (Karimi et al., 2001) which can facilitate and enhance customer relationships in various ways but mainly enables companies to attain customisation, which is the essence of a customer-centric organisation (Stefanou et al., 2003). Electronic business (e-business, defined as business activities conducted over the Internet) has been one of the most remarkable information technology innovations in the last few decades.

A new term for taking care of customers via the Internet, e-CRM, is recently applied by some organizational and academic communities (Ragins and Greco, 2003). Judicious use of e-business impacts an institution's interaction with its customer interactions in a wide variety of areas: new

distribution channels; new markets; new business models; transparent marketplace; e-CRM, reduced costs and improved service (Foss and Stone, 2002).

Organizations today realize the fact that the customer is the driver for their success and survival, so firms seek to meet customers demand and their expectations by using new technologies available. Many organizations are moving towards web-based customer services to reduce costs and provide real-time services to improve customer's convenience and satisfaction.

In the past, organizations used traditional ways to interact with customers by using direct mail, sponsorship, public relations, press releases, exhibitions, merchandizing, word-of-mouth, personal selling. Nowadays, organizations can manage customers' relations through the Internet and other electronic technologies and electronic channels in more efficient and effective way, called e-CRM. The purpose of this paper is to introduce a coherent view of e-CRM concept in telecommunication industry. It promotes the value of e-CRM concept by researching the chances made for telecommunications firms and the some benefits they have realised in practice.

FUNDAMENTALS OF THE CRM / ELECTRONIC CRM

Two tenets of customer actually exist. The first is that a customer focused company needs to have a single, unified view of each customer. Conversely, customers need to have unified view of business regardless of the business unit or channel with which they are working. This bi-directional view is critical for true CRM concept. Regardless of touchpoints or channels (customer support centers, direct mail, telesales, direct sales, e-commerce, Web), clients want recent contacts (including complaints) or interaction to be known and reasonable personal recommendations to be made.

As a result, the need for this bidirectional view has also promoted a paradigm shift towards effective and relevant customer interaction, which provides the ability to have a personalized dialogue/conversation with each individual customer seamlessly across channels/touchpoints and over time with the following attributes of (Janjicek): engage customers in a constant conversation; customize conversations to the individual; coordinate all conversions centrally; deliver conversations on any channel (preference of the customer). The ability to support customer interactions consistently across channels or touchpoints is the prerequisite to sustaining the customer experience, customer loyalty and profitable customer relationship.

In real meaning, CRM concept allows an company to deliver its products and services according to the customer's preferences. CRM is a customer focused business strategy that aims to increase customer satisfaction and customer loyalty to offering a more responsive and customized service to each customer (Croteau and Li, 2003). With the advent of Internet, CRM has enhanced an organization's capability by providing access to its customers and suppliers via the web. This web experience and communication through the wireless web is called e-CRM.

The Internet is advancing e-CRM and it has features that are attractive to customers and business organizations. The differences between CRM and e-CRM are underlying technology and its interfaces with users and other systems. In e-CRM, the customer with a self service browser based window can place orders, check order status, review purchase history, request additional information about products, send emails and engage in a host of other activities. These capabilities provide customers freedom in terms of place and time. E-CRM concept can be seen to originate from the consolidation of traditionary CRM concept with the e-business applications marketplace.

In general, CRM systems use client/server technologies where all programs and applications are run on one or more centralized server. The front-end operations of the system interface with the back-end operations through traditional ERP systems. The system does not use data warehouses. ERP systems act as data repositories and capture data from both the front-end and back-end operations. The usual customer touch points are retail stores and the organization's customer service and support centers i.e.; personal contact through retail outlets, telephone and fax.

With advent of e-CRM, the interface between the front-end and back-end operations is not only through ERP systems but also utilizes data warehouses. Data warehouse is multidimensional database which represents logical collection of information, gathered from several operational databases, used to create business intelligence in support of business activities and decision making. Today's data warehouses are sophisticated computer systems which enable managers to simple and almost instantaneously access requisite data (Stojkovic, 2008).

The users in e-CRM are the employees of the organization or the retail store's personnel. The system provides access via a set of predefined menus and choices, which can not customized by the user. Any customization requires making significant changes at the system level. In e-CRM, an individual can easily customize these applications and menus through their web-based user interfaces. On the other hand, in e-CRM all applications are designed and implemented for optimal web interaction and experience. The browser is the medium and it allows access to appropriate information without any reference to the podium/platform of the client. From the customer's perspective, it is just like accessing different web pages.

ELECTRONIC CRM AND ADVANCED TELECOMMUNICATIONS ORGANIZATIONS

Indeed, CRM systems are widespread in the telecommunications industry, where many companies are operating on a mass market and the quality of customer service is a major competitive factor (see also Figure 1) (Anon, 2006). Almost one fourth of telecommunications companies said that they have installed a CRM system – a share which is more than double as on average in all 10 sectors studied 2006 year by the e-Business W@tch. CRM software suites are quite expensive and require a lot of organisational effort to be effectively implemented in a company. This should be the main reason why the diffusion of CRM systems increases with firm size (see also Figure 1).

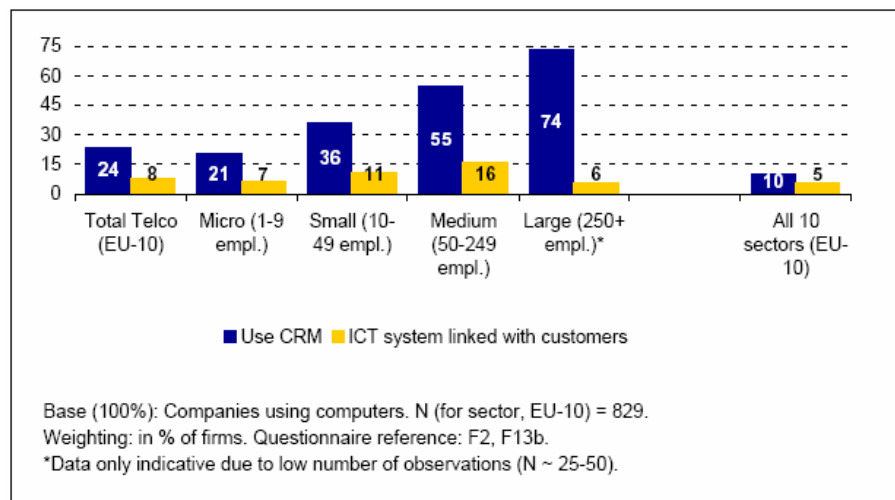


Figure 1: Use of CRM and integration of ICT systems with customers (Anon, 2006)

Some possibilities of e-CRM concept for telecommunications organizations include: improved customer interactions and relationships; increasing in customers, revenue and profits; and leveraging e-CRM capabilities as a potential source of competitive advantage.

E-CRM involves three phases, all of which are designed to manage the customer life cycle and maximise customer lifetime value (Kalakota and Robinson, 2001): acquiring new customers; enhancing the profitability of existing customers and retaining profitable customers for life. All of these phases are dependent on the quality of customer information and insight available to the organisation.

The core of the knowledge base in CRM systems consists of individual information items and dynamic knowledge bases which when properly designed and implemented can remove many of

the administrative demands within organisations and present better information to customers at a lower cost (Ahn et al., 2003). Well defined segmentation will also lead to cost effective marketing efforts and increased profits. Coupled with other technology at the back end such as customer databases, warehousing and data mining, value adding and personalised products or services can be offered which in turn create an edge over competing companies (Ab Hamid, 2005).

The approach to well defined segmentation facilitated by e-CRM technology can be seen in the case of KPN Mobile N.V., a leading European mobile telecommunications network operator and provider of mobile voice and data services with over 15 million customers. As a result of high customer churn and low sales within the saturated mobile market, KPN turned its attention to its high-value customers and launched a CRM Implementation for Very Important Customers (CIVIC) programme. These customers were prioritised when calling the contact centre and routed immediately to a dedicated CIVIC team member. All details of the customer's history are shown on the agent's monitor including contact details, mobile call and service behaviour as well as ongoing campaigns and individual privileges to be offered. As a result of this initiative customer satisfaction ratings reached 90% and more and more contracts were being renewed. Success of the programme at KPN is measured using the following key performance indicators: reduction of customer churn, increased customer lifetime value and reduction of operational costs.

Budget Telecom is a small French telephony service provider that offers low-cost telephony connection services to worldwide customers (www.budget-telecom.com). The company's business model is almost entirely based on the Internet that is used as a low-cost channel for acquisition and marketing activities. Budget Telecom also uses its websites as a basis for customer relationship management. Since the majority of Budget Telecom's customers use online services (e.g. for registration), customer data can be easily stored and processed in real time. Mr. Caballero explains: *"Our technicians have programmed applications with a web interface that allows employees that are in charge of customer care to access the necessary data."* Mr. Caballero himself uses such applications for compiling statistics, which he needs for planning, tracking and analysing marketing campaigns. *Thus*, he concludes, *"Budget Telecom uses the web as a powerful and efficient CRM tool."* (Stiehler, 2006).

The number of active customer has significantly increased from less than 1,000 (at the end of 2000) to about 100,000 in April 2006. Between 2004 and 2005, the number of customers increased from about 42,000 to 70,000. Revenue has grown by about 40% (from ca. €10m to ca. €14m) and net profit by about 30% (from ca. €1.8m to €3.2m). The increase in customers, revenue and profits confirm the success of this strategy.

For companies at the forefront of CRM development, opportunities exist to reinforce their competitive advantage through the extension of the customer-centric strategic orientation to incorporate innovative e-CRM strategies and technologies. For example, eircom has adopted e-CRM as a strategic imperative with net benefits for both the company and its customers. Eircom's on-line sales and service channel, www.eircom.ie, was first developed as a high-level static marketing site in 1999 but since then has been upgraded to a fully integrated enterprise-scale portal application, incorporating a personalisation platform and content management system, which currently supports over 180,000 electronic customers. The implementation of e-CRM has dramatically reduced the cost of communicating with customers and has led to reduced administrative and operational costs. Online transactions are fully integrated with eircom's core provisioning and other enterprise applications. E-CRM has developed significant scalability benefits to the organisation in comparison to traditional call centre and sales force operations and the on-line channel is perfectly placed to positively meet any increased traffic.

With e-CRM customer-centric organizations can use customer information to better manage pricing and marketing decisions in real time, and in the case of eircom e-customers are incentivised by reduced prices for a number of products and services online.

SHORT REVIEW OF THE CRM REFERENCE MODEL FOR TELECOM FIRMS

Hewlett Packard has developed an industry-based Reference Model (Janjicek), which is logically layered model that includes touchpoint, business application, process, CRM, Data management and Decision support layers (see also Figure 2).

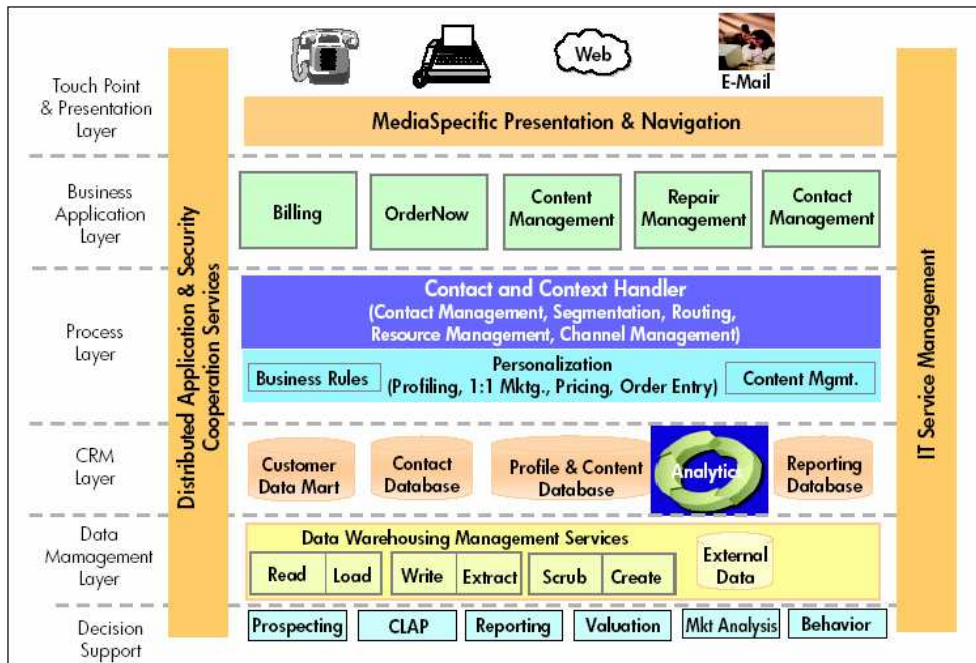


Figure 2: Reference model of CRM concept for telecommunications industry (Janjicek)

Touchpoint and presentation layer presents information to the business end-user through a communication channel-specific device. The presentation and navigation displays a consistent “look and feel” for input and output information in the format required by the device (e.g., browser, terminal, keyboard, keypad, phone) that is consistent across different business processes and their functions.

Business application layer determines the communication touchpoint being used, and transforms knowledge from the touchpoint to the Application such as Billing.

Process layer provides services to different communication touchpoint-specific devices, from a single implementation of that specific device. The process layer is separated into a Contact, Context handler and personalization.

CRM layer represents databases that consist of the single customer view, integrated contact/dialogue, customer profile, and content information. This layer also provides for the ability to perform analytics and reporting on the customer experience by using the variety of knowledge gained from all customer activity.

Data management layer is the first layer that has no direct link to the business processes. It represents purely IT centred objects: Transactions (get data x for user y and reservation z), direct read/write operations (read user profile u), etc. Its main function is the separation of data storage from business process functions. This is done by wrapping the calls to the new or legacy systems and presenting them as objects to the higher layers.

Decision support layer: Regulatory changes have made telecommunications industry so competitive that many existing databases, campaign management applications, etc. exist and need to be leveraged in the upper layers of this model.

Vertical layers of this reference model provide services that are required by all the horizontal layers.

Distributed application and security cooperation services: In order to support the management of objects between the various layers some generalized support will be required. The CORBA (Common Object Request Broker Architecture) of the OMG (Object Management Group) consortium's OMA (Object Management Architecture) is an example of this support.

IT service management: All components in the model will have to be managed for availability and performance (Service Level Agreements). IT management processes and technology must be in place in order for an IT organization to deliver quality services to its customers.

CONCLUSIONS

This paper offers coherent view of e-CRM concept in telecommunications industry. It promotes the value of e-CRM concept by researching the chances made for modern telecommunications companies and the some benefits they have realised in practice like improved customer interactions and relationships; increasing in customers, revenue and profits; and leveraging e-CRM capabilities as a potential source of competitive advantage.

Budget Telecom which uses the web as a powerful and efficient CRM tool is an illustrative example for domestic telecommunications companies of how small telecommunications companies can use simple e-business technologies to establish a visible brand and reach customers on a global scale. Understanding of the e-CRM concept and its possibilities in telecommunications industry will help domestic telecommunications companies in their operations; will create assumptions to improve the relationship and satisfaction of their customers and to increase their market share.

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MOBILE CRM CONCEPT IN THE TELECOMMUNICATIONS INDUSTRY

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ABSTRACT

Year by year, Customer Relationship Management (CRM) concept has become a topic of major importance. However, the mobile communication channel as an element of CRM concept is rarely taken into consideration. This paper deals with these issue by providing an explaining of how to utilize the mobile communication channels in CRM concept with the emphasis on the telecommunications sector.

Key words: e-CRM concept, telecommunications, mobile communications, m-CRM concept utilization

INTRODUCTION

Nowdays, modern telecommunications organizations have realised the fact that their ability to compete in competitive marketing environment is solely dependent on their building and thereby maintaining relationship with their target customers through electronic technologies and electronic channels. Therefore, Customer Relationship Management (CRM) concept has become a topic of major importance. However, the mobile communication channel as an element of CRM concept is rarely taken into consideration.

In the past, firms used traditional ways to interact with customers by using direct mail, sponsorship, public relations, press releases, exhibitions, merchandizing, word-of-mouth, personal selling. Nowadays, firms can manage customers' relationships through the Internet and other electronic technologies and electronic channels in more efficient and effective way, called electronic customer relationship management (e-CRM).

Judicious use of e-business impacts an institution's interaction with its customer interactions in a wide variety of areas: new distribution channels; new markets; new business models; transparent marketplace; e-CRM; reduced costs and improved service (Foss and Stone, 2002). Typically electronic and interactive media such as the Internet and email are seen as playing the most significant role in operationalising CRM as they support effective customised information between the organisation and customers. However, e-CRM can also include other e-technologies and new e-channels including mobile telephony, customer call and contact centres and voice response systems. The use of these technologies and channels means that organizations are managing customer interactions with either no human contact at all, or involving reduced levels of human intermediation on the supplier side.

Firms today realize the fact that the customer is the driver for their success and survival, so firms seek to meet customers demand and their expectations by using new technologies available. The objective of CRM is, on the one hand, to build and maintain customer relationships and to provide value for customers on the other. Despite the potential of traditional CRM to provide value for customers, customers are expecting more and more individual attention. New digital marketing

channels such as the Internet and mobile phones are considered powerful channels to reach customers because they allow personalisation and interactivity of the content and the context of the message (Kim et al., 2004). The emergence of mobile commerce has led to the introduction of new products, new ways of selling products to customers and new learning curves for companies in terms of how to manage interactions with customers (Wright et al., 2002). Mobile customer relationship management (m-CRM) represent a subgroup of e-CRM.

The purpose of this paper is to enlarge knowledge about the application of mobile communication channels in customer relationship management concept of domestic organizations with accent on the telecommunication sector.

SHORT EXAMINATION INTO PRACTICE OF M-CRM CONCEPT IN THE TELECOM

Mobile CRM concept is a subgroup of e-CRM concept. The mobile medium serves the traditional CRM system well because of its unique characteristics, such as accessibility, broad reach and interactivity (Turban et al., 2007).

Mobile CRM is a term for CRM systems which make use of mobile devices like cellular phones, PDAs and smartphones but also on-board vehicle computers or notebooks. The basic idea behind m-CRM concept is to provide IT support for customers and/or employees in mobile scenarios. Mobile scenarios include different levels of mobility: a user can work at different places (serial mobile) or while being in motion (walking on customer's premises). For the last case there are additional requirements with regard to the dimensions of the devices and the provision of connectivity.

Mobile CRM (m-CRM) expands the channels of CRM to the customer and supports actors of CRM using mobile technologies (Sundararajan, 2002). CRM concept requires that the firm manages and coordinates the customer interactions across different customer touch-points. For a relatively long time, customers have expected to interact with organizations for example via phone, fax, e-mail, and Internet. As the uppermost purpose of CRM is the ability to communicate with customers on an individual basis, mobile medium represent an appealing additional channel that can complement the existing channels (McManus and Scornavacca, 2005). Since mobile technologies have become ubiquitous, customers have begun to expect to interact with organizations via mobile medium on anytime and anywhere basis as well. Several industries have attracted to the potential of utilizing mobile medium and used it to activities which can be classified as being part of m-CRM concept.

Really, the potential of m-CRM concept is acknowledged also among academics although the empirical research is still quite rare. Therefore, m-CRM systems will be a requisite to compete and retain customers who are mobile users (Martyn, 2001).

The essence of convergence between CRM concept and mobile medium is to make both the customers' and firms' life easier for doing business with each other. The utilization of mobile medium may offer several benefits to both the firms and the customers. The benefits may include: learning from and about customers, revealing their needs and interests, and on this basis, making it possible to provide customers with better and more personalized service. For example, the Internet has given power for the customers to get up-to-date information, ability to more easily compare products and services, and to get in touch with companies (Robins, 2000). In other words, m-CRM concept aims at finding ways to make customers' interaction and relationship with the company more positive by saving time, frustration, costs and inconvenience.

Although, utilization of mobile communication channel to promote CRM activities is a relatively new area, it enables novel ways for managing customer relationships which were not possible before. There are several reasons behind high expectations laid to mobile medium in using it for CRM purposes. For example, mobile medium is considered to be powerful opportunity to reach customers (Kim et al., 2004), offering various opportunities for the organization to plan and implement more advanced ways to communicate with the customers. Especially, the SMS is seen as immediate, automated, reliable, personal, discreet and customized channel making allowing an efficient way to reach customers directly. Additionally, mobile medium allows high speed message delivery, relatively low cost and high

retention rates (Anon, 2002). Because of these characteristics, m-CRM concept is likely to be suitable also for the industries, such as telecommunications, involving a lot of customers to communicate with.

To further elaborate mobile medium, the most essential characteristic that differentiates the mobile from traditional media is the concept of interactivity (Barwise and Strong 2002). Interactivity means two-way communication enabling real-time dialogue between organization and its customers as well as the opportunity to the instant response for both of the parties. In other words, mobile medium transcend traditional communication by incorporating interactivity. In that sense, it seems that mobile medium may not have a comparative alternative when building a continuing dialogue between the organization and the customer.

Research model is developed to test the interrelationship between the level of exposure to mobile communication technologies and the chance of adoption of mobile commerce (Khalifa and Cheng, 2002). The result showed a positive correlation between the two variables. Furthermore, some authors acknowledged that mobile commerce has led to new ways of sales transaction processes, managing customer relations and introducing new products. Therefore, customer value mobile commerce is estimated to be substantial, suggesting that e-CRM using mobile communication technologies can provide a more efficient way of interacting with customers in fast changing environments (Reinhold and Alt, 2009).

The mobile business industry has emerged as a growing industry; innovative technologies have created the large scope for new and effective services. As a result the mobile and personal nature of wireless devices provides a set of unique attributes such as (Singh and Singh, 2011): ubiquity, reachability, localization, personalization, dissemination and convenience. They are considered to be a distinctive advantages upon which mobile services can build their value proposition.

With regard to technology, mobile CRM services may be delivered in various formats thanks to various technologies which can be based on messaging (SMS, MMS), browsing (WAP, i-mode), video streaming and applications download (J2ME, BREW).

The Italian context is chosen as field of research because it is an advanced market with one of the highest rates of mobile phone ownership in the world, ranking second in Europe in terms of mobile telephony penetration, fifth worldwide in total number of mobile subscribers and having one of the highest per capita SMS usage rates in the world (Camponovo et al., 2005). As shown in Figure 1, survey indicates that the large majority of services are delivered in the form of SMS messages (86%). A modest number of services (23%) are available through browsing. Finally, almost inexistent are the services available with multimedia content using MMS (1%) and video streaming (1%).

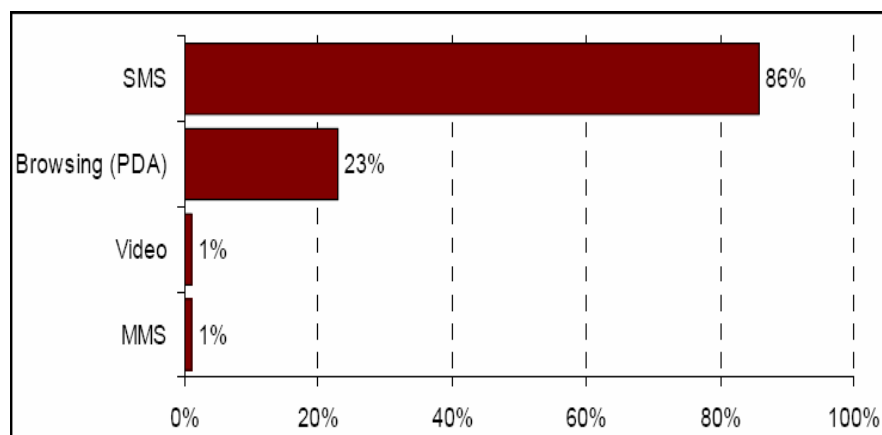


Figure 1: Repartition of mobile CRM services by delivery technology (Camponovo et al., 2005)

The current situation in terms of technology is thus rather deceiving given that the predominant technology is SMS, which is the most limited medium of delivery as it can only convey a low amount of text. However, it is often sufficient for sending small but relevant pieces of information. The major reason is the low adoption of the newer generations of devices and networks, which limits the user base available to more advanced services such as those based on MMS or browsing with multimedia content. Fortunately, there is a marked trend towards the adoption of newer devices, which should encourage the future development of more compelling and presumably innovative services. As well, the proliferation of wireless LAN hotspots may also become a useful alternative delivery technology.

CONCEPT OF M-CRM WITH THE EMPHASIS ON THE TELECOM INDUSTRY

The survival of any modern business is based on its ability to retain customers. The telecommunications sector is testifying a cruel competitive market, where customers enjoy the privilege of switching from one service provider to another because customers want quality services at lower price. The telecommunications industry is experiencing an average between 10 % and 67 % annual churn rate, which can be informally defined as the process of customer turnover (Hughes, 2007), and it costs 5-10 times more to recruit a new customer than to retain an existing one (Lu, 2002).

There are few causes that support the importance of adopting m-CRM practices in the telecommunications industry. The cruel competition, new technologies, market changes forced telecommunications firms to reposition themselves in order to survive. Many telecommunications organizations realized the value of retaining customers and benefits of customer loyalty.

Indeed, CRM systems are widespread in the telecommunications industry, where many companies are operating on a mass market and the quality of customer service is a major competitive factor (Anon, 2006). Almost one fourth of telecommunications companies said that they have installed a CRM system - a share which is more than double as on average in all 10 sectors studied 2006 year by the e-Business W@tch. CRM software suites are quite expensive and require a lot of organisational effort to be effectively implemented in a company. This should be the main reason why the diffusion of CRM systems increases with firm size.

BMS, an IT solutions provider in the UK, wanted to sell Windows Mobile®-based solutions to small and mid-sized businesses, but found limited awareness of mobile products and solutions (Anon, 2008). BMS formed a strategic partnership with a telecom firm that now passes business leads to them in return for device leads. BMS has enjoyed both an increase in sales leads and an improvement in converting business leads into closed sales. Success in selling mobility starts with personalizing the sale. BMS's team began offering its customers truly tailored solutions that clearly demonstrated how Windows Mobile could help solve their pain points, increase productivity, and help them become more responsive to their own customers and colleagues. "We started offering service packages of Windows Small Business Server and Windows Mobile-based solutions, instead of losing customers to a third-party for the mobile side of things," Wright says.

In addition to its own offerings to address this situation, BMS enlisted the support of telecom firm Trojan Communications to help spread the word about Windows Mobile. Building upon its own expertise in mobile solutions, BMS staff was able to offer a training program to its business partner's staff. "We formed a strategic relationship with a telecom company, and trained their sales staff in the benefits of Windows Mobile devices when connected to Windows Small Business Server and Exchange Server," Wright says.

Trojan's sales team is now able to provide full and accurate information to its own customers, strengthening the proposition offered by BMS. "Our [telecom] partner now passes leads to us for network infrastructure based on Windows Small Business Server and Exchange Server," says Wright. "They provide us with a lot of new business leads we wouldn't have gotten previously. "In

turn, we recommend Windows Mobile devices to our customers and pass those leads on to our telecom partner, who provides the devices and the tariff. We then charge the customer for installation, and to set up their phones to use push e-mail and other functionality via their Window Small Business Server and Exchange Server.”

This strategic partnership provides mutual benefits for each firm. The increased understanding of how to position the breadth and value of Microsoft’s offerings has helped override competitive propositions; whereas before the Trojan sales team would have pushed the Blackberry Enterprise Server, they now pass leads to BMS for network infrastructure based on Windows Small Business Server, Exchange Server, and Windows Mobile. The telecom organization earns a commission on any leads that BMS converts into a sale.

By adding Windows Mobile to its sales portfolio and developing a strategic partnership to sell mobility solutions, BMS has enjoyed both an increase in sales leads and an improvement in converting business leads into closed sales. “We closed 15 percent more business deals last year due to the adoption of Windows Mobile, and saw an increase of 25 percent in new business inquiries due to leads generated by the relationship,” Wright says. BMS has also strengthened its relationships with existing customers who have already chosen Microsoft server solutions, furthering their investment by adding Windows Mobile to their mix, thus enhancing customer loyalty. As a result, BMS generates an average of 7 percent more recurring monthly revenue on managed support contracts.

The integrated approach adopted by both business partners is reflected in the sales process experienced by the customer. “Specialist IT and telecom expertise can be called upon where necessary to ensure that the correct mobile solution is provided to best meet the customer’s individual needs,” says Wright.

O2 firm belongs to the industry of IT and telecommunications, with 18.4 million customers in the UK, deployed 2 ergo’s wireless-based CRM messaging services to send interactive text and personalised multimedia marketing messages to its large customer base (see also Figure 2).

Integrated mobile CRM helps O2 UK customers 'get the message'

O2 required a sophisticated, cost effective mobile CRM messaging service that would instantly enable them to engage with customers. 2ergo's Campaign Manager allows O2 to create and manage SMS, MMS, WAP push and email campaigns from one interface to their entire customer base. The solution helps O2 to intelligently gain a greater insight into its customer demands whilst building upon existing relationships through interactive messaging campaigns.

- From 30% to 65% response rate
- Over 30 million messages sent per month
- Over 4 million emails sent per month
- £250k cost saving within the first year
- Significant reduction in customer churn

"Campaign Manager allows us to enhance further the O2 experience, communicating and interacting with all of our customers on a truly one-on-one basis. At a practical level, it gives us the capability to streamline the many processes involved in delivering multimedia and interactive campaigns to just a single application."

Andrew Day, Head of Customer Relationship Management at O2

Figure 2: Deployed 2 ergo’s wireless-based CRM messaging services in O2 (Anon, 2010)

Delivering a totally new dimension to customer and employee engagement (Anon, 2010), 2ergo’s Campaign Manager offers more personalised and response driven communications that are aligned with the way people lead their busy lives. Using proven technology adopted by leading brands,

Campaign Manager provides a highly interactive web-based messaging service that allows you to create and send media rich, integrated, personalised and sophisticated marketing campaigns. Using SMS, MMS, WAP push, email, voice or a combination of these you can quickly and easily create and send campaigns from one source direct to audiences ranging from hundreds to millions.

CONCLUSIONS

Concept of mobile CRM aims at finding ways to make customers' interaction and relationship with the telecommunications firm more positive by saving time, frustration, costs and inconvenience. M-CRM concept can be regarded as a future variant of electronic CRM concept since most CRM vendors like Microsoft and 2ergo are providing solutions (Windows Mobile and Campaign Manager) to integrate mobile communication channels and CRM concept. It also can be seen as a means to make CRM concept more powerful with utilization of advanced mobile communication channels. This paper promotes the value of m-CRM concept by researching the some benefits realised in practice for two modern telecommunications firms (BMS and O2) like closing more business deals; increasing in new business inquiries; reduction in customer churn; enhancing customer loyalty; cost saving; and increasing revenue. Enlarging knowledge about the mobile CRM concept in telecommunications industry will help domestic telecommunications organizations in their operations; will create assumptions to improve the relationship and satisfaction of their customers and to increase their market share.

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SOFTWARE SUPPORT TO SUPPLY CHAIN MANAGEMENT

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ABSTRACT

Adjustment of information, material and financial flows is the necessary for effective operation of supply chains. All stakeholders in supply chain should to participate in management process referring to adjustment of the flows, in order to customers timely receive ordered products. The management process encompasses material and parts procurement, manufacturing, distribution and retailing. Many software applications can be used as a support to this management process. Basic aim of the paper is to analyse various software solutions and role of the software applications in supply chain management.

Key words: information technology, supply chain management, software applications, ERP

INTRODUCTION

In order to timely deliver products to customers, enterprises intend to accelerate business processes in supply chain management (SCM). SCM integrates logical requirements of suppliers, distributors and customers in cohesive process by which time of delivery and costs of inventory are reduced. During the years, development of supply chains was very slow. Companies have been developing parts of their supply chains by starting with transport component. After transport, they have included warehousing, inventory control, packaging, customer service and purchase. Current industrial production is influenced by dynamic and continual changes. The changes, on the other hand, impact on activities and aims of supply chains which are multidimensional and includes: minimization of costs, quality improvement of products and services, improvement of communication between firms in supply chain, increase of flexibility in shipment terms and response time, integration of IT with business process flows and reduced time of shipment.

Concept of SCM is accepted by many enterprises. Flows of products, information and money through distribution system of supply are permanent source of problems. However, in these flows there are great opportunities for improvement of everyday enterprise business. IT can support in solving the problems and use of the opportunities. Main contribution of the paper is research and analysis of various software solutions for optimization of the flows in supply chain. Decision makers in organizations can use the results of research in order to analyse number of the software solutions and to choose the appropriate one. The research might be starting point in this analysis. In that sense, the paper is structured in four sections. In the next section, challenges of SCM and possibilities of IT use in SCM are explained. The third section is dedicated to analysis of software applications that can be found on market and implemented in organizations for purpose of SCM. In the final section, concluding remarks on IT and software support to SCM are given.

CHALLENGES OF SCM AND IT

Expansion of trade and all information that goes with it are key generators of implementation of modern logistic and distribution management systems. Actual factor of all improvements in product and information flows is concept of SCM and all its methodological technics developed till now for various requirements of optimization. Global economy is changing fast in absolute as well as in relative sense. Therefore, all global distribution channels can not have same problems and

technics for its solving now and before expansion of IT. Evidence for that we can find in global statistical data. For example, value of world export in 1963 was around \$157 billions, while the value in 2004 was \$8907 billions. Also we should know that structure of main players in world export is changed. Presently, EU participates in world export with 42%, USA participates with 9,2% (value of internal trade has significant value in USA), China participates with 6,7% (the share in world trade is constantly growing), Japan participates with 6,4%, and the rest of world export belongs to the other countries and regions. (Steinfeld et al., 2011)

At this time, it is more difficult to organize shipment of right quantity of right products, to right place and in right time with acceptable costs and with minimal errors in documentation. In addition, sensitivity of all kind of consumers around world enforces increasing level of service from their suppliers. This causes greater costs of service, but on the other side it differentiates suppliers by power, rapidity and, in one word, by successfulness of their business and competitive strategy implementation. Increase of trade value implies increase of supply costs on a firm level, whole distribution chain level and all distribution chains in one country. Logistics costs are nowadays key factor in many industries and trade sectors and very important aspect of operating of economy as whole. In USA, these costs are very precisely measured and presented through regular annual studies. Experience of USA shows that it is not easy to manage the logistics and shipment costs. The costs can be often out of control. Namely, according data of Council of Supply Chain Management Professionals (CSCMP) logistics costs of all enterprises analysed through its share in GDP have been reduced in last decades. However, in recent years the costs have moderately increased in relative sense, but in absolute value, the costs have increased significantly. (Cohen and Roussel, 2005)

In the future, we can expect significant increase of global GDP induced by global trade. In such turbulent time, new solutions for optimization of global supply chains should be found. Great interest for SCM leads to search of new solutions for this optimization, apropos cost control with acceptable level of customers' service on both bid and demand side of supply chain. In combination with absolute increase of trade, new modes of supply and distribution channels are implemented. Key role in this situation has IT and internet revolution (Wasko et al., 2011). New software solutions enable companies to plan and manage their supply chain. All these things bring to emergence of new mode of communication, connection, achievement and collaboration in supply chains.

During 90s of last century, the great world economies had the biggest continual growth. In that period, the best world companies which increased their market share and spatial dimension of their activities had more and more problems in optimization of supply chains. Old modes of material and information flows management have been replacing fast by new methodological technics and technologies. Logistic management which partially optimizes material flows in one system is replaced by new concepts, business practices, innovations and ideas directed to move boundaries between various companies in a distribution channel from primary producer to final consumers. SCM becomes more and more existing term in business practice, while on the other hand in this research area there are many relevant theoretical contributions.

SCM is placed in context of unique business process and material and information flow. The flow goes through whole distribution channel and every individual company as a participant in the supply channel is only one shackle in supply chain where interorganizational boundaries does not exist. Every logistic process in a enterprise is part of wider and greater process taking place in whole supply chain. Therefore every managerial logistic decision should be according to principles of specific management in whole supply chain.

Every participant in supply chain, from suppliers to retailers, has possibility to manage its own segment of the supply chain by support of IT. IT, particularly internet technology, enables connection of all participants in supply chain. IT makes SCM efficient by integration of demand planning, forecasting of manufacturing, material procurement, order processing, inventory

allocation, order fulfilment, transport services, receiving of goods, invoicing and payment. IT enables free flow of material, financial and information resources in supply chain.

ITs support SCM in three different segments: purchase side of supply chain, internal part of supply chain and sell side of supply chain. Purchase side of supply chain regards to activities of enterprise with its suppliers. Intention of IT application is to improve purchase activities and relations with suppliers by use of electronic procurement potentials. Internal part of supply chain includes all processes regarding to transformation inputs to outputs and processing of business transactions related to the transformation. Transaction processing systems (TPSs) are used for that purpose. Sell side of supply chain imply all activities participating in shipment and delivery of products to customers. IT can support sell side of supply chain in two fields: activities of customer relationship management (CRM) and acceptance of orders from customers and delivery of products and services.

In order to effectively apply ITs in SCM, an organization foremost has to make difference between transaction and analytical ITs. These technologies have different forms and functions. Transaction ITs refer to acceptance, processing and joining rough data on historical and current operations of supply chain (e. g. TPS, ERP systems and electronic commerce systems). Analytic ITs are related to development and application of systems for evaluation of decisions regarding supply chain. The decisions are based on models built from database (e. g. forecasting systems, systems for supply chain network optimization, systems for manufacturing planning, etc.) (Turban et al., 2006)

SOFTWARE SOLUTIONS IN SCM

Main aim of SCM software is optimization of many activities and resources in supply chain. Evolution of technologies and software applications for optimization of supply chains started in 1940, and it was first phase of optimization. George Dantzig designed and implemented Simplex method as base of linear programming and mathematical optimization discipline. Optimization gives scientific explanation for decision making in conditions of limited resources. Second phase of optimization took place in 1990s of last century. Characteristic of the phase is application of optimization tools for problem solving in supply chain by design of supply network and transport planning. Finally, third phase of optimization is under way and is based on supercomputing.

Optimization is important because of solving problems which was inconclusive earlier. Today, performance of computers enable real-time analysis both in case of decision making and in case of automated actions. The best example for this is IBM semiconductor factory which on every five minutes makes optimization of all activities, processes great number of variables that was completely unthinkable in second phase of optimization.

In order to facilitate management of shackles in supply chain, many software tools are developed. Application service providers (ASP) offer the software tools and the other software services based on contract. The services are related to hosting, management and access to applications.

Huge advantage of ASP use is in fact that initial technological investment for starting up of some business is not necessary. Only before several years, a small business searching for the software services had to obtain financial resources for: buying one and many servers for web software, hiring staff for installation and administration of the software, etc. These were great obstacles, but now all these services could be ordered and received during a day and monthly costs could be lower than \$50. Recent startup ASP product is eCommerce Storefronts that could cost \$200-\$400 monthly. Its advantages are: great bandwidth for data transfer, online support 24 hours a day, opportunity for increase of capacity, daily ASP data backup. (Yoo et al., 2011).

Therefore, many ASPs offer simplex software solutions. Companies such as Verio and WebHosting.com offer classical ASP scenario: virtual web hosting. These companies provide hardware, software, bandwidth and human resources for web site hosting of firms and individuals.

The companies provide hosting for a hundreds accounts on same server. Web hosting companies usually offer some e-mail services.

On the other hand, there are traditional ASPs that sell great and costly applications, but also offer „pay-as-you-go“ model for small clients. Typical example for this is **service** software for web site management, auction software for web sites and software for online advertising. DoubleClick for Advertisers, advertising firm from USA, helps you manage, optimize and report on online advertising campaigns.

According trend of increasing interest for planning and supply chain management, ASP market is dramatically enlarge (Supply Chain Management Software Tools, 2012). This trend was actual in the last decade and optimization was embeded in ASP software supplements in last few years. There are many providers of quality software applications for SCM on market, such as:

Manugistics (Rockville, MD) embeded various methods for providing optimal solutions in integrated supplement for supply chain planning. The name of the software supplement is Supply Chain Navigator.

I2 Technologies (Irving, TX) bought CSC Operations Planning Group (Austin, TX) in 1997 to increase optimization features of its software for supply chain management of commodities. Also, I2 Technologies bought Optimax Systems, a pionir in application of genetic algorithms for optimization of assembly line arrangement.

Logility (Atlanta, GA) embeded optimization software of INSIGHT, Inc. in its software products. INSIGHT, Inc. is provider of optimization software for supply chains already twenty years. Logility's supply chain management software offers organizations state-of-the-art global supply chain management, visibility, and replenishment solutions.

SynQuest (Atlanta, GA) is a global provider of Supply Chain Event Management (SCEM) solutions. These software solutions allow companies to monitor their extended supply chains for events and exceptions that could impact their ability to fulfill customer orders, satisfy inventory needs, and manage shipping requirements. By implementing SCEM solutions, customers dramatically increase supply chain efficiencies, balance inventory with demand, lower costs, and make better use of their assets.

ILOG, Inc. (Mountain View, CA), offers ILOG software components for mathematical programming, programming limitations, business rules and visualization. In same time, this firm supplies ASP providers with optimization software for supply chains.

Infor TM is global provider of ERP solution for manufacturing, distribution, retailing and service. Infor company has over 70000 customers in over 100 countries. With basic ERP applications, Infor company offers set of fully integrated additional solutions for logistics and optimization of warehousing. Infor WMS Infor Warehouse Management System is software for management of warehousing that enables total monitoring of material and product flows with control of all activities and originated costs as well.

XSB, Inc. is firm that provides SCM optimization software based on web technologies. This firm offers WEAVE® software which is automatized web-based tool for SCM optimization. It also enables interactive searching in order to locate and compare various items. In that way, users can identificate similar items and suppliers' prices as well.

Manhattan Associates is a midsize supply chain management vendor apropos supply chain management software provider. The company has been headquartered in Atlanta, Georgia, since 1995 and operates around the world.

Beside this software solutions, many companies use Enterprise Resources Planning (ERP) software for management of internal part of supply chain. Intent of ERP is to integrate all business processes in organization and to use this integration for performance improvement in relations to customers.

First attempt of enterprises to manage their resources and requirements on integral manner was development and use of Material Requirements Planning (MRP) systems. These were computerized systems for improvement of inventory control and manufacturing planning. In second phase, Manufacturing Resource Planning II (MRP II) system is developed. ERP system practically represents extension of MRP II concept with additional functions for finance, distribution, human resources management which are integrated so that can meet overall requirements of networked enterprise.

ERP is set of software modules enabling an organization to automatize transactions included in the organization business processes. ERP system enables greater data integration, use of available database and consolidation of great number of various incompatible systems. ERP system usually include finance, order tracking, forecasting, sale analysis, local and global distribution and quality control. ERP systems have powerful tools for monitoring and reporting, but they are quite rigid and their use requires well defined data. (Nah, 2002).

ERP systems are commercial software packages for small, medium and great enterprises. They encompass all standard business functions and can be adjusted to specific requirements of enterprise in support of international standards. Use of ERP software packages contributes to improvement of products and services. This kind of systems enable integration of complete operation of business system by support of unique software solution. Most popular ERP packages are: SAP (BusinessOne, AiO, R/3); ORACLE - People Soft; BAAN; Microsoft Dynamics Systems - NAV (Navision), AX (Axapta), GP (Great Plains), SL (Solomon); ASW - asw:dominus. (Subramanian and Peslak, 2010)

Implementation of ERP system imply analysis of business processes, training of employees and implementing of new working procedures. ERP implementation phases are: selection of package, selection of modules, technical installation, customization, calibration, exploitation and maintenance. Implementation strategy can be incremental (step-by-step), total (big bang) and modular (module-by-module).

On our ERP software market, most implemented ERP modules are: financial accounting, control, material management (procurement and inventory), sales and distribution, planning and management of manufacturing, project management, investment management, equipment maintenance, quality management, system administration.

CONCLUSION

SCM integrates logical requirements of suppliers, distributors and customers in cohesive process by which time of delivery and costs of inventory are reduced. Aims of supply chain management are multidimensional and includes: minimization of costs, quality improvement of products and services, improvement of communication between firms in supply chain, increase of flexibility in shipment terms and response time, integration of IT with business process flows and reduced time of shipment. In order to achieve all these aims, organizations must implement the best software applications. Foremost, organizations should analyse market of software applications which can be used in SCM. There are many providers on global software application market offering solutions for optimization of resources and flows in supply chain. Organizations have to analyse carefully main players on the software market in order to find appropriate one which satisfy organizational requirements on the best manner. This research gives to managers in the organizations basic knowledge on available SCM software solutions and their providers.

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TOTAL PRODUCTIVE MAINTENANCE – A SOLUTION FOR OPTIMIZING THE PRODUCTIVITY OF MANUFACTURING EQUIPMENT

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ABSTRACT

In modern lean manufacturing conditions, the emphasis is placed on the customer and the idea that, through the optimization of production and business processes, it can be possible to provide cheap but quality product as well as its timely supply. In light of aforementioned, Total Productive Maintenance, as an organization-wide equipment improvement strategy, aims to make business processes more reliable and, as much as possible, contribute to the reduction of losses related to equipment, while, at the same time, strives to increase employee morale and job satisfaction. Moreover, it is a process of continuous and systematic identification of potential critical control points through preventive and corrective maintenance, as well as maintenance prevention, in order to completely avoid, or at least reduce, sudden and unforeseen repair of production equipment, so that maximum vitality of business process may be ensured. In order to evaluate the effectiveness of TPM implementation in practice, a composite indicator OEE is often used. OEE indicates the extent to which the company attains or deviates from world-class status in terms of manufacturing equipment efficiency.

Key words: total productive maintenance, preventive maintenance, corrective maintenance, maintenance prevention, overall equipment effectiveness

INTRODUCTION

In an effort to adequately master the challenges of global, dynamic and highly uncertain business environment, companies place more focus on incorporation of specific tools and techniques that will ensure the optimization of time, human resources, assets and productivity and, at the same time, improve the quality of products and services for their clients. Namely, in an attempt to achieve world-class status, many organizations relying on lean business philosophy (reduce costs, improve quality and increase market share), direct their attention primarily toward improving the technical and operational performance, which ultimately leads to improvements in overall financial performance.

One of the inevitable methods of lean manufacturing system is Total Productive Maintenance. By reducing the maintenance costs on the one hand, and increasing the safety and morale of employees on the other hand, this method contributes to a significant increase in production and improvement in overall business processes by ensuring a quality, timely, and cost/price affordable way to meet the needs and demands of the market.

TOTAL PRODUCTIVE MAINTENANCE – FUNDAMENTAL PROPERTIES

Total Productive Maintenance (TPM) represents a maintenance strategy that focuses on optimizing the productivity of manufacturing equipment by involving employees from all levels of business (from direct executors to top management) in its systematic maintenance. The goal is to make business processes more reliable and, as far as possible, to reduce equipment-related losses resulting from failures, breakdowns, adjustments, idling and minor stoppages, reduced speed etc.

For many years, the equipment maintenance was considered a nonprofit, secondary activity. However, lean business concept emphasizes the importance of maintenance in order to preserve business process vitality. This view is supported by the fact that only one machine malfunction may cause a delay of the entire product line and that a significant percentage of such failures can be prevented through adequate maintenance. Approximately 75% of machine failures occur as a result of contamination and improper lubrication (El-Homsi and Slutsky, 2010).

According to its characteristics, TPM is quite similar to popular concept of Total Quality Management (TQM). Some authors (Roberts, 1997) go so far as to claim that it is, in fact, no more than a variant of TQM, considering the obvious common features such as:

- Full commitment to the highest level of management represents a prerequisite for their successful implementation;
- Employees must have the freedom to voluntarily undertake corrective measures to remedy identified deficiencies in the work;
- Complete and successful implementation of both programs is a lengthy process;
- The programs in question are continually evolving and improving, with emphasis placed on fostering positive change in employees' mindset regarding their undertaken responsibilities etc.

However, it is important to note that despite aforementioned similarities, there are substantial differences between these two programs and that is the reason why we do not equate them. The respective differences are listed in Table 1 (Venkatesh, 2007).

Table 1: The differences between TQM and TPM

	TQM	TPM
Object	Quality (output and effects)	Equipment (input and cause)
Mains of attaining goal	Systematize the management (It is software oriented)	Employees participation (It is hardware oriented)
Target	Quality for Parts Per Million	Elimination of losses and wastes

TPM emphasizes the necessity of linking human and technical factor. Developing a sense of ownership of equipment used, employees become more responsible towards their work in the sense that they constantly strive to improve the performance and reliability of production equipment which, consequently, affects the efficacy and safety of the entire business process, and thus, of course, the quality of the final effect. It can be argued that TPM is to the process of maintenance what TQM is to the process of production.

Types of maintenance

Prior to the introduction of TPM, maintenance of equipment meant reaction performed only after equipment has failed. However, TPM puts an emphasis on preventive maintenance, corrective maintenance and maintenance prevention with an aim to reduce or even completely eliminate unforeseen and urgent technical services.

Preventive maintenance is an integral part of maintenance planned for all equipment available, not only randomly selected samples. Employees have an obligation to service the equipment regularly in order to detect any anomalies. In this way, it may be possible to prevent unexpected and sudden failures of manufacturing equipment and improve their efficiency. There are two types of preventive maintenance: periodic maintenance i.e. time maintenance (periodic control, servicing, equipment cleaning, etc.) and intuitive maintenance, i.e. condition-based maintenance (assessment and analysis of the failure records conducted by the surveillance system, designed for on-line monitoring).

Corrective maintenance refers to the improvement of equipment in order to reduce breakdowns and/or to ease the maintenance process. In this sense, it can be said that the corrective maintenance deals with decisions of whether to repair existing equipment or buy a new one. If the equipment or its parts are bad, in the sense that they constantly break down, it is certainly feasible to purchase a new one. Therefore, emphasis is placed on choosing the right equipment; otherwise, the money invested in this equipment will represent a pure loss.

Maintenance prevention indicates the design of new equipment. The weaknesses of the existing equipment is monitored and analyzed in detail (what led to the failure of prevention, what steps to take in order to ensure easier maintenance and prevention of defects, how to secure safer and easier manufacturing process) so that the same weaknesses would not occur with brand new equipment.

The main objectives of TPM implementation

The successful implementation of TPM program includes the four main objectives shown in Figure 1 (El-Homsi and Slutsky, 2010).

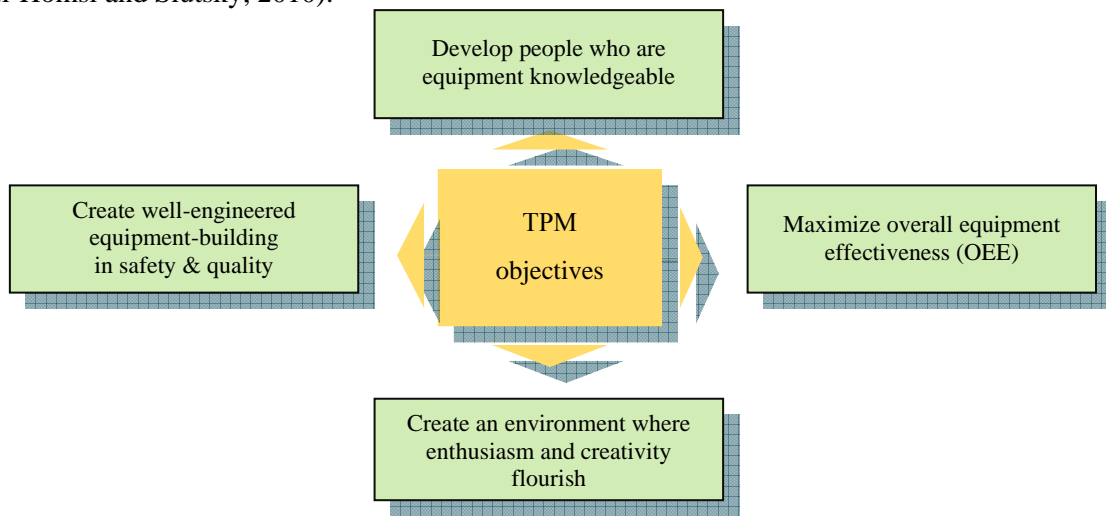


Figure 1: TPM objectives

These four goals can be reformulated into the main motto of TPM: *zero errors (defects), zero accidents and zero loss*.

Adequate implementation of TPM allows the elimination of losses that occur as a result of:

- failures (which can lead to lengthy, costly repairs),
- idling and minor stoppages (observed as isolated incidents they can be regarded as insignificant but, taken collectively, they represent a significant loss.),
- set-ups, conversions, and changeovers (if intense, it can cause reduction of production volume),
- defects and reworks (due to the insufficient quality of the final output caused by the insufficiencies in equipment running),
- reduced equipment speed (which leads to decrease in productivity),
- frequent investments in equipment replacement (because of equipment damage and excessive wear of equipment, its durability and productive life is significantly reduced), etc.

However, successful implementation of TPM cannot be done overnight. It takes at least two years - according to some authors even five to seven years (Roberts and Kobb) - but the results are more than impressive. Direct and indirect benefits of TPM are indicated in Table 2 (Venkatesh, 2007).

Table 2: Benefits of TPM Implementation

Direct benefits	Indirect benefits
Increase productivity and Overall Plant Efficiency (OPE) by 1.5 or 2 times	Horizontal deployment of a new concept in all areas of the organization
Rectify customer complaints	Higher confidence level among the employees
Reduce the manufacturing cost by 30%	Keep the work place clean, neat and attractive
Satisfy the customers' needs by 100%	Achieve goals by working as team
Reduce accidents	Share knowledge and experience
Follow pollution control measures	The workers get a feeling of owning the machine

The results of TPM

Examples and practical experience show that in modern business environment, characterized by harsh and increasing competition, TPM possibly represents the only thing that stands between success and failure of certain companies due to the fact that, when properly applied, this program actually works.

Ford, Kodak Eastman, Dana Corp., Allen Bradley and Harley Davidson are just some of the companies that have successfully implemented TPM (Roberts, 1997). Their reports clearly show that it was a step which contributed to the increase in overall productivity. Kodak reported that an investment of \$ 5 million (for the implementation of TPM) can be directly linked to the increase in profit by \$ 16 million. Texas Instruments states that some areas have increased their productivity by as much as 80%. Also, in some manufacturing companies, set up time has been reduced from several hours to just twenty minutes, while, simultaneously, production volume increased by 25-50%. Almost all companies that have implemented TPM report a reduction of downtime by 50% or more, reduction in the number of spare parts, as well as increase in the number of timely deliveries.

TPM AND ACHIEVING WORLD-CLASS STATUS

TPM can be used to achieve world-class status in terms of manufacturing equipment effectiveness. The Overall Equipment Effectiveness (OEE) is being used as an evaluation metric to evaluate the effectiveness of TPM implementation. It monitors the machine's ability to produce quality products in a timely manner in order to maintain customer loyalty. Considering the fact that, in most cases, the production cycle of work cell, within defined value stream, is determined by the machine's ability to reach customer's 'takt time', the application of OEE indicators makes it possible to identify the problem that hinders the realization of a given rate of production. It is believed (Roberts and Kobb) that if this ratio is above 85%, it can be argued that the company operates at the world-class level.

OEE represents a complex indicator which consists of the following three factors:

$$OEE = A \times PE \times Q$$

- *Equipment Availability (A)* – indicates the available manufacturing equipment's level of engagement. It is computed as the ratio of time period in which the machines really work over total time during which the machine should be in function (the reasons for the disparity of these two time periods may be different: equipment failure, the various settings that require machines to be stopped etc. – it is a rule that all delays must be documented and the reasons for their occurrence explained);
- *Performance Efficiency (PE)* – indicates the level of utilization of available capacity within a particular unit of time. It is computed as the ratio of actual capacity over ideal capacity where the ideal speed of machines (production) may not be the maximum speed. Namely, it is only important that the speed is adjusted with the customer's 'takt time', where the actual

capacity may deviate from the ideal capacity due to undocumented idling, reduction of the speed of machinery, downtime, etc.,

- *Quality Rate (Q)* – indicates the degree or percentage of correct products within a given production cycle (usually a day or an hour, although this indicator can be calculated for each work shift), and is computed as the ratio of total number of correct products over total number of manufactured products.


As an indicator, OEE is, to some extent, considered difficult – since it relies on these three factors, a certain amount of time is necessary to collect data and calculate the final results. Therefore, in the initial stages of this method’s application is recommendable not to calculate the coefficient for all the machinery within the work cell, but only for those who are bottlenecks (Wilson, 2010). Eventually, when calculating of OEE becomes a part of daily routine, it can be used to monitor the performance of other machines, i.e. machines that do not lead to bottlenecks.

Data regarding OEE application is summarized at the end of the day or at the end of the shift and presented through graphs or columns, while all the component factors of the observed indicators are clearly presented and the lower limit of acceptable performance highlighted. Also, in addition to providing OEE calculation, it is necessary to indicate the problems that are encountered during operation, such as the number of occurrences and duration of the delay, the reasons for the quality problems or insufficiencies in utilization of equipment (Maskell and Baggaley, 2004).

In practice, generally accepted world-class standards for each factor within OEE are quite different from one another, as shown in Table 3 (<http://oee.com/world-class-oee.html>).

Table 3: World-Class goals

OEE Factors	World Class
Equipment Availability	90,00%
Performance Efficiency	95,00%
Quality Rate	99,90%



It is necessary to note that certain deviations are acceptable and expected because of differences among manufacturing companies. For companies that, for example, have successfully implemented Six Sigma quality program, quality rate of 99.90% is quite unsatisfactory, because they strive for perfection in case of performance quality, streamlining operations, quality improvement and eliminating defects and errors in all business activities. Therefore, these standards should be accepted as a rough lower limit necessary for achieving the viability of the entire production process at the world-class level.

CONCLUSIONS AND IMPLICATIONS

Total Productive Maintenance as a strategy, or rather as a new philosophy of continuous improvement and teamwork, in modern and highly competitive business environment, represents an indispensable tool for increasing the efficiency of manufacturing equipment and the reliability of the entire production process. Relying on the concept of lean operations, TPM greatly contributes to the process of satisfying customer needs by increasing productivity, improving the quality of manufacturing equipment performance, reducing production costs and increasing the number of timely deliveries. Also, one of the key features of TPM is its capacity to create a safer working environment and better working conditions while, at the same time, significantly improving morale and cooperation among employees. Employees gain a sense of ownership over the machine which thereby, increases their responsibilities towards work, while emphasized teamwork contributes to intensive exchange of experiences and knowledge.

Adequate implementation and realization of TPM, achieved through the optimization of production and business processes in the company leads to the establishment and improvement of its

competitive advantage. Namely, providing the right quantity, at the right time, with the required quality and at an affordable, competitive price (due to performance-related improvements and, consequently, cost savings) will create the possibility for the company to reach world-class status and continuously work on its maintenance and improvements in accordance with the contemporary market trends.

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INTERNAL AUDIT OF THE SUPPLY CHAIN MANAGEMENT IN FUNCTION OF COST REDUCTION OF THE COMPANY

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ABSTRACT

The supply chain has major impact on the company's business strategy directly affecting its operational costs. Supply chain performances within the organization have a significant impact on the company's ability to provide services to their customers and create added value. Internal audit of the supply chain is one of the most powerful and fastest ways to reduce operational costs and provide the company competitive advantages in the global market in times of economic crisis. The aim of this paper is to present the key areas of internal audit activities in assessing risk and analyzing the functioning of the supply chain. The aim of internal audit is to make recommendations for improving the efficiency and effectiveness of operations and to help management to in achieving the projected business goals. The subject of this paper is the analysis of various fields of internal audit of the supply chain as well as evaluating the characteristics of individual elements of the chain with consideration to appropriateness and integration of those elements. Moreover, this paper will give an answer to the question to what extent the operations within the supply chain contribute to the fulfilling of the development strategy of the company.

Key words: internal audit, supply chain, operational costs

INTRODUCTION

As a result of the economic crisis companies are forced to analyze their business processes in order to reduce operating costs of business. Old cost impact strategies do not have the same effect as they once had. Traditional approaches based on improvement are also no longer adequate. Today under the influence of changes on a global level and under pressure to reduce costs the company diverts its attention to risk assessment, process management and environmental risks. Supply chain should not be viewed as a function that supports other functions, but as a separate activity which is involved in all functions of the company.

The definition of SCM given by The Global Supply Chain Forum is the following: »Supply chain management is the integration of key business processes from end-user through original suppliers that provides products, services, and information that add value for customers and other stakeholders« (The Global Supply Chain Forum; <http://fisher.osu.edu>). According to Douglas (2008), successful supply chain management requires cross-functional integration within the firm and across the network of firms which comprise the supply chain. The function of internal audit aims to evaluate and contribute to the improvement of risk management processes, suggests setting up such process if necessary, but does not coordinate risk management of the company.

It is necessary to make a difference between cost savings and risk reduction, actually to regard them as different strategies that are often at the expense of one another. If a company wants

seriously to dedicate itself to cost reduction, it must have access to contemporary ways and plan its actions and effects in the long term. Although internal audit bears certain costs in the short term as well as the risk management processes it encourages, in the long term its effects and actions may permanently lower the cost of doing business primarily through identifying risks. It must be noted that managers of the company remain primarily responsible for risk management while internal auditors have a proactive role in assisting the initial establishment of such a process, but they do not have to deal with or be responsible for identifying risks (Nerandžić, 2007).

The main objective of this paper is to present fields of internal audit activities of supply chain processes with emphasis on establishing a system of assessment and risk management. The aim is to depict the types and effects of risks that affect the functioning of the supply chain, as well as their increased influence in the last decade that have led the company to deal with them, evaluate them and act before they occur in order to reduce future costs.

INTERNAL AUDIT AND REASONS FOR ITS IMPLEMENTATION IN THE SUPPLY CHAIN PROCESS

Financial statements, accounting and auditing provide relevant information on the financial position and performance of company's business. The need for improved financial reporting, accounting and auditing is a general trend in all financial systems. This is caused by the emergence of the financial crisis and the crisis in corporate governance (Sabovic et al., 2010). Responsibility for corporate governance lies on several organizational entities. Main participants in corporate governance are boards, executive management, internal auditors and external auditors (Beke-Trivunac, 2011). An especially interesting area of auditing is internal audit with the main task to be a support for the management of the company.

According to The Institute of Internal Auditors (IIA) internal auditing is defined as an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It helps an organization to accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes (<http://www.theiia.org>). One more comprehensive definition of internal audit explains it as a multi-step process aimed at determining whether existing processes and procedures (condition) comply with predetermined rules and regulations (the criteria) or deviate in any way from this standard (Kagermann et al., 2008). Internal audit adds value to the organization and its stakeholders by providing objective and contributing to the effectiveness and efficiency of corporate governance, risk management and control processes (Beke-Trivunac, 2011). Internal audit examines the organization and functioning of accounting systems and related internal controls, credibility of financial and operational information. It evaluates the economy, efficiency and effectiveness of business operations and controls, application of policies, plans and procedures and conducts special checks. Unlike the audit of financial statements that is focused on testing and assessing of the reality and objectivity of financial reports which is traditionally done by external auditors, internal audit focuses on testing and assessing of business and increasing the success of the organization as a whole (Tušek and Sever, 2007).

According to General and Specific Standards for the Professional Practice of Internal Auditing issued by the IIA in 1978 and Performance Standards of the IIA process of internal audit should include:

- **Audit planning** (Engagement Planning) - internal auditors should plan each audit;
- **Examining and evaluating information** (Performing the Engagement) - internal auditors should collect, analyze, interpret, and document information to support audit results;
- **Communicating results** - internal auditors should report the results of their audit work;
- **Following up** (Monitoring Progress) - internal auditors should follow up to ascertain that appropriate action is taken on reported audit findings (European Confederation of Institutes of Internal Auditing, 1996; Pickett, 2003).

As it is presented, internal audit can be understood as a support for corporate managers. Namely, internal audits allow managers of larger production systems to delegate its oversight function to internal audit department. This is important for several reasons:

- Growing complexity of the operating environment due to automated data processing;
- Increased decentralization in physical location and decision making as a result of globalization or internalization;
- Lack of expertise required to conduct efficient, high – quality audits (Kagermann et al., 2008).

After analyzing definitions and some of the standards of internal audit, it can be concluded that this process can improve effectiveness and efficiency, and by that, the performances of many functions in one production system. Internal auditors unfortunately often push supply risk lower on the list of priorities (Salonen, 2010). High-impact supply chains win market share and customer loyalty, create shareholder value, extend the strategic capability and reach of the business. Independent research shows that excellent supply chain management can yield:

- 25-50% reduction in total supply chain costs;
- 25-60% reduction in inventory holding;
- 25-80% increase in forecast accuracy;
- 30-50% improvement in order-fulfillment cycle time;
- 20% increase in after-tax free cash flows (<http://www.scp-uk.co.uk>).

To enhance supply chain integrity, companies should develop a framework for a structured approach to ongoing risk identification and management. This will enable businesses to proactively address organizational supply chain risks on a periodic basis - a practice that affords stronger company and brand protection against supply chain risk gaps (<http://www.pwc.com>).

SUPPLY CHAIN STRUCTURE AND INTERNAL AUDIT TASKS INVOLVED

There are different models of supply chain within the company and they are adapted to its complexity and the activity in which it is engaged. There is no ideal model that will provide the best setting to its results, but common processes are defined to operate inside an organization. The supply chain management processes identified by The Global Supply Chain Forum are:

- Customer Relationship Management;
- Supplier Relationship Management;
- Customer Service Management;
- Demand Management;
- Order Fulfillment;
- Manufacturing Flow Management;
- Product Development and Commercialization;
- Returns Management (Douglas, 2008).

All these processes are related supply chain features in all businesses, and also successful management of the supply chain requires the involvement of all of the corporate business functions. SCM offers the opportunity to capture the synergy of intra- and intercompany integration and management. In that sense, SCM deals with total business process excellence and represents a new way of managing the business and relationships with other members of the supply chain (Douglas, 2008). According to PricewaterhouseCoopers internal audit can contribute to company's security and success by:

- Reviewing and understanding supply chains, including their strengths and weaknesses, in developing markets, to validate monitoring programs;
- Working with the company's supply chain specialists to help develop a monitoring process that can be repeated;
- Helping to identify which suppliers are critical;

- Assessing which suppliers may be vulnerable to threats and helping draw up a residual mitigation profile;
- Identifying strong risk control procedures;
- Helping to develop key analytic tools and techniques;
- Aiding with compliance monitoring (www.pwc.com).

In response to the financial crisis, organizations are also charging their internal audit function with value-added roles to assist in formulating and achieving strategic objectives and sustainable growth. Internal audit of supply chain is to help company in finding answers to crucial questions about managing success factors of supply chain excellence, which can be divided into five main sections:

- **Strategy** - To determine if the enterprise has a clear strategy tuned to business expectations and focused on profitably servicing customer requirements;
- **Organization** - To determine if an effective organization structure exists enabling the enterprise to work with its partners to achieve its supply chain goals;
- **Process** - To determine if the enterprise has excellent processes for implementing its strategy, embracing all plan-source-make-deliver operations;
- **Information** - To determine if the enterprise has reliable information and enabling technology to support effective supply chain planning, execution and decision-making;
- **Performance** - To determine if the enterprise is managing supply chain performance in ways that will increase the bottom-line, cash flows and shareholder returns (<http://www.scp-uk.co.uk>).

SUPPLY CHAIN RISK MANAGEMENT

Internal Audit can work with business leaders to develop an appropriate supply chain risk management program to provide assessments of the supply chain risk management program through continuous monitoring and auditing.

Before companies can devise effective means of reducing supply-chain risks, managers must first understand the universe of risk categories as well as the events and conditions that drive them (see Table 1). Then, armed with clear, specific knowledge about these crucial risks, companies can proceed to select and tailor mitigation strategies, which are likely to be most effective.

President and CEO of the global consulting firm Protiviti, Joseph Tarantino, said that boards of directors and their audit committees must be aware of the hurdles and opportunities that lie ahead if business conditions remain uncertain in 2012 and be prepared to advise their organizations quickly and strategically. According to Protiviti, managing supply chain risks and rising commodity costs were included in the top ten business challenges for non-financial services firms (www.cfoinnovation.com).

The big challenge for managers is to mitigate risks by intelligently positioning and sizing supply chain reserves without decreasing profits. However, while stockpiling inventory may shield a company against delivery delays by suppliers, building reserves in an undisciplined fashion also drives up costs and hurts the bottom line. Other benefits of SCRM include the elimination of potential and unexpected costs, reduced disruptions and time to recover.

In addition to development methods and tools for managing its own supply chain risks, IBM has invested in several joint university programs to further explore topics related to supply chain risk. Among these was a survey designed to understand how supply managers attempt to manage risk in procurement. Their conclusion was that supply management professionals do recognize that risk exists in their upstream supply chains, though often it is discussed only when a problem occurs (www.ibm.com).

Table 1: Supply chain risk and their Drivers (Sunil and ManMohan 2004)

Category of risk	Drivers of risk
Disruptions	<ul style="list-style-type: none"> • <i>Natural disaster</i> • <i>Labor dispute</i> • <i>Supplier bankruptcy</i> • <i>War and terrorism</i> • <i>Dependency on a single source of supply as well as the capacity and responsiveness of alternative suppliers</i>
Delays	<ul style="list-style-type: none"> • <i>High capacity utilization at supply source</i> • <i>Inflexibility of supply source</i> • <i>Poor quality or yield at supply source</i> • <i>Excessive handling due to border crossings or to change in transportation modes</i>
Systems	<ul style="list-style-type: none"> • <i>Information infrastructure breakdown</i> • <i>System integration or extensive systems networking</i> • <i>E-commerce</i>
Forecast	<ul style="list-style-type: none"> • <i>Inaccurate forecasts due to long lead times, seasonality, product variety, short life cycles, small customer base</i> • <i>"Bullwhip effect" or information distortion due to sales promotions, incentives, lack of supply-chain visibility and exaggeration of demand in times of product shortage</i>
Intellectual Property	<ul style="list-style-type: none"> • <i>Vertical integration of supply chain</i> • <i>Global outsourcing and markets</i>
Procurement	<ul style="list-style-type: none"> • <i>Exchange rate risk</i> • <i>Percentage of a key component or raw material procured from a single source</i> • <i>Industry wide capacity utilization</i> • <i>Long-term versus short-term contracts</i>
Receivables	<ul style="list-style-type: none"> • <i>Number of customers</i> • <i>Financial strength of customers</i>
Inventory	<ul style="list-style-type: none"> • <i>Rate of product obsolescence</i> • <i>Inventory holding cost</i> • <i>Product value</i> • <i>Demand and supply uncertainty</i>
Capacity	<ul style="list-style-type: none"> • <i>Cost of capacity</i> • <i>Capacity flexibility</i>

CONCLUSION

According to many authors and researchers, internal audit can be used for improving supply chain process in terms of efficiency and effectiveness, by providing insight and recommendations based on analyses and assessments of available data from the company. Supply chain management is a very complex structure of activities with cross-functional processes, and it presents one of the most important functions in the company since it is directly linked to all functions of the company. Supply chain problems result from natural disasters, labor disputes, supplier bankruptcy, act of war or terrorism, systems breakdowns, procurement failures and other causes. Internal auditors have changed their roles of merely providing a check over accounting transactions into helping and providing support for companies in supply chain risk management. The supply chain internal audit aims to support managers in process optimization and above all in cost reduction which result from an uncertain environment by evaluating and directing management towards approaches which will prevent or reduce negative effects.

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INFORMATION MANAGEMENT IN LOGISTICS

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ABSTRACT

Technological changes in the world require innovation and improvement of the business strategy of all firms and companies. Priority is given to those companies and companies whose business is based on information quickly. Modern technology in the field of information and information technology opens up great possibilities for solving space and time, as well as for solving optimization problems, management and operational control of logistics processes. Application means the orientation of the entire logistics activities of the company according to market demands. The highest goal is the marketing demands of customers in terms of product quality, delivery and precise information. From the abundance of methods offered by the modern theory and practice of building complex systems in this paper should be noted that one of the dominant influence on the realization of set objectives and that are most used.

Key words: Logistics, information systems, information management, data modeling

INTRODUCTION

In this paper an attempt is made to develop a methodology for reorientation of the company based logistics operations, and to lay the foundations of integrated logistics information system that supports the system flow of vital activities in the logistics chain, both within companies and between the enterprise – and enterprise customers –suppliers.

The central design problem of researches is to improve the quality and rationality of production companies. One of several times valuable tools of the modern organization is a user – oriented information system (*User – oriented information system*).

A well designed information system can improve production, reduce inventory, eliminate activities that do not add value, improve customer service, decision support and management and coordination of activities within the organization. Need to introduce logistics, came at a time when supply of goods could not pay the actual demand and therefore, the task was the company find a way of increasing production and improving automation and rationalization, but later the problem of market saturation. This problem shifts from manufacturing to sales and thus increasing the importance of sales and marketing....

To realize the logistics concept of operation of the business system, it is to study the existing requirements and execute the redesigning of the material and information flows through:

- Analysis of the structure of logistic flows;
- Analysis of information flow through the primary logistics subsystems;
- Critical review of compliance of the material and information flows;
- Modeling of logistic flows;
- Redefining the structure of the logistics sub – systems, which are the material and information flows;
- Establishment of data flow diagrams.

SECOND ESTABLISHMENT OF INFORMATION AND INFORMATION SYSTEMS IN THE LOGISTICS CHAIN

Information systems in the logistics chain

Before we present the specific logistic systems in the logistic chain, followed by analysis of the characteristics of information system in the logistic chain. It should be mentioned, that the logistics of application, with regard to the data extremely intense, as one of its functions cross section must take information from a variety of functions and various enterprises. For these reasons resulting high demand for electronic communication (related data) in logistics information systems.

The basic characteristics of information systems in the logistic chain are :

- Application of information in all links of the logistics chain is very intense;
- Information links all processes in the company;
- Information and links enterprise environment;
- There are a number of feedback information flows;
- The quality of information directly affects the sale of goods on the market.

Information flows logistics chain enterprises are shown in Figure 1.

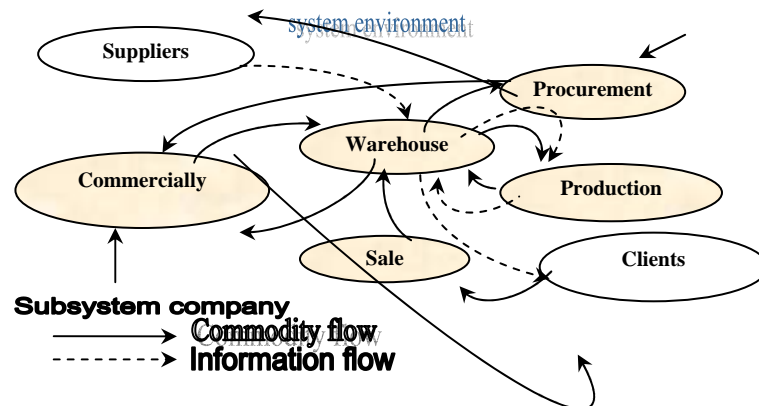


Figure 1. Freight and logistics chain information flows enterprises [1]

The set goal for the information (education) of information systems in the logistics chain, which is able to support the processes of development and planning processes, it is only through integrated processing data creates the necessary transparency in the logistics channel, which allows efficient and effective co-operation partners. The integrated information processing is based on the information in an integrated logistic chain.

Impact of information quality of service delivery and system operation

In the area of monitoring and management of information flows all the more present electronic data collection and processing. One factor to minimize the total cost and the quality of products and services and the rationalization in the field of information systems. The rationalization of the observed area contributing to the increase of flow rate and quality of information, along with a commitment of resources to ensure the minimization of total costs.

Modern technology in the field of information and information technology opens up great opportunities for:

- Overcoming space and time;
- Solving optimization problems;
- Management and control of operational logistics processes;
- Provides a wide range of information and others.

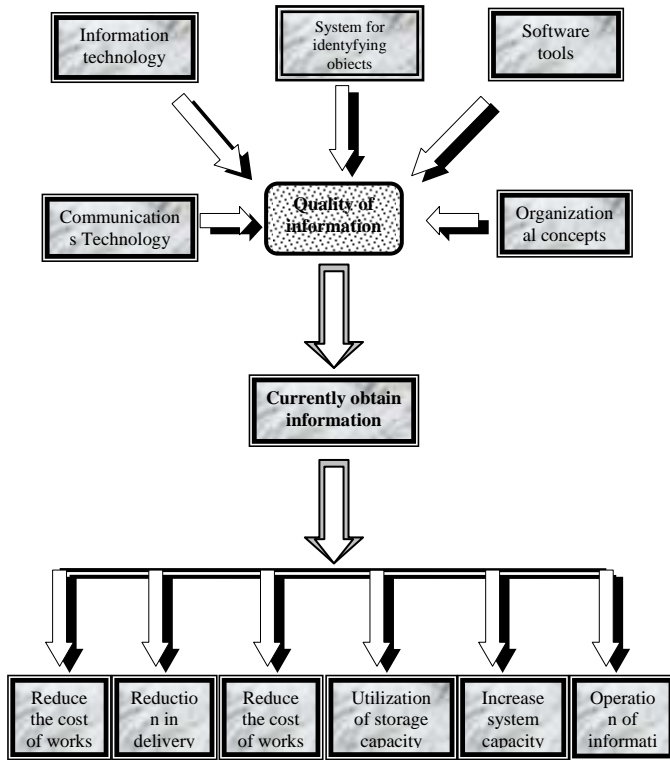


Figure 2. The effects of quality information on the quality of service delivery and operation of the system

Obtaining timely information and quality of information affects the higher quality of service in terms of reducing delivery times, delivery accuracy, elimination of errors in the delivery and the like, which can be shown in the figure [2].

The introduction of computer systems in the logistics chain information system provides:

- Greater degree of speed;
- Accuracy and completeness of the operation;
- Processing of information;
- But it is possible to realize the application of human labor

THE STRUCTURE OF THE LOGISTICS INFORMATION SYSTEM

The components of the logistics information system

Information logistics system interaction of its components, provides systematic continuous collection, sorting, processing and analysis, evaluation, distribution and presentation of information. All are appropriate management decisions, which improves the management – the process of planning, implementation, organization, control and auditing of logistics activities.

The organizational structure of logistics information system does not disturb the existing organizational structure of the company. However, "it should be noted that, when linked to a function, not the organization, functions as the stable, and the organization is subject to frequent changes. This is how it is achieved that the implemented information system as little change" [3]. Logistics is defined as a multidisciplinary area that encompasses all the activities that enable the design, planning, directing, design, management and control in all processes of movement of goods, energy and information across different systems [3]. Procurement logistics subsystem (which includes all aspects of raw materials, intermediate products, auxiliary materials and spare parts from suppliers to warehouse of raw materials in the manufacturing enterprise;

The logistics can be divided into four functional sub systems:

- Production logistics subsystem, which includes all the material flows that pass (be processed, processed or consumed) through the production process;
- Distribution logistics subsystem, which includes all aspects of the final products of the warehouse of finished products to end users;
- The subsystem of logistics flow exchangeable packaging (container management), covering all aspects of waste products and return flows of emty containers.

Place of purchase in the logistic chain

- Operational supply / liquid (non – production);
- Finished products (corporate procurement) and
- Services (non – production procurement).

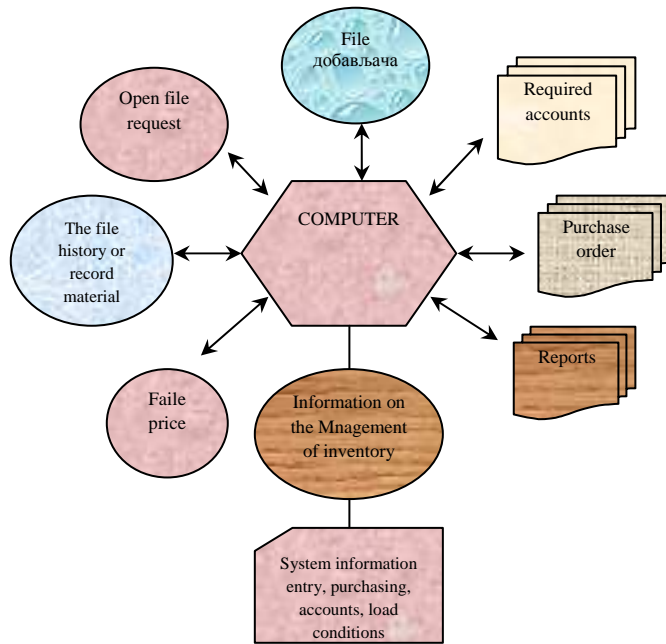


Figure 4: An automated information system acquisition [6]

Electronic data interchange (Electronic Data Interchange – EDI) for the purchase of benefits are shown in Figure 5.

The possibility of buying situations:

- Routine orders / orders – common and well – established procurement procedures;
- Procedural problems – non – routine procurements often require employees to learn;
- Performance problems – non – routine purchase alternative

products / substitutes, must be tested and their performance ;

- “political” issues - non – routine procurements, which have an impact on several parts of the company, or more people involved in decision making.

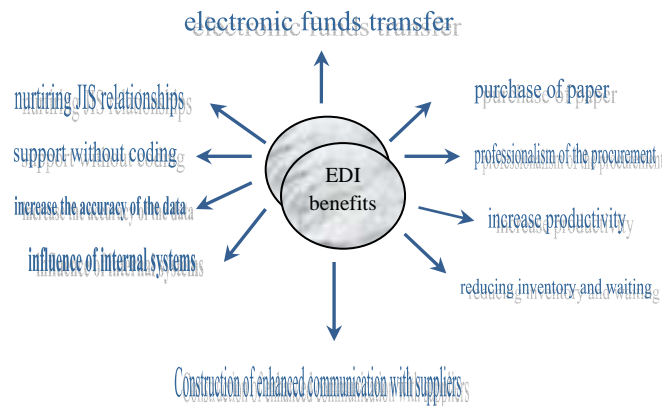


Figure 5: EDI benefits for the purchase of [6]

Physical model of the business information system

The general procedure of the physical model of the system include:

- The answer to the question of how the activities taking place in the system or procedure preparation establishment / operation of the system
- Development of specifications necessary hardware and
- Identify jobs and tasks that require computerization to be faster, cheaper and better performing.

Implementation of information system design in terms of physical structure, it requires reconstruction and monitoring existing systems. In figure 6. is a procedure of entering the component master data and the three procedures, and reporting, and generating information, forms and other documents

INPUT / UPDATE

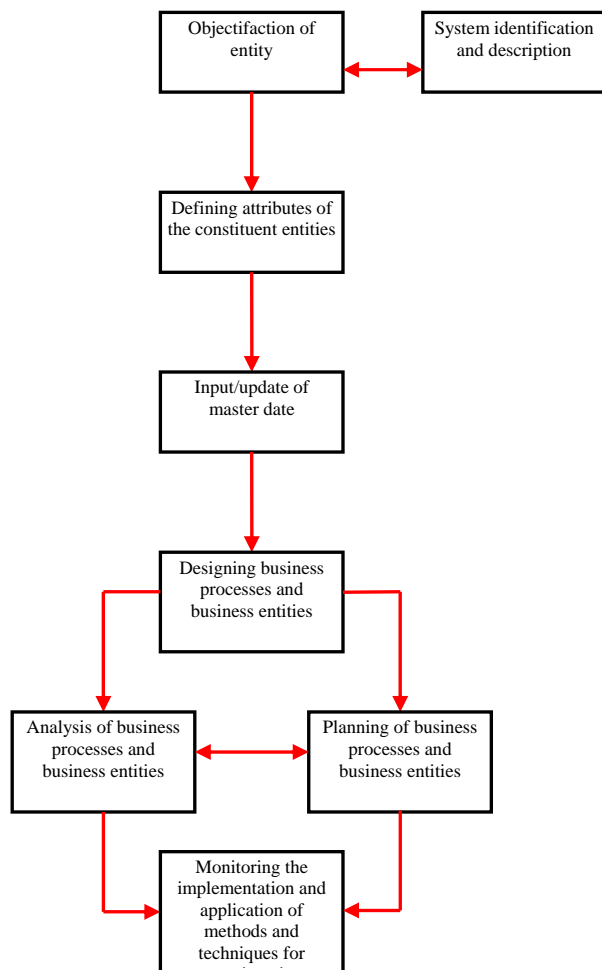


Figure 6. Establishment of PIS – a

CONCLUSION

Based on a retrospective of work and consideration of data and processes as a basic component that is based on the existing business system, taking into account all that needs to be changed fulfil solutions or due to changed tehcnical capabilities, which allow on – line processing, providing access to new solutions for individual processes within the logistics sub – systems company.

Operating system, is considered as a set of hierarchical business processes performed, the associated data flows. Decomposition of business processes first, and then streams the data warehouse, created a starting point for designing a database as a basis on which to be based logistics information system. Performed the decomposition of streams and data warehouses, data were grouped into classes, that is, the entities identified and their attributes.

In addition to the above, the master work is included in the theoretical foundation that is based on the aspects of logistics information system. Starting from the concept, types and qualiiti of information in logistics, they are now considering the implementation of logistics information system, that attention was paid to data processing.

Finally, it can be concluded that the data modeling powerful tool for the design of information systems to enable business system analysis by lowering the level of abstarction, and increasing of detail analysis.

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APLICACION OF ISO 14000 SERIES STANDARDS IN MANUFACTURING COMPANIES – THE ROLE AND IMPORTANCE

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ABSTRACT

Many industrial activities significantly damage the natural environment with secondary products which expire in the environment after the ending of a production process. The need for environmental protection growing exponentially every day and is caused by increased production, the modernization of technological processes and raising level of environmental awareness and environmental culture. Demand of so-called "green" products is increased. Knowledge about breach of natural balance, degradation and pollution has led to the need for implement environmental protection. Therefore, a several systems and environmental management instruments are developed, including the most important series of international standards ISO 14000. These standards commit the organization to establish and implement a process of environmental protection

Key words: ISO 14000, environmental protection, production, company

INTRODUCTION

Public interest in ecology, which is conceived seventies, grew into a world-wide movement. Many groups and organizations for environmental protection were formed around the world. The activities of these groups range from protests, over the scarce environmental cleaning, to pressure the government for establish more control in terms of environmental protection. However, the term "greater control" has different meanings in different countries. While some countries have already defined the penalties for those who violate the regulations on environmental protection, others still have no similar regulations, and internationally in this respect there is a large disharmony.

ISO 14000 series of standards are trying to harmonize the requirements for environmental protection to be achieved by industry in all parts of the world. Harmonized standards advocate an approach that can be applied anywhere in the world. The public wants to companies worldwide take responsibility for their actions. However, the public is not the only advocate of environmental protection. Many companies have also recognized this need and help create a series standard ISO 14000. Environmental ISO standard requires the company to a number of activities concerning environmental protection. Protecting the environment provides the full preservation of its quality, conservation of natural communities, rational use of natural resources and energy in the best way for the environment as a basic condition for a healthy sustainable development.

The most common activities undertaken by the company, in order to protect the environment, are: manufacturing and product planning, implementation of new technological processes in production, investment in environmental protection and the establishment of special departments for environmental protection in the companies.

ISO 14000 SERIES STANDARDS

ISO 14000 is a series of international standards on environmental management. It provides a framework for the development of an environmental management system and the supporting audit programme. The main thrust for its development came as a result of the Rio Summit on the Environment held in 1992. Table 1 shows the most important standards that are among the series of ISO 14000.

*Table 1: The most important standards of ISO 14000
(http://www.ird-bg.org.rs/share/pub/ISO_web.pdf)*

Standards and Guidelines	Purpose
ISO 14001:2004	Systems Environmental Management - Requirements with guidance for use
ISO 14004:2004	Systems Environmental Management - General guidelines on principles, systems and support methods
ISO/AWI 14005	Systems of environmental management - Guidelines for phased implementation of environmental management systems, including the use of performance evaluation in terms of environmental
ISO 14015:2001	Environmental Management - Assessment of sites and organizations in terms of environmental
ISO 14031:1999	Environmental management - Performance evaluation in terms of the environment - Guidance
ISO/TR 14032:1999	Environmental management - Examples of performance evaluation in terms of environmental
ISO 14040:2006	Environmental management - Life cycle rating - Principles and framework
ISO 14044:2006	Environmental management - Life cycle rating - Requirements and guidelines
ISO/TR 14047:2003	Environmental management - Life cycle rating - Examples of application of ISO 14042
ISO/TR 14049:2000	Environmental management - Life cycle rating - Examples of application of ISO 14041 to determine the objectives and areas of application and analysis of storage
ISO 14050:2002	Environmental management - Vocabulary
ISO/TR 14062:2002	Environmental Management - The inclusion of aspects relating to the environment in product design and development
ISO 14063	Environmental Management - Communication concerning the environment - Guidelines and examples
ISO 19011:2002	Instructions for checking the quality management system and / or environmental management
ISO/WD 26000	Guidelines for responsibility towards society
ISO/IEC Manual 66:1999	General requirements for organizations that carry out assessment

ISO 14000 series of standards was created in response to daily increasing concern about the environment and in response to the increasing number of laws that address this issue. Also, these standards are intended to help any organization to set up their business in a way to respond to the growing demands of environmental protection. Organizations use environmental management systems as their competitive advantage by offering products that do not harm the environment, created through a process that itself can not harm the natural environment (Jovanovic and Silobad, 2001).

The process of implementation of an environmental protection system involves several phases. First, from top management is expected to define the organization's environmental policy and ensure that it suits the nature, extent and impact of its activities, and to commit to continuous improvement and compliance with relevant laws and regulations.

Having defined, it proceeds in the planning stage in order to achieve environmental policy. At this stage, the companies should:

- Identify, evaluate and manage environmental aspects and impacts of these aspects have on the production or service organizations;
- Apply an obligation to constantly improve the production and pollution prevention;
- Identify legal and other requirements prescribed internally;
- Identify the prescribed objectives for each relevant function in the company, according to environmental policy;
- Make environmental management plans and programs to implement the goals.

In the implementation phase of the operation, the company should:

- Define, document and publish the organizational structure and roles, responsibilities and powers of all participants. In addition, it is necessary to ensure the existence of human, financial and technological resources, and determine a management representative responsible for program implementation;
- Establish a system of internal and external exchange of information on the requirements and expectations stemming from the system of environmental management, as well as to document procedures, their implementation and the current situation regarding the implementation of certain procedures;
- Establish and maintain a system of document management and archiving system, which will be in accordance with legal regulations and internal regulations.

In the testing phase of the corrective measures set forth a control function of the system of environmental management through:

- Monitoring and measuring the effectiveness of management activities;
- Corrective and preventive measures concerning non-compliance;
- Maintain records of training, verification and evaluation;
- Conduct review of environmental management systems.

The last phase is the management review. At this stage of the environmental management system is reviewed at intervals which are determined in order to ensure continuing suitability, adequacy and effectiveness of application of this standard. The review includes:

- Review of general and specific objectives and outcomes;
- Reports of checking the system for environmental management;
- Assessment of the effectiveness of environmental management;
- Assessment of benefits of environmental policy in the light of changing legislation, progress in science and technology, as well as product changes and organizational activities (Steger, 2000).

The standards require that the top management companies define and implement environmental policy. This policy should be documented, in line with the nature of the organization's operations and must include a commitment to continuous improvement, pollution prevention and to ensure continuous compliance with applicable laws and regulations relating to environmental protection.

Planning of environmental protection shall be:

- how the company affects the environment,
- what legal and other requirements placed on the company in terms of environmental protection,
- what the company defines itself for the task in terms of environmental protection,
- what activities will be conducted in terms of environmental protection, in what terms and who will be responsible for them (Silobad, 1998).

Planning begins with identifying aspects, i.e. determining which products, processes or activities of the company affect the environment and what is the nature of that influence. Attention is paid to aspects of an enterprise which can only be managed (e.g., fuel combustion in the boiler), and those

that can only be affected (for example, construction work performed by its subcontractors). Then the total lists of identified aspects distinguish those that significantly affect the environment, in order to be able to act on them. The process of analysis of environmental impact and find out important aspects is shown in Figure 1.

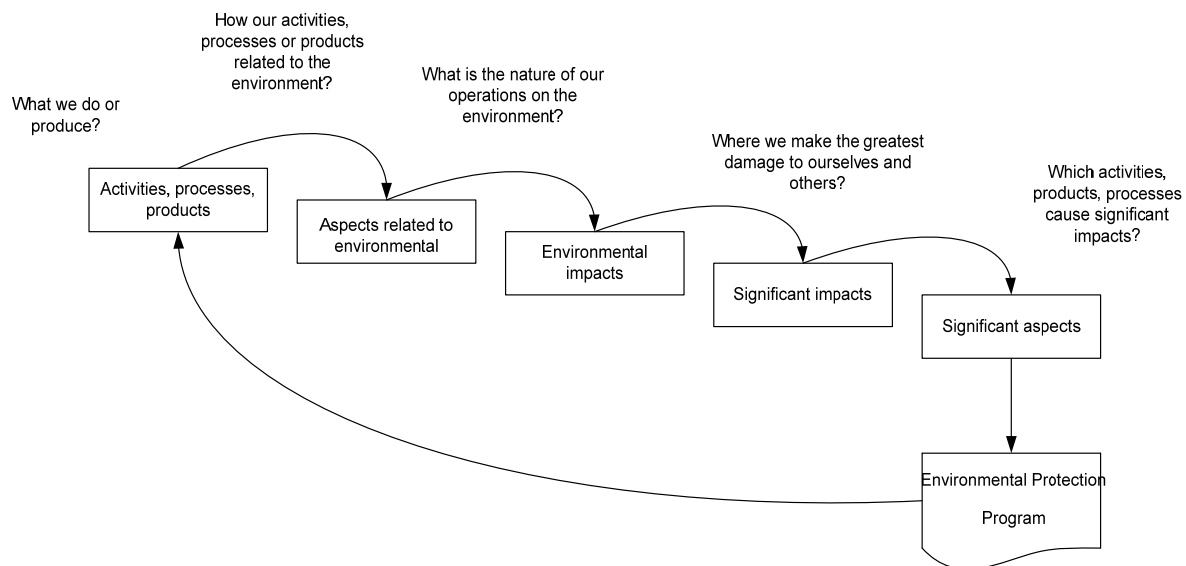


Figure 1: The process of implementation aspects of the analysis and environmental impact (Jovanovic and Silobad, 2001)

Even when it comes to one of the company, environmental impacts can be various, for example, discharge of harmful substances in water, air or land, non-renewable energy consumption, creating noise, vibration or odors, create smoke and dust, and other electromagnetic radiation, the accumulation of industrial and municipal waste, use of natural resources, damage to flora and fauna, endangering rare and protected species, etc. The company determined that the aspects and impacts considered significant as per the defined methodology. As a rule, these are areas where it can cause the greatest environmental damage, or the reputation and business enterprises.

ENVIRONMENTAL POLICY AT THE LEVEL OF PRODUCTION COMPANY

In order for environmental protection measures were carried out in practice, production companies must implement and maintain a system of production systems. Management must define the policy environment and ensure that it is effectively implemented. This includes the obligation of continuous growth, "eco - efficiency" and to prevent pollution and liability cerning with the relevant laws and regulations concerning environmental protection. It is necessary to provide a framework for setting and reviewing aims and objectives of environmental protection, and defined policy must be communicated to all employees and available to the public (Evers, 1997).

Management must provide resources that are essential for the introduction and control of environmental management through the production process. These resources include human resources and specialized skills, then the technology and financial resources. The leadership of the organization determines that the special representatives, independent of other responsibilities, have defined roles, responsibilities and powers:

- 1) to ensure the formulation and fulfillment of requirements relating to environmental protection system in accordance with ISO 14000, and
- 2) to report to top management on the performance of an environmental protection system for review and form the basis for improving the management of this system.[3]

The company must identify the need for vocational training, requiring all personnel whose work may cause effects on those in the vicinity, to pass the appropriate courses. All employees must be familiar with the requirements relating to the protection of the environment and the impacts of their work

activities may have on the environment. You should also be familiar with their roles, responsibilities and potential consequences in case of deviation from the established operating procedures.

Management establishes and implements a documented procedure for regular monitoring and measuring key characteristics of its operations and activities that can have a significant impact on the environment.

One of the main requirements for the management of production systems in terms of environmental protection in the company is organizing a special monitoring system commonly referred to as "monitoring" system. It can monitor the nature, source and quantity of by-products which enter the environment and their effect may have a detrimental effect. "Monitoring" system includes the registration and monitoring of various harmful by-products.

Some industrial activities significantly damage the natural environment. Many organizations, particularly those with so-called "Dirty" - non-ecological technologies considered that the costs in terms of meeting environmental regulations and implement new "green" technology in the production of very large. Managers in these organizations believe that the adoption of ISO 14000 standards provide little marginal benefit organizations. On the other hand, many organizations are increasing the requirements for preserving a healthy environment appropriate environmental product, recycled packaging, and improved control of pollution and efficient use of energy.

The main obstacles that prevent the activity of the company are poor awareness, lack of political will and adequate stimulation. Environmental protection must be installed in the core manufacturing processes, and then influence the choice of raw materials, operating procedures, technology and manpower. Environmental manager must have knowledge of the natural and social sciences, and must act as coordinator of the process between economics and ecology. It must also act to reduce consumption of natural resources, reducing pollution and creating a positive "ecological environment" (Boudouropoulos, 1999).

EFFECT OF THE COMPANY TO THE ENVIRONMENT

Besides people, the preservation of a healthy environment affects the company also. Socially responsible companies are oriented towards socially responsible behavior. These companies employ resources in a socially responsible manner, the process of implementing sustainable production and distribution of products of the same leading consumer satisfaction and achievement of goals asked.

Companies should protect and preserve the environment achieving the following objectives:

- Elimination of waste - the real question is what to do with the waste stream to produce products with less waste;
- The new concept products - according to which there are two or three types of products. The first group is the non-durable consumer goods (e.g. food) whose spending should have a minimum adverse effect on the land. The second group consists of durable goods (TVs, computers) that would be produced, used and returned to the manufacturer for the purpose of recycling. Companies should ensure the dismantling and recycling of such products. The third group consists of products such as radioactive materials, heavy metals and toxins. Manufacturers should be responsible for the consequences of these products in all stages.
- Pricing based on the total cost - the price of each product should include not only direct production costs, but also the costs of environmental protection.

Environmental standards and norms are rules that every company should adhere to in order to avoid negative impacts on the environment (Silobad, 1998).

BENEFITS OF THE ENVIRONMENTAL MANAGEMENT SYSTEM

Many managers believe that investments in environmental protection system and the introduction of the ISO 14000 standard provide little marginal benefit organizations. However, in practice it is not. One reason is that it appears many consumers who are willing to pay an extra price for the use of so-called "Green" products.

Some of the benefits of implementing an Environmental Management System (EMS) in accordance with the ISO14000 standards include:

- identifying areas for reduction in energy and other resource consumption and their associated costs,
- reducing environmental liability and risk,
- helping to maintain consistent compliance with legal & regulatory requirements,
- potentially faster permitting processes with state agencies,
- benefiting from regulatory incentives that reward companies showing environmental leadership through certified compliance with environmental excellence,
- preventing pollution and reducing waste, both of which reduces costs,
- responding in a positive fashion to pressure from customers and shareholders,
- improving community goodwill,
- profiting in the market for "green" products, and generally achieving a market advantage,
- lower insurance costs by demonstrating proof of good management before pollution-incident coverage is issued, and
- demonstrating commitment to high-quality (EHSO, 2012).

Implementation of cleaner production processes in the system developed environmental management provides assurance that the improved performance available in the environment and progress towards sustainable development.

CONCLUSION

Many industrial processes use "dirty" technology and secondary products which significantly damage the environment. Environmental protection must be installed in the core manufacturing processes, and then influence the choice of raw materials, operating procedures, technology and manpower. ISO 14000 is an internationally recognized standard that requires companies to effectively manage its impact on the environment through a commitment to pollution prevention, legal compliance and continual improvement. How ISO 14000 standards requires a commitment to continual improvement on environmental protection acts as an incentive for more efficient use of raw materials, and therefore its introduction leads to a reduction in costs. Implementation of environmental protection involves the use of clean "green" technologies. The end result of the introduction of environmental standards and the transition to cleaner production processes are environmentally friendly products that do not pollute the environment, a company helping to improve competitiveness, increase market share and thus a profit.

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A STOCHASTIC MODEL TO DETERMINE THE ELEMENTS OF PRODUCTION CYCLE TIME IN TEXTILE INDUSTRY

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ABSTRACT

The paper presents an original method of determining the elements of the production cycle time by using the modified work sampling method applied to a textile factory. It is shown that the movement of the elements of time can be viewed as a process and in the mathematical sense can establish control limits of error of ± 3 SD.

The mean time of the production cycle of the groups created by the number of pieces in the series – t_{pcu} moving the hyperbolic function, which has the asymptote c , a function of the form $\bar{t}_{pcu} = c + \frac{b}{\log n}$, where

all groups of the production cycle in the mathematical sense does not act like strata but is a function t_{pcu} related to technology and deterministic factors of production series.

Key words: production cycle, elements of production cycle time, work sampling, stochastic model, textile industry

INTRODUCTION

To ensure rational production and adherence to time schedules in production, quality planning of production and corresponding technical-technological calculations are needed to provide machine operating modes and time duration of machine operations as well as the activities in the manufacturing process. This way, they are normed, normalized and standardized, so the elements of production cycle (PC) time can be determined beforehand for machines, mechanization means and manual work. In practice they are not deterministic but stochastic, especially under conditions of small and medium businesses and as such they have to be monitored.

The elements of PC time are possible to monitor using the work sampling method that was first applied by Tippett [1, 2, 3, 4,5]. However, the original method has a restricted realm of use, and only three elements of PC time were monitored: the machine is in operation, the machine is in preparation, or the machine is idle (+, x, -).

Although a technical-technological indicator of machine utilization level, i.e., the time of operation against machine total available time, is a very significant indicator in production and business operations and the stochastic model application itself very simple, it is more important to obtain those levels for the elements of PC time [7]. The PC time involves the time for making a unit or a series of units from putting them in production until their storage, and aside from being significant as a technical indicator, it is important as an economic indicator of freezing current assets, especially raw materials. There can hardly be any enterprise that does not monitor the PC time over documentation and analytically, but rare are those that monitor the elements of work within the PC and by analyzing those elements affect their reduction and thereby the PC time reduction.

This is the reason why in the present paper we prove experimentally the applicability of the original stochastic method to determine the elements of PC time using as the example the results obtained by screening in textiles plants with small scale production.

In theory, the PC time – t_{pc} – is divided into production time – t_p – and non-production time – t_{np} and production time is further divided into technological time – t_t , with machine - t_{tm} and lead time - t_{pf} , non-technological time – t_{nt} with time of control – t_c , transportation – t_{tr} and packaging – t_{pk} . Non-production time is classified according to various causes of stoppages in production, and we have made the screening of the most general and common ones caused by the lack of raw materials – t_{mr} , tools - t_{tl} , organization – t_o , machine breakdown – t_b and other troubles – t_{ot} [14].

The representativeness of a screening sample per number and time of screening was established by mathematical parameters, SD and control limits, where the elements of PC time are observed as the elements of the process function. The organization of a sequence of operations, and in this regard the determination of machine time – t_{tm} , has the greatest impact on production time as the most important PC time in small scale and serial production.

The organization of a sequence of operations can be consecutive, parallel and combined. In a consecutive type of operations sequence, production proceeds in such a way that the entire series of units is waiting for all units of a series to be finished on one machine, and only afterward to be removed all together onto another machine (operation), as evident from Fig. 1. From the point of life is the cheapest.

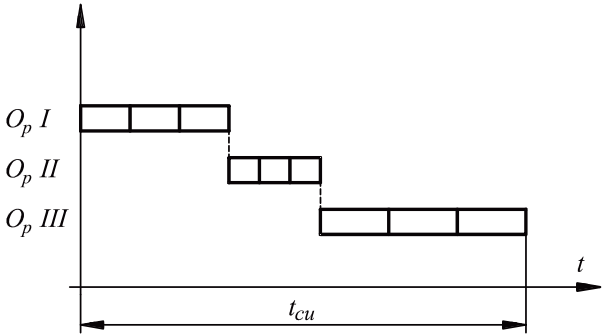


Figure 1: Organization of operations sequence for the consecutive type

In consecutive type of sequence of operations, the total time necessary for a series' production, i.e. production cycle length is:

$$t_{cu} = n \sum_{i=1}^k t_{oi}$$

- where:
- n - the number of items for production in a series,
 - k - number of operations for producing an item,
 - t_{oi} - time of individual operations' duration.

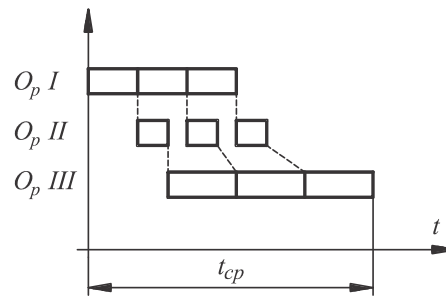


Figure 2: Organization of operations sequence for the parallel type

It is obvious from Figs 1 and 2 that for the identical time duration of technological machine time observed for the machine operating mode, for three operations for a series of three units, the PC time is much longer in a consecutive type of operations sequence. In effect, PCs in Figs. 1 and 2 represent only machine time that involves beforehand the time of waiting for the operation and worker's manual work time related to a single unit. Therefore, technological machine time should be distinguished when the machine capacity is analyzed [5] and when the PC time is analyzed and monitored. This refers particularly to serial production, when work sampling method is applied and, in general, work study is performed.

Application of the model

Practical application of establishing the mentioned elements of PC time is reduced to instantaneous observations of time elements, where the object of labor is moving through the production operations list. A series of units is distinctly marked by this document and an analyst (recorder) can readily identify it.

Screening is conducted according to randomly chosen times that are entered in a screening sheet. The screening sheet is related to one PC, and the number of individual elements of work – frequencies - are entered in it. This way, data in Tab. 1 are formed. Using the frequencies, we first calculate % of individual elements against the total PC time, and afterward based on PC time duration, analytically screened, time duration of individual elements of working time is calculated.

The organization of operations sequence in both enterprises where screenings were performed was of the consecutive type.

The experiment is related to a plant that produces military and firemen clothing. The results of cycle monitoring are represented by diagrams only in Figs 3 and Figs 4. Screenings were carried out from September 27, 2011 to November 13, 2011. Monitoring comprised 26 production cycles of different types of clothing and different series sizes, from 9 – 117 units, with time durations from 355 min for the shortest to 3700 min for the longest, while instantaneous observations ranged from 21 – 90.

Despite the significantly lower number of production cycles monitored for this enterprise (26), the stochastic variable of production time level is more stable. Minimal deviation from the control limits is found in two points only (two samples): No 5 which exceeds the upper control limit AC by 0.57 per cent; (0.8064-0.8007), while the lower point, No 9, exceeds the lower control limit BC by 1.84 per cent (0.5926 – 0.611). The production time level mean is $\mu_{tp} = 0.7092$, the upper control limit AC = 0.807, and the lower control limit BC = 0.611. The average levels for working time elements amount to $\mu_{tpt} = 0.1167$; $\mu_{tm} = 0.2334$; $\mu_{tc} = 0.1454$; $\mu_{tr} = 0.0871$ and $\mu_{tpk} = 0.1266$; for production time and the sum of times respectively, $\mu_{tp} = 0.7092$ and $\mu_{ttr} = 0.0664$; $\mu_{tl} = 0.0135$; $\mu_{tto} = 0.0637$; $\mu_{tb} = 0.009$ and $\mu_{tto} = 0.1382$ for non-production time, or the sum of times $\mu_{ttrp} = 0.2908$.

If the presented levels are compared to those for enterprise 1 (Tab. 1), it is evident that there are no significant deviations in the time elements. The highest levels of machine time are $\mu_{tm1} = 0.246$ and

$\mu_{ttr2} = 0.2334$, followed by transport time level $\mu_{ttr1} = 0.152$, while in enterprise 2 this level is significantly lower $\mu_{ttr2} = 0.0871$. The control time and packing time levels do not deviate more significantly in production time, while in non-production time, in both cases the level of the other types of time approximates the sum of the other four times, $\mu_{tto1} = 0.165$ and $\mu_{tto2} = 0.1382$.

Table 1: Frequencies of production cycle elements' occurrence

Date	MIN	Time		Production time tp					Non-productive tnp					Number of items
		Beginn.	End	tpt	tm	tc	ttr	tpk	tmr	tfl	to	tb	tto	
27.09.'11.	980	7:00	30.09.'11. 12:00	5	12	5	2	4	1		3		5	17 protective trousers
27.09.'11.	990	7:00	30.09.'11. 12:00	6	10	6	2	5	3		2		5	17 protective trousers
27.09.'11.	980	7:00	30.09.'11. 12:00	5	9	5	2	3	2	1	5		6	17 protective trousers
13.10.'11.	640	7:05	18.10.'11. 12:40	2	7	3	4	3	1		2		3	17 SMB trousers
13.10.'11.	640	7:05	18.10.'11. 12:40	4	8	4	5	4	2		1		3	17 SMB trousers
24.10.'11.	793	9:00	26.10.'11. 13:10	6	7	8	5	3	2	1	6		5	12 fire suits
24.10.'11.	780	9:00	26.10.'11. 13:10	5	10	7	7	4	3	1	4		6	12 fire suits
24.10.'11.	760	9:00	26.10.'11. 13:10	8	9	6	2	4	2		3		6	12 fire suits
20.09.'11.	520	7:00	22.09.'11. 13:40	3	5	2	3	3	3		2	1	5	10 black overalls
20.09.'11.	480	7:00	22.09.'11. 13:00	4	5	3	2	3	1		2		5	9 SMB overalls
13.10.'11.	610	7:05	18.10.'11. 12:40	2	7	5	2	4	1		1		5	17 SMB trousers
20.09.'11.	460	7:00	22.09.'11. 13:40	3	6	3	1	2	3	1	1		4	10 black overalls
20.09.'11.	480	7:00	22.09.'11. 13:00	2	6	3	2	2	2		3		3	9 SMB overalls
06.10.'11.	620	8:04	10.10.'11. 13:35	2	6	5	1	4	2		4		3	18 hunting vests
18.10.'11.	820	6:00	25.10.'11. 12:10	6	9	5	6	2	5	1	2		3	115 black long-sleeved shirts
18.10.'11.	800	6:00	25.10.'11. 12:10	4	6	6	3	4	2		2		5	115 black long-sleeved shirts
04.10.'11.	520	7:00	05.10.'11. 12:55	1	6	3	3	3	1		1		3	14 blouses
04.10.'11.	540	7:00	05.10.'11. 12:55	2	5	5	2	2	1	1	1		4	14 blouses
18.10.'11.	800	6:00	25.10.'11. 12:10	6	6	5	1	4	2		3		4	115 black long-sleeved shirts
29.10.'11.	1420	8:00	10.11.'11. 12:25	9	20	10	7	13	5	3	3	1	11	106 quilted jackets
29.10.'11.	1420	8:00	10.11.'11. 12:25	8	15	8	5	10	7	1	4	lighting 2	6	106 quilted jackets
29.10.'11.	1400	8:00	10.11.'11. 12:25	9	17	9	7	12	8	2	4	2	7	106 quilted jackets
15.11.'11.	1060	9:30	24.11.'11. 13:37	8	20	10	6	15	4	1	4		17	67 trousers
16.11.'11.	1000	8:00	25.11.'11. 09:35	6	16	13	4	9	4		3		9	63 blouses
15.11.'11.	1080	7:40	25.11.'11. 13:50	9	20	14	7	15	4	2	4		15	112 blouses
23.11.'11.	875	9:00	25.11.'11.13:15	5	13	9	6	4	3		1	4	6	10 sweaters
	21,468			130	260	162	97	141	74	15	71	10	154	

Considering the results given above, the analysis should be directed towards the problem of the elements of transport time which can be reduced. Also, the distribution of time elements in other types of stoppage should be considered from a mathematical standpoint in such a way that the most significant stoppage will be segregated within it.

This indicates that experiment design and repeated screenings should focus on a possible size and frequency and whether the designed (anticipated) stoppages per type will emerge at all. The technical level of machine time elements μ_{tmi} deviates very little from the control limits (Fig. 4) which for $\mu_{tm} = 0.2334$ amount to: AC = 0.2570 and BC = 0.2097.

From Table 1, we get the data in Table 2 and Table 3. Data given in the Tables represent mean values and SD_p for groups of screenings for PCs per the series size. Therefore, it is noticeable that

there are 11 groups containing at least 9 units in a series, while the largest group has 115 units in a series.

Table 2 shows the size of each group with the number of units in a series for PC time per unit \bar{t}_p and production time \bar{t}_{pcu} as well as mean values by groups and SD_p in % for t_p . Table 3 displays mean values \bar{t}_p and \bar{t}_{pcu} , SD_p and number of PCs screened by groups and number of units in series in those cycles.

Table 2: PC time per unit in a series and production time in % for enterprise II

Number of items n	t_{pcu} (min)/kom	t_p %	S%
9	53,33	67,2	0,99
9	53,33	67,22	
\bar{x}	53,33	66,21	
10	52	59,26	5,64
10	46	62,49	
10	87,6	72,56	
\bar{x}	61,87	64,77	
12	66,08	67,44	2,07
12	65	70,21	
12	63,33	72,5	
\bar{x}	64,8	70,05	
14	37,14	76,19	3,32
14	38,57	69,56	
\bar{x}	37,86	72,88	
17	54	75,68	5,22
17	54	74,36	
17	54	63,16	
17	37,65	73,6	
17	37,65	80,64	
17	35,88	74,08	
\bar{x}	45,53	73,59	
18	34,44	66,67	0
\bar{x}	34,44	66,67	
63	15,87	75	0
\bar{x}	15,87	75	
67	15,82	70,4	0
\bar{x}	15,82	70,4	
106	13,4	71,95	1,22
106	13,4	69,69	
106	13,21	69,13	
\bar{x}	13,27	70,26	
112	8,64	72,33	0
\bar{x}	8,64	72,33	
115	7,19	71,8	0,41
115	6,96	71,87	
115	6,96	70,97	
\bar{x}	7,04	71,55	

Table 3 also shows the log taken for the number of units in a series – log unit/ser, so the trends for presented working time elements are given by a diagram in Figure 5 Stratified mean value of production during is:

$$\bar{t}_p = \sum \bar{t}_{pi} \frac{f_i}{N} \quad (1)$$

where f_i is the number of PCs with identical number of units in a series, and N is the total number of production cycles [8]. According to the data in Table 3

$$\bar{t}_p = 66.21 \frac{2}{26} + \dots + 71.55 \frac{3}{26} = 70.53$$

Stratified the standard deviation is given by the formula:

$$\sigma' = \sqrt{SD^2 + \sigma^2} \quad (2)$$

Where is :

$$\sigma^2 = \frac{\sum_{j=1}^1 (\bar{t}_p - \bar{t}_p)^2 f_i}{N} \quad (3)$$

$$\overline{SD}^2 = \frac{\sum_{j=1}^1 SD_j^2 f_i}{N} \quad (4)$$

$$\overline{SD}^2 = \frac{0.99 \cdot 2 + 5.64 \cdot 3 + \dots + 0.41 \cdot 3}{26} = 11.56$$

$$\sigma^2 = 9.45$$

$$\sigma' = \sqrt{11.56 + 9.45} = \sqrt{21.01} = 4.584$$

$$SD < \sigma'; SD = 4.6; \sigma' = 4.584$$

SD is not stratified standard deviation of all 26 elements of the production time to time table 1. control limits the amounts

$$CC = \bar{t}_p \pm 3\sigma' \bar{t}_p = 70.53 \pm 3 \cdot 0.04584 \cdot 70.53$$

$$AC = 77.14\%, BC = 63.92\%$$

Table 3: Number of cycles and number of units in a series

No	Cycle no.	unit/ser	\bar{t}_{pcu} (unit/ser)	\bar{t}_p (%)	SDtp	log (unit/ser)
1	2	9	53.33	66.21	0.99	0.954
2	3	10	61.87	64.77	5.64	1
3	3	12	64.80	70.05	2.07	1.079
4	2	14	37.86	72.88	3.32	1.146
5	6	17	45.53	73.59	5.22	1.23
6	1	18	34.44	66.67	0.00	1.255
7	1	63	15.87	75.00	0.00	1.799
8	1	67	15.82	70.40	0.00	1.826
9	3	106	13.27	70.26	1.22	2.021
10	1	112	8.64	72.33	0.00	2.049
11	3	115	7.04	71.55	0.41	2.061
\bar{t}_p (%)				70.53		

Mean value for all groups obtained using the formula (1) is $\bar{t}_p = 70.53\%$ and ranges from bottom control limit $BC = 63.92\%$ to upper control limit $AC = 77.14\%$. The stratification of groups was again unsuccessful, because according the Tab.1. $SD_p = 4.6\%$ and according to the formula (2)

$\sigma'=4.584\%$, which is approximately equal, and it can be said that stratification is again unsuccessful.

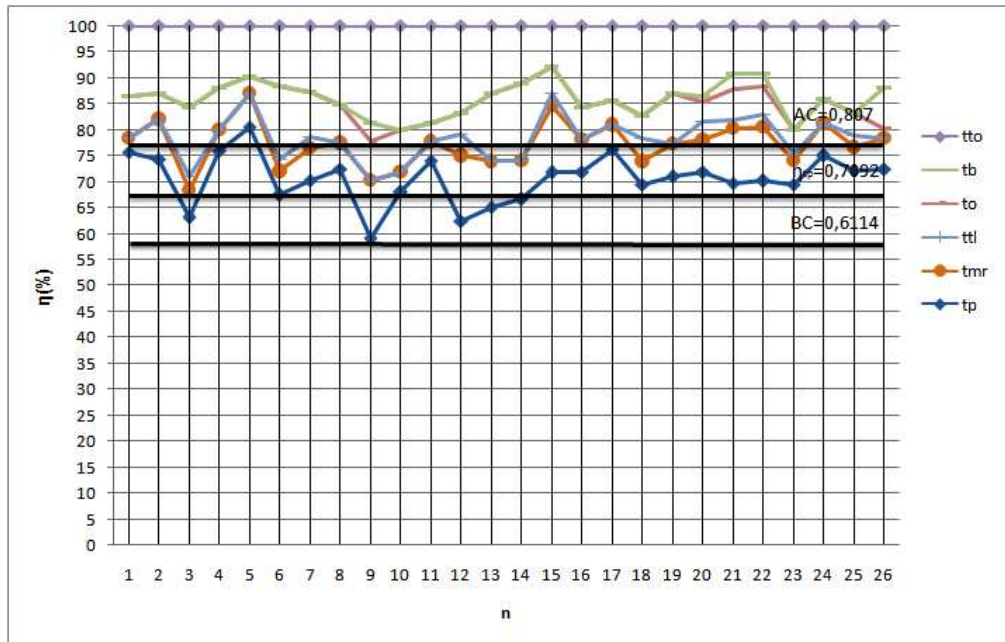


Figure 3: Diagram showing the levels of cycle time elements

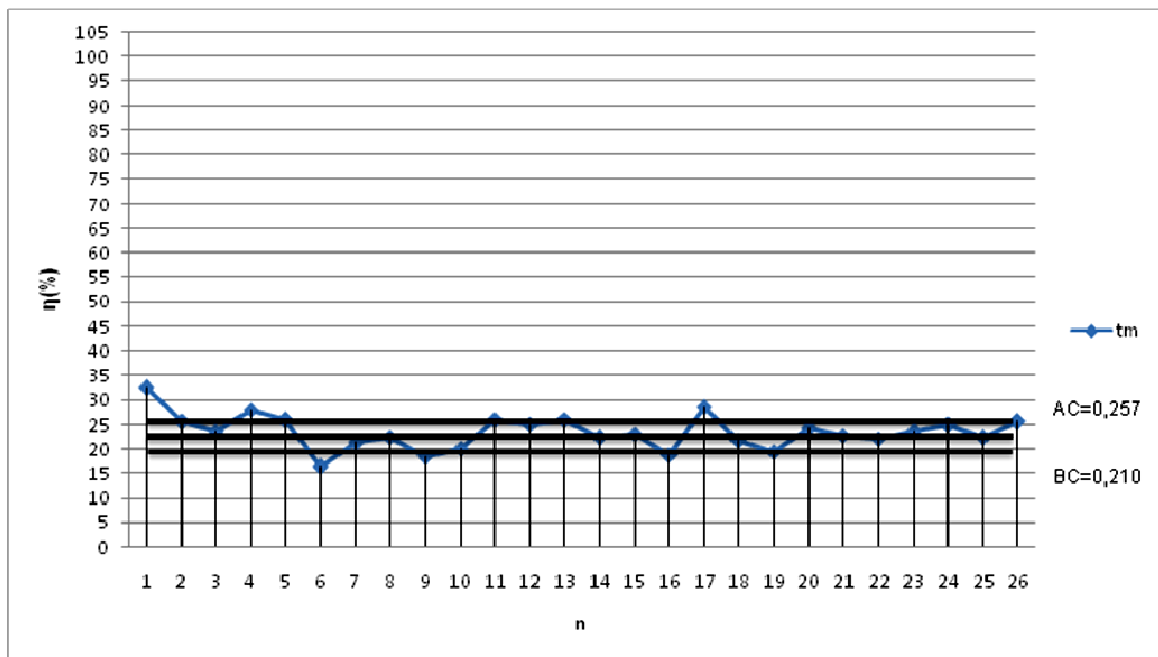


Figure 4: Machine time level

Moving \bar{t}_{pcu} can be approximated by the formula:

$$\bar{t}_{pcu} = c + \frac{b}{\log n} \quad (5)$$

CONCLUSION

Production cycles is the most significant technical-technological indicator in production in general, and in the textile industry, and it is necessary to steadily monitor and reduce it. In our experiment,

the textile factory has been proven that the original stochastic model of monitoring elements of the production cycle time is applicable. Shortening the production cycle can be influenced by the ancillary elements of the time. The movement of elements of time can be monitored through the establishment of mathematical control limits where they are seen as a process. Production cycles mean value for the groups formed according to the number of units in a series t_{pcu} moves along the

hyperbolic function which has asymptote c , $\bar{t}_{pcu} = c + \frac{b}{\log n}$, and, mathematically, these groups do

not behave as strata, which means they are not linked to deterministic factors of technology and number of units/series.

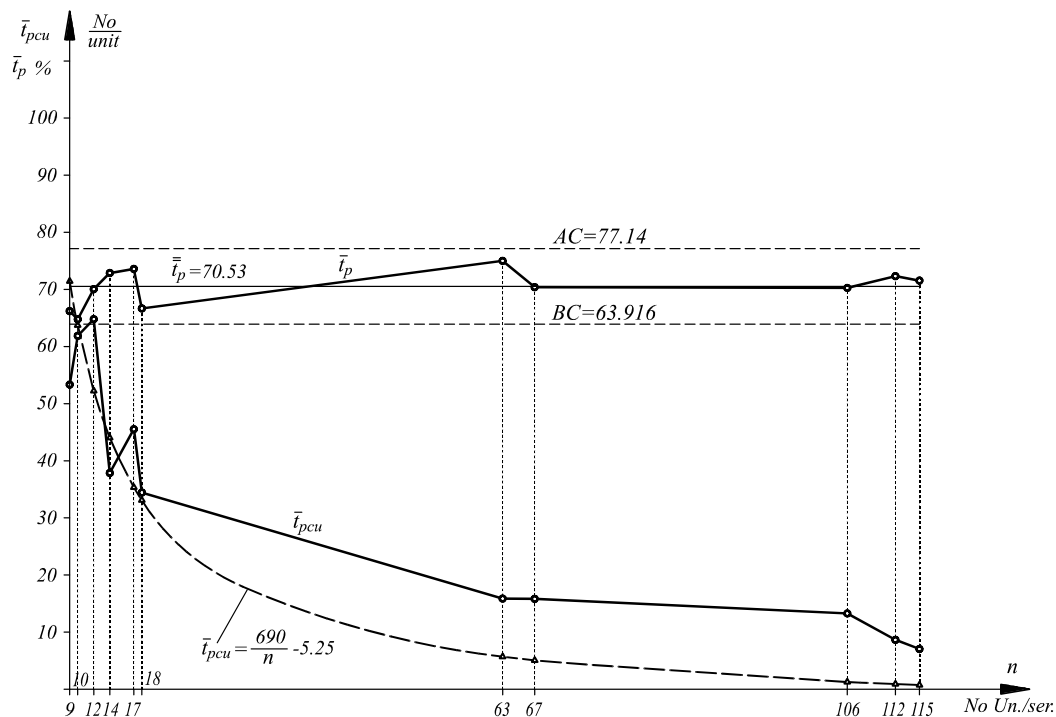


Figure 5: Moving average values of the production time \bar{t}_p and mean the production cycle apiece in the series \bar{t}_{pcu}

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Session F: ECONOMY

Papers (pp. 435-496):

Dejan Ječmenica, Lidija Barjaktarović NEW APPROACHES IN THE MANNER OF HUMAN RESOURCES IN TERMS OF ECONOMIC AND FINANCIAL CRISIS	...435
Marko Ivaniš FACTORING AS A CONTEMPORARY FORM OF ENTERPRISE FINANCING	...440
Nada Milenković, Jelena Đurasinović FACTORS AFFECTING THE BALANCE OF INVESTMENTS IN SERBIA	...446
Miloš Pjanić, Darko Marjanović, Danilo Lučić STRATEGIES CREDIT POLICIES OF COMMERCIAL BANKS IN SERBIA	...451
Romana Petrović, Jovana Ivančević MANAGEMENT STRATEGY OF PROBLEMATIC LOANS OF THE BANK	...456
Vera Zelenović, Milivoje Davidović QUALITY SYSTEM IN THE BANKING BUSINESS IN ORDER TO IMPROVE PROVIDED SERVICES	...462
Dragana Ikonić, Snežana Milošević, Nada Milenković CAPITAL ADEQUACY ANALYSIS AS A CONTEMPORARY CONCEPT AND MEASUREMENT OF PROFITABILITY OF INSURANCE COMPANIES IN THE REPUBLIC OF SERBIA	...468
Nataša Papić-Blagojević, Maja Ilić-Pupovac THE INFLUENCE OF THE BAYESIAN'S BETA ON THE CAPM METHOD IN CALCULATING THE COST OF EQUITY	...474
Nemanja Berber , Milan Pasula , Milan Radošević ECONOMIC VALUE ADDED IN FUNCTION OF DETERMINING INCENTIVE COMPENSATION SYSTEMS	...480
Husein Mehmedović CREDIT RISK MANAGEMENT TECHNOLOGY	...486
Savina Đurin, Jelena Stanković, Edit Terek HEDGE FUNDS IN CONTEMPORARY ECONOMY	...492

NEW APPROACHES IN THE MANNER OF HUMAN RESOURCES IN TERMS OF ECONOMIC AND FINANCIAL CRISIS

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ABSTRACT

This paper presents a new approach in management of human resources in terms of economic and financial crisis, with a special aspect of staff development and creating competitive advantages in relation to the market environment. In doing so, based on the understanding that the new challenges of human resource management are not only efficient employees and information, but the daily development and training of employees in the direction of changing their knowledge, skills and abilities. Daily changes in business environment affecting the organization changes. In such organizations are changing the approach to human resource management and their role. To the organization could fully satisfy the demands of their environment have focused on the development of human resources that are out of vital importance. The challenge of managing human resources goes in the direction of creating competitive advantage through the promotion of enterprise skills of employees, creating and applying new knowledge, skills, and differentiation of its products and services, as well as the amount of built-in knowledge of human resources in relation to competitors

Key words: management, human resources, development, knowledge and skills.

INTRODUCTION

There are more and more rapid and unpredictable changes in the environment of modern companies, and for this reason they are turning to employees and their potential. The dominant advantage of modern environment with a very large implications for management, its present and future, is the increase of its complexity and dynamism or volatility. Constant, more rapid and radical changes that require greater sensitivity, skill and ability to adapt, are becoming an integral part of managerial reality and the reality of companies. All these changes are happening daily in all areas of life, in economic, technological, social and legal environment. The complexity and interconnectedness are their essential properties. The uncertainty associated with the large amount of information needed for decision making, impossibility of prediction and the use of any method and model forecasts, make business and managerial situation even more complex, and their responsibility for making the right decisions and the development of the company even greater. Thereby, changes in one segment act as billiard balls, causing a series of chain reactions in many areas. The dominant influence of the environment on the management with constant change is the great uncertainty in future growth and development of companies.

TURBULENT CHANGES IN BUSINESS ENVIRONMENT

Regarding afore mentioned, more is expected from management, and decision-making process seems very complex. The most important task of management becomes a constant adjustment and active response to changes, tracking and quick use of new business possibilities and opportunities that are provided. Monitoring and detecting weak signals of changes in the environment and

proactive response are becoming very important. In such circumstances the only appropriate response is to intensify internal company changes, constant change and rapid response to changes in the environment. It simply prevents the centralization of information and decision, establishing clear structures and procedures, and makes all traditional management mechanisms obsolete. In these circumstances, the only thing the company can really rely on are the capabilities and informed employees that will detect and use new business opportunities, quickly react to changes and take action required by the environment. In order for a company to survive and be successful, it needs to have employees who will:

- Successfully track and discover the weak signals of changes in internal and external environment of companies;
- Timely communicate all important information about changes in those parts of the company which can have an effect on them;
- Appropriately and creatively respond to changes and challenges of the environment, i.e. create the necessary internal changes (in the business, product and service, technology, methodology, education, application of new knowledge, marketing, etc.);
- Quickly and effectively place the changes in the environment and make appropriate commercial effects;
- Provide continuous feedback on the effects of changes;
- Continuously develop, learn and keep pace with the latest developments, and provide continuous creative contributions;
- In ever-changing challenge, see opportunity and chance to create new in all areas of work and business.

THE COMPETITION INCREASE

The key focus of the modern business environment is on a strong intensification of market competition and competitiveness. Competitors and consumers are undoubtedly the two most important environmental factors and they have big influence on business orientation and management behavior. The main objective of the company, is to satisfy consumers, and the logic consequence of it is profit. On the developed, saturated and competitive markets demanding and sophisticated consumers constantly change their needs and values. In such circumstances, the choice possibilities change daily and it is a very difficult task for management. The result is a compulsive orientation to consumers, establishment of intensive communication with them and involving them in the company and all its processes, meeting their needs and requirements.

Another important factor in the immediate environment are the competitors who are critical for any company environment. Every action of competition has immediate consequences for the company because it requires change, constant adjustment and appropriate responses to maintain the relative position and mutual relations. In fact the competition is one that affects the rise of quality, constant innovation, new products, production processes, methods, but also the changes in business orientation and behavior.

On the behavior of companies, their action strategy and development act, not only the current but also the future competitors, and also the substitutes for the products and services. Particularly important, becomes the focus on the employees at all competitors.

Companies are daily faced with the more demanding and sophisticated consumers, but also with a cheaper and more imaginative producers of goods and services. At the same time it must compete with those who, concerning the high-quality employees that are becoming lesser in number, give more and continually develop all attractive and creative staff development programs to attract and retain the most capable ones. So the competition is intensified both in the goods and labor market. In both cases, competition has become very severe and global. To increase the competitiveness of companies more decisive is the quality of all employees and their creative potentials that allow differentiation and the creation of something new. The maximum external orientation on

consumers, which becomes predominant determinant of successful companies, can be, as is emphasized, only realized with the maximum internal orientation to employees.

IMPACTS OF ECONOMIC DEVELOPMENTS AND CHANGES

One of the undoubtedly most important factors of different policy and relations with employees are the economic changes and processes that have in recent years affected also the developed world. The trend of action of the economic changes on the rotation to employees can be illustrated with a few pointers:

- All theoretical approaches to the company emphasize the employees and their behavior as a relevant factor in the success of the company. The immediate material incentives were in the economic crisis (Daft, 1997). Thus, we can give an example, the access to personal relationships and the changes initiated in the companies of that era, resulting in a period of great world crisis of 1929 - 1933. The reasons for its occurrence are not humanistic and social, they are primarily economic.
- The analysis of the dynamics of technological changes, viewed through a number of innovations, shows with discontinuity, more increasing technological progress every sequent is higher than the previous one (Girifalko, 1983). In this way, the largest industrial and technological innovations occur in the middle of great world depressions.

In early eighties, there is a great interest for the quality of life and work in U.S. companies, as well as action in this direction. There is a development of a movement and a series of differently named programs with one goal: to increase interest, identify and involve employees in solving business problems and achievement of company goals i.e. maximize their potential. Managers focus on employees, processes and ways of motivating that can use all the potentials and direct them fully to the goals of economic development of a company. More than 2,000 private and public companies of various sizes introduced during this period specific development programs. This confirms the rule that an economic recession or crisis by making capital scarce and expensive conditions turning to those resources which in practice are of enough number, and that are the employed, and efforts to compensate through the development and maximum use of resources for the lack of availability of other forms of capital. Knowing that employees are an inexhaustible developmental resource, and also the most flexible form of capital, it defines the logic and business behavior of successful companies nowadays, their structure and all other organizational processes. Furthermore, rapid changes in this direction for years to come can only be intensified.

Japan precisely has this philosophy, with no traditional manufacturing and natural resources (oil, coal, uranium, bauxite, farmland, etc.), from retrograde and war-devastated country it became a world economic superpower and shook the entire world economy, becoming a role model, but also the constant threat to the undeveloped. With that it became a very important factor of world economy development and unimagined development of productive forces. One of the key factors for the development of unlimited capacity of innovation, which is in the Japanese success basis are the employees and the fact that it was the only way out.

In parallel, that we can draw with the current economic crisis and the problems faced by a modern management, we often ask ourselves if we are learning enough from the past.

THE IMPORTANCE OF HUMAN RESOURCES AND CHALLENGES OF THEIR MANAGEMENT

Rapid changes in the company business environment, as well as changes in company organization gave a basic stamp to the contemporary models of human resource management. These changes have greatly affected the management models, as well as the attitudes and evaluation of human resources in companies. Some of them are:

- Employees are becoming more and more strategists, leaders and specialists in certain fields,

- Employees are no longer performers, but also creators of their own specific tasks and duties,
- Human resources are becoming one of the most important business resources ,
- The project and teamwork are being affirmed.

In theory and practice of human resource management interwoven are the knowledge, creativity and abilities of employees. The acceptance of such qualitative importance of human resources in companies implies the evolution of human resources management content. In this sense, human resources are becoming, on the one hand, a fundamental prerequisite for successful management in the company, and on the other hand one of the focuses on which this function concentrates its comparative advantage in relation to the environment. The most modern approach to the challenge of human resource management today is that the employees are the most valuable and dynamic resource for any company. This approach has influenced that the management of human resources becomes a key area of strategic management in modern companies. In this approach are included:

- Human resources practices such as recruitment, selection, evaluation and remuneration,
- Human resources policy which directly and specifically determines the development of special practice of human resources management ,
- Philosophy of human resources with specific values that maintain policies and corporate objectives.

In such changes challenge of human resource management involves two essential components. The first concerns the establishment of a framework for the daily impact of human resource management in companies and decision making. It includes:

- The vision of human resources management,
- Design of human resources management,
- Identifying human resources management strategies for the achievement of all elements and processes of human resources management, which is consistent with company strategy,
- Identifying desired behavior, goals, policies and practices of human resource management that supports them.

Another important component is related to the implementation of policies and practices of human resources management that are required by companies and are necessary in order to realize the full potential of their human resources. Changes, economic crises and challenges that are facing the management of human resources position the role of human resource management at the center of complex organizational changes of each company. In this role, the main task and challenge of human resources management is to channel the individual potentials of the company towards achieving the stated goals of individuals and companies. This process is very important to recognize and use all available knowledge, skills, abilities and motivation of all employees to achieve company goals.

Very important variables that affect human behavior stand out above all by the individual characteristics of employees. First of all we are concerning knowledge, ability, willingness and situational approach. In addition, employees in companies are being accessed as an important resource that is included in all the essential elements of business strategy of each company. In this direction, human resource management is primarily focused on the system of motivation, education, and training of employees. Common features of the motivation system are the strive for all employees to feel a common spirit and culture of the company, so that with the material and nonmaterial remuneration the creative potential of all employees is released. In this context, increasing the use of human capital in the company, as the most precious resources, becomes a challenge for human resource management function in every company. From a number of factors and the approach depends the extent to which employees will be motivated to work. In addition to motivation, ongoing staff training and education are essential elements of modern strategies in human resource management. The training is seen as a way of developing and motivating the employed for current and future tasks they perform or will perform in the near future. In the process of training all employees involved. Special attention, resources and budget are defined for

employees who are at executive positions. They are expected to have other skills and abilities. In order to achieve their goals and lead the company, they have to go through different training programs that are specifically designed for them. Companies that recognize their opportunity in the latest market challenges, provide substantial means and resources for training and development of their employees and managers.

By understanding the logic of the changes that occur at all these levels, human resources management in the company will have time to recognize, predict and better understand all the changes which are taking place and in which they are involved. This usually means that it is necessary to set new goals under the new circumstances, make an action plan, to provide what is needed to achieve these goals. In some cases this involves removing the obstacles and risks, and making quick decisions to move into implementation immediately. In such situations, and with the measures taken, often is expected or expressed "More for less" or how to achieve more with limited resources. In practice this means how to reduce certain costs. In the first and in the second connotation the point is in a better rationalization, rather than reduction of business functionality. In these difficult and challenging business conditions, account must be taken in order to communicate, act and work with employees. In such circumstances it is necessary to motivate employees to greater productivity. In order to achieve this employees should be more informed, be present more and more positive with them.

CONCLUSION

There are more and more rapid and unpredictable changes in the environment of modern companies, and for this reason they are turning to employees and their potential. The dominant advantage of modern environment with a very large implications for management, its present and future, is the increase of its complexity and dynamism or volatility. Constant, more rapid and radical changes that require greater sensitivity, skill and ability to adapt. The complexity and interconnectedness are their essential properties. Thereby, changes in one segment act as billiard balls, causing a series of chain reactions in many areas. The dominant influence of the environment on the management with constant change is the great uncertainty in future growth and development of companies.

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FACTORING AS A CONTEMPORARY FORM OF ENTERPRISE FINANCING

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ABSTRACT

Factoring is a modern non-credit business that purchases short-term accounts receivable. The purchase is done prior to maturity, and in the developed market economies factoring is frequently used as a form of accelerated recovery of claims. A company resorts to obtaining funds by way of sale of receivables when it cannot obtain the money in other ways, or if it sells its products on credit. Positive effects of factoring are the most important for small and medium enterprises, as well as start-ups, primarily due to the unwillingness of banks to grant loans to such firms. Factoring enables many companies to be competitive and survive in the market. The aim of this paper is to highlight the importance of factoring as a contemporary form of enterprise, as well as its advantages and limitations.

Key words: factoring, factor, client, customer, calculation.

INTRODUCTION

Factoring is a specific tool used to obtain funding by way of sale of accounts receivable. Namely, factoring is generally defined as the sale of receivables by a business entity (enterprise) to an agent organization that purchases the receivables and assumes the whole risk of possible inability to collect the purchased receivables. The purchase of receivables is done prior to maturity. In doing so, a factoring company immediately pays part of the receivables in the amount of 80% to the client company, while the remaining amount of 20% is used for accounts receivable corrections and is made available to the client after the collection of receivables by the factoring company. The factoring company charges a fee usually around 3% of the accounts receivable amount of the factoring service, including credit risk and interest from the time of purchase to the collection of the receivables. Factoring companies operate as independent organizations, with a large capital which provides for a number of economic entities that have an interest in this activity.

In developed market economies, factoring is frequently used as a form of accelerated recovery of claims. In this sense, a company resorts to obtaining funds by way of sale of accounts receivable when it cannot obtain the money in other ways, or if it sells its products on credit, due to which the company's receivables constitute a big part of its assets. Factoring involves the conclusion of an agreement according to which the client (enterprise) is obliged to transfer (assign) receivables which are the subject of the factoring agreement to the factor. In addition, the client may transfer their accounts receivable in their entirety or only partially and also can assign their future receivables in their entirety or partially. As a legal source, on the occasion of the conclusion of a factoring agreement, general business terms of the factoring organizations, trade practices, appropriate norms of commercial and contract law, as well as legal and arbitration practices apply. In this respect, it should be noted that factoring agreements are governed by the UNIDROIT Convention on International Factoring, which was adopted in Ottawa on 28th May 1988.

PARTICIPANTS IN THE FACTORING BUSINESS

As a rule, the main entities participating in the operation of the factoring business are: the client, the customer and the factor. The client is an entity that produces goods (or offers services), mostly for durable consumption, with which a factor concludes a special agreement. The customer is an entity that purchases goods from the manufacturer or service provider and that becomes the factor's debtor and bears an obligation to repay the loan in connection with the sale of certain products or provision of services by the client. The factor is an organization that purchases invoiced amounts from clients over a longer period of time. The main activity of the factor is reflected in the fact that it collects the receivables transferred (assigned) to it by the client.

The main obligation of the client is to continuously and duly submit to the factor the invoices which relate to products shipped to the customer (or to services) in accordance with the provisions of the sales agreements. In addition, invoices must be complete, contain all relevant data and information so that customers are able to duly pay the value of purchased goods and services. Under the terms of the agreement of sale of goods or services, the client is obliged to indicate the payment terms on the invoice: payment in full or by installments, payment deadlines, as well as an indication that the payment is made through a designated factor.

The main obligation of the customer stems from the essence of the factoring mechanism, where the customer is the main subject with important functions, since it bears the payment obligation resulting from the purchase agreement entered into with the manufacturer of the product (or service provider). In doing so, it is the customer's insistence that the products or services are paid on credit, which means the customer is specifically interested in the conditions of payment using the current situation in the market. The existence of the credit relationship is important for the interests of the customer, regardless of who provides the credit, the client or the factor. With the act of payment of the debit amount by the customer, ends the final stage of the funding procedure using the factoring mechanism.

The main obligation of the factor is to undertake all necessary procedures for the granting of credit lines to the client, or the limit to which the client has the right to do business with its customers, taking upon itself the 100% of the risk that may occur if the customer, for any reason, defaults payment under the credit line approved by the factor. Furthermore, the factor is required to keep accurate records of whether the payment of receivables is duly made and controlled, because the client sells its receivables for goods or services to the factor most commonly without the recourse. Therefore, there is a constant obligation to keep track of the maturity of receivables from customers. However, practice often shows cases when the factor occasionally gets responses from customers that they do not want to make the payment, that they will return the goods or make it available for use by others, or offer payment at a reduced price, which, in fact, presents the customers' refusal to pay, which is usually caused by the poor quality of the contracted goods, inadequate packaging, or other defects. In such cases, when it comes to customer payment disputes, the practice is that the factor addresses the client in order to determine the reasons for customer's refusal to perform its obligation to pay the amount owed, or the proposal of the customer for reduction of the obligation. Similarly, the client is obliged to respond to customer complaints relating the default of payment of receivables by the customer or to delay payment at the time of maturity. There is no doubt that this situation leads to unfavorable relationship between the entities in the factoring business. Although the main activity of the factoring company consists of client financing or the redemption of its invoiced receivables, it should be noted that the factoring organization, in addition to its main function, can also deal with activities that are outside of its usual and regular scope of activity. This means that in certain cases, the factoring company can provide services which can be of great benefit to the customers due to their importance and possibilities of material savings. Among these services and activities of the factors, the following particularly matter: (a) maintaining accounting services by the factor, (b) audit of business records and documents by the factor, (c) development and improvement of turnover, especially for small and medium enterprises, i.e. clients who do not possess the appropriate marketing department, and

(d) improving client's business, in relation to the management, planning and control in various areas of its operations.

TYPES OF FACTORING

As a form of financing company's renewal process, factoring can occur in several types and various contents. Therefore, in business practices, there are different types of factoring agreements depending on the criteria observed in their classification. However, despite the abundance of division criteria, it can be said that, in practice, most commonly used forms of factoring are the following: firstly, open-factoring, secondly, closed or hidden factoring and thirdly, true factoring and quasi factoring.

Open factoring - occurs when an exporter assigns (transfers) its receivables from a foreign buyer, with a notice to pay the debt to the factor. In addition, there are two types (forms) of open factoring. The first form of open-factoring is when the exporter of receivables, owed by a foreign buyer, transfers them definitively to the factor. At this point the exporter ceases to be the creditor of the debtor from the previous main business and his place is taken by the factor as a new creditor. The value of this form of factoring can be up to 95% of the book value of receivables, and it depends on the volume of turnover that is realized through the factor, the degree of risk the factor enters into, and the balance sheet of the foreign buyer. For the transferred accounts receivable, the factor pays the export value of receivables minus the interest, fees and costs of the collection of receivables. Another form of open-factoring is when the exporter assigns his receivables solely for collection. In this case, the assignment is made with the aim of the definitive transfer of receivables to the factor, so that the factor could collect the receivables from the foreign buyer in its own name, and on behalf of the domestic exporter. The factor pays the exporter a designated amount in equal installments over a specified period of time. However, in modern economic practices, the combination of these two forms of factoring can occur, when the exporter has more accounts receivable from abroad, and gives only one to be collected, and the other receivables transfers definitively to the factor. In fact, open factoring, in both its forms, has proved its value in practice, so that today it is widely spread in the open market.

Closed or hidden factoring is a financing mechanism that is more complicated than the open factoring. Namely, this form of factoring occurs when an exporter sells goods meant for export to the factor for money, in the way that the bank, acting as a hidden principal resells the same goods through the same exporter to the foreign buyer on credit. In this form of factoring business, the factor makes a profit on the price difference. In addition, the profit is significant because it concerns the financing of export business, which enables the exporter to place the goods abroad. In this factoring model, the exporter is enabled to place the goods while the factor is given the possibility to make a profit arising from the price difference by assuming the risk of sales.

True factoring is present in all cases where the factor carries out three functions cumulatively. These are: (1) function of refinancing of accounts receivable, (2) function of payment security, and (3) function of service provision in connection with the sales of goods and collection of receivables. Quasi-factoring - occurs when the factor carries out one or two of these three functions. In this form of factoring, the factor does not assume the risk of collection and is not liable for the collection of receivables, which remains with the client if it does not manage to collect the receivables from the debtor.

Finally, we should mention that in practice we often see another division of factoring - factoring with the right of recourse and without the right of recourse. Recourse factoring allows the factor to ask for credit protection and realization of payment in the amount of outstanding receivables from the client in the event of insolvency of the buyer, or more of them. In non-recourse factoring, the factor is not given the right of compensation from the client if one or more buyers are unable to pay their obligations. In the modern world practices, non-recourse factoring agreements are dominant,

which means that the whole obligation of the realization of receivables from the buyer lies with the factor.

FACTORING CALCULATIONS

As with leasing arrangements, what is very important for deciding in favor of financing through factoring is the so-called project analysis of the factoring business, based on which both the seller and the buyer of receivables make their respective detailed calculations. The seller does so in terms of its internal labor and business economy, like the buyer, but the latter having to take certain risks into account. For this reason, the buyer of receivables in the calculations goes for reinsurance, i.e. guarantees and superguarantees by other companies regarding the collectability of receivables from a particular debtor. When making the calculation for the sale of their receivables or the calculation of the costs for the collection of receivables, the seller of receivables starts from the activities which it transfers to the factor such as: information about the credit worthiness of the buyer, accounting, correspondence with the buyer, time of collection of receivables and the amount of interest not charged during the time, the level of risk connected to uncollectible debt and so on. Based on all these elements and others relevant for decision making, one can draw a conclusion on costs of the collection of receivables which are acknowledged to the factor, and the receivables are sold reduced for the amount. In this respect, the determined costs of collection of receivables could be expressed in different ways. Firstly, in a fixed amount for each receivable, separately for regular ones, and separately for disputed receivables, and that the amount is paid in full to the factor on the conclusion of the agreement. Secondly, in the reduction of the invoiced receivables for the amount of recognized costs in both types of receivables (regular and disputed). Thirdly, in the percentage for which the factor participates in the charged receivables (3%, 5%, 10% or 20%) depending on the previously made calculations.

Calculations of factoring operations are business documents of the factor and the seller of receivables and are considered confidential until the conclusion of the agreement, which may occur at a later time. Modern practice has shown that the most stimulating solution for both parties is when factoring costs are provided from the collected amount. However, for a more practical understanding of the factoring mechanism, it is best to provide a practical example of financing through factoring, where the key question comes down to the following: is it better for an organization to entrust a factoring company with the collection of receivables, or is it better to wait for payment, i.e. collect the payment using own resources? Accordingly, the main elements for consideration of this hypothetical example are contained in the following data: the accounts receivable on 1/1/2012 amount to 300.000 euro, the payment is agreed for the period of one year, with 12% interest rate (per annum), and the receivables mature on 1/1/2013. Examples of calculations for collection of receivables are given in Tables 1 and 2.

Table 1: Calculation of in-house collection of receivables

Indicators	Amount
1. Receivables on 01/01/2012 (mature on 01/01/2013)	300.000
2. Agreed interest rate 12% (regular)	36.000
3. Gross receivables (01/01/2012 = 1 + 2)	336.000
4. Index price of raw materials 135.2 i.e. calculated depreciator (100 : 135.2)	coefficient 0,7391
5. Discount factor I_{12}^1 (table)	coefficient 0,8928
6. Discounts:	
(a) according to the table 0.8928×300.000	267.840
(b) according to the depreciator 0.7391×300.000	211.730
7. Differences – loss of receivables	
(a) 1 minus 6/a = discount	32.160
(b) 6/a minus 6/b = inflation	46.110
(c) total loss of receivables (a+b)	78.270
8. Updated receivables (3-7c)	257.730

Table 2: Calculation of collection of receivables through factoring

Indicators	Amount
1. Paid by the factoring contract 01/01/2012 75% of 300.000	225.000
2. The remainder of the receivables in the amount of 75.000 euro paid on 01/01/2013 with 12% interest	84.000
3. Gross collection (1 + 2)	309.000
4. Discounts:	
(a) according to the table 0.8928×75.000	66.960
(b) according to the depreciator 0.7391×75.000	55.432
5. Differences – loss of receivables	
(a) 2 minus 4/a = discount	8.040
(b) 4/a minus 4/b = inflation	11.528
(c) total loss of receivables (a+b)	19.568
6. Factoring fee (300.000 x 2%)	6.000
7. Updated receivables [3 – (5c+6)]	283.432

Calculations presented in Tables 1 and 2 clearly show that the amount of updated receivables in the first case amounts to 257.730 euro, while in the latter case it amounts to 283.432 euro. Similarly, this undoubtedly leads to the conclusion that the collection of receivables should be left to a factoring organization, because it is more profitable for the creditor's company. The main reasons for this decision are as follows: firstly, it is about a higher purchasing power of the same amount of receivables, and secondly, it accelerates the turnover of assets in the company's process of renewal. Considering the relations in the presented calculations, one should bear in mind that the difference shown may be even smaller, assuming that the collection from the debtor can be accelerated by cash discounts, but it can also be much higher if it is about receivables arising from international economic relations connected to the countries with the currency devaluation. According to the presented example, we see that the factoring organization, apart from the fees of 6.000 euro also charge 12% interest on the amount of 225.000 euro, or a total of 33.000 euro, comprising a total of 11% on the initial (assumed) accounts receivables.

ADVANTAGES OF FACTORING

The main benefits of the factoring business are manifold, both on the macro and micro level, i.e. on the level of companies as active participants in all financial flows of the economy. At the macro level, there is an evident impact of factoring on the growth of production and turnover, and the overall effects in the economic and financial flows, faster flows of exports and imports, with a positive impact on the country's balance and the overall economic growth. Factoring allows all producers, particularly exporters, to quickly adapt to market developments, to increase manufacturing efficiency and direct their activities towards the problems of demand, also achieving significant cost savings, by way of transferring receivables to the factor. Additionally, factoring is generally not used to meet the needs concerning fixed assets (which is typically the case in forfeiting), but is mostly used in cases of sales or exports of consumer products.

At the micro level, i.e. regarding economic enterprises, there are also multiple benefits from factoring, since the factoring mechanism enables companies to quickly respond to changes in demand at home and abroad, and to avoid significant costs which they would otherwise have if they carried out the collection of receivables on their own or based on approved loans. An important benefit of using a factoring mechanism for a company is that their own company balance is not burdened as the factor assumes the risk of the collection of receivables. In this way, the manufacturer-exporter does not wait for the realization of its receivables or the realization of loans of domestic and foreign customers, but immediately receives funds or loans by handing over an invoice with appropriate supporting documentation on shipping and payment security.

In addition, factoring mechanism provides an opportunity for manufacturer-exporter to sell goods for cash, rather than to deliver products on credit or by deferred payment. In this way, the manufacturer-exporter has a possibility to quickly acquire the necessary means for the normal

funding of the next production cycle. The use of factors enables the manufacturer-exporter to pursue a policy of procurement of raw materials in accordance with the dynamics of the sale of products as well as the possibility of selling more products to a larger number of buyers-importers, given the fact that factoring organization takes on the obligations of credit risk, even in a higher amount in relation to the number of customers.

In the context of the aforementioned, there is no doubt that the rational use of a factoring arrangement can provide the necessary funding to allow export-oriented enterprises to achieve optimal business operations. In other words, this means that the overall functioning strategy of the specific form of enterprise financing presented here - the factoring mechanism, is aimed primarily at increasing the economic efficiency of enterprises and financial flows in the open market, which implies the company's opportunity and need for the rational use of the factoring mechanism.

CONCLUSION

Factoring activities provide the company with the possibility to reach the required funds, especially when the funds cannot be provided in any other way. Moreover, the strategy of using factoring as a financing mechanism should focus on increasing the economic efficiency of business enterprises. Therefore, the decision whether the company will assign the collection of receivables to the factoring organization, requires rationality and prudence. In this regard, in order to assess the feasibility of financing through factoring the significant parameter is the volume of business. For example, in Germany it is estimated that the upper limit for profitable operations with the factor is at the level of EUR 75-100 million of annual turnover, while the lowest limit of turnover, below which the effects of factoring are not evident, is at EUR 1.5 million. Because of this, when deciding in favor of factoring, it is necessary to bear in mind all the advantages it offers but it is also necessary to take into account all its limitations.

In Serbia, financing through factoring is not yet developed, in contrast to the developed countries with market-type economy. Because of this, the positive effects of factoring as a contemporary form of financing fall substantially behind the actual needs of local companies. In addition, financing through factoring would have the most impact on small and medium enterprises, as well as start-ups, primarily because of the unwillingness of banks to grant loans to such firms. Since there are no legal obstacles to the application of financing through factoring, it is expected that in future this type of financing will increasingly gain in importance, which would provide many companies with a greater degree of competitiveness and survival in the market. It should be noted that there are hundreds of factoring companies in the world today, operating in Europe, the USA, Canada, Australia, Japan etc. The largest factoring company in the world is The International Factors Group, which operates in many countries and does business with the world's leading banks.

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FACTORS AFFECTING THE BALANCE OF INVESTMENTS IN SERBIA

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ABSTRACT

The importance of investment for the development of some country is undeniable. In today's economic conditions, it is necessary to observe all the influencing factors and examine their impact on the investments in the economy of some country. The goal of each country is to create a favorable climate (conditions) for the investments, because they stimulating the growth and development of the country. The aim of this paper is to point of the current situation (the past few years) of the foreign investments in Serbia's economy and to highlight the main factors that influenced this situation. Some of the influencing factors that must be emphasized are the country's general economic situation, political risks, taxation, the financing of the investments, the government's incentives (subsidies), support from some specialized institutions etc.

Key words: Influencing factors, financing, investments.

INTRODUCTION

After the fall of the socialist system of economy, transition economies have opened their markets for the entry of foreign investment. Looked from the side of the investitures, these countries, including Serbia, represented a new market potential for them. From the point of developing countries this investments represented the possibility of external growth and development.

It was only in the early 21st century when Serbia was affected direct investments although its socialist system collapsed in the 1990s. The reason for this lies in unregulated legislation and high political risk of the country. (Milenković et al., 2012)

In January 2001, Serbia's new government launched an ambitious program aimed at a rapid transition to a market economy, the normalization of relations with foreign creditors and integration with regional, EU and world markets. The government's economic program rested on three pillars: (1) more prudent macroeconomic policies; (2) market-oriented structural reforms; and (3) the mobilization of significant financial and technical support from donors.

Serbia has enacted specific legislation outlining guarantees and safeguards for foreign investors. The current Law on Foreign Investments establishes the framework for investment in Serbia. The law eliminates previous investment restrictions; extends national treatment to foreign investors; allows the transfer/repatriation of profits and dividends; provides guarantees against expropriation; and allows customs duty waivers for equipment imported as capital-in-kind. In order to attract FDI, Serbia developed a range of incentives for investors in 2006, including cash grants to investors that create significant new jobs, as well as tax incentives in the form of credits, cuts in payroll contributions and reduced corporate tax rates. (Dimireva, 2010)

Serbian government has created Serbia Investment and Export Promotion Agency (SIEPA) with the mandate to promote Serbia as favourable location for FDI. This agency provides direct assistance to investors. SIEPA has successfully attracted some headline strategic investors.

Thanks to all measures and development programs that the government has taken to improve investment in Serbia in the past decade there was an increase in foreign investment noted. This growth has been stunted under the influence of the global economic crisis that affected the economic system of Serbia.

OVERVIEW OF INVESTMENTS IN THE PAST PERIOD

Overview of the last decade

In the period after the nineties of the twentieth century, Serbia opened up to foreign investment. The growth of investments is credited to a series of measures taken to establish a favorable climate for investment. A significant increase in investments is recorded in the past decade. According to the Serbian Chamber of Commerce in the period 2002-2011 the movement of foreign direct investments was as follows:

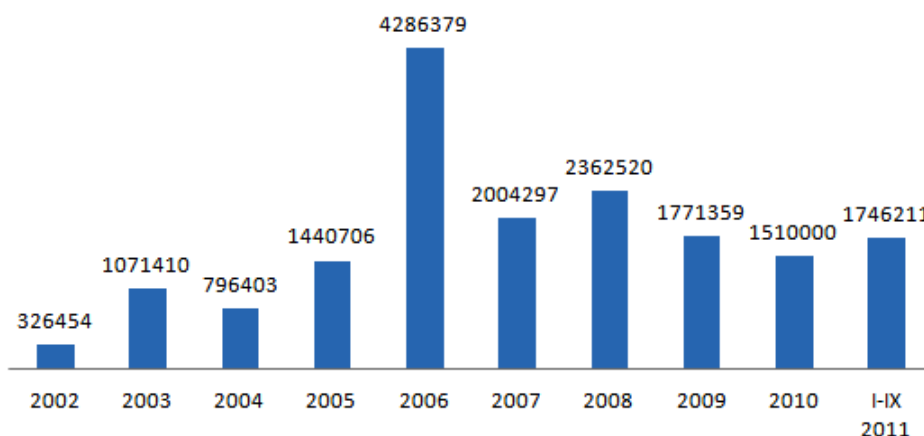


Figure 1: The movement of foreign direct investments in the period 2002-2011

As it can be seen based on the graphics, in 2006 there was a sharply increase in the volume of foreign investments. The reason for such a large increase is the restructuring of large state-owned companies by foreign direct investment. In the period after 2006 the amount of foreign direct investment is continuously moving nearly 2 million U.S. dollars.

Economic development in the last decade is characterized by inadequate investment in production. The inflow of foreign funds in Serbia after 2000 was characterized by predominantly investing in infrastructure and energy, while very little is spent directly in production. Only in 2006 has taken steps to encourage greenfield investments, and also tenders were called for some concessions. In the aim of faster economic development it is necessary in addition to encouraging investment in the form of loans from international and regional financial organizations, government measures etc. It is necessary to take into account the sectoral direction of the investment, they must be directed in production capacity, which must be export oriented. Investing in production from domestic and foreign sources, primarily also from foreign direct investment, will enable Serbia to join the process of faster development.

If we make a comparative analysis with other post-socialist countries in 2009 and 2010, as we can see from the figure no. 2, the extent of Serbian foreign direct investment is in the sixth place among developing countries.

Based on the figure no. 2 it can be seen that the inflow of FDI into the Russian Federation was the largest, with most investments in infrastructure and manufacturing, on the second place Russia is followed by Kazakhstan, which is attractive for FDI because of the great natural wealth that is insufficiently exploited. If we look at Serbia, we can conclude that the lead among the neighboring

countries (Montenegro, Croatia, Albania), although in 2010 compared to 2009, the volume of FDI has declined. This decrease in value was due to effects of the financial crisis which affected the monetary sector of Serbia and therefore reduced the investors' interest in investing in Serbia.

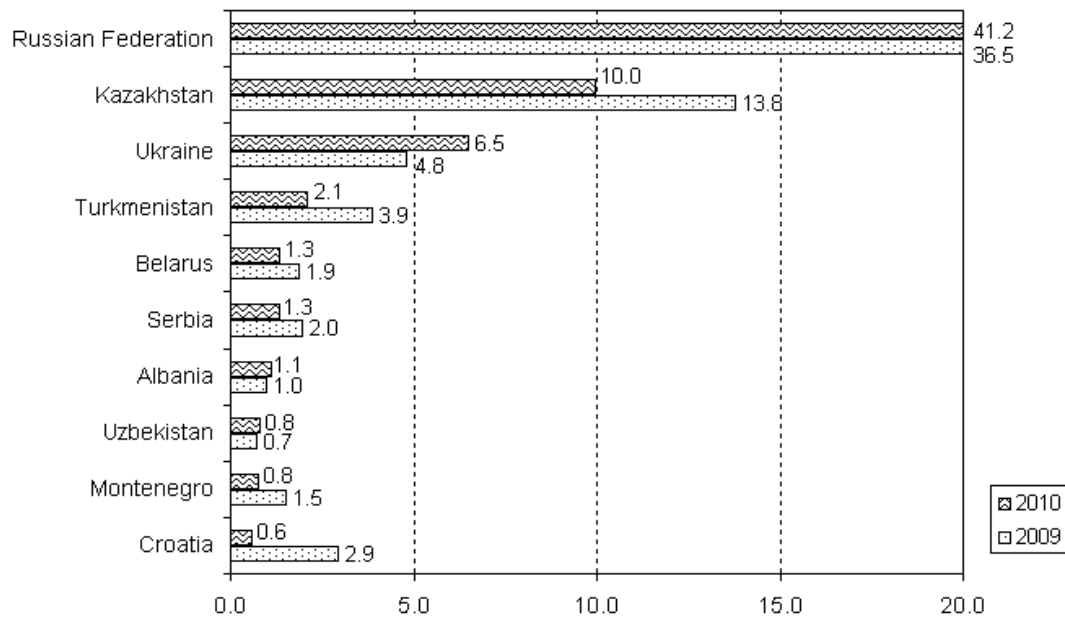


Figure 2: Transition economies: top 10 recipients of FDI inflows, 2009, 2010 (Billions of dollars)
 Source: UNCTAD, World Investment Report 2011.

Foreign direct investment in Serbia in 2011

Based on the report of the National Bank of Serbia in 2011 has increased the level of investment compared to the year 2010. The total amount of foreign direct investment in 2011 from January to November was amounted to 1.026,8 millions of dollars, while in 2010 the relevant period amounted to 2.142,5 million dollars. The structure of this investment is given in the figure 3:

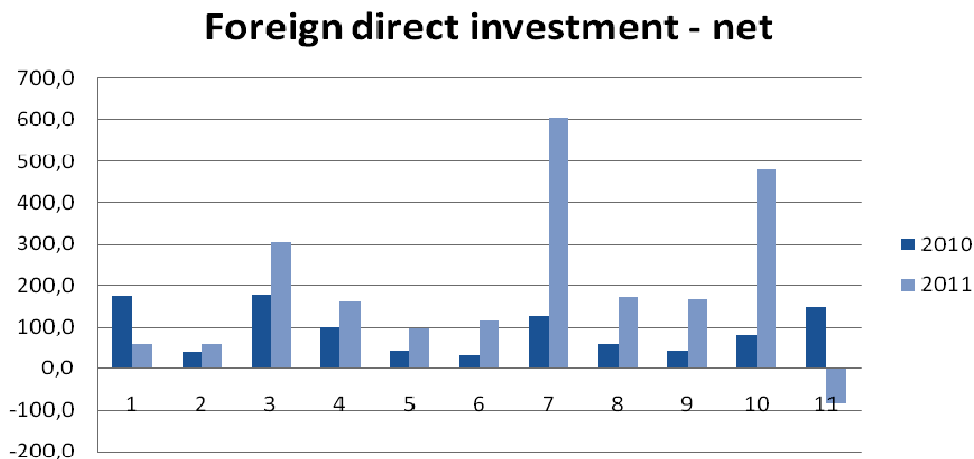


Figure 3: Amount of foreign direct investment in 2010 and 2011

The inflow of investments in the first three quarters in 2011, according to the National Bank of Serbia, was most intense in the retail sector with 39, 5% of total inflow, followed by manufacturing with 21.1% and financial and insurance activities with 11, 1%. The investments in the manufacturing sector are so low that they do not reach 10% of total inflows, and as such can be considered as insignificant. From the standpoint of economic development in Serbia this is very important and gives an indication that in the future should be taken measures to encourage investment in productive activities in order to increase the growth of the gross domestic product based on the productivity and directed the country towards to export orientation.

IMPORTANT FACTORS THAT IMPLICATE THE BALANCE OF INVESTMENTS IN SERBIA

It is not enough to understand the crucial importance of foreign direct investment in the economic system of the country it is necessary to take concrete measures to attract them, because there are very competitive countries in the environment.

Experts claim that Serbia lacks the political will to be instantaneous and very quickly overcome much of an obstacle for investors. David Lyngtoe from the company Baines Babic (Halifax Consulting) said a few basic things that Serbia needs to be more desirable for business:

- Stability - whether the economy is stable; if there are unforeseen developments in inflation rate;
- The justice system must be much more efficient;
- Regulations are still unclear and not transparent to the uninformed investors;
- Flexibility of administration, for what was cited as an example of procedures for hiring and firing workers, which complicate the hiring of workers for short periods (one, two or three years) to execute a particular project (he reminded that this is the simplest in Denmark, which has one of the lowest rates unemployment in the world);
- Education staff is working out of date, the education system in Serbia has long been building staff who learn to memorize, but not to develop skills.

The Development Strategy and Policy of the Republic of Serbia from 2011 to 2020 Analysis states that the most important factor is creating market environment in order to attract foreign investors. This influence of economic environment is given in the table below:

Table 1: The influence of economic environment on the competitiveness of the economy

	Pull motives (pull)
Political influence	A stable political situation, liberal legislation, dominant business-oriented culture, the growth of credit, regulated market
Economic influence	The good economy, high potential of growth, low operating costs, market development, opportunities for real estate investment, large market, a favourable exchange rate, depressed stock prices
Social influence	Positive social environment, positive demographic trends, population growth, reduction of social benefits
Cultural influence	Well-known reference points in the cultural milieu, attractive composition of cultural values, innovative business culture, fostering corporate culture, homogeneous cultural environment (friendly segments)
Competitive structure	Market niches, ownership of capacities, the possibility of expansion through copying, favourable operational conditions

The creation of a favourable climate for investment, both foreign and domestic, is a major challenge for all countries as increased globalization and competitive business pressures provides the framework and need for continuous improvement in both the overall enabling environment for business and company performance. Governments have a key role at the macro level in providing stability and in improving the overall environment for business whilst competitive market pressures are demanding continuous improvement in efficiencies and increased flexibility and effectiveness by company management.

CONCLUSIONS

The attraction and retention of foreign direct investment is a key objective in many countries as it is well recognized that FDI has the important potential to create incremental and sustainable jobs,

increase exports, transfer technology and business knowledge, enhance competitiveness, boost overall productivity and ultimately reduce poverty through overall economic growth and development.

All developing countries, to exploiting the benefits of investment should focus on creating a favorable climate for attracting FDI. The most important factors related to macroeconomic and political stability. Also play a major role and institutions to encourage the inflow of investments.

All developing countries should focus on creating a favorable climate for attracting FDI to take all the advantages of investment. The most important factors are related to macroeconomic and political stability. Major roles have financial institutions because they encourage the inflow of investments.

In recent years, Serbia has undertaken and implemented a large number of measures to stabilize economic conditions and in this way to attract foreign direct investment. A major contribution was given by the government's agency for investment promotion and export opportunities, which provides assistance to investors in the pre - investment, investment and post-investment phase. SIEPA facilitate in many ways foreign investors to invest in Serbia, because it provides advisory services related to legislation, agreements and exemptions. It also releases funds to investors, pointing to favorable sources of financing.

Therefore, Serbia has fulfilled a large number of conditions for attracting FDI, which can be observed according to the statistics of growth inflows from foreign direct investment. To further encourage foreign investment Serbia should focus on the stability of monetary and fiscal system. Also, it shouldn't be forgotten the influence of the political risk which has always been strong in the region. In favor of stabilization of conditions is getting the nominations for membership of the EU, which in future can contribute to a greater inflow of foreign direct investment in Serbia.

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STRATEGIES CREDIT POLICIES OF COMMERCIAL BANKS IN SERBIA

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ABSTRACT

Contemporary business conditions involve the active participation of banks in the financial market. This involvement is primarily related to the approval of different types of bank credits to economy and citizens for their productive functioning, as well as to successful and organized implementation of credit policy by each bank. Today we can note different types of banking markets, which entail the differences between their participants. As credits represent the largest item in the banks' assets of balance and the largest source of interest income, it is necessary to establish the strategy of credit policy to contribute to the maximization of bank's earnings, all within the boundaries of acceptable risk level. It is essential to build a distinct credit policy, which includes clarity of regulations and conditions under which the bank is willing to approve credit to its clients. The banks' policy of credit placements should be noticeable, transparent and continuous, so as to be projected both in short and long term respectively, where we should take into account that long-term projections should be more flexible, so that the bank can adapt at any time to new regulations and opportunities offered by the credit market. This paper addresses the types of credits approved by banks, as well as the market coverage of credit placements towards economy and population, current credits and the instruments for achieving them.

Key words: credits, credit policy, placements, bank.

INTRODUCTION

Credit policy of a bank can be defined as a document about basic attitudes and principles that regulate credit approval. The purpose of a credit policy is to make certain that the representatives of a bank as a financial institution treat all its clients equally, as well as define clear procedures and actions. The best practice demands a written policy that precisely elaborates all relevant actions in a credit process. Credit policy should be in coordination to other bank policies like: securities policy, assets and liability policy, human resources policy, bank marketing management policy etc. Banks develop their credit policies and procedures taking into consideration the characteristics of their credit portfolio. Credit policy should respect the ability of credit return before the expiry date, through defining the bank credit portfolio. Taking into consideration the material importance and specific qualities of a credit portfolio that the banks approve to economy and citizens, they should particularly process the category of credit risk within their credit policies and procedures. In course of their business, the banks are supposed to abide the basic business rules: stability, liquidity and profitability. This means to invest their assets into the credits of clients who will pay them back regularly, before the expiry date, and who are not threatened of bankruptcy or liquidation, in such forms of credit placements that can be cashed in short terms without any loss, as well as placements where they can get profit on the basis of the balance between active and passive interest rates.

SERBIAN BANKING SECTOR

By the end of 2011 in Serbian banking sector there were 33 banks with 29.644 employees. The total net bank assets are 2.538 billion dinars, and the total capital is 535 billion dinars. Out of the total number of banks, foreigners govern 21 bank and there are 12 banks governed by Serbian investors out of which 8 are governed by the state as the majority share owner and 4 are governed by citizens.

With the total assets of 371 billion dinars and the participation of 14.6 % in the total assets of the banking sector, Bank Intesa (Banka Intesa) represents the biggest bank in Serbian banking sector. It is then followed by Commercial bank (Komercijalna banka) with 259 billion dinars and the participation of 10.2%.

Table 1: The ten largest banks by total assets criterion

	30.09.2011.			30.06.2011.			31.03.2011.		
	Mlrd RSD	%	Rang	Mlrd RSD	%	Rang	Mlrd RSD	%	Rang
Bance Intesa	371	14,6	1	357	14,1	1	343	13,5	1
Komercijalna banka	259	10,2	2	257	10,1	2	255	10,0	2
Raiffeisen bank	184	7,3	3	169	6,7	3	171	6,7	3
Unicredit bank	174	6,9	4	166	6,6	4	166	6,5	4
Societe Generali	168	6,6	5	153	6,0	6	148	5,8	6
Eurobank EFG	164	6,5	6	164	6,5	5	154	6,0	5
Aik banka Niš	144	5,7	7	139	5,5	7	142	5,6	7
Hypo Alpe-Adria	141	5,6	8	138	5,4	8	133	5,2	8
Vojvodanska banka	91	3,6	9	89	3,5	10	89	3,5	10
Alpha bank	87	3,4	10	94	3,7	9	99	3,9	9

As far as the whole Serbian banking sector is concerned, regardless of the fact that Serbia cannot be isolated from the global credit crisis, its effects in our country will be considerably milder due to the highly restrictive monetary policy that has been applied in the last few years, and which has led to a high capitalization of banking market.

Regardless of the differences between certain banks, the general structure of credit placements should be such that out of new available sources minimum 70% should be directed to economy, maximum 20% to citizens and 10% to the state and other credit applicants. That would support the financing of the development and current production of economic participants, and reduce the financing of public consumption based on the import of foreign products, which would certainly influence the growth of Serbian Republic gross profit.

CREDIT ACTIVITY OF SERBIAN BUSINESS BANKS

Credit activity of each bank is defined in coordination to the boundaries of its business activities. Such a policy is supposed to be directed to clients` satisfaction, their determination to apply for credit loans, and simultaneously attribute to the maximization of financial institutions` profitability. By this policy, it is necessary to predict all the conditions under which the bank would be able to approve the loans to its clients, as well as credit repayment possibilities in due terms. Therefore, each bank is supposed to abide by the basic principles that are important to all banks and all credit forms, and they are the following:

- Avoiding high placement concentration in certain branches, economy sectors, except with the specialised banks, for risk dispersion,
- Obligatory client share who are in demand of a credit for investment, in other words providing means for the working capital,
- Obligation of highly formalised procedure of defining credit approval conditions,
- Demanding at least the last-year financial report for the client,

- Obligatory demand of a depreciation payment plan and a client quarter income plan,
- Priority credit approval for client liquidity with restrictive approach to financing of new, risky investments,
- Surveillance and control of credit application.

The total banking sector activity at the end of the third trimester in 2011 was 1.736,1 billion dinars which is 15.3 billion dinars or 0.9% more than in the previous trimester.

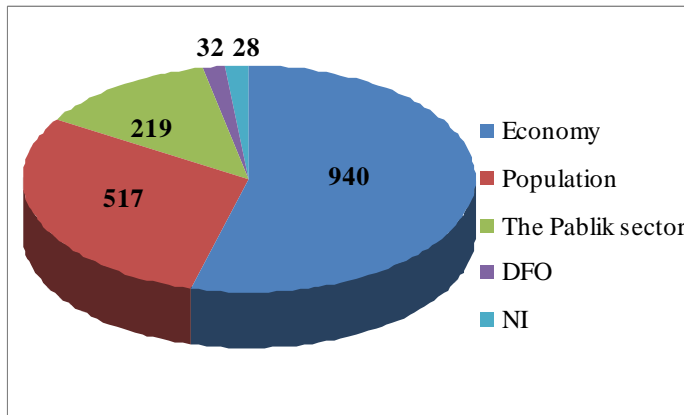


Figure 1: The structure of the bankink sector lending derbija

Among the most popular credits are residential credits for certain. Ever since the state has adopted the program of residential credits subvention, there was great interest in withdrawal of bank capital for the purpose of investing it in purchasing real estate in construction. Statistics show that in our country the

approximate value of a credit is 39.411 euro and that the approximate share is 17.69%.Economy and citizens pay off credit approximately for 20 years, which means that today long-term credits dominate the short-term cash credits.

In the period January 1 2008. to July 12 2010.Serbian citizens were mostly interested in **car credits**, then cash credits, residential and refinancing credits, with the exception of the first six months in 2008, when the most demanded were state subvention credits. The analysis of credit interest shows that car credits were definitely most wanted during 2008 (31.4%). In 2009 this interest was lowered (25.7%), so that in 2010 the drastic fall in interest was recorded (13.92%).

When it comes to **cash credits** indexed in euro, there was almost the same interest in 2008 (14.54%) and in 2009 (14.72%), so that it would fall to 11.58% in the first half of 2010. These credits are interesting because they are purposeless, in other words, citizens get cash and the approval procedure is less complicated and faster than with other credit types. Nevertheless, their popularity among citizens is surprising having in mind that they are the most unfavourable when the height of interest rates in concerned, they are indexed in euro and carry the value risk.

Residential credits, since 2008 until today are considered to be the most attractive credits. In 2008, about 10% of citizens were interested in these credits, next year this interest was lowered to 7%, and in the first half of this year the interest continues to decline to 5%. The tendency of interest fall for classic residential credits is due to the increase of interest in subvention residential credits which were approved in the last trimester of 2009 and continued up to the beginning of 2010. Citizens have greatly turned to more favourable subvention credits, while those who had incomes bigger than 120.000 dinars turned to classic residential credits. Let us not forget, one of the conditions for the subvention residential credit application was a monthly income lower than 120.000 dinars.

Refinancing credits have recorded the considerable growth of 13.54% in 2009 in relation to the growth in 2008 which was 9.34%, so that in 2010 the interest would fall to its lowest level of 8.14%. Resourceful and less indebted citizens refinanced their obligations by dinar subvention cash credits, therefore, the interest for classic refinancing credits has been reduced this year.In any case, the fact that more and more citizens want to refinance their obligations due to the impossibility of paying back their instalments, can be alarming, but not indicative, because it must not be forgotten

that the growth in credit request has been recorded at the height of world economic crisis, when the majority of citizens were trying to reduce and optimise their indebts.

Nowadays, Serbian economy has certain liquidity deficit, so the credits for maintenance of current liquidity are most applied for. The prerequisites that the bank client, in this case the company, has to fulfil are the following: it has to be registered in Serbia, it has to be working for at least two years, it has to have an account open in a bank where it applies for this credit, positive business result for the previous two years, all taxes paid, and that the client`s account has been under blockade 15 days longest. Minimum credit amount is 50.000 euro in dinar value, with the interest rate up to 10.5% on year basis, where the Investment fund gives subventions to the amount of interests of 5% a year on the amount of the credit. Repayment period is up to 12 months.

The reduction of available money together with the price rise and decreased purchase ability which is the result of massive discharges, illiquidity, especially of medium enterprises, more restrictive policy of large and state enterprises, has certainly had its influence on sales. It is even clearer that during crisis citizens are more turned to the purchase of necessary articles only. On the foreign market, buyers are more careful with order placements in fear of making unnecessary stocks and therefore endangering their liquidity.

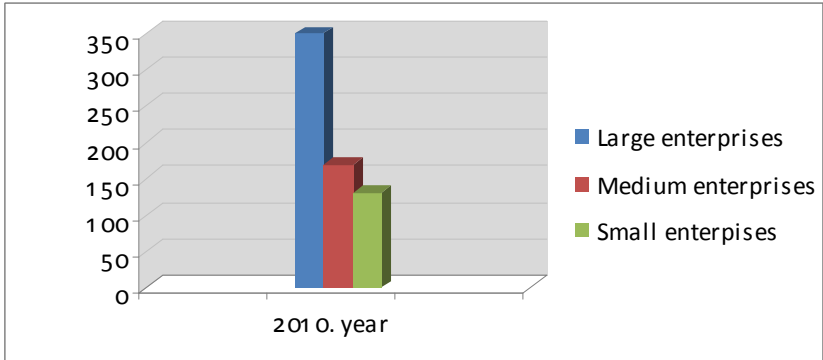


Figure 2: Structure of subsidized loans for the companies liquidity

Stimulating economy package includes liquidity loans of 80 billion dinars total, of which 4 billion is approved by the state. The banks that approve loans through the government Program of measures for stabilization of Serbian economy have, by now, approved 703.4 million euro subvention loans.

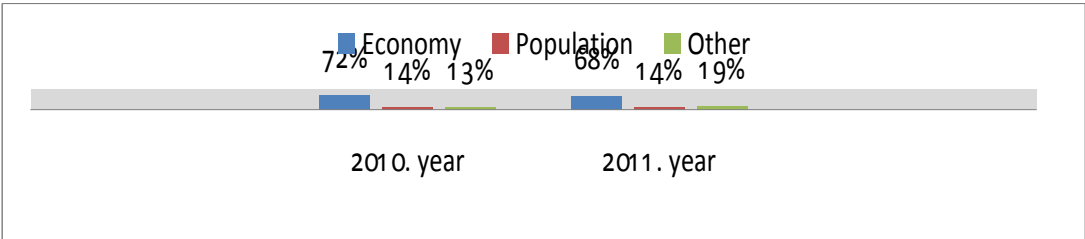


Figure 3: Problematic loans

Banks combine different ways of protection depending on the loan amount, client`s loan ability and client`s total indebtedness:

- Verified bills (signed and stamped) by the authorized company person (client) and the owner,
- Other legal person guarantee (bills verified by the legal person`s authorized guarantee),
- First type mortgage on adequate real estate which provides the condition 1:1.25 if it is a residential real estate, or 1:2 if it is a business real estate together with the real estate insurance policy.

Loan policy strategy must consider the critical business bank placements. They can emerge due to inadequately estimated prerequisites that a consignee has to fulfil in order to become loan user, due to the lack of promptness of loan administration or due to the effects of monetary policy sudden changes that banks are unable to cope with.

The total sum of banking sector loans that are overdue longer than 90 days, at the end of the third trimester in 2011 are 321.5 billion dinars and represent 18.8% of the total number of approved loans. Absolute and relative increase in problematic loans has been continued (10.5 billion dinars or 3.4%) which resulted in the increase of the level of indicators that point to problematic loans for 0.2% compared to the end of the last trimester.

CONCLUSION

Bank credit policy is supposed to contain elements of both long-term and short-term credit approval both in state and abroad. Bank experiences of highly developed countries show that long-term credit policy should be as flexible as possible, in order to be applied and modified according to changes of law and demands of credit market. In this way banks adapt their credit functioning to new conveniences and possibilities offered by credit market. Regardless of the loan type, credit policy should answer this question: what data, information and reports will be demanded from loan applicant in order to analyse and mark his credit ability. Related to this, if a bank wants to provide the efficient way of credit placement, it needs to develop a unique way and style of credit placement that will make it recognisable on the credit market.

Banking sector in Serbia has relatively well dealt with the major strike of world economic crisis, in great part due to the more conservative regulations of the National Bank of Serbia which prevented economy and citizens to indebt across available limits. High obligatory bank reserves demanded by the National Bank of Serbia, as well as proportionally high interests, provided the stability of financial sector, so the state did not invest the means from its national treasury to save the banks. None of the 33 Serbian banks considerable liquidity problems, nor difficulties with paying their obligations to the founders. Even though the profit has decreased, the system stability has been maintained. Interest for loans in Serbia is still present in such a way that the interest structure has been changed over time regarding the types of loans. Subvention loans of the Republic of Serbia have turned out to be profitable, the economy was most interested about overcoming the liquidity problem, and citizens about purchasing consumer articles.

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MANAGEMENT STRATEGY OF PROBLEMATIC LOANS OF THE BANK

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ABSTRACT

Overflow of the global crisis on the Serbian market and overall economic trends have led to an increasing number of problematic loans, both in number and amount, with all the negative consequences in terms of overall performance of the bank. Therefore, management of problematic loans and their successful collection is gaining in importance, while definition of adequate strategy for resolving problematic loans and precise determination of phases in collection process become an instrument for minimizing credit default and/or maximizing the return on the disbursed funds. The purpose of this paper is to highlight potential opportunities for solving of problematic loans in the loan portfolio of the bank. The first part deals with defining of the process of managing problematic loans in the bank. The second part includes the elaboration of the main strategies of collection of loans in arrears with all their advantages and disadvantages. The final section is reserved for the analysis of bad debts of the banking sector in Serbia and conclusion.

Key words: problematic loans, strategies, debt collection

1. INTRODUCTION

Poor payment discipline is a burning problem of modern society, and all legal entities as well as the banking institutions are facing it. The best prevention is regular control of debtor's credit solvency and the refusal of credit to the client with a negative credit history. However, in the financial crisis, when the negative impact of systemic and market risk to the ability of debt servicing is extremely high, despite all measures taken to manage risk, there is an increase in the number and amount of problematic loans with all the negative consequences in terms of overall business results. Because of that, proactive approach to managing problematic loans and the successful collection of these loans is getting more attention. Even in terms of dynamic and conjuncture economy, some of the loans in the bank portfolio will necessarily become problematic loans (Rose, 2003).

For the bank is crucial to have clearly defined phases of collection and the sequence of steps for solving problematic loan. Under the term problematic loan is understood the outstanding of total remaining debt of individual placement where the borrower is late with payments of principal or interest 90 days or more from initial maturity; where the amount of interest, for 3 months or more is attributed to a debt, capitalized, refinanced or delayed its payments; under which the borrower is late less than 90 days but the bank has estimated that the debtor's ability to repay debt has deteriorated and that repayment the full amount is called into question (National Bank of Serbia, 2011).

In order to maximize the return of the funds, it is necessary to delineate the responsibilities for resolving problematic loans (management function for bad and doubtful receivables (workout)) from functions of marketing and sales of financial assets of the bank. Decision regarding collection strategy of due debt (which may be voluntary or compulsory) is based on previously done assessments of the

client and his financial potential, market opportunities, analysis of its documentation within the bank and as the result of communication with the client.

MANAGEMENT PROCESS FOR PROBLEMATIC LOANS

The procedure related to the due receivables in the area of legal entities and entrepreneurs can be grouped into four interrelated stages (see figure 1.):

- Transfer of claims in workout status and preliminary actions prior to transfer
- Identification of strategies
- Implementation of strategies
- Monitoring of the settlement procedure

Preliminary activities are related to the identification of potential problematic loans, i.e. monitoring of all those receivables for which borrowers are late in settling due debts (principal or part of the principal, interest) for more than 30 or 60 days. At this stage it is very important to analyze the causes of problems in the regular servicing of the debt and to estimate their duration. Depending on the results of analysis and consultation with the client, the bank has the ability to grant additional time to the client for settlement of liabilities with precise schedule of repayment. Any non compliance with the approved plan for the settlement of due liabilities by the client and the delay in settlement of liabilities for more than 90 days, allows the bank to proclaim the debt fully matured and to start the collection procedure. In this stage, the most common problem is that the borrower does not submit the required information or they are subjectively colored, so it does not indicate the real gravity of the situation (the Association of Serbian Banks, 2004). For the bank is crucial to gather the widest possible range of information about the client's business and financial position, which enables the bank to choose the most effective recovery strategy in the next stage in management of problematic loans. The manner in which the bank will carry out debt collection depends on the pre-defined strategy of obligations settlement.

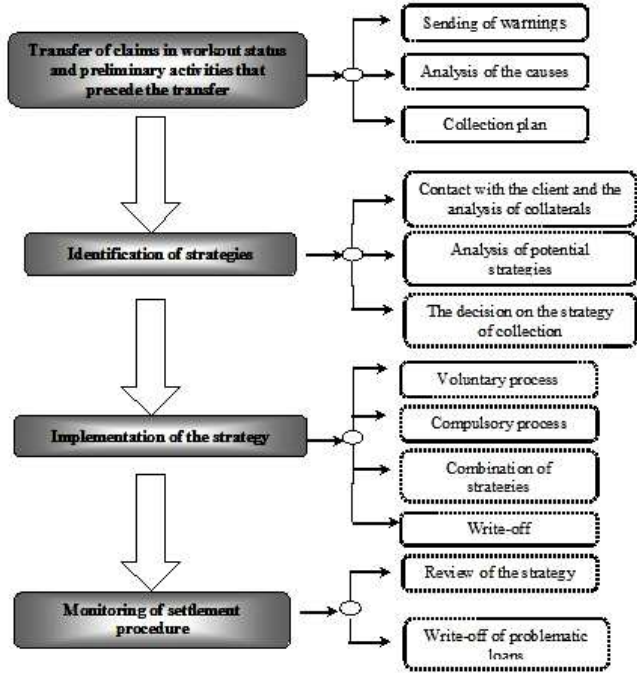


Figure 1: The process of managing problem loans

Identification of the strategy is correlated with the analysis of basic data about the client and its financial statements, with assessment of collateral given to the bank, with the results of communication and consultation with the client, cost estimation and the expected length of settlement, as well as analysis of debtor ownership structure and documents related to the co-debtor, if any. At this stage it is important to determine whether the agreed collateral are held by the bank, was it established in favor of the bank and entered in the relevant registers, all this in order to determine the current status of the collateral, and to estimate the current value and the possibility of its marketability. In addition to

assessment of costs and length of collection by force, essential for the identification of a settlement strategy is establishing the contact and communication with the client that must be focused on presenting the severity of the situation, which includes banks commitment to settle the outstanding debt, even with applying rigorous measures in case that client does not cooperate in the adequate way.

In addition to assessment of costs and length of collection by force, essential for the identification of a settlement strategy is establishing the contact and communication with the client that must be focused on presenting the severity of the situation, which includes banks commitment to settle the outstanding debt,

even with applying rigorous measures in case that client does not cooperate in the adequate way. If the Bank has adequate collateral, the client must be aware of the consequences of their activation, while in the same time it should be pointed out that the peaceful solution is in mutual best interest. Decision about a potential settlement strategy – whether the banks will settle their claims by voluntary or compulsory process – is made based on the assessments and analysis. If the collection of the debt is not possible, the bank is obliged to write off the debt at the expense of their capital (Curcic, 2003).

Implementation of the strategy is the next step in the process of management of problematic loans and their collection and it is the result of mutual cooperation of legal functions and management functions for bad and doubtful receivables (workout). The manner of implementation depends on selected strategy for settlement and is subject to consideration of the next chapter.

Monitoring of settlement procedure involves monitoring implementation of adopted strategies and adherence to deadlines, and ongoing monitoring of the client obligations maturity in relation to the bank. In this phase, activities are focused on finding interested buyers, investors or individuals who are willing to buy debt, their informing and negotiating the terms of sale. The result of monitoring is a continuous review of the success of selected strategies and possible modification of existing, or the application of new strategies in case of occurrence of certain circumstances and new information that the current strategy can make inefficient. It often happens that after starting court procedure client settles payment obligations. When you have exhausted all collaterals and there is no further possibility of debt collection, bad placement is canceled and all further debt collection activities are suspended.

POTENTIAL STRATEGIES FOR COLLECTION OF PROBLEMATIC LOANS

The assessments of the client and his financial resources, analysis of documents held by the bank and the result of communication with the client –all this is included when making decision on the strategy for collecting due debts. Potential strategies can be classified into two groups depending on whether the claim is collected by voluntarily or compulsory process.

Strategies for collection by voluntary process

If the bank estimates that collection of higher amount of due debt will be provided by more tolerant attitude and if the bank considers the management of borrower is able to solve the problems of the company, there are several possible strategies. However, for implementation of a voluntary process, it is necessary to obtain a certain cumulative conditions (the Association of Serbian Banks, 2004):

- It is necessary that the debtor is only a short time or temporarily faced with lack of liquidity, and that there is the client's set up ability to generate sufficient revenues and profits from which will be able to comply with the agreed system of collection,
- It is essential that the debtor is willing to cooperate and to show readiness in finding way(s) for settling its due obligations on time,
- After the accepted modality for collection of bad loans, it is necessary that the borrower acts in accordance with the agreement.

From the company point of view, in case of short-term problems with cash flow, it is necessary to move focus from the profit and immediately refocus on achieving and short-term accumulation of cash, which means that the company may suspend payment of dividends, to requires the inflow of fresh capital or loans from new or existing shareholders, to postpone the payment of obligations from operations, reduce inventories and receivables from operations, voluntarily sell assets or parts of operations that are not related to core business. If the company is not blocked, possible voluntary debt settlement options are **assumption of debt** or **joining to entire/part of the debt** by a third solvent party.

If it concluded that the problems with cash flow are temporary, banks can take into consideration the possibility for rescheduling of obligations of the borrower, in part or in whole, or give him a deferred repayment of principal and deferred interest payments, which will give the debtor the opportunity to overcome the current problems with cash flow. **Debt rescheduling** is an option that should be chosen only if the Bank firmly believes in the long term future of the borrower and its ability to deal with short-term problems. It involves extending in the due date(s) of required payments, which will enable the debtor to

settle all its payment obligations to the Bank on time (Rose, 2003). **Restructured debt** is regulated by a contract that redefines debtor's and bank's relations due to debtor's financial difficulties in the way that it replaces all or most of due debt from borrowers and substantially changes the conditions under which the facility was originally approved. Additional options of restructuring debt are reducing of the interest rate, adding grace period, write-off for part of the debt, extending the payment, etc. Given the increased credit risk in both cases, the bank is able to further strengthen its collateral position with constituting the mortgage or other lien, if such collateral has not been previously agreed, or to replace the existing one with more adequate collateral.

Restructuring of company's operations in order to achieve debtor's solvency is next possibility in solving problematic loans. The strategy is focused on debtor and its operations, i.e., organizational change, reorganization of work processes, reducing costs, or other measures that would enable the client to settle its liabilities. Implementation of this strategy involves the readiness of the client to high level of cooperation and the high impact of the bank and external consultants on business operations, which in this case is usually involved. The most common options in this process are divestments, improving of manufacturing / sales process, finding investors interested in the recapitalization of the client, the closure of unprofitable parts of company and solving employees surplus, sale of assets to cover debts, debt-equity swap and negotiate with other creditors to reschedule the debts, compensate part/all debt or even reach an agreement on write-off for part of the debt.

Strategies for collection by compulsory process

The worst possible option for the debtor is to refuse to cooperate with the bank in cases of delay. This will speed up the process of initiating litigation and forced collection. "Punitive actions" primarily depends on the contractual clauses and collateral instruments which were require by the bank in the time of loan approval, as well as estimates of the extent to which such action will be efficient and effective. In this sense, the bank has the following available possibilities:

- Activation of promissory notes through the courts,
- Activation of the right of pledge on movable assets inscribed in the register,
- Activation of the subject of the right of pledge through the courts,
- Activation of the mortgage through the courts,
- Executive out of court mortgage.

Enforcement of **court settlement** procedure is the ultimate option of trying to collect the debt, which follows after ineffective negotiations with the debtor, and when the receivable has not been collected in an **out of court** methods of payment: deposit takeover and blocking all accounts by the contract authorization or promissory note. If this does not happen, after a delay of up to 120 days and no later than 150 days, start the preparatory work for the out of court or court procedure, depending on the type of loan or collaterals. Out of court proceedings are usually initiated in relation to housing loans, where according to the Mortgage law, bank is allowed to act on document issued by Cadastre office and independently starts with selling off the property, which purchase was financed with the same loan. For other loans, which are not secured by mortgage or with the right of pledge on movable property, for the most part its collection of receivables will be exercised by court, based on valid documents – promissory notes, which allows collection from debtor property.

Conditions for the court and out of court proceedings against a debtor for forced debt collection are: the ability of the debtor party, mortgage inscribed into the relevant register – for immovable assets, right of pledge inscribed into the relevant register - for the process of seizing movable assets and known address of residence of the debtor.

Practical experience shows that no matter which of the strategic options the bank chooses, at any time of the enforced collection process, the bank is ready to agree to out of court alignment for voluntary payment of debt by the debtor or a third person, or his transfer to another solvent party.

Table 1: Collaterals overview with limitations regarding their use

Collateral	Main characteristics	Problems in use
Promissory notes	Promissory notes as collateral for payment are the documents required by the creditor for goods (or approved credit) from the debtor to give blank promissory note with authorization bill, or filled promissory note with specified maturity date. If the debtor fails to meet the payment, a creditor is seeking payment of claims by submitting promissory note.	Seal or signature on the bill does not match the seal or signature on the contract documents and signature specimen Personal note, as the only means of securing without a list of property and without consent of a spouse or adult household members The slow process of execution, although the law provided an option for simplified procedure of execution on the basis of valid documents - notes, mainly because of avoiding of receiving the decision, and because of the possibility of obstruction by filing a series of complaints
Surety	The surety contract obligates the guarantor to the creditor to fulfill a valid and due amount of the debtor, if this does not do so; At the guarantor, who has fulfilled the creditor's claim, exceeds the claim with all ancillary rights and guarantees of its fulfillment	Lack of consent of the spouse or an adult member of the family household for the disposal of assets Lack of knowledge about the guarantor and its business Complaints that the guarantor did not know what kind of commitments has been made, actions for annulment of the contract etc.
Right of pledge	The pledge agreement by which the pledgor gives to the creditor security for his claim by inscribing the creditor's right of pledge into the Pledge register	With the disappearance of movable assets, so will the pledge disappear; by selling the pledged goods (the sum of movable assets) the right of pledge will cease. Expire date of pledged goods (food, alcohol, chemical and technical goods) and the inability of permanent control and supervision of the pledged goods The lack of court practice regarding ruling movable assets in possession The priority of the owner of the warehouse / storage in the settlement of the pledged movable assets
Mortgage	A mortgage is a lien on the property, which authorizes the creditor if the debtor does not pay the debt when due requires the collection of receivables secured by mortgage from the real estate value, before regular creditors and before following mortgage creditors, regardless in whose property the real estate is	Inconsistency of data (when data from the Land Register or Deeds protocols were not accurately transferred in Real Estate Cadastre); Republic Geodetic Authority - Real Estate Cadastre is not responsible for the accuracy and completeness of data entered in a central register of mortgage; Lack of consent of the spouse or an adult member of the family household in establishing a mortgage which allows lawsuit against the spouse and claiming the nullity of the mortgage Establishment of a mortgage on part of the whole building, which represents separated building in land books causing difficulty or totally preventing from collection if one building in land books does not have the use value without the another building ZK Mortgage on state property with right of use - inconsistent court practice regarding the possibility of execution.

Source: Material from the seminar, (2011): The legal aspect of problematic loans and their resolution in practice, Belgrade

Table 2: Overview of strategies for management of problematic loans

Exit strategy	Possibilities and recommendations	Limitations
Debt rescheduling and restructuring	In the case that the debtor cooperates, under the condition that it performs its registered activity, that it has enough goods and if not overdue, consider allowing subsequent period the debt (debt rescheduling); Install additional monitoring of the pledged goods if the goods are there Take a collateral or replace an existing one with more adequate collateral; For larger amounts, it is good to establish contact with other creditors for a common collection	The strategy is inapplicable if the client refuses to cooperate with the bank and when a company does not have business future
Restructuring of operations	This analysis of strategies, processes and systems enables preparation of an effective implementation plan with special focus on priority areas, the benefits can be realized in the short term, implementation plans and cost estimates	The strategy requires the full cooperation of the client, external consultants, banks, and, often the state
Blockade of the current account	An order to block the accounts in all the banks in which the company has funds, thus increasing the efficiency of collection and prevent possible manipulation	Blockade by one creditor usually causes blockade by other creditors, and usually only one few of the creditors collect due debt (first in line depending on the time of the blockade), while debtor's operation will be completely disabled. It is therefore important to assess the effects blockade, contact other creditors, contact the debtor, all depending on the specific case
Court settlement	The only possible strategy in the case that cooperation with the bank is refused	The long process and many opportunities for the debtor to obstruct the process The collapse of collateral, liquidation proceedings by the debtor or bankruptcy
Out of court settlement	The process in accordance with the Mortgage Law: leaves the possibility of negotiating for at least 6-9 months even when procedure is started.	Previous practice has shown that neither the courts nor the RGA - Real estate Cadastre have "courage" in case of any doubts in applying the law of creditor protection Problems in delivering decision about mortgage sales The lack of the real estate market

Source: Author's presentation based on the practices of banks

Voluntary vs compulsory process of collection of problematic loans

What way bank will choose to resolve problematic loans depends primarily on the estimated financial ability of the debtor, the type of collateral that the loan is secured, and from which a bank may be reimbursed, market conditions and projected economic trends, projections of costs and estimated length of

collection by force. In Table 1. are presented the most frequently used collaterals with their main characteristics and problems that occur during their activation. In Table 2. are presented opportunities and limitations of the particular strategies for management of problematic loans.

Comparative analysis of the legal systems of neighboring countries showed that the degree of success of enforcement of court decisions in Serbia is at a significantly lower level compared to other European countries. As the main reason for such poor implementation of the enforcement procedure, domestic and foreign experts have on the first place the fact that the number of employees is insufficient and that there is not enough system resources compared to the growing number of cases. These findings confirm the results of a survey conducted by the portal specialized in issues related to enforcement. Of the total of 350 surveyed, even 31.2% were not successful in an attempt of collection through the courts, while only 8.8% were successful. The same number of surveyed (8.8%) has characterized their experience as partly successful. Surprising and worrying is that even 51.0% of surveyed has never, nor would ever try to recover their claims by court because they believe that it is a time-wasting effort. Also, in our system, as well as in the world, the court proceedings are too long. It often happens that the borrower does not have sufficient funds (movable and immovable property), from which the court authorities may charge the relevant claim. In such cases, a creditor, despite the court judgment obtained in his favour, cannot collect their claims. All costs, time spent and effort expended in this case were in vain, which, unfortunately, proves only at the end of the procedure. In practice it is not uncommon that the best results can be achieved by a combination of strategies and taking actions oriented both at the process of voluntary collection as well as of force collection, depending on the situation and the attitude of the client.

CONCLUSION

Effective management of problematic loans is aimed at minimizing credit default and loss on that basis on the equity and income (statement) of the bank. To achieve efficiency in management, it is necessary that the bank always has appropriate measure of the quality of its risky placements portfolio, and those actual and potential losses are adequately identified. This is accomplished with clearly defined process steps in the management of problematic loans through the use of various strategies. Comparing the basic advantages and disadvantages, as well as the effects of application of a strategy for managing problematic loans, it can be concluded that the bank its resources should direct to the peaceful and voluntary way of collection, and that a strategy of forced collection should apply only when all previous resource regarding voluntary strategies have been exhausted. In case that as potential settlement strategy is designated compulsory process, it is the result of previously conducted analysis and assessment of the most productive form of settlement given that the collection procedure requires the economy, efficiency and effectiveness. Practice shows that the best results in minimizing credit default are achieved by a combination of strategies or taking actions aimed at both voluntary collection and forced collection. Practical experience shows that no matter what strategic option has been chosen by the bank, at any moment in forced collection process the bank is ready to accept out of court alignment that will result with voluntary payment of the debt by the debtor or a third party, or its transfer to another solvent party.

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QUALITY SYSTEM IN THE BANKING BUSINESS IN ORDER TO IMPROVE PROVIDED SERVICES

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ABSTRACT

Quality assurance in the banking business, quality control, total quality control, total quality management more than ever confirmed that the quality is no alternative and that it has become a kind of mega-categorie of contemporary banking. Quality categories of modern banking are increasingly standardized and became one of the most important factors for the improvement of banking services. One way of differentiating banks in the market is the consistent delivery of higher quality than what the customers expect from the competition. It is a continuous work on improvement of quality systems in the banking business and a powerful weapon in the hands of the banks of a steadily increasing satisfaction of bank customers. While exploring and analyzing the experiences of successful banks, which in its operations implemented TQM, everything has lead to certain conclusions regarding the application of TQM concepts in the banking industry, its importance to the delivered quality of banking products and services and to a increased satisfaction of bank customers. Concluding observations are presented later in this paper.

Key words: quality, TQM, customer satisfaction, bank, banking services.

INTRODUCTION

Modern conditions of business assume that it can be operated efficiently and effectively, if the competition is in the focus of business strategy as much as consumers. Taking care of the consumer means constantly working on improvement of the quality of services provided, so that no one is willing to tolerate deviations from quality. Quality in banking is increasingly standardized and is certainly one of the first class solutions for the systematic improvement of the services provided to a client. Overall development of IT, banking market and customer needs led to a complete and inevitable shift of the focus from managerial knowledge and skills to a quality- meaning challenge and scope for demonstration of the ability of market subjects. This new and extended meaning and growing daily affirmation promote it as a sign of our new civilization era. Insurance quality, quality control, total quality control, total quality management more than convincingly confirm that the quality is no alternative and that it has become a kind of meta and mega categorie of contemporary economic-banking life. In order to survive, banks had to make changes in their quality programs. Quality began to have a strategic meaning. Today, successful bank knows that quality improves service provided to a client. For that reason they have put consumer in the first place and thus have defined a quality that meets the needs and desires of the client.

THEORY

During the 70's of the last century, the competition was based on quality. Companies were focused on improvement of the quality in every business process, in order to become even more competable. In many companies quality has become the standard for conducting business. One

company that did not recognize or accept this phenomenon, one simply can not survive in the market.

TIME:	Early 1900s	1940s	1960s	1980s and Beyond
FOCUS:	Inspection	Statistical sampling	Organizational quality focus	Customer driven quality
	 <p>Old Concept of Quality: Inspect for quality after production.</p>			 <p>New Concept of Quality: Build quality into the process. Identify and correct causes of quality problems.</p>

Figure 1: Timeline of the quality concept
Source: www.wiley.com

We can see that the old concept represents a reaction, because it is defined in a way to correct the problem in the quality after it appears in the products and services. The old concept has been in operation since 1900 until the 1960, where the quality first appeared in the study, then received the statistical significance and was eventually accepted at the organizational level. Prevention is a new concept, because it is defined in a way that incorporates quality in products and services and in manufacturing processes. This concept is used since 1980. and it is still in use today.

Importance of service quality, particularly in banking, can not be underestimated. The research conducted by the American Association for the Management has given following result: companies on average lose 35% of clients each year, of which two thirds of the poor quality of service. This result is even more devastating when you consider that it is three times harder to win a new customer than keeping the actual ones. Dimensions of quality services of bank, based on which customers decide whether to receive a quality service are (Zelenović, 2012):

- Time - How long must an user wait for the service and how long does delivery take?
- Timeliness – Are services going to be delivered exactly at the appointed time?
- Completeness - Is the service delivered completely?
- Kindness - Refers to a person who provides the service.
- Consistency - Is the service always provided in the same way for each customer?
- Availability and convenience – Is there an easy access to services?
- Accuracy - Is the service provided correctly?
- Response - How quickly the staff responds to unexpected problems?
- Numerical accuracy - The accuracy of transfer of funds in the bank .
- Cleanliness - Clean area in which clients are received.

One way of differentiating banks in the market is the consistent delivery of higher quality than customers expect in relation to competition. Clients expectations are formed in accordance with previous experiences, and with those they have heard in banks advertisements. Clients choose a bank to the above principles, and after receiving the service, they compare it with the expected service. If service quality falls below the expected quality, customers are losing interest in bank. If received service meets or exceeds customer expectations they will be more firmly bound to the same bank. TQM covers all functions of the bank, starting with research and development and then through the product placement and market services, with all the activities that a banking institution needs in order to provide conditions for growth and development. TQM incorporates: the concept of product quality, process control, quality assurance and improvement of quality. From all the above we can see that customers come first for banks now. The banking institution is asking his customers what they want, what are their demands or suggestions about the service or products and in return the client receives exactly what he has asked for from a bank. Today, customers say to the banking institutions what services they want, not the opposite, that the bank comes up with the

service and the client chooses from what they have offered. If a client is not satisfied with the service provided, he can simply leave the bank and move to another one, where they will provide to him what he wants, what satisfies his interests and needs.

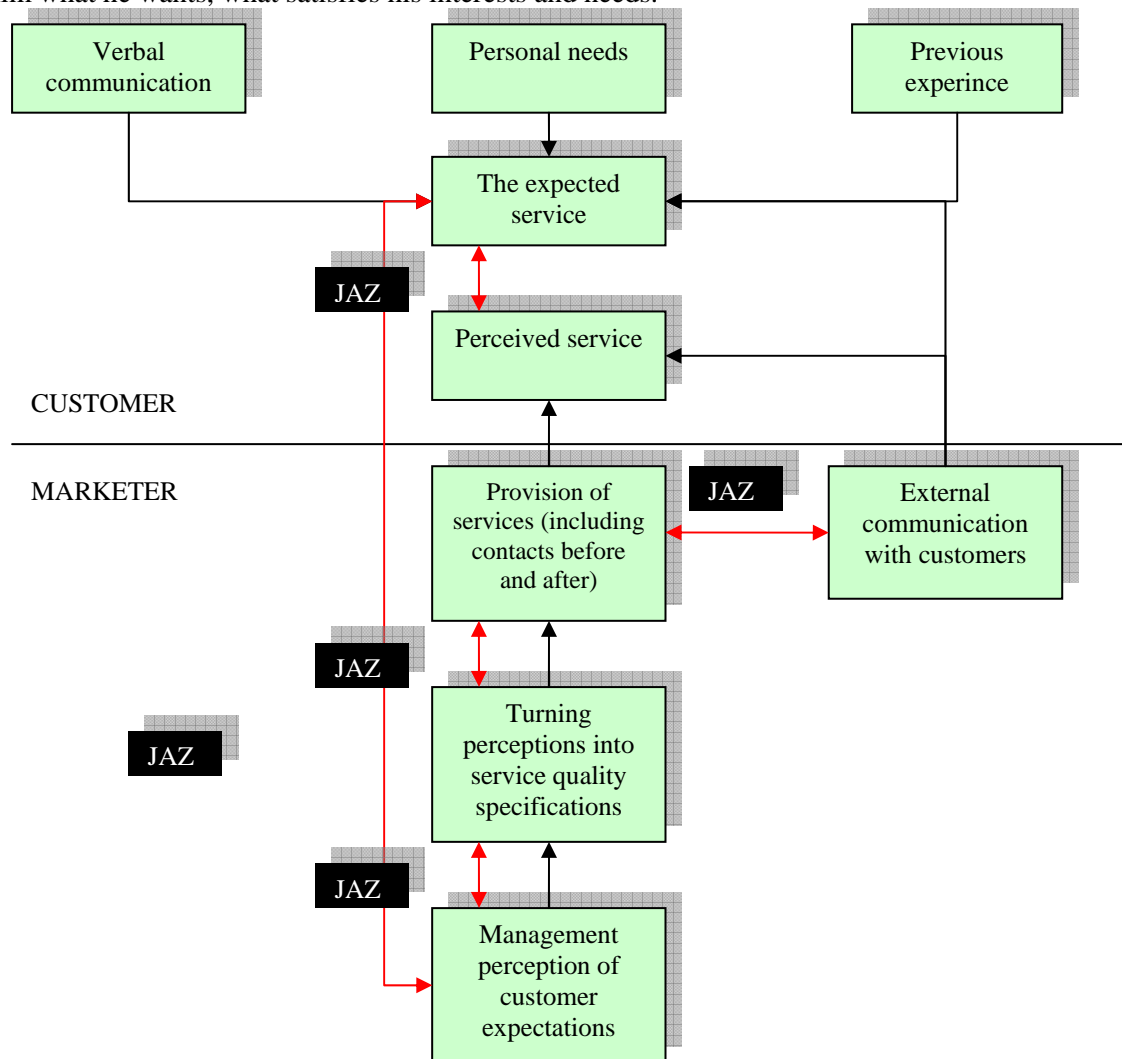


Figure 2: Model of quality management of banking products and services (Kotler, 2006)

The principles of ISO 9000 in the bank are based on (Vunjak & Kovačević, 2011): Bank commitment to customers, Leadership in the bank, Full employment in the bank, The orientation of key business processes in the bank, System approach to bank management, Decision making based on facts, Continuous improvement of bank efficiency, Mutual benefit of bank and clients.

Reasons for the introduction of quality management in to a bank are based on:

- Quick and efficient meeting the needs of users of banking services
- Anticipating their future needs
- Minimizing technical risks in the bank
- Improving the competitive position of banks in the financial market

Based on the defined characteristics of service quality there have been identified determinants of service quality and in order of importance (Kotler, Armstrong, Saunders, & Wong, 2009):

1. **Reliability** – the ability to provide the promised service accurately and according to expectations
2. **Responsiveness** - willingness to help customers and to provide them fast service
3. **Credibility** - knowledge and courtesy of employees and their willingness to instill trust and confidence

4. **Empathy** – customer care and attention to individual customers
5. **Tangibles** - the appearance of the premises, equipment , personnel and promotional materials

METHODS

Problem: In order to successfully operate in the financial market and gain competitive advantage, banks must pay great attention to quality of provided services. In every bank's interest is to create an unique and recognizable quality system, which is essential for successful differentiation and business on this market. Depending on how seriously and professionally bank settles this claim, the continuous improvement of quality of services rendered to its clients, the bank can count on a profitable and successful business.

Objective: The aim of this paper is to highlight the importance of the role played by the implementation of quality in the banking industry from the point of the quality of the services to clients, which is the direct consequence of increasing customer satisfaction on the one hand, and the resulting increase in profit of the bank, on the other hand.

Subject: The subject of this paper is to define quality in the banking system, the reasons for its implementation in banking business, and the results that come by such business. In first part there is a theoretical overview of quality systems in the banking industry and its positive impact on increasing the quality of service provided to the bank customers. Second part presents and analyzes the results of the application of quality systems at successful banks in the world. In this paper there have been used methods of content analysis of literature, books and magazines, and internet sites.

FINDINGS

There is a big difference between what the customer expects from the bank and what the bank really provides him. Based on their needs and previous experience, clients form their expectations of a bank. On the other hand, the bank, as financial institution, knowing the needs and demands of its clients, offers its services to solve their clients financial problems. Bank can not just advertise its quality services, but it must, on a daily basis, affirm the counters of banks, as well as personal contact with clients. However, even when the promotion of quality and actual delivery of service quality are correlated, there is a difference between what customers expect from a bank and what the bank's management team thinks they expect. Moreover, there is a difference between what the bank really offers to its customers from what bank should be offering. Six Sigma is one of the models¹ on how to improve the quality of banking products and services, which has developed into a comprehensive business philosophy aiming at the users' requirements, improvement, customer retention, and improving and maintaining business products and services.

In 2004 **Bank of America** began implementation of Six Sigma quality management practices. Investment resulted in more efficient processes, better alignment with business and even increased sale. Informational part of the bank needs to be strategically aligned with business, and for that reason IT staff needs to know more about bank customers and their needs. Voice of the customer is a starting point, when applying Six Sigma model. For listening to clients, associates need to work together with colleagues in the business banking centers, call centers and other business units, and look for improvement. Bank of America began continuous quality improvement in 2001, and with the introduction of Six Sigma model, because the managers realized that inefficient processes cost the company money, while providing no added value to clients. The final result of this project, which involved the efforts of many employees, was doubling the satisfaction of clients, which had

¹ The term comes from the use of statistics in Greek letters (Sigma), which means the standard deviation, ie. deviation from the mean. Six Sigma is a measurement that is based on a strategy for improving processes and reducing errors and problems through the application of projects. This improvement is achieved by using two Six Sigma models: DMAIC i DMADV.

big financial influence on bank. The training in the domain of the quality system considered (Bank of America, 2000):

- Increased customer satisfaction in relation to problem-solving complaints
- Precise control of supplier payments
- Increased productivity through training of new employees
- Elimination of significant travel costs
- Improving enterprise e-mail management to improve productivity
- Reduced credit risk
- Number of staff in key areas
- Enhanced ability to detect and prevent fraud in the banking centers.

The results for the Bank of America achieved through Six Sigma model were impressive, and they are (Bank of America, 2000):

- Customer complaints have decreased by 70%
- Through a series of projects, defects of electronic channels (ATMs, online banking, etc..) were reduced by 88%
- The time of approval of the mortgage loan has been reduced to an average cycle time of 15 days
- Non-credit losses, including losses from fraud were reduced by 28%, while the number of accounts were increased by more than a million in 2003
- Payments were improved by 22%
- Deposit Time was improved by 35%
- The cumulative financial benefits exceeded \$ 2 billion by the end of 2003
- The customer satisfaction has increased by 25% in 2003.

Quality and Six Sigma have become part of the culture at Bank of America, thanks to greater commitment, internal training program and the results that delighted all in the bank. Some key lessons learned from this training are: strong leadership is of critical importance, strong potential benefit is available in the financial services, how distributed resources can contribute to the development of ability to manage growth and quality.

Citibank aims to become a leading international financial company that requires a strong commitment by each employee. The goal is ambitious, but Citibank has implemented such a quality assurance system that enables it to satisfy customers smoothly and quickly anywhere in the world. The introduction of innovative information technology and operations through Six Sigma and CFPM, makes employees work faster and create high levels of customer satisfaction. CFPM has influenced other financial institutions from the Citibank group, including the following (Rucher, 1999):

- Private banks - that serve rich individuals. This group reduced internal calls by 80%, and outside calls by 85%, while the time for loan processing decreased by 50%.
- Global Equipment Finance, which provides global financing and leasing services of Citibank customers. This group has improved all steps of the cycle, from the time the customer entered the bank, to the delivery of service. Group also reduced the time for loan approval by 67%, with three days to one day.
- Copeland Companies - this group used CFPM methods to improve the timeliness and accuracy of statement. The group made 100% accuracy in four months. It also reduced the processing time from 28 days to 15 days.

DISCUSSION

Theoretical consideration concerning the quality system and its implementation in the banking business and the impact that it has on increase of the quality of the services provided to clients, shows the close connection between correlation and continuous improvement of quality of services provided to clients, and successful business relationship between banks. This indicates the great

importance of implementation and consistent application of quality systems in the banking business. This viewing points were confirmed by making practical examples of successful international banks, which have, thanks to the implementation of quality system and finding the corresponding models which are the most applicable to such bank, successfully improved the quality of service provided to its customers, which resulted in an increase in their satisfaction, and consequently resulted in increasing the achieved level of profits. Time the quality system qualifies for a permanent commitment of banking business and therefore, becomes an important component of the bank's competitive advantage in the market.

CONCLUSIONS AND IMPLICATIONS

The quality begins with customer needs and its improvement only makes sense if it leads to an increase in the quality of the service. It must be reflected not only through product and service, but also, through the activities of the bank, through propaganda, sales and aftersales services. The only way for bank to attract and retain customers is to have a quality product or services-the present time is the quality time. The big impact of implementation and consistent application of quality systems in the banking business, speaks for its wider application in banks. Implementation of a quality, was first accepted by a large and successful banks, which in the competitive struggle to preserve their market positions showed a willingness to face all the challenges that brings quality, with the goal that is to advance the quality of service to their customers and to increase profits. Results reached in this work have practical applications when creating strategy for business development of banks, because they point out the importance of quality systems for the successful implementation of quality business. Analysis by successful banks in the world and their results show that the quality is a powerful tool for gaining competitive advantage in the banking market. It is important that commercial banks accept that there is not a unique approach for the development of their plans, that would guarantee the quality of making the right and timely decisions related to quality. Bank needs to recognize that the key to success is establishment of organizational culture where every employee feels, not duty, but the need for constant innovation of their own work.

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CAPITAL ADEQUACY ANALYSIS AS A CONTEMPORARY CONCEPT AND MEASUREMENT OF PROFITABILITY OF INSURANCE COMPANIES IN THE REPUBLIC OF SERBIA

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ABSTRACT

Economically developed countries hold much of its total wealth as financial savings, and they should faster experience higher rates of overall economic growth in the long run. Given the level of income made by economic entities and according to such correlation, their propensity to save can be generated. As a clear reflection of the development of the financial sector, insurance companies as financial intermediaries, through the mobilization of savings, contribute to the development of the entire financial sector. Analyzing the performance of insurance companies in Serbia, CARMEL method will be applied which includes indicators for the presentation of quantitative criteria for the purpose of monitoring and analyzing the financial stability of insurance companies consisting of a model that is the current methodology of the MMF. The aim of this paper is to display, using theoretically and scientifically established economic indicator results shown on the example of two insurance companies.

Keywords: capital adequacy, insurance companies, profitability.

THE CONCEPT OF PROFITABILITY ASSESSMENT BY CARMEL METHOD

A consequence of the global financial crisis is reflected in the reduction of profitability of insurance companies at a given level of cost and capital reduction. The profitability of the insurance company means achieving a certain rate of invested capital return.

In order to not only standardize performance evaluations of insurance companies, but also to simplify the procedures of this process, the National Bank of Serbia has prepared guidelines according to the IMF methodology, i.e. Carmel indicators. These are criteria for quantitative monitoring and analysis of financial stability of insurance companies. The starting point includes the capital adequacy indicators so that the profitability of insurance companies can be identified.

In order to meet desired goals, an insurance company has several objectives. Some of the objectives are, for example, to satisfy the requirements for adequate amount of the capital both from the aspect of the insured, rating agencies and regulators and from the aspect of their own survival. Also, the interest of the company is to profitably use its capital. No one can omit the fact that shareholders, i.e. owners of insurance companies have a vested interest in achieving capital return (which corresponds to the risks they take by placing their capital to the insurance company) and that the meaning of the presence of insurance companies is not only to protect the insured. Optimizing the performance of the insurance company can be achieved by capital management and risk management. The function of capital adequacy is to absorb the risks (for example, insurance risk, market risk, operational risk, etc), which can occur during the operations and maintain or

increase the level of profitability of the insurance company. The size of the company is not proportional to the size of the insured items, i.e. magnitude of risks. The presence of a large number of mutually independent risks reduces the probability of simultaneous occurrence of all risks over a period of time.

Insurance companies are faced with the problem of adequate amounts of capital required to support the insurance and investment activities, i.e. with the problem of capital allocation. For each insurance company, capital is needed to create a security that the obligations towards the insured will be paid. Because of the high reciprocity in the insurance business, there is always the possibility that the obligations exceed the assets of the insurer. Capital adequacy allows the insurance company to face more easily unexpected losses and adverse changes in the implementation of insurance, overcome disasters and changes of regulatory environment as well as to withstand the period of considerable loss.

For a long time, risk management and insurance company capital management have been based on an analysis of each separate risk. Such approach did not take into account the relationship of several types of risk. However, the integrated approach to risk management and capital management is more increasingly used. The advantage of this approach is to analyze all risks, i.e. the total exposure to risks that the insurance company has and their correlation. Integrated risk management and capital management lead to the information about the capital required to cover the total risk exposure. It is the system that does not allow the insurance company to have availability to the excess capital, which reduces its profitability.

ECONOMIC AND LEGAL GENERALIZATION OF CAPITAL ADEQUACY

The analysis of capital adequacy indicators shows how profitable a specific insurance company is. Determining capital adequacy based on the Carmel method consists of the following sub-groups of indicators:

C1: Self-insured retention / Total capital

This indicator measures the ratio of self-insured retention and total capital of insurance companies. Self-insured retention is an approximation of the risks assumed in line with the insurance contracts by insurance companies dealing with general insurance. The significance of this premium is reflected in its ability to absorb inadequate price level of premiums and any unexpected damages covered by the insurance. More precisely, self-insured retention measures insurance risk.

The total self-insured retention at the company engaged in insurance premiums relates to the premium of its portfolio increased by the premium of received co-insurance and reduced by the sum of premiums transferred through co-insurance and reinsurance. At the company engaged in the business of reinsurance – the premium from net reinsurance is reduced by ceded reinsurance (Official Gazette of RS, No. 31/2005). If there is a high value of this indicator, it leads to the conclusion that the total capital is inadequate in relation to the risks assumed by insurance contracts (as measured by the premium). Conversely, a low value after comparing self-insured retention and total capital suggests that capital resources are unused or that the insurance company has problems, i.e. it is not able to generate your portfolio.

The global structure of the balance sheets of insurance companies in Serbia is fragile. An undesirable characteristic of insurance companies is that the value of fixed assets exceeds the value of the capital. Immobilized funds in the form of intangible assets and fixed assets show that it is difficult to distinguish non-insurance company from an insurance company, or in other words, insurance companies recognize only those assets that are readily cashable and which are called the recognized assets. Only these forms of assets should be included in the balance sheets of insurance companies, while the fixed assets should be excluded from the balance sheet, which would underestimate part of property income (Ostojić S., 2004). The new institutional regulatory solutions go beyond this problem by high capital censuses and a strict division of insurance companies into property and life insurance.

C2: Loss over the total capital/ Total assets

This indicator measures the ratio of loss over the total capital and total assets (property) of the insurance company. This indicator measures the exposure of the insurance company to the market, investment and credit risk. The low value of this indicator may indicate a high exposure to these risks.

Market risk is a risk by which the value of the investment decreases due to changes in market factors. Therefore, it is a risk that the assets and liabilities of the insurance company are to be adversely affected by changes in the financial market such as stock price changes, changes in interest rates, exchange rates or property prices. It represents a major threat to the assets part of balance sheets of insurance companies. The reduction of market risk may be influenced by the allocation of assets and diversification.

Credit risk is the cause of the financial loss occurrence due to adverse changes in the ability to meet debt obligations (creditworthiness) of clients or third parties. Insurance companies collect data of the insured and make a selection of potential clients with a high level of risk in order to reduce the possibility of negative choice and thus get rid of clients with a low credit rating.

When it comes to investment risk, which stems from the interest rate sensitivity of the present value of liabilities and trading activities in financial markets, one should bear in mind that properties part of the balance sheets of insurance companies mainly consist of financial assets in the form of government and corporate bonds, mortgages and the shares which are subject to market risk and liquidity risk.

C3: Loss over the total capital / Technical provisions

This indicator represents the ratio of loss over the total capital and technical provisions. Based on the amount of the premiums for general insurance it is possible to determine how much risk is taken by the insurance contracts. Due to the long term of insurance, premiums cannot be used for the same purpose in the case of life insurance. To determine the level of assumed risk based on life insurance contracts, technical provisions are used. They can measure the obligations taken by insurance contracts.

If the indicator C3 shows very high values, there is a signal for the inadequacy of the total capital in relation to the risks assumed by insurance contracts (measured by the height of technical provisions). The high value of the indicators may draw attention to unused capital resources or the inability to generate portfolio.

The insurance company must, at the end of the year, determine the technical provisions to cover liabilities arising from insurance activities and they are then used to meet debt obligations under issued policies. Technical provisions arise from the allocation of technical premiums. Their height is determined by actuarial methods and depends on the structure and future liabilities of the insurance portfolio.

In order to have insurance companies with more active participation in financial markets, the institutionalized framework is given in which free funds can be placed. According to the Insurance Law, there is the precise height of technical participations that may be placed by the insurance company (The Official Gazette of the Republic of Serbia No. 83/2005), whereby there are not liquidity problems.

C4: Collateral provision / Solvency margin

This indicator represents the ration of the collateral provision and solvency margin. Insurance companies in their business operations, i.e. in meeting their obligations (paying the claims) do not use revenues from premiums or investments. The reason lies in the mismatch of types of business operations among insurance companies. That is why forming reserves is necessary for these companies. They arise by allocating funds from gained profit, premium and share capital.

Collateral provision is a form of guarantee that the insurance company will settle its obligations in respect of insurance. It is an indicator of solvency. According to the Insurance Law, collateral provision of the insurance company must always be higher than the calculated solvency margin, which is an indicator of excess liquid assets over liabilities. In order to meet its obligations, the insurance company must have collateral provisions or capital. The company is obliged to deposit and invest its collateral provision (The Official Gazette of RS, No. 83/2005) in accordance with the rules of professional

insurance and good business practices as well as with the prescribed law (whereby it is important not to cause problems with solvency).

If the collateral provision does not reach the amount of the calculated solvency margin, the company shall within 30 days from the date of the non-compliance develop a synchronizing programme. The solvency margin is a guarantee that the company's obligations in connection with the payment of the indemnity to the insured will be conducted even if they are in financial difficulties.

PRACTICAL APPLICATION OF CARMEL INDICATORS

The analysis of capital adequacy gives a clearer image of profitability of particular insurance companies. The required information is obtained from the balance sheet, income statement and notes from financial statements as well as from consultations with key officers of the insurance company. As part of analyzing profitability of the Dunav Insurance A.D.O. and DDOR Insurance A.D.O. by the application of the mentioned indicator, the observations for the years 2009 and 2010 are ensuing.

Table 1: Overview of the subgroups of indicators for DDOR insurance

Group Code	Indicator	The amount in thousands	
		2009	2010
C1	Self-insured retention / Total capital	274.6%	220.9%
C2	Loss over the total capital / Total assets	19.7%	22.1%
C3	Loss over the total capital / Technical provisions	28.1%	36.1%
C4	Collateral provision / Solvency margin	166.3%	221.43%

Table 2: Overview of the subgroups of indicators for the Dunav insurance

Group Code	Indicator	The amount in thousands	
		2009	2010
C1	Self-insured retention / Total capital	122.1%	121.8%
C2	Loss over the total capital / Total assets	40.9%	38.9%
C3	Loss over the total capital / Technical provisions	81.1%	76.4%
C4	Collateral provision / Solvency margin	329.4%	364.47%

C1: The share of self-insured retention of the total capital (total equity value is related to the value of the capital and reserves without the reduction of the losses to the level of capital losses and unrealized losses on securities available for sale) at DDOR it stood at 274.6% in 2009, while in 2010 it was 220.9%. Since this ratio reflects the company's ability to absorb inadequate price level premiums and unforeseen damage, its high value indicates that the total capital is not adequate in relation to the assumed risks (risk management attracts more attention; for example, the Dunav Insurance has an unit for actuaries, statistics and risk management, whereas DDOR has a department for risk management) from the insurance business. In the event that the premium has not been adequately measured, the total capital is used, i.e. its parts as a guarantee of coverage. The 2009 and 2010 changes in the indicators are a consequence of a negative growth of the capital of insurance companies and a drop in self-insured retention. In addition, every dinar of the invested capital generated 2.20 dinars in self-insured retention.

The Dunav Insurance has a different ratio of self-insured retention and total capital. The value of C1 indicators in 2009 stood at 122.1%, while in 2010 it was 121.8%. This change is the result of higher growth in capital value than the growth of self-insured retention. The lower value of this indicator suggests that capital is not fully utilized and that every dinar of the invested capital generated 1.21 dinars of the premium in retention.

Consequently, it can be concluded that the total capital is not adequate in relation to the assumed risk from the pool of DDOR Insurance, whereas in the case of the Dunav Insurance the capital is not fully utilized.

C2: The share of the loss over the total capital in the total assets of DDOR is 19.7% in 2009, while in 2010 it was 22.1%. This change is a result of growth of the capital value deduced by loss and property,

which is a positive change. Since this indicator measure the exposure of the company to market, investment and credit risk, its low value refers to the high exposure of the company to all risks. Every dinar of the investment is covered by 0.221 dinars of the capital resource deduced by loss.

The Dunav Insurance has a somewhat different ratio of the loss over the total capital with the total assets. The value of the C2 indicator in 2009 is 40.9%, whereas in 2010 it stood at 38.9%. This change resulted from a rise in the value and assets and capital deduced by loss. At the Dunav Insurance, every dinar of the assets is covered with 0.39 dinars of the capital resource deduced by loss.

C3: The share of the loss over the total capital in technical provisions at DDOR stood at 28.1% in 2009, whereas in 2010 it was 36.1%. This change resulted from a rise in the capital deduced by a loss and fall in the value of technical provisions. A very low value of this indicator may refer to an inadequate level of the capital in relation to technical provisions.

The Dunav Insurance has a different ratio of the loss over the total capital with technical provisions. The value of the C3 indicator in 2009 was 81.1%, whereas in 2010 it stood at 76.4%. This change is a result of a higher rise in the value of the total capital deduced by loss and rise in the value of technical provisions. In the case of inadequately measured and assumed risks of the company, this ratio refers to the level of the reserves of about 80%. A high value of this indicator may refer to the failure to utilize capital resources since a great proportion of the funds is retained.

C4: The share of collateral provision in the value of margin solvency at DDOR stood at 166.3% in 2009, while in 2010 it was 221.43%. This change resulted from a fall in the margin solvency and a rise in the collateral provisions. According to the Insurance Law, collateral provisions must always be higher than the calculated margin solvency in order that this company can be called solvent, which is the case with DDOR that formed enough collateral provisions in the event of unexpected loss in the business operations.

The Dunav Insurance has a different ratio of the collateral provisions with the value of margin solvency. The value of the C4 indicator in 2009 was 329.4%, whereas in 2010 it stood at 364.47%. This change has a greater fall in the value of margin solvency and rise in the collateral provisions. The Dunav Insurance formed a significantly higher level of the collateral provisions in order to cover unexpected loss in comparison with DDOR Insurance, whereas the calculated margin solvency is approximate to the same value of DDOR.

It can be concluded that a higher level of the collateral provisions at the Dunav Insurance might provide a higher level of protection due to the unexpected loss in comparison with DDOR Insurance.

The sublimation of previously presented indicators of the capital adequacy which were applied in practical examples leads to the conclusion which refers to the profitability of the insurance company. Namely, the analysis and interpretation of the indicators of capital adequacy may suggest that DDOR Insurance form a lower level of profitability in comparison with the Dunav Insurance.

CONCLUSION

A striking competition between the subjects on the market is becoming more obvious in our region as well, so the proper observation and analysis of the success of business operation is very important. The reason for this is a need for better understanding of the current position as well as for better planning of the future operations. Only the companies that make "right" decisions in a fast and effective manner and consistently implement these decisions can be classified as successful companies.

The results of the research in the second part of the paper indicate that the insurance company may reach and maintain a desired level of profitability if it has an adequate level of the capital. It has been emphasized that this analysis is based on the indicators of CARMEL methods which are adapted to the insurance companies. This method can increase a level of transparency and comparativeness because the processing of all indicators of CARMEL method is automatically done by the National Bank of Serbia. Transparency of business operations is upgraded since annual financial reports of insurance companies are available on the Internet. Within the profitability analysis the indicator of capital adequacy has been utilized, which is undoubtedly the essence of the business operations of the insurance company because its function is to absorb risks, provide security to the insured and enable survival on the insurance market. The listed theoretical assumptions are applied on the example of DDOR and the Dunav Insurance business operations. In the initial parts of the paper there was a tendency to theoretical explanation of the indicator which would refer to the quality of business operations of the insurance company, whereas in the latter part (in its practical part) there was an application of the defined theoretical assumption and the obtained results were interpreted. Their interpretation might be useful to insurance companies to check the quality of their business performance, i.e. profitability and to find ways how to maintain them in the segments where they proved to be positive and to improve the segments that deviate from the desired values. This approach will enable insurance companies to fulfill, in a serious and scientific way, their attempts to successful performance in comparison with their competitors and the future time.

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THE INFLUENCE OF THE BAYESIAN'S BETA ON THE CAPM METHOD IN CALCULATING THE COST OF EQUITY

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ABSTRACT

An adequate estimate of the cost of equity is a computationally demanding process. The most frequently used model that estimates the cost of equity is the CAPM (Capital Asset Pricing Model). CAPM model assumes that the investor will expect a higher rate of return of invested capital than it could provide to invest in risk-free investments. CAPM method the required rate of return on assets is determined as the sum of two components: risk-free rate and the risk premium, which is a function of the beta coefficient. Beta coefficient is the ratio of the change in the yield of individual portfolio. The traditional way of calculating beta coefficient involves the use of regression model that determines a linear relationship between the return on the assets or stocks and return on the market. Previous studies have shown that individual stock beta coefficient calculated in this way has a tendency to the mean of all stocks on the market. Such estimation of beta coefficient is not considered as sufficiently reliable for further research, so it is necessary to make its correction by applying Bayesian statistics. This paper describes how the performance of stock portfolio can be improved by Bayesian estimation of beta coefficient.

Key words: cost of equity, CAPM, risk premium, beta coefficient, Bayesian beta

INTRODUCTION

The cost of equity capital estimates represent a complex and significant process in decision making. Only by knowing both components of Weighted Average Cost of equity – WACC, that is, costs of own capital and costs of borrowed capital, is it possible to direct the assets towards the best alternatives and take into account opportunity costs, that is, return on an alternative investment with the identical risk. In contrast to the borrowed capital costs which are most frequently precisely and explicitly defined, the calculation of costs of own capital is based on complex financial-mathematical methods. Regardless of the fact that own capital costs do not cause money outflow, they have to be included in the total cost calculation. The reason for this is simple, the risk of ownership investment is much higher than the risk of borrowing money and they presuppose certain higher risk premiums. Own capital costs represent the rate expected by investors, that is an alternative investment rate for identical risk investments.

Despite the existence of simpler methods for calculating own capital costs and capital in general, such as, expected dividend discounting model, long term interest rate correction model and building model, the most frequently used method when estimating the required rate of return is the Capital Asset Pricing Model – CAPM. The proof for this can be found in the research conducted by Welch (2008), which has shown that around 75% of professors of finances recommend the usage of CAPM method when calculating the cost of equity, while Graham and Harvey (2001) saw that 73.5% of respondents actually use this model. The required rate of return expected by investors is defined by the CAPM method as a compensation for their investments in more risky placement through the risk free rate of returns and risk premiums. To reduce a risk, it is necessary to avoid portfolio whose stocks are highly correlated to each other. How Markowitz (1959) explains, the

returns on a hundred stocks, that simultaneously increase or decrease, requiring little more protection than the uncertain return on one stock. Introducing the risk into the model, it is necessary to precisely define it. In the CAPM method, the expected rate or return rate on stocks, that exceeds the risk-free rate of return, is proportional to the regression slope coefficient of that rate on a market index. From that reason, the slope coefficient or beta coefficient (β), the best known as a measure of systemic risk, is one of the fundamental concepts of modern theory of the capital market. Usually, the beta coefficient is calculated based on the historical data, using regression method of least-squares. The least-squares technique consists of fitting a linear relationship between the rates of return on a security and the rates of return on a market index, so that the sum of squared differences between the security's actual returns and those implied by the relationship is minimized (Vasicek, 1973). In order to generate a regression coefficient of the return rate on stocks in respect to the return rate on a market index, authors applied Bayesian method of estimation.

CAPM METHOD

The starting point of the CAPM model is the fact that the investor will be expecting higher rate of return on the invested capital as compared to the rate he might get by investing in risk free placements. By introducing risk free placements in the analysis, CAPM determines required rate of return of an asset as a sum of two components: risk-free rate and risk premium, which is in the function of beta coefficient. As already stated, the risk premium is excess return above the risk free rate of return which is expected by investors as a compensation for investing in placements with higher risks. Consequently, the CAPM required rate of return is presented with the following adjusted relation (adjusted according to: Damodaran, 1994):

$$k = R_f + \beta (R_m - R_f)$$

where: k – is the required rate of return, R_f – is the risk free rate of return; R_m – is the market rate of return ($R_m - R_f$) – is risk premium and β - is beta coefficient.

Determination of the cost of equity when issuing ordinary stock by using the CAPM model presupposes a set of successive steps and/or estimates (Brigham and Ehrhardt, 2001): risk free rate of return, risk premiums and β coefficient. *The risk free rate of return* represents a return (interest for an investor) which could be gained as a result of investments in risk free securities, primarily in government securities. The risk free rate of return is more theoretical than realistic since in practice the risk free rate does not exist because even the safest investments carry a more or less amount of risk. In practice, the most common risk free securities are long-term bonds issued by the government. In addition, the empirical research in the USA have shown that around 2/3 of the biggest enterprises treat the risk free rate of return in the same way as the interest on long-term Treasury bills. (Brigham and Ehrhardt, 2001). *The risk premium* represents the difference between the expected return on the market and risk free rate of return ($R_m - R_f$). It is most commonly estimated on the basis of the historical trends and expected future trends. Some studies (Ibbotson Associates, 2000) confirm that the risk premium for any kind of securities is equal to the difference between achieved rate of return of a certain type and risk free rate of return. This means that, if the average risk free rate of the return was known, it would be possible to calculate the expected return for any kind of security at any time, by simply adding the average risk premium to the security in question. The estimation of future risk premium trends is primarily based on the above explained capital asset pricing model, from ordinary stocks through expected dividend discounting. According to the CAPM model the total risk of investment placements is divided into two categories: systematic risk and unsystematic risk. The systematic risk is a part of the total risk which refers to the variability i.e. (in) security of the investment on a certain national market. It is determined by factors forming an economic environment which equally influence all enterprises of a national economy. This total risk component cannot be reduced by diversification (unless there is a possibility for international diversification), and its best known measurement is *the beta (β) coefficient*.

BETA COEFFICIENT

The beta coefficient (β) represents a ratio (index) of change of returns on the individual portfolio caused by the change in the market returns (market portfolio) that is, the beta coefficient measures the market risk of stocks and its sensitivity to market trends (Brealey and Myers, 2003).

The value of the beta coefficient is represented by the slope of the characteristic line, as an expression of functional link between historical returns of individual securities and returns of market portfolios (Standard&Poor 500- stock market index). The determination of the value of β coefficient based on the slope of the characteristic line derived from the ratio of pairs returns of individual securities and returns of past market portfolio is called the historical beta. Data on the beta coefficient value and past trends present reliable predictors for future betas, especially if changes to the characteristics of individual investments are not expected. It is important to measure the systematic risk, because it enables rational investors to determine the acceptable return limits. Considering the fact that the connection between the β coefficient and risk premium in the equation for determining the discounting rate is linear, the following possibilities are present:

- (a) if $\beta = 1$, the investment risk in the observed project is equal to the average risk of the national economy. Consequently, in the long run, the discounting rate will have the same fluctuations as the rate of returns of the national economy,
- (b) if $\beta > 1$, the investment risk in the project is higher than the average risk for the economy in general,
- (c) if $\beta < 1$, the investment risk is lower.

The unsystematic risk refers to certain financial and business characteristics of a specific company and it is independent of the economy policy and other factors inherent in the economy environment of a national economy. It is worth noting that this type of risk can significantly be reduced by efficient portfolio diversification of high risk and risk free placements. In this way, the unsystematic risk becomes lower, while the total risk approaches the systematic risk. This is also important to know since the risk premium is derived only for the systematic risk.

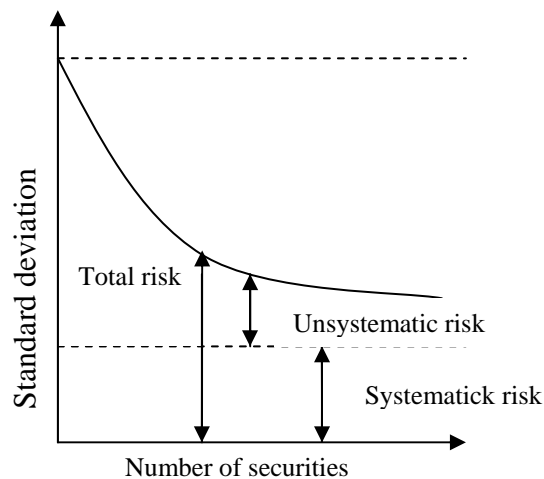


Figure 1: Total risk (Modigliani and Pogue, 1974)

This graph shows that an increase in securities initially leads to a significant decrease in the value of total risk of the portfolio. Up to a certain number of securities a large portion of unsystematic risk is eliminated, while an additional diversification refers to slight risk reduction.

The standard deviation of return on the portfolio is not only determined by the standard deviation of individual stocks, but also depends on the correlation between stocks. The correlation coefficient

measures the extent to which two series increase or decrease together. As the two series have in common more prominent movement, the correlation coefficient is higher.

The standard deviation of a portfolio is determined by (Markowitz, 1959):

- (a) the standard deviation of each security,
- (b) the correlation between each pair of securities, and, of course,
- (c) the amount invested in each security.

When we have known all three elements, the standard deviation of the portfolio could be calculated. In the case when other parameters are equal and when correlation between the return on stocks is higher, the standard deviation of the entire portfolio will be higher, too; i.e., the returns on individual stocks more rise or fall along, less variation in individual stocks exclude each other. Therefore, the variability of the portfolio return would also be greater.

Both financial theorists and practitioners agree that investors should be rewarded for assuming higher risk with higher expected returns. It is possible to eliminate the unsystematic part of the total risk by appropriate diversification. Consequently, there is no reason for investors to compensate the risk premium in order to overcome the unsystematic risk. Furthermore, the capital asset model emphasizes that the returns (together with the risk premiums) for any kind of stocks (or portfolio) shall be linked to the β coefficient, a systematic risk which cannot be diversified.

The beta coefficient for a particular asset (or particular company) will be estimated through variable analyses which are believed to influence the investment risk. Numerous studies on determination of the beta coefficient have shown that the key risk factors to be analyzed can be grouped as follows:

- (a) Financial risk factors which comprise: expected returns, solvency, market presence, rate of profit, diversification of production and sales. The analysis of these factors is based on the company's financial report and comparative analysis of financial ratios.
- (b) Risk factors within the company's branch (or the branch the company in which investment is made) where the following is considered: capital intensity of the branch, competition, regulations and entry barriers.
- (c) Economy risk factors which analyze and perceive the influence of changes on the company business in an economic environment: inflation rate, growth rate, interest rate, economic policy and alike.

This kind of beta coefficient estimation is based on studies, which have shown that there is a high correlation between the beta coefficient and analyzed risk factors. If financial transactions (investment, purchase) are performed within a single national economy, a discounting rate estimated through the analysis of a/m risk factors can give a satisfactory representation of the required rate of returns of the investor. However, if the investments are made in other countries, risk factors of the target country frequently additionally influence the value of a discounting rate. These are, by rule, political risk factors. These factors are estimated on the basis of reports of multinational companies and refer to: political stability of the country, attitude towards foreign investments, tax policy, currency stability, inflation rate and alike. It should be emphasized that the calculated discounting rate is usually augmented by the estimated risk rate of the target country.

In practice there are various modifications of β coefficient quantification methods. Some companies believe that they are familiar with the attitude of potential investors towards risk investments in a particular stock and that they can estimate the "real" value of the beta coefficient with much greater precision. Another alternative, so-called, adjusted beta coefficient is obtained by certain statistical adjustment of historical beta value in order to converge to the average beta value ($\beta = 1$). There is, also, so-called fundamental beta which corrects historical beta using information on the most significant parameters of the company's issuer of stocks (products, capital structure and alike). Independently of the quantification method, experience shows that the beta coefficient of most stocks quoted on the market ranges between 0.60 and 1.60.

THE RELATIONSHIP BETWEEN BAYESIAN BETA AND BETA COEFFICIENT DETERMINED BY CAPM METHOD

When portfolio optimization is implemented using the historical characteristics of security returns, estimation error can degrade the desirable properties of the investment portfolio that is selected (Frost and Savarino, 1986). Therefore, the inclusion of estimation error, generated by the application of method of least-squares, could improve the characteristics of the estimated beta coefficient.

As a general rule, estimation of beta coefficient is performed in order to predict the rate of return on assets. Beta, determined from regression equation, is based on an assessment of historical data that will not detect any changes in future beta. In this sense, the beta is a statistical model called "regression toward the mean". This means that the high value of beta coefficient of stocks ($\beta > 1$) at one time usually shows the higher values of beta coefficient in subsequent periods, while lower values ($\beta < 1$) is an indicator for higher values of β in the future.

Estimating the beta coefficient is usually done by applying the market model regression (Bodie et al., 2001):

$$R_i = \alpha_i + \beta_i R_m + \varepsilon_i$$

where: R_i is return rate on stocks, R_m is return rate on the market, α_i and β_i are the intercept and slope coefficient (beta coefficient) that should be estimated for the stock i .

The market model is estimated using least-squares technique, where the beta can be evaluated as follows (Bradfield, 2003):

$$\beta_i = \frac{\text{cov}(R_i, R_m)}{\text{var}(R_m)}$$

The market model is not based on an assumption about investment behavior, but on the linear relationship between the return on stock and market return. Beta coefficient of individual stocks has a tendency of regression toward the mean of all stocks. Therefore, beta determined by regression analysis may be suboptimal for future reference. In order to correct the propensity regression, we introduce Bayesian estimation of beta coefficient in the following form (Bradfield, 2003):

$$\hat{\beta} = w\beta + (1 - w)\bar{\beta}$$

$$w = \frac{\sigma_{\bar{\beta}}^2}{(\sigma_{\bar{\beta}}^2 + \sigma^2)}$$

where: β is estimated using the method of least-squares, $\bar{\beta}$ is the average value of beta coefficients of all stocks on the market evaluated by using least-squares technique, σ is the standard error of the estimated beta coefficients and $\sigma_{\bar{\beta}}$ is the cross-sectional standard deviation of all beta coefficients estimated on the market.

What distinguishes the beta coefficient determined by using the CAPM method and the beta coefficient determined by Bayesian assessment is that the Bayesian beta takes into account the weighting coefficient, which includes the standard error occurred by applying method of least-squares. As can be seen from the above mentioned form, weight coefficient w will be higher if values for $\sigma_{\bar{\beta}}$ are higher, too. That means if the beta covers all the stocks so well that all the values for beta are equally probable, then the value for beta estimated by using the method of least-squares is optimal. Conversely, if σ is high compared to $\sigma_{\bar{\beta}}$, then the value of weighting factor w will be low, so the Bayesian estimation for the beta will be reduced compared to the average beta for all stocks on the market. Therefore, estimation for beta that does not fall within the usual interval of

beta values and has a high standard error will be probably being overestimated, while the low values of beta will be unreliable and often underestimated.

In practice, investors commonly use a Bayesian estimator for beta in order to evaluate an asset's contribution to portfolio risk (Vasicek, 1973; Murphy, 1990). Because of the wide practical application of Bayesian beta and due to the strong theoretical basis supporting it, the testing of CAPM method using Bayesian beta estimation has practical and theoretical importance.

CONCLUSION

Application of Capital Asset Pricing Model provides a precise assessment of relationships between the return on assets and expected returns. In this sense, the CAPM method takes a central place in modern financial theory. However, the CAPM method has two limitations: first, it relies on the theoretical market portfolio, which includes all assets and, second, it deals with the expected return in relation to the actual return. Nevertheless, the method has great practical importance and is widely accepted among the investment professionals who take care about the difference that exists between the risk characteristic for the firm and systemic risk, so the beta coefficient is often used to measure systemic risk.

With assessment of the statistical characteristics of returns on the stock based on historical data, we are faced with an error that occurs. The application of sophisticated techniques would take into account the weights (w) that would be awarded for estimated beta to increase the level of statistical reliability; i.e., if we have a more precise estimate of beta from historical data, the value of weights will be increased. Based on the Bayesian estimation of beta coefficient, controversial parameters in the application of CAPM method could be improved, thus contributing to the efficient application of theoretical assumptions and perceptions.

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ECONOMIC VALUE ADDED IN FUNCTION OF DETERMINING INCENTIVE COMPENSATION SYSTEMS

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ABSTRACT

Corporate enterprises develop specific systems of rewarding the managers for successful performances. By taking into account the need of creating shareholder value, it is necessary to implement method for measuring performance that would satisfy the objectives of shareholders and managers' interests. The optimal compensation model assumes that managers are motivated to create added value for shareholders. One method for modeling the reward system is economic value added (EVA). Economic value added represents a very attractive instrument for measuring corporate performances and its management. The subject of this paper was the analysis of the economic value added in function of creating incentive systems for managers, as well as the advantages and disadvantages of application of this method. Economic value added was presented as a concept that brings the objectivity in the system of modeling long-term incentives for managers and, thereby, reduces the risks associated with the incentive system.

Key words: human resource management, performance measurement, EVA, compensations, incentives

INTRODUCTION

Modern business requires a high level of delegation of decision-making rights and responsibilities to managers. Capital owners are usually only interested in the value of company shares and the amount of dividends, while the organization and management of business activities and the achievement of corporate goals are delegated to the managerial structure of enterprise. In such circumstances, the question is how to reward and thus motivate managers to maximize their skills and abilities on the accomplishment of organizational goals.

Structuring acceptable compensation package for manager seeks to achieve the highest possible degree of concordance between shareholders and managers. Linking compensations for managers with actual managers' performances should focus managers on actions that would result in increasing shareholder value and realization of organizational goals. But in reality, the structure and amounts of the compensation packages often were not correlated with the level of managerial performances. Because of this, it is important to analyze some different performance measures that would be better base for structuring managerial rewards. As a possibility appears the concept of economic value added.

The subject of this paper was the analysis of the EVA in function of creating incentive systems for managers, as well as the advantages and disadvantages of application of this method. The aim was to present EVA as a concept that brings the objectivity in the system of modeling long-term incentives for managers and, thereby, reduces the risks associated with the incentive system.

MAIN ISSUES IN THE CONCEPT OF INCENTIVE COMPENSATIONS FOR MANAGERS

Especially interesting field of HRM is a system of compensation and benefits. Compensations are seen as a mechanism of development and intensification of the global corporate culture, the primary source of corporate control, which very explicitly associate achieved performance with the incurred costs and the link between all the sharper, sophisticated public discourses about central issues related to corporate governance in international contexts (Dowling et al, 2008, p. 160) especially if we are talking about executive compensations. Compensations are direct financial costs for the organization, and if it is taken the fact that that labor costs may represent a great amount of total operating costs, there is the need of viewing the compensation system in terms of investments that will result in value added for the company. Also, incentive compensations are the most commonly used motivation factor for motivating managers to maximize their skills in the accomplishment of organizational goals.

At the beginning of analysis of manager's incentive compensation systems, it is important to pay attention to several questions that arise from this topic.

First is the *agency problem* in corporate governance. The managerial structure is responsible for the proposal, organization and implementation of business policies, while the functions of profit distribution and corporate control are left to the owners of capital. The primary task of managers is to ensure the continuous enlargement of a company shares. Since managers have their own goals and tasks, this often can lead to opportunistic behavior of managers in the sense that objectives of corporate enterprises are subordinated to the goals of managers. The situation when managers work harder to satisfy their own interests at the contrary of the goals of the owners is a called agency problem. The agency problem is most manifested when it comes to the determining compensation between shareholders and managers. Lack of sufficient information include weaker control of the managers by shareholders, but also opportunities for managers to increase the amount of their compensation to the system when there is no real basis.

Second question is related to the *compensation systems and its components* from the aspect of human resource management (HRM) theory. Compensations in contemporary HRM represent one of the most mentioned elements of this system, from the aspect of research, as well as the aspect of determining the best way to establish compensations. Authors of the expectation theory have suggested that motivation and performances are shaped based on the link between the effort and the reward and by the importance or valence of the reward to the person in question (Brewster et al, 2007, p. 121). Authors in HRM have established several models of compensation elements (Štangel Šušnjar and Zimanji, 2005, p. 332; Dowling et al, 2008, p. 162; Briscoe et al, 2009, p. 245 – 252; Morley and Czarnecki, 2010, p. 12 – 14): base salary, allowances, awards, premia, overtime, incentives, bonus, commission, severance, perquisites, financial and retirement planning, health, pension, unemployment insurance, security services, loans and saving, outplacement, taxes and the like. Is it can be seen, some of those components are very useful instruments for motivation of employees and managers. According to *The Wall Street Journal/Hay Group 2010 CEO Compensation Study* (2011) the main components of the total compensation for managers are:

- **base salary**, according to Sigler (2011, p. 2) it comprises 11.2 % of executive compensation,
- **annual incentives** – bonuses,
- **long term incentives** – stock options grants, restricted stock grants, performance-based grants in equity and cash, restricted cash grants (which are not disclosed elsewhere),
- **all other compensations** – perquisites and personal benefits; tax gross-ups; discount stock purchases; company contributions to a defined-contribution plan; or company payment of insurance premiums.
- **change in nonqualified deferred compensation earnings plus change in pension value** – the aggregate change in the present value of accumulated defined-benefit and actuarial pension plans plus the above-market or preferential earnings on compensation that is deferred on a basis that is not tax-qualified.

The bonuses and long term incentives present the biggest part of managerial compensations, and because of that, it is important to determine the base on what managers should get these incentives.

Third issue related to the topic of compensations is *the problems of rewarding managers*. Main problems presented are next:

- Cash bonuses tied to accounting numbers may motivate executive to manipulate the timing of revenues and expenses to maximize pay out to them.
- Rewarding top management with different forms of stock compensation may not tie the executive's efforts to company performance closely enough. The stock price may rise or fall from market forces and not from moves of the company's executives.
- Problems may also occur if the stock price declines after executive stock options are issued putting the options being way out of the money. With options so far out of the money, it may not give the manager the incentive to exert effort to move the stock price.
- Executive may be enticed to manipulate accounting numbers when they are about to exercise their options to give the appearance of superior firm performance to drive up the stock price.
- Restricted stock rewards executives for performance but it restricts the stock from being sold by the executive for a period. This may not encourage the manager to set a high priority on accomplishing company goals in the near term (Sigler, 2011, p. 3-4).

Beside presented compensation systems and problems, one of the most analyzed problems was the correlation of compensations with the performances of managers. So far many studies revealed that there is no strong correlation between these variables. For example, in the research of author Ozskan (2011, p. 260), it have been pointed out to a weak effectiveness of corporate governance reports in the UK, which suggested that compensation for managers should be more closely linked with their performance. In one other research it was found that annual change in managerial compensation in the US during the 70s and 80s of the twentieth century to a large extent were not correlated with changes in corporate performances – the total compensation of managers have varied only \$3 to every \$1,000 change in shareholder wealth (Jensen and Murphy, 2010, p. 64). Since managerial compensations are very complex category of HRM, there have to be made changes in modeling incentive compensations. One possible way to make performance – based incentive compensations is the concept of EVA.

THE CONCEPT OF ECONOMIC VALUE ADDED

The Economic Value Added is a management technique developed by the Stern Stewart & Company consultant group (Stern et al., 1995). "EVA emphasizes the residual wealth creation in a company after all costs and expenses have been charged including the firm's cost of capital invested. In its simplest terms, EVA measures how much economic value in dollars; the company is creating, taking into account the cost of debt and equity capital" (Abdeen and Haight, 2002, p. 28). EVA can be defined as the change in the NOPAT (Net Operating Profit after Taxes) minus the change in the Cost of the Capital used to generate this NOPAT (Rappaport, 1998; Kumar and Kaura, 2002). Thus, EVA depends basically on the firm operating profit, taxes, debt level, and the cost of capital. The calculation of EVA it can be proposed like (Rappaport, 1998; Tortella and Brusco, 2003):

$$EVA = NOPAT - (D + EBV) \times (WACC) \quad (1)$$

Where:

- NOPAT – Net Operating Profits After Taxes.
- D – Debt
- EBV – Equity Book Value.
- WACC – Weighted Average Cost of Capital.

EVA calculation relies on generally accepted accounting principles to measure past management decisions. Because of that, a certain adjustments will have to be made in order to rectify any possible accounting distortions of income and investment. Examples of adjustments include

research and development expenditures, and employee training costs that more correctly should be capitalized and amortized over their perceived years of future benefits (Abdeen and Haight, 2002, p. 28). Besides this, it is also important to define the cost of capital, which is one of the most complex parts of EVA calculation. Usually, a capital asset pricing model (CAPM) is used. Under CAPM, cost of equity is given by the following formulation (Sharma and Kumar, 2010, p. 201):

$$K_e = R_f + B_i (R_m - R_f) \quad (2)$$

Where:

- R_f – Risk free return
- R_m – Expected market rate of return
- B_i – Risk coefficient of particular investment

EVA is one of the measurements of the performances that present real economic state of the organization. It enables better protection of the shareholders interests since it measures the added value to the organization, in contrary to traditional performance measures like return on assets, equity or investments, earning per share and the like. But, there are some limitations with this concept. Namely, the main problem with EVA is the calculation of net operating income after tax and the average cost of capital. The fact that several adjustments have to be made in order to calculate economic income makes this performance metric complex. In some cases the number of adjustments may reach over one hundred and fifty (Abdeen and Haight, 2002, p. 34). The complex calculation of EVA made author Ilić (2011) who for the first time showed calculation of EVA in the company business practices of Serbia. In favor of EVA speak the main proponents through several principles:

- it helps in reducing agency conflict and improve decision making;
- it is more strongly associated with stock return than other measures;
- it improves stock performance;
- it adds more informational content in explaining stock returns;
- EVA and market value are correlated (Sharma and Kumar, 2010, p. 201).

There are also more contributions of this concept, and major of those are that management now pays greater attention to management of assets, allocation of resources, and capital structure including the operating leverage. EVA is appealing to developing companies that need to fund their projects through satisfying the value enhancement requirements of investors (Abdeen and Haight, 2002, p. 31). But one of the most important facts is that implementation of EVA into performance management system is that it can improve an incentive systems for managers. EVA can provide investors with a normal return on the company's shares—that is important not only for securities analysts in evaluating stocks, but also for corporate compensation committees in setting performance standards for management incentive compensation plans (O'Byrne, 1996, p. 125).

EVA IN FUNCTION OF INCENTIVE COMPENSATION SYSTEMS

Some researches were made on the link between EVA and the form of executive compensation. An examination of the compensation structure and economic value added of 209 companies in 1995 – 1998 provided evidence supporting incentive compensation where EVA is found to be positively and significantly related to incentive based compensation (Evans and Evans, 2002). One comprehensive look at EVA based compensations gave authors Stern, Shiely and Ross (2001) who suggested a number of improvements over the original EVA bonus plan. Namely, EVA bonus plan measures excess EVA improvement as opposed to simply EVA growth over prior periods. It provides a more direct link to the true measure of shareholder wealth creation – returns above market expectations (Young and O'Byrne, 2001, p. 138). According these authors a following formula can be used to calculate a manager's bonus in each year (Young and O'Byrne, 2001, p. 139):

$$CURRENT\ YEAR\ BONUS = TARGET\ BONUS + y\% (\Delta EVA - EI) \quad (3)$$

Target bonus is “the bonus earned by a manager for delivering the EVA improvement that is expected by investors (to be determined by the compensation committee prior to the performance period). This expected EVA improvement should be equivalent to the EVA that will provide shareholders with a cost of capital return on the market value of their investment in the business” (Balsley, 2005). If EVA is below this level bonuses will be reduced while returns of shareholders do not fall to zero. At this level there will be no bonuses for managers. If there is no return for the owners (negative EVA in the level of capital costs), there is no bonuses for management. Namely, creation of the return in the range from zero return to expected returns of shareholders provides bonuses from zero to the level of the target bonus. If EVA is sufficient to cover the expected returns of investors, then the managers realize the target bonus (Malinić, 2007).

Δ EVA – EI represents “the change in EVA less expected EVA improvement. This is meant to capture the incremental EVA that a manager has delivered above and beyond the EVA growth that investors expect and have already paid for. The percentage of the incremental performance (y %) that is returned to management is established by the compensation committee” (Balsley, 2005).

Additional incentives beyond the level of the target bonus are provided for increasing the EVA above the level provided by covering the total cost of capital and only the part of EVA that is increased above the expected level. In this way it will be prevented the excessive increase of compensation costs. If the criteria for bonuses was any increase in EVA, then there will be situations in which one reached EVA (above the level that provides target bonus) is decreasing, which is usually accompanied by a decline in value of shares and managers will still exercise bonuses over target level (Malinić, 2007). Because of this, Stern Stewart & Co proposed the use of a “bonus bank” designed to base a manager’s annual bonus payout on multi-period EVA delivery. The mechanics of the bonus bank is presented as following:

- In every year, the “current year bonus” is calculated using the formula described above and based on the manager’s performance during that year.
- That “current year bonus” is then placed in a “bonus bank” that also holds the deferred (or unpaid portion of) bonuses from prior years.
- The bonus bank balance (after the current year bonus has been included), rather than the current year bonus, then determines the amount of bonus actually earned by a manager each year. The amount earned is determined in two steps:
 - o 100% of the bonus bank (if possible) is paid up to the amount of the target bonus, plus
 - o 1/3 of the remaining bonus bank (after the target bonus) (Balsley, 2005).

The bank account concept with the vulnerable three – year payout gives the annual incentive compensation program a longer – term perspective and provides participants with ownership incentives as the account balances build or decline (Wallace, 1997, p. 299).

CONSLUSION

Managerial compensations are very complex area of HRM. A mixture of compensations elements, importance of short and long – term incentives for managers and problem of rewarding in the past make this issue more sophisticated. Since the incentives are the most important part of executive compensation, those elements should be created in relation with the managerial performances. Usually, executive compensations was weakly correlated or even no correlated with the achieved performances. While values of shares were declining, managers were still exercising bonuses and other incentives. During past years because of the lack of sufficient information there have been weaker control of the managers by shareholders and managers were able to maximize their own interests in contrary to the interests of shareholders (agency problem). Because of the existence of all those issues and problems there is a need for improvement in the design of managerial compensations. One possibility, analyzed in this paper, was EVA.

EVA concept was understood as the contemporary technique for performance measurement. When it comes to the managerial compensations, EVA encourages managers to make decisions that are

aligned with the creation of value for the shareholders. As it was described in the paper, EVA incentive compensations are based not only on the year increase in EVA, but on the increase that is above expected EVA improvement. Bonus bank is usually used to motivate managers to make decisions that will create superior performances and value for the shareholders continuously. This method will connect results of managers (EVA improvements) to the deferred bonus payout (payout will be set in defined time period, for example three years).

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CREDIT RISK MANAGEMENT TECHNOLOGY

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ABSTRACT

The turbulent economic environment has reinforced the intensity of traditional banking risks and imposed an additional need for effective controls and risk management, achieving satisfactory profitability. Depending on the preferences of bank managers to risk, each bank can take a greater or lesser degree of risk, positioning itself between two extremes: absolute risk aversion and absolute risk acceptance. Accepted level of risk must be commensurate with a bank's ability to absorb any losses and to achieve an acceptable rate of return. Despite the appearance of sophisticated forms of risk (interest rate, currency, liquidity, etc.), credit risk has a special place in the risk management framework. On the one hand, it is the oldest bank risk, that is imminent for banking, but on the other hand, regardless of financial market development loans are still the dominant balance sheet item for most banks, especially in transition countries. The first part of paper analyzes the determinants of credit risk from the standpoint of credit risk factors and sources. The second part deals with operational risk management, identification of phases in the management process, procedures and organization of credit risk management. The third part is related to the analysis of international standards for credit risk (Basel standards). The conclusion is reserved for research results.

Key words: credit risk, standardised approach, internal rating approach, the Basel standards

INTRODUCTION

Uncertain fact which implementation can have a direct or indirect impact on financial results of banks is called the risk of financial operations. Financial risk in banks can be defined as the ability to invested funds will not earn an expected rate of return, but manifestation of this risk in the business makes a loss. Banks are becoming aware of the risk only when the losses are disclosed and injuring the reputation of the bank. Banking today is a skill measurement and risk management in the area of credit, investment and trading activities. The task of the banks is not to avoid risk, but to professionally manage their banking risks. That does not mean that the bank chooses activities that contain only low risks. In banking, there is a risk structure of investment funds, ranging from satisfactory safety and liquidity, and low, medium or high risk investment. Credit risk exists in all cases when the bank approves the loan or on behalf of the client issuing the credit instrument, such as a guarantee or letter of credit. Risk-free credit does not exist. The risk simply means the possibility that a debtor who takes a loan from a bank or require the issuance of letters of credit / guarantees, will not be able to carry out the maturities of their liabilities to the bank for the repayment of principal, interest payments and fees. The risk also involves a combination of threats and opportunities: the threats default will occur and the possibility of regular payment loans with accrued interest. Credit risk can be minimized by careful analysis of all loan applications before the final decision of the credit bureau and conscientious management of the loan process.

THEORY

In banking, the management is forced to make compromises every day between the size of the risk and size of the yield. Credit risk is the primary risk that arises in banking. This risk can be defined as the risk that the result of inability or lack of desire of the debtor to fulfill its obligation to the bank (Vunjak & Antonijević, Strategija upravljanja kreditnim portfoliom banke, 2008). Credit risk

is the most common reason for deterioration of banks and most visible risk that management faces. In the bank's portfolio, the loss is caused by complete or partial failure to fulfill obligations under the loan, trade, agreement or other financial transactions made on his behalf. Failing to meet the obligations of an individual or group of connected clients, the bank may enter the zone of insolvency. Credit risk is still the main reason for the insolvency of banks because in recent times over 80% of bank balance sheets relating to this aspect of risk management in banking (Greuning & Brajović-Bratanović, 2003). Possible bank losses occur due to decrease in the portfolio as a result of deterioration in loan quality. Credit risk is the current or future risk of adverse effects on the financial result and equity that arises when the counterparty fails to fulfill obligations under the signed loan agreement. Credit risk should be viewed through the prism of economic exposure, which means that the opportunity costs involved and the costs associated with off-balance assets. The most important credit risk can be identified as follow: failure to fulfill contractual obligations; deterioration of credit ratings; spread risk; refund in the event of liquidation (Vuković, 2009).

The risk of failure to meet contractual obligations is a traditional form of credit risk, which is manifested, for two reasons: either because the wrong assessment of the credit solvency of the credit analyst or the explicit intention of the debtor not to pay the credit obligation. In the first case, the credit analyst has responsibility for the manifestation of credit risk, while in another case it is responsibility of the debtor. Also, in another case the bank is forced to activate the appropriate economic mechanisms (take collateral and sell it) or legal mechanisms (initiating bankruptcy and liquidation proceedings).

The worsening credit rating occurs as a result of deteriorating business performance of the debtor caused by internal and external factors. If a debtor suffers deterioration in credit ranking, the bank will seek to redefine clauses in the loan agreement, to adapt elements of the contract (eg interest rate, repayment period, collateral) to the new situation. If the contract itself does not allow changing certain elements, debtor achieved net benefit due to deteriorating credit ratings, because under new conditions he uses bank funds relatively "cheap", despite worsening credit rating. Net loser is of course the bank that lent money to a debtor with declining credit rating at "relatively favorable" interest rate.

The spread risk occurs when bank investments in debt securities. The bank pays the purchase price of investment securities in order to achieve adequate yield (interest) in the maturity period and eventually earns the difference between the buying and selling prices of securities. However, external factors, first of all market interest rates may cause the loss. Namely, in case of an instrument with a fixed interest rate, growth in market interest rates will cause a decline in the market value of credit instruments. The bank will undergo two types of losses: opportunity cost, because bank earns the lower interest rate in relation to current market interest rate, and capital loss due to the depreciation of the credit instruments market value caused by rising the market interest rates. Instead of the positive spread, the bank realized a negative spread because the purchase price is higher than the selling price.

The risk of repossession in the event of liquidation occurs due to different priorities in the debt collection. When starting to bankruptcy creditors are classified in the appropriate payment priorities. After the settlement of liabilities to the bankruptcy authorities, fiscus and the workers, the rest of the money shall be seconded to private creditors. The legal principle applies: prior in tempore potior in jure - Who is "faster" in time, the "stronger" in right. If the claim is concluded latterly, the bank is classified as a creditor at the end of the payment priority and there is a risk of inability to collect receivables.

METHODS

All banks should have detailed policies and procedures for managing credit risk. Banks must pay attention to the proper management infrastructure which is necessary to establish before expanding its operations. It provides adequate control structure over the business growth. This applies

particularly to the structure of bank loan portfolios. If the control operation failed, it can be concluded that the growth of credit operations becomes uncontrolled, it can result in catastrophic losses. A typical framework for risk management in financial institutions can be broadly categorized by the following main components: (State Bank of Pakistan, 2003)

- A. Loan Committee and senior managers monitor
- B. Department of Credit Risk Management
- C. Systems and procedures for identification, acceptance, measuring and controlling risk.

A. Loan Committee and senior managers monitor

Loan Bank Board has overall responsibility to approve the acceptance of bank risk strategy and significant credit risk policies. The same degree of responsibility has the function of supervision by the management that should be based on the bank strategy. That a strategy was in line with current developments, the Board must evaluate it, usually on an annual basis.

Responsibilities of the Board for credit risk takeover include (State Bank of Pakistan, 2003): sketching a comprehensive bank's risk tolerance with regard to credit risk; safety to get exposure to risk is held at a predefined level, consistent with the available bank capital; top management expertise to carry out the task of risk management; banking activities to simplify the identification, measurement and monitoring of risk; adequate plans and procedures for managing credit risk. Main role of bank lending strategy is to determine how the bank is willing to accept risk. Once defined, the bank can develop a plan to optimize the loan portfolio, while retaining the credit risk in the defined terms.

B. Department of Credit Risk Management

Risk Management Department, so-called "Credit department" bears full responsibility for the formulation of proposals to the Credit Committee and the implementation of decisions of the Board of Directors

Responsibility of Credit Department is reflected in the following (Narodna banka Srbije, 2004): formulation of credit policies and procedures that are submitted to the Credit Committee; compliance with the prescribed methodology of loan classification; Credit Committee recommendations in terms of determining the limit of the loan; the right of the second signature on the recommendations and approval of the proposed loan; right of the other signatures on the recommendations for a strategy to collect bad loans; control of credit operations, and recommendation for approval of corrective measures; standard forms of credit to the appropriate cases, to be submitted for approval to the Credit Committee for further use in the bank. Employees in the department should be quality and experienced, with practical work experience in the credit departments.

C. Measurement of Credit Risk

Measurement of risk is the process identification and measurement of future losses. Unlike market risk, credit risk measurement involves two important facts relating to the availability of data. Regarding the first fact, refers to the frequency of events that give rise to credit risk. This frequency is very low. This is supported by the fact that the price of foreign currency can be obtained every four seconds until it is possible that the three default companies with AAA rating occur once in 10,000 years (Ivanovic, 2009). The conclusion that arises is that the default probability is very low. The variance of the credit risk may be only 0.2%, while the market risk variance is up to 100 times higher. Although it seems that this situation is favorable when it comes to credit risk, it should be noted that a key problem for the credit risk realization is total exposure loss. This results in much greater loss to the bank by default. To reduce the impact on the bank's exposure to achieve adequate credit risk management, bank management takes interdependent activities. The first of these is that the bank identifies systemic risks specific to the loan portfolio. Major role in the

identification have statistical and economic analysis, but also banking experience in these matters. Second, it must be established reporting system with a number of appropriate categories of loans. That means sorting potential borrowers into groups and categories to be able to identify main sources of external "shocks" to the bank. Determination of the risk premium for different loan types, is also part of the activities undertaken by the bank management.

FINDINGS

Basel II offers sophisticated approaches for calculating capital requirements for credit risk, taking into account the specificities of individual banks and their ability to measure their risk exposure. Gradations of credit risk measurement approaches recognize The Standardised Approach, The Foundation Internal Rating Based Approach and The Advanced Internal Based Approach Rating, that allows measurement of exposure and assessment of capital adequacy using internal methodologies. Banks that have a lower volume of business and simpler control structures are opting to use the standardized approach. This approach can increase sensitivity to bank risk exposure. It was conceived with the aim of the basic approach to credit risk is not complicated, given that banks are not capable to establish and implement internal methodologies for measurement. This approach is a modified version of the credit risk approach under Basel 1 standard. Standardized approach assumes the application of appropriate weights for assets that are grouped into categories, according to the portfolio methodology principle. According to Matic (2010), there are the following risk weights: claims of sovereign states, international development banks, commercial banks, from the companies: 0-150%; the claims of individuals: 75%; the claims secured by residential / commercial real estate: 35 - 100%; the matured receivables: 150%; other receivables: 150%; off-balance sheet items: 0-100%. To assess the credit quality of borrowers bank uses the agency for external credit ratings that are given to the prior approval of the supervisor. Standardized approach makes it possible to calculate the bank's exposure to risk weights applied in accordance with the assessment of external rating agencies (Standard & Poor's, Moody's Fitch). Because it is about agencies that operate globally and assess only major participants in financial markets, their assistance is not adequate for domestic banks.

Table 6: Criteria for the classification of claims and special reserves (Narodna banka Srbije, 2006)

Category	Criteria for the classification and special reserves
A	- Claims on debtors who do not expect problems in the collection, which settles the obligation not to delay longer than 30 days; reserves amount to 0%.
B	- Claims on debtors whose financial situation is not entirely satisfactory, does not imply problems in the future, as well as claims are settled with a delay of 31 to 90 days; reserves amount to 5-10%.
V	- Claims on debtors whose cash flows are not adequate in the settlement of obligations, where there is no harmonization of the maturity of assets and liabilities. Liabilities are settled with a delay of 91 to 120 days; reserves amount to 20-35%.
G	- Claims on debtors whose financial situation points to significant problems in business, particularly claims from debtors who operate at a loss. Liabilities are settled with a delay of 121 to 180 days; reserves amount to 40-75%.
D	- Receivables with doubtful / disputed in the legal basis, receivables from debtors in bankruptcy / liquidation. The debtors pay its obligations with a delay of 181 days or more. In this category also includes claims which do not qualify for classification in other categories, reserves amount to 100%.

For banks operating in the Serbian financial market, the regulatory framework for credit risk management is prescribed by supervisory body - the National Bank of Serbia. Criteria for identifying, measuring and evaluating the risks to which banks are exposed are defined by the Decision on risk management (Narodna banka Srbije, 2004). Credit risk is the most significant risk and establishes other risks that are defined by the above decision. The reason for the application of categorization lies in segmenting the loan portfolio of the bank and its risk assets, indicating the

different levels of credit risk. Accordingly, banks calculate and allocate special reserve for potential losses.

The criteria for classification are related to the delay in payment of liabilities. On the basis of the classification, banks calculate reserves for potential losses. This is the account categories of a minimum amount of expected losses resulting from the measurement and assessment of credit risk. Bank has regularly calculated it. Each bank shall establish reserve from the profit if the amount of reserves for estimated losses less than the determined amount balance sheet assets correction value and provisions for losses. The aim of the provision is to prevent the bank's capital reducing if there is a risk that a loan portfolio will be lost.

DISCUSSION

Depending on the preferences of bank managers to risk, each bank can take more or less risk, positioning itself between two extremes: absolute risk aversion and absolute risk acceptance. Accepted level of risk must be commensurate with a bank's ability to absorb losses and achieve an acceptable rate of return. An important task of the banks is adequate operational risk management and the analysis of the creditworthiness of the applicants. Inadequate analyzed requirements for loans may have adverse consequences for the bank, if it turns out that the loan seeker is unable to repay borrowed funds at the maturity. In the loan approval process, it is estimated creditworthiness of individuals and legal entities. When it comes to companies, the assessment of the financial statements of the bank starts with the analysis of data of potential borrowers. Also, banks use some traditional techniques such as "6K" analysis, the method of comparative analysis, trend analysis method, the method of financial indicators analysis.

CONCLUSION

Credit risk is a basic risk that arose with the emergence of banks and will always be faithful satellite of the banking business. Since the manifestation of credit risk causes huge losses in banks, credit risk management is an imperative. Management of credit risk is coming from the business strategies and bank's lending policy. Credit risk management is a continuous process in with very important role of credit officers, analysts, asset management committee, with the supervision and control by the senior executive boards of the bank. Accepted level of risk must be commensurate with a bank's ability to absorb losses and achieve an acceptable return. Between the strategic orientation of the bank and its desire to take risks and to manage them, there is a correlation. All banks should have detailed policies and procedures for managing credit risk. Banks must pay attention to the proper management infrastructure which is necessary to establish before expanding its operations. In this way, it provides adequate control over the growth of business. This applies particularly to the structure of bank loan portfolios. The full application of the measurement of absolute credit risk is a long process that requires data collection, model development and testing. Regulators show increased interest that banks build credit risk measurement techniques to achieve better control of required capital and more effective regulation of banks.

IMPLICATIONS

In order to get a complete view of the risks magnitude, it is necessary the amount of risk coupled with information about the risk quality. The quality of risk includes the likelihood of inability to pay obligations (default). This is expressed through the credit rating. Prevailing and traditional assessments of credit risk is a rating system that can be a system of external ratings and internal rating systems (Djukic, 2007). External ratings are the highest in use in assessing credit risk related to the issue of corporate bonds. In order to apply the rating system, it is necessary to define a set of methodologies, processes, controls, data bases that support the classification of the borrower and loan accounts into risk categories. Internal rating systems are organized in banks in order to systematically determine the rating level of the debtor (obligator rating). This rating is displayed in the form of interval probability of default. The second objective is to establish the **facility rating**,

which determines the loss parameters in case of default, such as *loss given default* and *usage given default*.

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HEDGE FUNDS IN CONTEMPORARY ECONOMY

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ABSTRACT

Investment management can be defined as professional management of funds of individual and institutional investors. Investment management includes: investment companies, hedge funds, venture capital funds, LBO funds (funds of credit capital). In recent years, there are dynamic changes related to investment companies, which are associated with emerging market changes in modern economies. There were hedge funds that control large amounts of cash, with the present lower limits on use of funds investment strategies. Investment companies, as financial intermediaries, stimulate economic development. Within the investment companies usually exists a number of separate investment funds and hedge funds are private investment in the funds. They use financial instruments that are not available to open-ended investment funds, and therefore they manage investment risk in a better way. However, there are examples that indicate major failures in practice. Despite all the uncertainties and possible crunches, hedge funds survive and develop very successfully.

Key words: hedge funds, investment, leverage, failure

INTRODUCTION

Hedge funds appeared in the early 1990s. They form a "pull" of funds to invest in securities. Business activities of hedge funds include government securities, foreign exchange and financial derivatives.

In order to enter the hedge fund, an investor is obliged to pay the prescribed minimum amount. This amount is different for individual investors. Investors who invest their capital in hedge funds become *limited partners* who are not eligible to participate in managing the daily activities of hedge funds.

On the other hand, the *general partner* is usually the founder of hedge funds. He manages the fund, performs all daily operations related to the fund and chooses the strategy of hedge fund. The majority of investment strategies in hedge funds have a positive return from the investment as a goal, regardless of whether the markets rise or fall. These funds' managers mainly invest their money in the fund they manage, in order for their interests to be in concordance with the investors' interests [5]. Net value of fund's asset can amount up to billions of dollars, due to the investments from the big institutions. According to the data from 2009 [2], hedge funds are 1.1% of total funds and assets owned by financial institutions. Estimated hedge fund industry value is 1.9 trillion dollars [1].

HEDGE FUND ATTRACTIVENESS

Since these funds do not belong to public and small investors, their advisors have never been constrained as other investment funds' advisors in terms of fund structure and strategy use throughout history. However, nowadays these funds have to be in compliance with a number of statute and regulatory restrictions, just like other institutional market participants. This gains particular role after the credit crisis from 2008, both in America and European Union, where the strive to increase the government's insight into hedge funds and 'fix regulatory loopholes' [12].

By predicting growth of markets and companies and buying and selling complex financial derivatives, hedge funds earn millions of dollars each year. They levy their revenue from their good judgement, but it is questionable whether the growth they made profit on is actually based on existing goods.

Location and legal codes of hedge funds are determined by tax environment of potential fund investors, as well as the legislature. A lot of hedge funds has been established in offshore financial centres, so the investors (not the funds) pay the portfolio value increase tax. According to the 2010 data [3], around 60% of hedge funds were registered offshore – mainly on the Cayman islands (37%), British Virgin Islands (7%) and Bermuda Islands (5%). When it comes to onshore funds, Delaware in USA carries 27% and European leaders are Ireland and Luxembourg, with 5% of total capital.

Contrary to the funds themselves, investment managers are mainly located onshore. The reasons lie in possibilities of having quality employees and the proximity of investors. Most hedge fund managers are found on East American Coast, especially New York and Gold Coast area in Connecticut, since investments in these funds are mainly from this stretch. In Europe, centre of hedge fund managers is London, with 70% European investments in these funds (which amounted around 420 billion dollars by the end of 2010 [3]). Asia, i.e. China takes increasingly more important role as the fund source in this global industry, where America and Great Britain are main locations for investment managers in Asia, with about 25% of share [3]. Hedge funds use a number of strategies to preserve capital, reduce volatility in the market and minimize potential risks, so we call them fund management.

HEDGE FUND RISKS AND LEVERAGE

Numerous hedge funds use leverage – lend money or trade the financial margin, additionally to investment capital. Although this practice can increase potential income, the chance for greater profit is proportional to chance for greater loss. Hedge funds using this strategy use extensive practices of risk management. However, compared to investment banks, hedge funds' practice is relatively low; according to National Bureau for Economic Research [4], average leverage in investment banks amounts 14.2, while in hedge funds it is 1.5-2.5.

Hedge funds are fairly prone to risk, with the intention to maximise their profit. This is the reason why the investors' and managers' tolerance to risk is greater there. However, since investment in hedge funds can add diversification to investment portfolios, investors can use them as a means of lowering their total risk exposure. Hedge fund managers use individual strategies as trade techniques so as to create risk-adjusted profit, consistent to investor's desired risk level. Ideally, these funds create profit relatively uncorrelated to market indices. While hedging can be a way to lower risk from investment, hedge funds, like all other investment types, are not immune to risk.

Since hedge funds are private entities, there are really few requirements for public transparency – in fact, they are frequently believed to be almost not transparent at all. The other problem is the fact that their managers are not controlled so strictly as other financial investments' managers. Thus, they are more prone to manager-specific risks, like style changes, bad decisions or frauds. However, a new regulation from 2010 obliges hedge fund managers to give more information, i.e.

make their funds more transparent [6]. Apart from that, investors, especially the institutional ones, encourage further risk management development in hedge funds through internal practice and external regulations [13]. Increased influence

STATISTICS OF THE BEST HEDGE FUNDS

To indicate the size of hedge funds, the last two places in the top10 in the U.S. have nearly \$20 billion in assets under management each. Even more amazing is the fact that the funds’ individual size is the size of the hedge fund world. U.S. funds that had \$1 billion or more in assets cumulatively had assets under management of more than \$1.3 trillion. Well over \$1 trillion of those assets tracked were distributed in New York, Connecticut and Massachusetts.

Although the industry is very large, it is not rescued by the unstable situation. Many funds take such outsized risk to grow more rapidly than their competitors. After the fall of Lehman Bros in 2008, thousands of funds were closed. That was probably the worst quarter in the industry’s history. Hedge Fund Research reported that 700 U.S. funds closed in the third quarter of that year. The hedge funds lost their money on investment and couldn’t repay loans taken from banks that gave them leverage to help increase their asset bases.

Last year, the hedge fund industry was lifted by the surge in the stock market and improvement in the economy, when number of new funds rose to 1113 from 935 in 2010. In the Table 1 below, there is a display of the top 5 hedge funds, which is the result of Wall Street research, and present their strategies and business importance.

Table 1. Top 5 hedge funds

	Baupost Group	BlackRock	Och-Ziff Capital Management Group	JP Morgan Asset Management	Bridgewater Associates
Assets under management	\$25.0 billion	\$25.5 billion	\$28.4 billion	\$45.0 billion	\$76.6 billion
Year founded	1983	1988	1994	1984	1975
Location	Boston	New York	New York	New York	Westport, Conn.
Strategies:	Can use debt and equity, often has a substantial position in cash rather than being long or short	Manages multiple asset classes through various absolute return strategies around the globe	Varied. Primary: convertible and derivative arbitrage, merger arbitrage, private investments and structured credit via mortgage-backed and asset-backed securities	Multiple strategies crossing multiple asset classes via a fund of funds approach and through its direct hedge funds under Highbridge Capital Management	Take large macro-bets using currencies, commodities, bonds and other instruments.

HEDGE FUND FAILURES

There are many examples of failures of small and large hedge funds in practice. Essentially, this is not a big surprise for someone who knows the financial service industry, but certainly attracts the attention. However, this is a disaster when a large hedge fund loses a huge amount of money, for example 20% or more in several months or even weeks. Usually, investors may recover about 80% of their investments, but most of hedge funds are designed on the promise that they will make a profit regardless of market condition. A fact that must be accepted is that hedge funds always have a significant failure rate. As already mentioned, the factor which can also lead to hedge fund failure when the market moves toward an unfavorable direction is high leverage.

The following examples show fatalities in contemporary economies which were related to a strategy that involves the use of leverage and derivatives to trade securities that the trader does not actually own:

- The fall of **Amaranth Advisors** marked the most significant loss of value, after its attracting 9 billion \$ worth of assets. They lost 6 billion \$ on natural gas futures in 2006, because the energy trading strategy failed. Due to unfavorable conditions, gas prices did not rebound to the required level to generate profits for the firm, so 5 billion dollars were lost within one week.
- **Marin Capital** is a high-flying California-based hedge fund which attracted 1.7 billion \$ of capital. They put it all to work using credit arbitrage, which they invested in debt, and convertible arbitrage to make a large bet on General Motors. Mainly, when one of company's customers may not be able to repay a loan, the company can protect itself against loss by transferring the credit risk to another part, and that is a hedge fund. In this case, the share price went down substantially, General Motors' bonds were downgraded and the fund was crushed.
- **Aman Capital** was founded in 2003, by top derivative traders at one of the largest banks in Europe, UBS. The plan was to become Singapore's 'flagship' in the hedge fund business, but leverage trades in credit derivatives resulted in an estimated loss of hundreds of millions of dollars. After that, the fund stopped trading, and what remains from capital would be distributed to investors.
- One of the most successful hedge funds, **Tiger Management**, has also experienced the failure. Despite raising 6 billion \$ in assets, Julian Robertson, a value investor, placed big bets on stocks through a strategy that involved buying what he believed to be the most promising stocks in the markets and short selling what he viewed as the worst stocks. During the bull market in technology, this strategy failed. Tech stocks continued to soar, while he overestimated the tech shares that have only inflated price in order to make the difference, but profit was not certain. They suffered huge losses, and Robertson overthrew the Tiger Management from the throne.
- **Long-Term Capital Management** began trading with more than 1 billion \$ of investor capital, attracting investors with the promise of an arbitrage strategy that could take advantage of temporary changes in market behavior and reduce the risk level. They operated so well during the 1990s, that they made a big bet, when the Russian financial markets entered a period of turmoil, which said that the situation would quickly revert back to normal. They were so sure this would happen that they invested the money that didn't actually have available if the markets moved against it. That didn't happen. Losses approached 4 billion \$ and the federal government of the United States feared that the imminent collapse of LTCM would tumble in a larger crisis. A loan of 3.65 billion \$ was created by fund, which enabled LTCM to survive and be liquidated in early 2000s.

HEDGE FUNDS AND GLOBAL ECONOMIC CRISIS

In the mid-third trimester of 2007, global financial markets saw a large-scale crisis. Before that, a large financial crisis has been noted in Asian and Russian markets, in the end of the previous decade. This time, the crisis starts from the American mortgage market, where borrowers with suspicious credit history find themselves in a situation of being unable to repay their obligations, due to a rise in interest rates. Contemporary financial instruments enable creditor banks to transform their claims into other forms of asset through securitization and make considerable profit by trading these new securities.

However, when this chain broke, due to inability to repay the debtors' loans, U.S. mortgage market sees a liquidity crisis, interest rate rise in interbank lending, as well as the general distrust between the mortgage market participants.

Due to global financial interdependence, this liquidity crisis soon transfers to developed countries' markets of Western Europe and Asia, which banks have been buying American mortgage securities. An increase in interbank lending and a sudden drop in stock market indices in Europe and America were next, caused by stock sale. A kind of panic emerges in financial markets in developed countries. Central banks intervene so as to stabilise the situation as much as possible, and they succeed in a way, through interest decrease and restoring of confidence. Financial markets slowly recover, stock market indices rise again and normal lending flows establish again. However, what were the long-term effects of these panicked interventions? The future remains to show.

CONCLUSION

Despite all the failures and their public disclosure, the global hedge fund assets continued to grow in the trillions of dollars and continue to attract investors. Some of them fulfill the promise, others offer diversified investment that is not associated with traditional financial markets, and of course there are some hedge funds that fail.

Hedge funds are more flexible in their investment options, compared to other investment funds. They use financial instruments that are not available in other funds. Their flexibility means using the best hedge strategy in a given market, because it provides the same ability to manage the fund in the best way to avoid investment risks.

Hedge funds are particularly attractive because they offer specific strategies, but wise investors treat hedge funds the same way they treat any other investment – carefully, not putting any money into one investment and devote a great attention to risk. Before investing should conduct research, should beware of investments promising something too good to be true and never put more into a speculative investment than you can comfortably afford to lose.

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Session G: MARITIME AND ECOLOGY

Papers (pp. 499-524):

Marija M. Janović THE IMPORTANCE OF ENVIRONMENTAL DETERMINANTS IN THE WORKS TO PRESERVE URBO DYNAMIC SYSTEMS – SHIP	...499
Darko Ž. Đurović THE IMPORTANCE OF THE INTERNATIONAL CONVENTION FOR THE PROTECTION OF AQUATIC AREAS FROM DISCHARGES OF BALLAST WATER FROM SHIPS AT SEA	...502
Nenad M. Griner THE IMPORTANCE OF SOPEP-PLAN IN THE EVENT OF OIL SPILLS IN THE SEA	...505
Danilo A. Đurović, Ljiljana V. Daković BEHAVIOUR OF SHIP'S CREW IN CASE OF AVERAGE IN ACCORDANCE WITH MARITIME ERGOSOFOLOGY	...508
Baldo Saulačić MARINE BIODIVERSITY THREATENED BY MARITIME DISASTERS	...514
Dijana G. Pean SPECIFICATION FOR THE EQUIPMENT FOR CLEANING POLLUTION MATERIALS IN COASTAL AQUATIC AREA	...518
Tanja D. Ivanišević SIGNIFICANCE OF THE DEPTH OF AQUATORIUM OF THE PORT OF BAR	...522

THE IMPORTANCE OF ENVIRONMENTAL DETERMINANTS IN THE WORKS PRESERVE URBO DYNAMIC SYSTEMS-SHIP

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ABSTRACT

International conventions that promote the protection of waterways, referring to urbo dynamic systems - ships greatly propose, coordinate and complement certain international laws which have great importance in preserving the marine environment. Ship as a dynamic system urbo elaborated in the concept of maritime ergosozology based on scientific specificity, which promotes the protection of the overall techno-physical resources and their processes. If you want to consider the elaboration of the participants in the working processes of life on board ship and members of the collective then it is necessary to consult a modern scientific field titled Maritime ergo sofology. To building a scientific matter could be implemented in the oeuvre of environmental values, it is necessary to recognize broadcasters who violate the harmony of the eco system. Their common denominator is the agent or agents, which leads to knowledge that is observed in the present environment destructor or destroyer of established harmony. Ship as urbo dynamic system in its structure and predictability of the current transport service movement provokes certain aquatic destruction that have significant influence in habitats as well as its living species. Perturbation factors are evident through the work of operating systems, to maneuver the ship, its anchorage, loading and unloading of ballast water, fuel loading and manipulation service port of loading and unloading cargo.

Keywords: environmental determinants, urbo dynamic system, Marine sofology Ergo, Ergo sofology, maneuver, biocoenosis, biotope.

INTRODUCTION

A very large number of international conferences held on the protection of the sea and marine areas has contributed to reduce the large number of eco-system destruction. At these conferences were passed binding Convention that must be applied to all marine traffic activities aimed at prevention of conservation and sustainable development of marine space.

However, despite binding convention then adopted, we know that the sea of everyday accidents or disasters that occur Disrupt the Eco-system values. Long-term experiments in this field by no small number of scientific and professional individuals and institutions points to the fact that in all these accidents undisputed main actor man. In this context, more than two decades of years in the maritime educational milieu, as a compulsory subject of study practiced the building blocks of matter from the Marine urbosofology by Prof. sci. Danilo A. Đurović. Marine Science in urbosofology codifiers implemented with the Eco-sozology and the Eco-sofology determinants, with the aim of primary prevention of possible urbo marine destruction, including pollution of marine areas.

CONTRIBUTION TO THE STUDY OF MARITIME URBOSOFLOGY IN THE PRESERVATION OF ENVIRONMENTAL CRISIS

The contribution of the prevention of maritime urbosofology ecological crisis has accentuated the relation "ship as urbo restrictive system - sailor and environmental determinants."

In this context, are observed patterns of two models of seamen engaged in merchant ship for long voyages. The first model of behavior are observed, "sailors boarded" with the emphasis on "professional mariners," while others are observed behavior of the model of "seamen." It is certainly a difference in the respective models. The first model shows that it is professionally engaged for seafarers who are dedicated to their educational engagement exclusively maritime vocation, such as professional services engagements in the management of boat (sailing), and operation and maintenance of marine propulsion and auxiliary systems (marine machinist).

The second model shows that these sailors whose professional knowledge can be performed on land and aboard. These are people with professional caterers and other professional services (service) profile, such as cooks, waiters, kitchen Boys, Boys Room, electricians, carpenters ... which are observed through the ministry of "white and support staff."

Certainly it is important consistently offered to elaborate because it is more professional seamen year-educated, only for certain maritime profile. For these categories of "seaman" are observed, and all seamen engaged on board that have been certified educational title, nor knowledge of the maritime area from other professions, but whose involvement is present in the opuses working on the land.

So, are observed urbosofogy Maritime Wisdom (cognitive value) events in the restrictive urban space ship implemented the concept of behavior, safety and preservation of the eco system of values, not just on board as an urban system, but in the context of aquatic physical contact "ship" with the tangent to other positions. Finally it comes to shipping restrictions impact on human health and behavior, ie the promotion, preservation and sustainable development caused by environmental determinants of human factor - the seafarers.

CONTRIBUTION TO THE STUDY OF MARITIME ECOLOGICAL CRISIS PREVENTION URBOSOOLOGY

Maritime urbosozology overall events are observed on board, as an urban dynamic system, with all the predictable urbo subsystems and elements in the context of the transport service and technical-physical processes and events.

Elaboration of said given the emphasis on sustainable management and treatment of operating systems and system loading, storage, shipping and preventive care, all in order to avoid disasters that can disrupt the ecological disabilities.

The dynamic characteristic of the urban system as a ship are observed through its reliability, both in urban predictable constructive Exposure, Exposure as well as positioning the ship in aquatic areas.

Meeting the quality of motor control systems with all their technical and physical distribution, you need to confidently match the requirements imposed through the regular movement (sail) boat in calm (calm) and turbulent (storms, hurricanes ...) sea, and the necessity of satisfying all the maneuvering that will not impair ship's stability and undermine taken-service transport responsibility.

In the context of prevention of environmental (aquatic) crisis that may arise due to the refilling of the transport or fuel, cargo handling, ship grounding, collision or sinking ship, it is necessary that members of the collective owns the ship predictable educational consistency.

CONCLUSION

Implementation of the building blocks of matter, which sublimates Maritime urbosofoology a preventive character, which is recognized by offering professional educational models and methods. Models and methods offered by the Maritime urbosofoology based on the patterns of maritime professional reliability as a result offers the ultimate prevention of disasters, vessel grounding, vessel collision at sea in ship collision during maneuvering in both the long voyage and in port waters, environmental accidents due to the sinking ship loading freight and many other regular and special activities.

These acquaintances require that timely and consistently dispenses with all the educational materials aimed at prevention and sustainable development of environmental determinants, with special emphasis on the presence and dynamics of the ship-service as an urban transport system.

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THE IMPORTANCE OF THE INTERNATIONAL CONVENTION FOR THE PROTECTION OF AQUATIC AREAS FROM DISCHARGES OF BALLAST WATER FROM SHIPS AT SEA

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ABSTRACT

The purpose of the International Convention for the Protection of aquatic areas from discharges of ballast water from ships at sea, has a substantial importance in preventing the water from the aspect of protection of human health and the vitality of aquatic biodiversity. The goal of the task and the subject of this Convention with its many additions aims to prevent, minimize, and completely eliminates the current transfer of hazardous and harmful aquatic organisms and pathogenic species through ballast water and its sediment from ships at sea. Technical plan of building a ship among the many very important details include the obligation of the International Convention, which indicates that each ship must have a double bottom, which is one type of system and environmental protection. Commander of the ship and his associates in the office machine operation must be trained to monitor and implement all the specific instructions of the International Convention relating to the safety of the cargo ship and crew in the navigation (oceans, seas and lakes, canals) that the anchorage, port terminal and dock. From this point on the International Convention stipulates that the true water where and when you can use the same ballast to achieve, and provided balance the ship. Modern educational models and methods as well as international and national laws and their regulations require the responsible person on the ship (captain or first officer of the deck) to strictly adhere to the standards that are cited in the "Plan for the management of ballast water and sediments."

Key words: aquatic space, ship ballast water, the International Convention Management Plan for ballast water and sediments.

INRODUCTION

Contamination of aquatic areas of oil pollution is one of the most serious environmental problems not only present more in the future. Under aquatic pollution refers to the person's direct or indirect actions of introduction of substances or energy into the water (sea, rivers, canals that can fatally affect aquatic biodiversity. Degradation of aquatic flora and fauna and their habitats (biotopes) strongly impairs ecosystem values and land, which is reflected on human health.

Degradation of aquatic flora and fauna and their habitats (biotopes) strongly impairs ecosystem values and land, which is reflected on human health. In the eighties of last century, scientists have pointed to the problem is related to the problem of transmission of organisms through ballast water. Then the problem of transfer of organisms detected in any other sea in the sea that have no natural enemies. In addition, it is possible to transmit the bacteria.

Disruption of aquatic eco-systems other than the aforementioned problems arise problems in the functioning of marine activities including fishing and other legal concerted activities on the water in the water and underwater. Realizing the seriousness of the problems that threaten aquatic flora and fauna and general issues arising from pollution of oil and petroleum products, International Organization, in cooperation with the affected coastal states, have decided to legally regulate this issue, hoping that, just, appropriate preventive regulations significantly affect the threat of sea vitality.

The efforts made by making the results of a large number of domestic and international regulations with the crucial role played in the international standardization of the International Maritime Organization IMO (International Maritime Organization). The fact that the discharge of ballast water from ships at sea today one of the most dangerous contaminants in aquatic space after petroleum pollution.

THE IMPORTANCE OF LOADING OF BALLAST WATER ON BOARD

Loading ballast water on board a cargo is loaded in the port of a legal obligation. With the loading of ballast water provides stability and balance of the ship, which is one of the main parameters of the vessel leaving port. Very often think that the only type of tanker ships in the harbor full of mandatory ballast water in ballast tanks, which is certainly wrong.

According to the International Convention which among other things, the law provided for members to promote the type of the ship at sea, according to an obligation balasntnih loading all ships in waters whose stability does not correspond to the propositions that provide for safe sailing ship from the port and its safe navigation.

Ballast water may be fresh, brackish or salt water by boarding ships in order to trim, stability and handling, and located in separate tanks or cargo, a position, size and shape of tanks can vary. The total capacity of ballast tanks can be of several cubic meters of fishing vessels up to several hundred or thousand cubic feet of cargo ships, while the large tankers could have a deadweight capacity of up to 200 000 m³. It is estimated that annual world oceans carries about 10 x 10⁹ t of ballast water.

At a time when ships were built of wood, the ship is used as ballast firm m aterijali or stones or sand, which is called 'sovrnja'. Since the steel ships (now as a shipbuilding material uses only elastic steel) replaced the wooden ships, as ballast on board or boarding more technical water. Whether at any port or harbor in the crowded waters of the sea as the ship ballast water or technical decisions port authority or sanitary inspection after Checking the water quality or composition of the sea.

If you determine that the sea water to be krca as ballast on board, there are certain pathogenic microorganisms or other contagious and harmful substances, the International Convention on Ballast Water strictly forbids such loading of water or the sea in ships' tanks intended for ballast. For this reason, the port authorities are obliged to inform the captain or first officer deck before the ship sails from port to the ballast water can not use seawater from the harbor waters, but that it must be done at the loading port, with technical water with which the port in the Port has the same infrastructure.

CLASSIFICATION OF THE NEGATIVE IMPACT OF BALLAST WATER ON THE ENVIRONMENT

It is undisputed that the stability boarded ships for ballast water in ballast tanks of cargo in the port of loading or port waters, and who are discharged in another port or the port where the straits to perform unloading.

With the ballast water ballast tanks contain certain amounts of sediment, which exacerbates the situation. Problem with this is that along with the water (sea) takes the ship and transferred from the domicile to the destination has more algae and other aquatic organisms, eg. various types of plankton, small invertebrates, spores, eggs and larvae of larger species, which creates a new habitat problem or discharging place. The problems are very velikiposebno the case of some sediments which are toxic or contagious property. Therefore, the geologist Vladimir Kalinski from the Environmental Protection Agency, there are three main negative effects of ballast water:

Ecology - the "sea of host" side flora and fauna is generally more aggressive than non-displaced species, dominated by the time Harry was different. Once you break the chain of natural nutritional consequences are unpredictable, incalculable and virtually irreversible. Eg in the Adriatic Sea were introduced tropical alga: *Caulerpa taxifolia* and *Caulerpa racemosa*, which were observed at several locations across the Adriatic, and control their growth seems to be very difficult, perhaps impossible. Marine flowering plants (grass) *halophila stipulacea* was recorded in the waters of Albania and soon expects its expansion to other national water zones.

Economics - fisheries, coastal industry and other commercial activities (tourism), disrupted the invasion of species adopted. It is estimated that in the U.S. in damage to the invasion of alien species is greater than 138 billion dollars a year! One of the culprits is the European mussel *Dreissena polymorpha*: the spread in the North American Great Lakes and in 40% of U.S. water lines, which creates problems in using such water for industry. It is estimated that the control measures since 1998. by 2011., cost between 850 million and one billion dollars.

Human health - toxic organisms and infection by pathogenic changes caused by disease and even death in humans. Such are, for example. Toxic: dinoflagellate (blue-green algae) and *Gymnodinium catenatum* in ballast water that are expanded to many locations across the world. Under certain favorable conditions, the algae bloom and if you are absorbed in shellfish that feed by filtering sea, such as. oysters or scallops, releasing toxins. These toxins introduced into the human body can cause the so-called. paralytic poisoning (PSP - paralytic shellfish poisoning), which often results in paralysis or even death.

CONCLUSION

Thanks to the advanced international maritime transport of these actions are usually carried out in different ecosystems, which is why, in fact, a problem of ballast water. About how big is the ratio got this problem is best evidenced by the fact that each year, along the banks around the world, transports between 10 and 12 billion tons of ballast water with about 4 500 different species of organisms and 3000 planktonic species. Ballast water can contain the liquid and solid impurities of different composition and live or dead marine organisms.

We believe it is necessary to take all the Measures of taking to the waters from ballast water in all parts of the world and to prohibit any ship or the captain or first officer of the broad palzubeodnosnoluka committed to supplying its systems every ship that sails from the port with technical water.

Technical water is relatively clean not to mention drinking, so that the impurities reduced to a minimum, which reduces the risk of transmission of severe and hazardous pollutants in the water, or foreign aquatic sea.

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THE IMPORTANCE OF SOPEP-PLAN IN THE EVENT OF OIL SPILLS IN THE SEA

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ABSTRACT

Talking about environmental protection means prevention and sustainable development of the three main aspects: 1) the protection aspect of air, 2) the protection aspect of terrestrial, 3) the aspect of protection of the aquatic. The goal of human ecology in the context of planetary conservation value implies an equal commitment to prevention of biocenosis all groups. Regardless of biocenosis diversity obligations of any entity that in its own way and in accordance with the requirements of biotopes and biodiversity conservation and contribute to sustainable development. SOPEP plan (ship oil pollution emergency plan), the product of the International Convention for the Protection of the sea and marine areas with special emphasis on the urgency of actions to prevent the spread pollution matter. SOPEP plan commits the captain as the first responsible person in the ship's collective that together with the first officer to comply with a definite plan and all the predictable steps that must at least contribute to the preservation and expansion of oil spills. SOPEP plan among other things, provides equipment, engagement of crews in a hierarchical opus, which can be defined in the prism through the concept of takeover activity applicable "techniques and tactics."

Keywords: SOPEP plan, biodiversity, biotope, prevention, tactics, techniques

INTRODUCTION

Contemporary world trade organization could not survive in its vitality in how all of her plans would not be merged in the oeuvre of the maritime economy. Since the sea route from one of the cheapest, or rather almost free as such time wants to use a large number of customer or supplier of goods, freight and other capital.

However, if they observed the events that occur as the unfortunate activity on the waterways, then to discuss a completely different character and access to the sea as a "free" roads. The character and approach relating to the observations of the sea route as the fairway, certainly requires certain obligations in accordance with the laws and international conventions are required for all floating Object, and thus the transoceanic cargo ships.

Disturbance of aquatic eco-systems of the ship has enormous consequences for the damage to the flora-fauna world that signifies biodiversible specificity through the consequences that may adversely affect human health. Consideration of the consequences that occur at regular or part-time navigation and manipulation, seaport transshipment, indicate that the sea surface every day more and more devastated. That is why the protection of marine conservation, as well as the value of the submarine International institutions, including the first IMO (International Maritime Organization) with headquarters in London, pointed out the necessity of adopting and implementing legislation for the task and have the goal of marine conservation and marine areas.

Back in 1954th The IMO is in the context of the International Conference on Prevention of Pollution from pollutive materials (oil), which is in the process preventive distribution is still topical.

THE IMPORTANCE OF THE INTERNATIONAL CONFERENCE ON POLLUTION BY OIL

At this conference which was held in London 1954th year, given the guidelines states signatories of the preservation and protection of marine areas with special reference to the following:

- Release of toxic, hazardous and dangerous materials, especially those that are permanent in nature and come from sources from land, air or by immersion in sea
- Pollution from ships, especially to take protective measures to prevent accidents and to meet emergency needs, in order to achieve predictable safety at sea, prevention intentional or unintentional discharge (ejection) and predictable regulations respecting the construction of ships, equipment and using boats
- Pollution from the plant (system's asteroid belt, subsystem, or some other techno physical activity), which are used for exploration or exploitation of natural resources of the seabed and the seabed.

This Convention shall in their hereinafter referred to Member States in general and regional cooperation, training, coordination and adoption of national regulations, as well as actively taking measures necessary actions should aim to prevent pollution of aquatic areas. After the conference held following the conference very much the same or similar subject, but in any case tematikm relating to prevention and on practically sustainable development of marine environment. One of the most important activities in the adoption of the regulations has a duty to influence the conservation of aquatic eco-systems, is certainly the SOPEP plan.

SOPEP-PLAN-MARINE EMERGENCY PLAN IN CASE OF OIL SPILLS AT SEA

SOPEP-plan indicates the following activities:

- When it comes to oil spills in the sea, it spreads through the sea surface, causing an environmental problem of high risk to mammals and birds, seashore and its infrastructure construction. Price of polution cleaning materials depends on the quantity, type, distance from shore and time interval), summer, winter, storms, etc.
- Of course this must be added the long calculative Measures of that from a legal point of view recognizes the request made by the claim of damages, losses incurred through the polutive materials, repairs and cleaning, as well as the possible loss of human life, or their injuries as the most important factor in this discussion.

SOPEP or Ship Oil Pollution Emergency Plan has been agreed with MARPOL73/78 Convention and its Annex, and that is that all ships over 400 GT must have such a plan according to the norms and instructions issued by the International Maritime Organization and the Committee for the Protection of the marine environment. Tonnage required for the tankers to SOPEP is reduced to 150 GT, thus the burden of their doubles the risk of oil pollution. Among other things SOPEP - the plan includes a plan with the duties of captains and deck officers, which include different scenarios that can happen in the event of oil spillage. Captain the ship is most responsible for changes in this plan along with the first officer.

THE CONTENTS OF THE ACTION PLAN FOR THE DUTIES OF MEMBERS OF CREWS

- General information about the boat and the boat owner
- The steps and procedures that retain the effusion of oil into the sea
- Reporting ship in case of effusion oil
- List of institutions and organizations that need to be contacted in case of spillage of oil (port authorities, teams are responsible for cleaning
- Plans and drawings of various pipelines through which oil flows from the positions of valves
- General plan of tanks including their capacity.

- Position container SOPEP equipment and a list of equipment

THE PROCEDURES TO BE TAKEN IN CASE OF OIL SPILLS

- If any members of crews pouring into the notice board should immediately set caps on the site where pollution is present to prevent further oil spills at sea, and then inform the operator or officer on watch.
- Stop the transfer of oil and localize tank sounding pipe and ventilation openings
- Launch a general alarm and instruct the crew to take all actions and duties according to plan
- SOPEP-use equipment in order to keep the effusion on board
- Execute the transfer of oil in the tanks so that the levels are as low as possible
- Use sawdust as a means to stop the further spread of oil spills
- Collect the spilled oil in the specially designed steel drums (cca.200 lit) and clean the soiled area
- The commander is obliged to record the flow of events and schedule a meeting at which will elaborate a whole stream of events and to initiate further steps to prevent similar situations.

THE CURRENT EFFUSION OF OIL INTO THE SEA

- At current oil spill in the sea-level commitments SOPEP commander of the ship is to immediately inform the competent authorities of the port, the management company and the owner of the transported cargo.
- They have to take all actions aimed at limiting spilled oil. Typically used the so-called derricks or snakes.
- Chemicals for dissolving oil can be used only with permission of the responsible institutions.
- No later than 24 hours should they contact the team that is responsible for cleaning
- Detailed keep records of all activities undertaken as an important and less important knowledge through the log book, log books and engine oils.

CONCLUSION

SOPEP-plan is one of very good quality and binding legal acts predict all activities in the protection process is already present polutive matter to the board, who and spills into the sea, or the aqueous space.

Available infomation oblige us through scientific meetings, professional discussion and others to give a concrete contribution to the current marine pollution and marine areas could prevent timely.

The method for the prevention of actual eco-system destruction is certainly reliability of the human factor and its consistency with the professional dispensing with additional educational measures.

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BEHAVIOUR OF SHIP'S CREW IN CASE OF AVERAGE IN ACCORDANCE WITH MARITIME ERGOSOFOLGY

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ABSTRACT

Maritime ergosofology as scientific and educational subject, among others, observes, elaborate and diagnosing the current problems with the ship's crew. Average as an unexpected event requires additional action by the collective members of the ship in order to prevent the consequences that may arise. As for the ship's crew on board at the ocean liner as a dynamic urban system, there are evident three basic observations. The first indicates that a service crew deck (nautical), second – ship engine crew, and the third is white support staff. The first and second group are professional sailors, as in the procedure of ergosofology aspect shows that those are the persons which will be theoretically informed of any possible problems, including accidents on board. This is not the case with members who belong to white support personnel, because their working arrangement can not be classified as a maritime professional. Each ship in its public, written proposition has an obligation to practice the Plan in cases of occurrence of marine accidents. Mission, purpose and object of study in the maritime ergosofology, in maritime prefix, indicate that the speciality which perceive engagement of seaman during working hours and outside working hours in the same urban space that is restricted for several months. The big problem with the occurrence of accidents, is the time involved subjects on ship during guardias and outside guardias - free time. Average as unfortunate event on the ship may represent an environmental catastrophe with no small consequence.

Keywords: Maritime ergosofology, average, guardias, environmental catastrophe

INTRODUCTION

We have witnessed that in spite of advanced information technology, management, control and drive technology, everyday average occur in certain types of ships and other floating aquatic areas and stationary objects.

Average as an event is a real problem of many stakeholders from the owner on whose system the accident occurred, then the responsible person (captain of the ship or any officer), persons who at that time was responsible for the management or control of the current notice system. Here is not the end "process" caused damage. He is a much longer time, investigating cocking, and highly questionable legal.

However, Maritime ergosofology observes a completely different part of which is related to the ship's average proceedings, and to the collective behavior of the members of the ship in case of disaster.

Average, as unfortunate, the expected-unexpected event in very many cases, unless the material and environmental damage, poses a serious threat to human life. For this reason, the shipping is a lot of current legal documents through verification of international conventions which aim to prevent and promptly point out everything that can be provided in the context of possible damage incurred.

Maritime ergosofology consult the International Convention in the foreseeable "average" socio human modifying effects of policy, with special emphasis on the theoretical practical educational prevention.

ORIGIN AND SIGNIFICANCE OF MARITIME ERGOSOFLOGY

Maritime ergosofology as a teaching subject is a regular education teaching materials at the Maritime Faculty Kotor, which is still not on the list of subjects in other marine educational institutions.

Maritime ergosofology is a young scientific field in the idea originated in 1986. year. When discussing the Maritime ergosofology (with all other built-in scientific titles such as: ergosozology Maritime, Naval and Maritime ekosozology, urbosozology) refers to its author, Prof. Dr. sci. Danilo A. Djurovic.

Substances that are consumed in a scientific presentation Maritime ergosofology, consists of shipbuilding, technical, sociological, psychological, health, medical and environmental scientific validity, with the aim of preserving the health and vitality of working life "loaded" subject to the ordinary and extraordinary situations, while sailing on board port and harbor straits.

AVERAGE

The term "average" (German) "avaria" (Italy), "avarii" (fran.) interprets the breakdown or failure of a system, subsystem, or element that acts as a greatly reduced threat of sustainable processes and system functions. The boat as urbo dynamic system with one hand, and urbo restrictive system installed on the other hand is a very large number of systems in their own way and justification to make the ship function as a service of transport system.

No matter which system or subsystem failure has on board, or the particular failure is more predictable in operation, a very big concern and a threat to sailors as well as damage to or loss of ship and cargo.

Discussion of general average on the board is riddled with a sort of triad that means a professional education as primary prevention (Pp) followed by secondary prevention (Sp), which implies action in much the average occurred while the third is the observation of the event itself and its danger to human health and material a good.

Maritime ergosofology through building material offers educational vitality to comply with international conventions and recommendations relating to the accident.

Maritime averages are called events or set of events that cause loss or damage to the ship, cargo or other property at sea or take any additional expenditure. The types of marine accidents observe: general average, collision, salvage and pollution of the marine space. The act of general average was any deliberate and reasonable extraordinary costs and any deliberate damage caused by the master or other person who replaces him, if they were hired to rescue the property values of the participants in the same maritime enterprise of the real dangers which threatened their common.

Elements of general average are injured or extraordinary costs (contingency), the intention and the act of reasonableness, common danger and common salvation or benefit in the same maritime activities. Typical victims of averages are common: throwing cargo into the sea, fire, intentional grounding and the unraveling of the ship and use of freight, marine equipment and supplies as well as marine fuel. When it comes to general average costs include: costs of the port where the ship took shelter, rescue costs, which belong to the winning of the costs of towing and salvage ship.

Legislation on common averages is regulated by the Maritime Code and the York Antwerp Rules of 1994. year.

DUTIES AND RECOMMENDATIONS IMO THROUGH THE INTERNATIONAL CONVENTION IN THE PREVENTION OF AVERAGE

IMO (national Maritime Organisation) adopted the Convention formed in 1947 and only after 11 JFY 1958 came into force. 1958th The IMO, the UN becomes a special facility, which indicates that, among other things, its purpose and mission "... encourage and support the general adoption of the highest applicable standards for maritime safety, navigation and successful prevention and control of marine pollution from ships.

"IMO Convention was signed by 158 maritime nations, which account for 98.47% of total world merchant fleet.

In the next section below we present some important codes of Conventions and Recommendations relating to the security measures of damage, safety of navigation in particular with emphasis on trailerable load or loading and transporting cargo and dangerous cargo, the ship's stability, etc.

Solas74

- Section A explains the definition and implementation of the Convention.
- Section B refers to the inspection of ships and giving testimony about the purpose and the purpose cargo ship, while,
- Section C discusses the accidents and manner of behavior possibly caused by accidents.

When it comes to damages resulting from the presence of fire on board, then the Convention implemented by following internationally accepted means:

- FSS- International Code for fire safety system
- FPT-International Code for application fire test procedure.

International signs relating to rescue and transport of certain cargo under special conditions and safe:

- LSA-International Life –Saving Appliance
- Code of Safe Practice for Cargo Stowage and Securing
- Code of Practice for Ships Carrying Timber Deck Cargoes
- Code of Safe Practice For Solid Bulk Cargoes (BC Code)
- Code for the Safe Carriage of Grain in Bulk
- International Maritime Dangerous Goods (IMDG Code)
- Code for the Safe Carriage of Irradiated Nuclear Fuel Plutonium and High-Level Radioactive Wastes in Flasks on Board Ships.
- International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
- Code of Safety for Nuclear Merchant Ships.

International signs relating to the management for the safety of navigation:

- International Management Code for the Safe Operation of Ships and for Pollutin Prevention (International Safety Management –ISM Code).

International security measures as a means for high-speed ships:

- Code of Safety for Dynamically Craft (DSC Code)
- International Code of Safety for High-Speed Craft (HSC Code).

When it comes to improving safety, then, provided a certain extent by the down-cited international recognition:

- International Ship and Port Facility Code (ISPS Code).
- Set of international guidelines for ships carrying bulk cargo in the oeuvre of additional precautions.
- Code of practice for the safe loading and unloading of bulk carries.
- COLLEREG Convention on International Regulations for Preventing Collisions at Sea.
- EMSA (European Maritime Safety Agency – which is formed 2002nd with headquarters in Lisbon.
- SAR – International Convention on Maritime Search and Rescue (1979.).
- STCW VI/2 Handling of Rescue.
- STCW VI/4 Qualifications of persons to provide medical assistance.

Marpol 73/78

MARPOL 73/78 is a binding international convention that provides for the prevention of marine pollution from ships caused by accident or by decanting and reloading of oil and petroleum products by ship.

International Convention for the Prevention of Pollution from Ships (1973)

- Protocol I – Reporting
- Protocol II- Arbitration

Protocol of 1978 and implemented the following Annexes:

Annex I – Regulations for the Prevention of Pollution by Oil:

- I - General
- II - Requirements for control of operational pollution
- III - Requirements for minimizing oil pollution from oil tankers due to side and bottom damages
- IV - Prevention of pollution arising from an oil pollution incident

Annex II - Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk

Annex III – Regulations for the Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form

Annex IV – Regulations for the Prevention of Pollution by Sewage from Ships

Annex V – Regulations for the Prevention of Pollution by Garbage from Ships

Annex VI – Regulation for the Prevention of Air Pollution from Ships:

- I - General
- II – Survey, certification and means of control
- III – Requirements for control of emissions from ships.

International Convention on Standards of training, issuance of certificates and guardias keep (guard) - STCW 78

- International Convention on Standards of Training Certification and Watchkeeping for Seafarers 1978 as amended by the 1995 Conference
- International Convention on the rules for Preventing Collisions at Sea (1972)
- Convention on the International Regulations for Preventing Collisions at Sea (COLREG 72)

- Number 147 International Convention of the minimum standards that must be met in the merchant navy ships (1976)

Principles of technical controls for the detection or lack of an accident-damage

If the average occurs on board (breakdown) or discover some of the non-functional systems, subsystems or elements, which interfere with safely expected process, then it observes the same as the destruction which affects the:

- Safety of the ship or the significance of impacts, and overall equipment for the notification of the resulting damages, the activities of rescue and monitoring of the rescue
- overall ship as a dynamic urban systems, and complete equipment which is on it to protect the eco system of oil pollution, dangerous chemicals and noxious liquid substances, then commander of the vessel in accordance with international conventions, it must as soon as possible inform the competent national registry of ships, to initiate proceedings to determine, whether a subsequent review of the appropriate vessel. National Register of ships among other things involved in researching the causes of accidents on board the ships and the eco-system.

The principles and the principles of technical control of the vessel's structure, functions correctly and state control and propulsion systems and subsystems as well as marine equipment serving the purpose of obtaining redress and verification of certificates - the Register.

BEHAVIOUR OF CREWS IN CASE OF AVERAGE

Written instructions as binding acts with the intention of indicating to the protection and preservation of human health resulting from the average, means the obligation of every member of crews to specific activities aimed at prevention of the possible major damage or threat to the whole system of ship.

Depending on their functions (activities) on the ship are given a clear binding guidelines that are featured on all visible places, both in work and domicile in the territory of the written language of the harbor and the English language.

If inspection bodies take note certain system deficiencies that could impair operating system harmony or endanger the safe navigation of the ship, human health and aquatic facilities, shall issue a decision prohibiting the vessel from the port of transshipment or stop or maneuver action that is ongoing.

The role of the master in the case of joint accident related to:

1. Making decisions about taking responsibility joint accident
2. Description of events in the log
3. Applications of average
4. Notification shipping
5. Obtain a guarantee for payment of the contribution in General Average
6. Overview of the ship and cargo to determine the damages caused.

When it comes to crash the ship, the commander has a duty to participate in the possible rescue of persons and property, establishing the identity of the ship in a collision, shipping information, description of events in the log, ship inspection and assessment of damage from the collision, a protest letter to the commander of another ship, the application maritime accidents within 24 hours when the ship arrives in port, obtaining guarantees for damages (in case of refusal of acceptance guarantees required by the competent adoption or retention of temporary measures to stop the ship).

The role of the master is in danger:

1. Sending information on danger
2. Notification shipping
3. Notification to an insurance company
4. Taking measures to rescue
5. The awarding of a possible rescue ship and cargo
6. Obligation to cooperate with a person who must be rescued,
7. Description of events in the log
8. Notification of casualty

CONCLUSION

The aim of the Maritime ergonomology as the science of behavior "loaded" in the working seaman's work and life on board as a dynamic and restrictive urban system, among other things, elaborate not only preventive, but also status and condition of the resulting damage and dangerous that may occur to human health, ship, cargo and aquatic eco-space, and communication systems.

If it brings us to the ensuing disaster, Maritime ergonomology is focused on knowledge about the behavior of "loaded" seaman during the average, where special attention is paid to preserving the presence of mind, self-healing and rescue.

No matter what the material losses resulting from average, always keep in mind that they are infinitely small compared to the potential loss of human life, it can be concluded that the material losses can still recoverable, while human lives are never in any form can not be recoverable.

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MARINE BIODIVERSITY THREATENED BY MARITIME DISASTERS

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ABSTRACT

The expansion of international market influenced the need for modernisation of capacities used for building ships as a system for transporting goods and people. With the development of shipbuilding technology the number of maritime disasters grew which became an extremely important topic of discussion at international conferences that are ever since 1954 often harmonised with conventions related to the conservation of marine biodiversity from maritime disasters. The goal and task of international conventions can be viewed in opus triad (oup. aut.) as P1 (Pp), P2 (Sp) and A (D). By elaborating factors threatening marine biodiversity (P1, i.e. Pp) the author wishes to address the primary prevention which actually represent an educational sublimation that is the basic goal and task of every individual or institution striving to achieve sustainable development. Unfortunately, disregard for international conventions, in this case inconsistent implementation of the programme, methods and models aligned with international conventions on the marine and marine areas protection leads to ecosystem destruction, i.e. threatens marine biodiversity. Modern risks are demanding activation of the secondary prevention P2 (Sp) promoting conditions and methods of action against an on-going pollution. We can observe the model and methods of the secondary prevention through the concept of technique and tactics in purifying the existing pollution. Based on the chosen programme measures are taken to prevent negative impacts of maritime disasters on the overall marine ecosystem values.

Key words: biodiversity, marine areas, maritime disasters, pollution, flora and fauna

INTRODUCTION

Maritime disasters, among many other destructions, most certainly cause contamination of water bodies and disruption of biodiversity values. Sea roads as the cheapest transport routes are becoming ever more clogged due to market demands to bring the load (goods and passengers) to a certain destination in the fastest and cheapest way. Such economic requirements contribute the emergence and modernisation of contemporary transportation services with a high-quality infrastructure which provides specific transport capacities and good dynamic. Both of them influence the development of adequate harbour aquatic areas, port terminals, port infrastructure, and other multisystemic and security activities. Regardless the existence of numerous international conventions regulating modern shipbuilding and, consequently, state-of-the-art navigation systems, maritime disasters and other ecological destructions still occur because of the human nature manifested through negligence, inattention or insufficient professional conscience.

Maritime disaster can be viewed as an event in the very system of the ship, as a contact of a ship with another dynamic system in communication (a ship to ship), as an unfortunate event of ship damage caused by natural obstacles (grounding or sinking) or technical failure during transshipment of goods.

PATTERN IMPLEMENTATION IN THE CONTEXT OF BIOTIC BIODIVERSITY

Following the endangerment of ecosystemic validity in a specific case of aquatic area, the first International conference for the protection of aquatic areas was held way back in 1954 in London.

Since then many conventions dedicated to the perseverance of aquatic area and biocenoses presence were adopted worldwide. This paper is giving priority to the triadic model, which is based on prevention while emphasising primal protection that actually needs to be regarded as the most significant.

Educational structure (Pp) includes theoretical-practical measures and models which need to be applied regularly on a ship. This model is about education, more specifically, professional education of seamen. The goal is for seamen to accumulate knowledge instead of simply obtaining a rank, which additionally obliges educators and educants to serious approach.

We are witnessing not a lone but ever more frequent cases that seriously endanger not only the sea surface but also seabed and in many instances the seacost as well. All this legitimises the application of the triadic model which simplifies Pp-A-Sp.

Damages in the ship's system

The type of damage of the very system of the ship includes fire, explosion, technical malfunction, etc. Fire on board can cause serious material losses and huge detriment to the environment. Despite high levels of security, fire frequently results in total loss of a ship and/or cargo, and it caused by negligence of the crew, inflammable cargo, on board explosion caused by various reasons. Often fire and explosion are related and they are especially predominant in tankers because there is a risk of gas expansion within storage tanks.

Primal prevention on a ship (Pp) envisages education conducted by the shipmaster, especially of younger persons staying or working onboard, in order to reduce to minimum maritime damages arising from human negligence, inattention or inexperience.

Ship's damages caused by collision with another ship

Collision is the most frequent type of maritime damage. Ships and other floating objects pose the most common threats to aquatic areas. This form of damage is a persistent occurrence in present day navigation, despite modernisation of navigation systems. When a tanker collides with another ship or vessel, it will cause serious ecological destruction, which can lead to huge and dangerous catastrophes for marine ecosystem carrying severe consequences.

In case of such maritime damage education is also important (Pp) which seamen acquire during their training for different jobs on board of a ship. It is important to mention that they must continue to educate themselves throughout their entire career. Beside educating the crew, it is also important to ensure technical correctness and proper use of onboard equipment and the very propulsion system.

Ship's damages caused by natural obstacles (grounding and sinking)

Maritime damages include grounding and sinking of a ship. The most recent example of such damage is the Italian cruise ship Costa Concordia which, despite being equipped with state-of-the-art navigation instruments, ran agrounded, lost stability and rolled over onto her starboard side with 4,231 passengers onboard. There were at least 19 casualties, 60 passengers and crew members were injured, 13 people are still missing. In case weather conditions worsen Costa Concordia could be turned into environmental disaster.

Beside primal prevention, the author would like to point at secondary prevention (Sp), which includes measures to be taken to avoid ecosystem disruption, as well as adequate implementation of corrective actions in response to maritime damage.

Damage or technical failure during transshipment of cargo or bunkering

A maritime damage occurring while transshipping dangerous cargo can be a result of human factors or an error in the transshipment system. Actual failure, regardless whether it is a subject, object or process, can threaten human lives and completely devastate the ecosystem.

In case of such damage it is important to implement both primal and secondary prevention, considering the fact that there is often a short period of time between the occurrence of damage and time to react in order to avoid ecological catastrophe.

METHODS OF REMOVING OIL SPILLS (TOOLS AND EQUIPMENT)

- When contamination happens, despite all preventive measures have been taken, it is crucial to apply measures and resources to minimise negative consequences. Regardless its size, the goal is to clean the oil spill in the fastest and most effective way. Treatment methods for removing marine spills include the following:
- Mechanical containment of oil spills (pumps, vacuum tanks...). There are two different basic approaches to mechanical collection of spilled oil. The first one identifies the use of nonspecific instruments regardless manual or mechanical approach, while the second one identifies the use of specifically designed equipment.
- Chemical dispersion of spills (dispersants). Dispersion of oil spillage in sections by using dispersants represents chemical treatment of oil spill. Such method helps to disperse oil spills in miniature oil droplets which are quickly scattered from water surface. In such manner the relationship between surface and volume is altered making the process of natural decomposition more effective.
- Use of absorbents. The absorption method includes soaking, sucking, taking in of oil spill, while the adsorption method envisages retention of oil spill on solid surface based on oil-attracting feature which enables smooth removal of the same.
- The use of other products used for oil spill recovery (biological agents, burning agents, gelatin agents, chemical barriers, sinking agents).
 - Biological agents used in response to oil spill are typically lyophilic (degradable) by such organisms (primarily bacteria) or more commonly nutrients as phosphorus and nitrogen which improve the growth of present microorganisms.
 - Burning agents are products meant to initiate or sustain the burn of released oil. Such controlled burn of spilled oil on water surface was proposed as a possible counteraction. However, despite obvious flammability of most hydrocarbons and vast research on this field, such method has certain limitations and has never been used on a larger scale for treating voluminous oil spills.
 - Gelatin agents are usually two-component polymer products which, when in contact with oil slick, integrate oil into their molecular structure making it immobile and firm.
 - Sinking agents are supposed to adsorb spilled oil into its surface in order to sink compounds with specific gravity greater than the one of water.

From the above stated it is evident that there are numerous products for the treatment (removal) of marine oil spills. The practice shows that the usage of chemical dispersants in oil spill treatment is a very effective method.

CONCLUSION

Alongside evident techno-systemic failures provoking maritime damages, human factor can be regarded as the main culprit. To prevent possible damage or any form of contamination of the ecosystem, we must implement available methods and models pertaining to Pp specification, that actually represents an educational category which building material implements accessible knowledge, actual personality (of educants) and total systemic methods (of education). Mastered material, which offers adequate preventive measures in the opus of modern educational material,

determines practical tests for educants on the so-called simulators. This is because the fact that a matrix can contain theoretical habitus of a candidate, but this does not mean that the same is applicable in practical dispersion as well. Knowing this we must approach the second type of prevention (Sp) which interprets that it is up to educants to, in a concrete case of emerged pollution, select the most suitable preventive model – method.

Activity (A) is a result of an event, i.e. actual destruction which was not successfully prevented. This means that danger is still lurking and that the problem must be addressed in a more capable and responsible manner.

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SPECIFICATION FOR THE EQUIPMENT FOR CLEANING POLLUTION MATERIALS IN COASTAL AQUATIC AREA

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ABSTRACT

Modern ships require qualitative ways of reloading service systems which often, during the given activity, can violate the eco-system presence of the aquatic area. Due to often disruptive activities that violate flora and fauna and the aquatic area in general, it has become necessary to deal with the mentioned problems on time so that the further disruptions could be prevented. The international conventions for the sea and aquatic protection areas demand from the participants in these activities to build the necessary systems and sub-systems for cleaning aquatic areas from pollution materials on time. The demanded specification of the equipment says that it is obligatory to possess the professional knowledge in using the actual equipment. For that reason, one must be able to recognize the expansion of the actual leaking pollution near the coast, in the harbour maritime zone and on the open sea. This knowledge dictates and obliges us to choose the right working equipment for the prevention.

Key words : coastal aquatic area, eco-system, pollution materials, sea and aquatic protection, equipment

INTRODUCTION

The pollution of the aquatic area, primarily those caused by oil and petroleum products, represents real danger nowadays, not only for the aquatic area but also for semi-aquatic and land eco-systems which are directly connected to water.

Maritime incidents, unfortunately, are everyday risk for possible pollution, so larger responsibility is ordered to control pollution by these matter. Constant fighting against the pollution of the sea area, and the great hazards caused by tankers and oil platforms, initiated a plan to control damages in the aquatic area, which led to the development of the industry and creation of the efficient equipment for removing sedimentary pollution at sea and in the coastal area.

IMO (International Maritime Organisation) gave a guide to develop plans of intervention in case of the sudden pollution of the aquatic area. The main part of the plans is the assessment of possible causes, size and the risks of the pollution. Very important process is to establish the degree of the pollution, and the process of repair work which includes these procedures and methods:

- eliminating the source of the pollution,
- marking the pollution area,
- removing the pollutional matters from the sea and the coastal area,
- discarding the pollutional matters and
- restauration of the affected area.

In practise, these processes include different equipment, and the institutions responsible for repairing the damage should certainly have it.

ABSORBENTS

Absorbents are special kind of equipment used to absorb liquid matters that have polluted the area. Floating absorbents are efficient means used on land and the sea, especially in harbours, where they are used to remove smaller stains, especially when it is not economically justified to use mechanical equipment. They are very specific because they are characterized by: oleophilicity and hydrophobia, they absorb twenty five times more oil and its products than they weigh, they stay on the surface before and after the absorption, they don't need complicated additional equipment, they can be used more than once, they come in several different shapes (basket, dam, pillow shape etc), they do not influence flora and fauna in a harmful way, they do not rot or go out of date, they are resistant to flames, when they burn they create only two percent of ashes and because of their wrapping they are adapted to outdoor or indoor storage.

Absorbents are cheap and easy accessible means because we find them in nature, as the bark, sawdust, cotton cloths, moss, coconut shells, feathers, the remains of sugar cane, corn, hay, reed, etc.

Bulk absorbents are made of bulk cargo and they don't have one specific shape, and they are produced as powders, fine matters and short mineral fibres. This kind of absorbents are made from the raw or processed industrial waste and now in modern days we have some synthetic products which can be divided into anorganic processed materials, processed herbal materials (turf) and polymers (polyurethane, polypropylene, polystyrene, epoxide). They work in two ways- when particles of the absorbent reach the affected area, they impregnate and the process of absorption starts. The process is relatively fast, it takes merely couple of minutes if the polluting matter is not very thick, then the absorption takes longer and the efficiency of the absorption process is diminished. The other way is the process of collecting or agglomeration- particles that have absorbed the polluted material gravitate towards each other. Larger clusters are created more easily if the material is bigger, and the clusters will be created if the pollutant has great thickness. If we deal with meager pollutant, the cohesion of the agglomerate can happen- it is inappropriate because the waves and currents can break already formed clusters. (Bicanic, 2003)

Pillows are absorbents that absorb polluted matter using bags, that is pillows. They are usually one square meter in size. Dams are used to enclose the aquatic area to prevent further pollution of the affected area. They work vertically, horizontally and athwartly- on the surface and in the depth, and they also serve as protective barrier (floating fence). They are made of long rolls. However, they are not appropriate for surface pollution in the rough sea, when the waves and currents tumble the pollution over or under the rolls. However, they are the best option for a quick intervention on oil effusion and the gathering of oil stains, so they are most often used in practice. They are efficient because they can maintain chemicals floating on the water and they are used for maintaining, gathering, and routing of the pollution. The main reason of this process is gathering of the oil effusion so it could be easily removed and the coastal aquatic area saved from the pollution. It is important to say that dams are always used together with some other equipment for removing the pollution so that the complete pollution removal can be achieved. There are a few kinds of dams.

Wall dams are made of rigid or semirigid surface and side corks keep them in a vertical position. The lack of these dams are their grossness, they occupy a huge storage areas, and their possible damages. Even though they are wear-resistant, easy to set, gather and transfer, that is the case only if they are handled in 15 to 20 metres long parts. They may also be resistant to high temperatures, but are difficult to manage in a rough sea.

Blind dams are made of floating material which have blinds belayed with weights on them. The floating part is mainly inflatable-compressor. Buoyancy is made of several air chambers, attached to each other with connectors- air valve. The blinds are made of waterproof material (impregnated fabric) resistant to physical and chemical activities. They have the ability to remain on the water surface when they are protracted and before they are inflated.

Solid floating dams are made of light material, and are usually 10 to 20 meters long. They are made of chambers filled with foamy matter, they are quite solid and resistant to rough contacts with floating material, abrasion to coast and rocks and inadequate handling. The only deficiency of these dams is the necessity of large storage area and susceptibility to deformation during the storage. However, even if the damage happens, the repair is done on the spot which makes them highly efficient.

Inflated dams come in two forms- the ones with associated compressor for inflating the air dams with valves which enable self-inflation. They are used in urgent situations and they can be set in a five hundred meters long row, if the staff is highly engaged. They do not require great storage area (they can be kept in the inside or the outside storage area), they are sustainable during waves and they hold the collected matter well. The only deficiency is possibility of damages during floating (tears and cracks).

Pneumatic (air-driven) dams release air bubbles from the tube placed at the bottom of the sea, and they move towards the surface of the sea and create certain flow of the water. In that way the oily spot is retained and further pollution is prevented. The good quality of these dams is that they do not affect sea transport, but their lack is limited possibility of action in the conditions of great current flow, which can also plug the tubes at the sea bottom. (Djurovic, 2002)

COLLECTING POLLUTING MATTERS WITH ASPIRATION DEVICES (ASPIRATORS)

Aspiration devices with the disc work on a principle of absorbing (aspiration and collecting) of pollutive matters on the water surface. They use the disc as absorbent material in order to collect stains, and operating device is needed to move the disc. The functionality of this equipment depends on the viscosity of the stain, the waves, currents, and it is recommended because they intake small amounts of water, they last long, they can collect up to 20 tones of polluted stains in a short period of time. Still, they are most efficient in closed harbours.

Aspirations device with cylinder works based on a rotational cylinder on a horizontal base. The cylinder is partially immersed in the polluted area, which is then collected on the cylinder and after that it is removed by scraping (scrapers), and the polluted matter is taken into a specially designed tanks.

Aspiration device with a belt works with a help of a rotating belt, which contains absorbing material. The belt constantly revolves through the polluted area and collects stains, that is the polluted material. This aspiration device is put inside the vessels due to its specific way of running.

Aspirators with a rope work based on a rope that is made out of absorbing material, and the rope is set on the rotating machine which uses the belt to move the rope which removes the polluted matters into the tank during the rotation. This system is most efficient in the banks.

Aspirators with brushes are made of several rows of brushes, forming a rope, that absorb the polluted matter. Due to their intention, setting and adjustment, they are most efficient in the coastal area.

INDUCTION SYSTEM

Induction devices are the equipment built in the vessels (ships, boats, etc). The system works on the principle of boats moving through the polluted area, while oil stains go into the cargo part of the boat that is intended for this, and later on they are cleaned using different methods and equipment.

Induction devices nowadays mostly use systems with multiple barriers which are set on the appropriate depth below the water surface, and the pollutive material overflows the barriers and goes into the tank and the system with a sloped surface works based on the belt that moves the opposite way from the boat movement. Under the pressure in the water, the oil stain moves towards the tank and clean water goes back into the sea.

Another mode of the equipment are also nets, used only to clean water surface from solid matters, oiled sea weed and polluted remains on the sea surface, and they can be used to collect impregnated absorbents.

CONCLUSION

Modern pollutants require different approaches when removed from the ecosystem area, no matter if they happen in the aquatic, terrestrial or aerspaces.

We are witnesses that the pollution of the sea represents a problem, not only when we talk about oil platforms, harbour transferences but because of the human negligence towards sights of nature.

The pollutive matters need to be handled competently so that their appearance is prevented and, when needed, more efficiently eliminated.

Therefore, the specifications of the equipment should be adequate to the conditions, weather, actual pollutive matter, and this requires modernisation of tactical and technical approach.

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SIGNIFICANCE OF THE DEPTH OF AQUATORIUM OF THE PORT OF BAR

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ABSTRACT

Modern urbanisation imposes an obligation to receive vessels safely in the port aquatorium area during pilotage, mooring and towage of the vessels, as well as their departure, in line with international and domestic regulations and standards regulating their protection. Thus, it is necessary to monitor and maintain the depth of the port aquatorium designed for servicing vessels. The depth of a navigable road for receiving vessels in the Port of Bar differs from the area with pertaining objects and organisation that provide this form of service. For this reason we must secure a safe and regular maintenance of the water level in areas envisaged for anchoring, maneuvering and landing of the ships. Considering the fact that it is a commercial harbour handling international traffic that provides services to the crew and services related to the vessels carrying cargo which is loaded, discharged and disposed, it is crucial to secure regular maintenance and control of the port aquatorium depth. The Port of Bar has an approved safety assessment and plan while their adequate implementation is secured by the port safety officers. A modern port which operates in respect of international and domestic regulations and conventions cannot be functional unless the water depth is adjusted to the type and tonnage of the arriving vessel.

Key words: aquatorium, water level, safety, conventions

INTRODUCTION

In the last twenty years, the concern for the natural environment and tendency for sustainable development of aquatic biodiversity is in big rise. Rules relating to maritime traffic are more and more severe whereas the ship has become the focus of interest, being marked as a resource of pollution.

Therefore, rational-sustainable use of natural resources, among which are port aquatoria is important link for development of the maritime economy. Bearing in mind the importance of urban ecology of ports, we are obliged to take care of sea protection in the port area, particularly in respect of busy ports accepting big tonnage ships such as Port of Bar.

Measures and models of sea protection and sea spaces must be covered and carried out in compliance with international regulations and conventions in order to efficiently combat destruction of natural wealth.

PORT AQUATORIUM OF THE PORT OF BAR

Port management, particularly merchant ports open to international maritime traffic like the Port of Bar must pay special attention to protecting sea and aquatic space from pollution.

When discussing port area protection, permanent protection of the port aquatorium must be highlighted, as the reasons for its pollution come from sea and shore respectively. Therefore, it is necessary to pay full attention to depth of port area and its significance in relation to port ecosystem.

There is no doubt that the area of the Port of Bar represents an important crossroad of maritime traffic in the Adriatic and the overall traffic in the Balkans, having in mind the geographic position of the port.

There are several economic and other subjects in the territory of the port of Bar, such as:

- Port of Bar JSC
- Container terminal and general cargoes JSC
- Marina Bar JSC
- Part of the floating objects of the Montenegro Navy
- OceanMontenegro Ltd (Maritime affairs).

Business performance of these subjects directly affects "sustainability" of the depth of port aquatorium not only in the ecological but also in the sense of safe sailing into and out from the port and performance of the trans-shipment function. In accordance with the needs and requirements imposed to the port following European and world standards in the modernization of the port infrastructure, port aquatic trans-shipment places reach even depth of 14m (see figure 1).

Safety and sustainable development of the whole port infrastructure with port aquatorium must be adjusted to the ecological determinants both in national and international frames as well as the new conventions promoting the preservation and protection of sea spaces.

Importance of depth

Maritime affairs as a branch of maritime economy develops daily, particularly in view of types and kind of ships (tonnage) which impose that national and world port must obey regulations on safe sailing into and out from the port, expressed through the depths of the port, port terminal and port aquatorium.

Port Authorities monitor safety and security of navigation which, among other things, supervise depth of sea in port. It is necessary to have good knowledge of ship's characteristics, during berthing, as well as ebb and flow difference.

The subject area may be regarded in the following two ways:

- Firstly, in the context of deepening (dredging) of the port, port aquatorium, which imposes disarrangement of existing flora and fauna and
- Secondly, delivery of mud and erosive land, through rainy sewage, streams and rivers flowing into port and port aquatorium, which imposes violation of the aquatic biotope.

CONCLUSION

When summarizing knowledge about the function of the port, port terminal and port aquatorium, we are obliged to remind that among many functional factors the sea depth of port aquatorium represents a very important role.

For that reason, the very paper which is dedicated to the importance of depth of the port aquatorium represents great contribution not only in the context of national economy, but world economic treatment as well.

Depth of the port and its width, along with the importance of ebb and flow fluctuations may be estimated through international conventions on protection and sustainable development of sea spaces.

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Session H: STUDENT PAPERS

Papers (pp. 527-584):

Maja Siljanovski , Dorotea Bešić CORPORATE SOCIAL RESPONSIBILITY AND COMPETITIVENESS DOMESTIC COMPANY	...527
David Novak, Maja Siljanovski THE ROLE OF LEADERSHIP AND MANAGEMENT SKILLS IN CREATING COMPETITIVE ADVANTAGE	...533
Danka Rus, Sanja Ristić, Snežana Radosavljević, Željko Stojanović SERBIAN NATIONAL BRAND	...539
Andrea Ivetić, Katarina Zorić, Slađana Isakov THE IMPROTANCE OF LEADERSHIP WITHIN MANAGEMENT SYSTEMS IN HEALTH CARE ESTABLISHMENTS	...544
Mila Zakin, Jovana Pećanac IMPACT OF THE QUALITY ON LEVEL OF COMPETITIVENESS OF COMPANIES IN SERBIA	...550
Jovana Pećanac, Jovanka Rkman MARKETING COMMUNICATION IMPACTS ON SALE OF PRODUCTS AND SERVICES	...556
Sanja Pantić MARKETING INFORMATION SYSTEM	...562
Ivana Petkanić, Ljiljana Litričin, Mila Zakin THE INFLUENCE OF FMEA METHOD ON QUALITY COSTS	567
Dragana Ćurčić DECISIVE KNOWLEDGE MANAGEMENT FACTOR IN MODERN BUSINESS	573
Bojana Gligorović THE INFLUENCE OF WORK ENVIRONMENT AND THE ROLE OF LEADERSHIP IN ENHANCING EMPLOYEE CREATIVITY	579

CORPORATE SOCIAL RESPONSIBILITY AND COMPETITIVENESS DOMESTIC COMPANY

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ABSTRACT

Unlike many other ISO standards (such as ISO 9001, ISO 14001, etc.), This international standard will be the standard against which certification will be performed. Therefore, ISO 26000 certification is not standard, but only a recommendation and support organizations (in the form of instructions) in order to incorporate their business principles of social responsibility. In this paper we presented positive business enterprises in the area of corporate responsibility such as Eurobank EFG and Galenika and will be shown what these companies have done for the community in which they operate. It will show the results of research that is performed in hospital in Serbia, which will see the effects achieved by socially responsible companies.

Key words: ISO 26000, customer satisfaction, competitiveness, social responsibility

INTRODUCTION

International Organization for Standardization (ISO) in 2005 initiated the process of preparing a new series of standards, ISO 26000 on Social Responsibility. Due to the extensive discussion and drafting of various interest groups, and the need to comply with the procedures for adoption of ISO international standards, the date of publication of the new standard "ISO 26000 - Guidelines on Social Responsibility" was moved to the last quarter of 2010.

Corporate social responsibility is one of the pillars of business excellence organizations. Applying the concept of social responsibility is of particular importance for the car companies from countries in transition due to the fact that in this way improves the competitive position of the market.

CONCEPT OF CORPORATE SOCIAL RESPONSIBILITY – ESSENCE AND SIGNIFICANCE

The responsible behavior of companies, and other organizations and institutions can be judged from the point of refraining from taking any action such as corruption, fraud, arrogant and unethical behavior that would harm the community, its people, and environment and so on. At the same time, this responsibility can mean proactively in terms of positive contributions to the community through various social activities. The initiative for this type of social engagement may come from the external environment, due to the more obvious appeals of various interested groups and individuals to help the company specific events and actions, contributing to the realization of humane and noble goals (James et al., 1996). On the other hand, the company can only actively look for those ideas whose implementation will be adequately supported and those they believe or highly appreciate many people. In this way the company can more easily attract their attention that might turn into affection for themselves and their products, and to strengthen their reputation and increase your sales.

Corporate Social Responsibility (CSR) is a desirable long-term marketing and business enterprise orientation. Its essence is that the action is much more than what is required by law, and includes the idea that the reactive attitude toward social problems better replaced by a proactive, voluntary and preventive action, that limited resources are not wasted to elimination of consequences of illegal and unethical behavior. By accepting the concept of corporate social responsibility and information about the environment, through various forms of communication, the company begins to differentiate from competitors, which may allow for better positioning in the market, increased customer loyalty due to their positive performance by the acquired company and, consequently, higher sales of its products and services.

In Serbia there are companies that engage in co-establishment of the community, but there is a lack of information about their activities, especially targeted towards customers. It is in this segment is done much less research than those that focused on perceptions, attitudes and opinions of the company (its manager). However, the company would leave a good impression and would benefit from investing in socially responsible business practices; it is an important way of communicating with its customers and other important target groups and partners, which requires an understanding of the angle from which they perceive CSR companies. The emphasis must be on an effort to assess the significance of the concept of corporate responsibility is for swimmers to be created on the basis that an adequate program of communicating corporate social initiatives. Communications directed to customers in order to inform them of what the company is taking the benefit of the community in which it operates is an essential part of a planned and systematic approach to the concept.

ANALYSIS OF THE COMPETITIVENESS AND CSR OF DOMESTIC COMPANIES

Successful companies have long applied principles of ethics in business - take care of workers, consumer health, and the healthy development of competitive relations. Most organizations that are leaders in various fields have become socially responsible, where this is particularly reflected in the achievement of customer satisfaction. Top 15 companies in 2001 such as: Johnson & Johnson, Microsoft, Intel, 3M, Sony, HP, FedEx, IBM, Disney, General Electric, Dell, Coca-Cola, P & G and UPS are known for their products and services, and philanthropy of the company.

These are companies that have gained reputation and confidence from the investment of many years of efforts aimed at achieving customer satisfaction, resulting in the effects of financial and market position. (Heleta et al., 1995)

Competitive position of Serbian companies on the basis of reputation on the world market is extremely unfavorable. Domestic companies generally have not invested adequate efforts in the formulation of business reputation, as an element that affects the market position of the company and its competitive ability. According to the global competitiveness index of the World Economic Forum, in 2009 Serbia ended on 93rd place out of 133 countries for which the index follows. Within a year, according to Serbia's competitiveness index dropped eight places. In front of Serbia there are Slovenia, Montenegro, Croatia, Macedonia, Hungary, Romania, Bulgaria, and countries such as Panama and Kazakhstan. In the region just behind Serbia is Bosnia, on the 109th in place (table 1).

The concept of corporate social responsibility in the past few years, applied to the domestic market. In order to better promote the concept of CSR, the Open Society Institute, Smart Collective and Serbian Chamber of Commerce launched a project called "Responsible RBI-Business Initiative" aiming to promote and institutionalize the concept of CSR in Serbia (Kotler and Li, 2007). In the field of small and medium enterprises, the award is given Company Infostud 3 ad Subotica. The company carries out its activities through its website. Scope of work is different, and aims to inform users of their services in part related to social and health care, education, promotion of employment opportunities, and the like. Specifically, the Bank through this project aims to support young Serbian designers. Another bank was awarded and in the long-term partnership between

business and nonprofit sectors. Societe Generale Bank Serbia ad Belgrade was awarded as a result of a collaboration with the Food Bank. The main prize for contribution to the national level have received the broadcaster B92 ad Belgrade because of its orientation towards vulnerable groups, educating, informing citizens of health prevention and support activities in the field of environmental protection. Serbian Chamber of Commerce in March 2008 awarded first prize for CSR - Tigar from Pirot, and undertaking BiVoda from Bujanovac were found in the most responsible companies in Serbia. In the category of large enterprises has received the award and Ball Packaging company from Belgrade, Carlsberg Brewery from Celarevo, Holcim from New Popovac and Erste Bank from Novi Sad.

Table 1: Ranking of the Western Balkan countries to the competition in 2009 (Schwab et al., 2010)

Country	PLACE
Slovenia	37
Montenegro	62
Croatia	72
FYR Macedonia	84
Serbia	93
Bosnia and Herzegovina	109

Agency and Medium Gallup daily Blic they conducted a survey of social responsibility of local business organizations in 2009, as can be seen in the following table. The survey was conducted of 17 and 22 November 2009.

Table 2: The most responsible organizations in the domestic market in 2009 (Telecom and EPS, 2009)

No.	BUSINESS ORGANIZATION	PARTICIPATION IN RESPONSE
1.	Telekom	26,3%
2.	EPS	24,1
3.	Telenor	20,35
4.	NIS	19,2%
5.	PTT Srbija	18,6%
6.	Knjaz Milos	15,5%
7.	RTS	14%
8.	Galenika	13,9%
9.	Hemofarm	13,7%
10.	Bambi	13,1%

On the other hand speaking, awareness for the need of applying the concept of corporate social responsibility is not yet sufficiently developed. This is best show the results of research conducted among students in late 2009, in the territory of the Republic of Serbia. The study included 520 students who were profiled to management. The results indicate that the overwhelming number of students 85.36% were not familiar with the concept of CSR. Those who have heard of the concept of CSR, the concept they learned from the media (35.68%), internet (23.78%) and textbooks (22.9%). According to the respondents, the most common activities in the field of CSR in our country are following : socially concerted business practices (25.23%), corporate social marketing (21%), marketing is connected with the social goals (17.3%) and the promotion of social goals (14 %). The surveyed students as necessary elements for the development of competitiveness of domestic companies listed : continuous training of managers and employees (25.49%), significant investments in marketing (22.13%), standardization of quality of business (12.89%), development of relationship marketing (10%) and the application of modern management methods and techniques (8.7%). The largest number of respondents, 85% could not specify a local company that operates in the domestic market that can be characterized as socially responsible, and 82.43% of respondents considered that there is a correlation between competitiveness and social responsibility.

CORPORATE SOCIAL RESPONSIBILITY AND COMPETITIVENESS

In order to achieve enterprise operational excellence, we need to continuously improve their business. Improving the business takes on the character of continuous improvement of business quality. According to Masaki have, the quality can be interpreted in many different ways, but in the broadest sense, quality is all that can be improved. Quality includes all aspects of human behavior.

The market aspect of improving the quality of operations relating to the satisfaction of consumer needs, convenience, market positioning, and achieve competitive advantage. Business aspect of improving the quality of operations relating to improving the quality of the internal organization of the economy - increasing efficiency, reducing costs, increasing productivity and knowledge, increasing profits.

The social aspect of improving the quality of operations of an organization means improving the welfare of the society on the basis of improving the quality of life:

- Protection of human health,
- Safety and Occupational Health,
- Protection and safety of consumers,
- Protection and enhancement of the environment,
- Conservation of natural resources,
- The safety of all in society, business compliance with regulations.

The social aspect of quality management combines business and market aspects of quality, allowing the realization of synergy effect in relation to the competitive position of companies. Successful management of the company, which should result in the achievement, maintenance and improvement to competitive market position, assumes the implementation of the principles of social responsibility in the organizational structure. Today, businesses have become aware of the fact that the way we do business and the impact on society. According to some beliefs, if the company is aware of the impact can have on society, provides jobs, jobs, guaranteeing a stable economy, and then its focus has changed to reflect this radical thinking. The principle there to compete, will give way to the principle that there would be continued. Modern business philosophy means that a company must be held accountable for their actions and deeds to all actors in the environment - both in the microenvironment, and in the company. In this sense, the company is required to meet all the demands of consumers, companies, partners, employees and shareholders. This business philosophy is referred to as Total Quality Management - TQM (abbreviation of the English words as Total Quality Management). Total quality management is a business philosophy which is the logical and historical response of entrepreneurs to requirements of modern society. It is a permanent improvement of the entire business organization, which includes integration of technological, market, economic, organizational and ethical business goals. This concept implies (Sajfert et al., 2006): satisfaction of consumer needs, quality of business development, employee safety, environmental protection, education of employees and creating a corporate culture of the organization. The ultimate goal of applying the concept of TQM is to improve the quality of life. Viewed in this way, the entire system rests on the individual, who must become a "responsible individual", whose work and actions contributes to increased productivity, and thus the general welfare.

CORPORATE SOCIAL RESPONSIBILITY IN SERBIAN CONDITIONS

The concept of CRS was formally introduced to the companies in Serbia about ten years ago. The business community, political elites, especially the media, have little knowledge of the essence of this concept, but it is the fact that there have been more and more talk about it lately, and that there are more people who have at least heard of it. In Serbia, the concept of CRS is understood mainly as a tool needed in the activities of marketing in view of building a reputation in the society, the media and government, business partners and customers. Improving quality and working conditions, consistent with respect for the rights of employees, professional development, relationship and cooperation with customers, suppliers and trade unions are still doing so, on the sidelines.

Over the past few years, companies have realized the importance of incorporation of the concept of CRS in sustainable business. CRS activities in numerous Serbian companies follow the tradition whose

essence is the idea of charity and investing in the local community, which should contribute to the acquisition of their social and business prestige.

In 2007, Serbia adopted recommendations of UN in this field (the United Nations Global Compact), and the concept of CSR has become an integral part of the latest National Strategy for Sustainable Development. In the first round there were 30 companies and non-profit organizations that were included. The first members of the UN Global Compact initiative in Serbia are: BFC Lafarge, Holcim, Cisco Systems, EFG Eurobank, Piraeus Bank, Societe Generale Bank, Credit Agricole, Meridian Bank, National Bank of Serbia, and Smart Collective. Since February 2008 the Center for Democracy – an organization that is running the campaign has joined the UN Global Compact, entitled “Power of social responsibility”.

The research results survey of CSR in Serbia

The results of the survey, which analyses the attitudes of young people concerning the involvement of the entrepreneurial process, as well as an understanding of the socially responsible business practices, shows reflection of future professionals and leaders.

It included 520 students who were profiled to management. Respondents as necessary elements for the development of competitiveness of domestic companies listed :continuous training of managers and employees (25.49%), significant investments in marketing (22.13%), standardization of quality of business (12.89%), development of relationship marketing (10 %) and application of modern management methods and techniques (8.7%). The largest number of respondents, 85% could not specify a local company that operates in the domestic market that can be characterized as socially responsible, and 82.43% of respondents considered that there is a correlation between the ability to competitive and social responsibility. The results indicate that the overwhelming number of students 85.36% were not familiar with the concept of CSR. According to the respondents, the most common activities in the field of CSR in our country are following : socially concerted business practices (25.23%), corporate social marketing (21%), marketing is connected with the social goals (17.3%) and the promotion of social goals (14%). Research was conducted in late 2009, on the territory of the Republic of Serbia. (Djordjevic and Bogetić, 2008)

Examples of good practice of CSR in local and foreign companies

Corporate social responsibility – Galenika

Socially responsible business for Galenika ad means they have a moral obligation to continuously contribute to economic development, improving the quality of life for its employees, local communities in which we operate and society in general.

Galenika ad act socially responsible, not only when it comes to its internal operations, but also in relation to the environment in which it operates. Galenika corporate social responsibility related to the internal operations include codes of ethics in business firms, the attitude towards the workers, their safety, education and other means of care to employees, such as organizing regular health checks, provided transportation workers, restaurant workers and the like, while investing in an external environment that is, concerned with the health of citizens through various programs, ecology and many other segments of society through a series of environmental projects, projects related to health, education, child protection and development of sports.

Caring for the community should include the care of science as an extremely important segment of society and Galenika this contributes toothier Institution, then intensive work involves the development and advancement of all employees, because people are the most important capital in the company, and implement projects that benefit the community and to bring positive change in people's lives Galenika shows how friendly oriented towards the environment.

Corporate social responsibility - EFG BANK

The strategy of corporate social responsibility Eurobank EFG Group has been recognized that growth and prosperity of the bank based on accountability and behavior in relation to the community, especially the stakeholders.

Corporate social responsibility is reflected through: Eurobank EFG Group continuously supports projects in the field of education, culture, sports and environmental protection. In addition, the impact on its business partners, customers, employees and the public to contribute to solving social problems in the communities where they operate. Eurobank EFG Group in 2006 became the owner of the National Savings Bank (market share of the bank on the day of purchase was 1.6%). market share on 30.06.2008. was increased to 6.14%, which has positioned the Bank in the five leading banks in Serbia (Kontic, 2009).

After the said acquisition of Eurobank EFG, the Group has announced the start of programs aimed at social responsibility activities in the field of education, health and environment. The program "Investing in European values", and was invested 3 million euro through the following is called projects: Eurobank EFG Scholarships for best students in Serbia, Eurobank EFG Parks for the reconstruction of city parks, Eurobank EFG Equality for disabled people in normal life and Eurobank EFG Healthcare for the early detection of malignant disease.

CONCLUSION

Achievement of business excellence organization requires a fully developed corporate social responsibility (CSR). It represents a commitment to improving community well-being through discretionary business practices and contributions to the account of company resources. Some of the reasons for the application and development of corporate social responsibility are as follows: increase market share, strengthening the position of brands, enhance corporate image, improving the ability to attract and motivate employees, reduce costs, increase attractiveness for investors.

Organizations that, in the present business conditions, manage to achieve a balance between profitability and ethical principles, including customers (and their satisfaction) and society (and its prosperity) in long-term alliances, can open ways that will enable growth and development. Ideas about corporate responsibility and sustainable development are global and they are growing into a worldwide movement. They should show respect and act locally and reflect the success of business organizations, companies and businesses but, in the same time, they should contribute to the community to become better and happier place for living.

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THE ROLE OF LEADERSHIP AND MANAGEMENT SKILLS IN CREATING COMPETITIVE ADVANTAGE

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ABSTRACT: Knowledge management is the most effective use of intellectual capital. Knowledge is one of the most important capital of a company may own. Problems that may arise in the management of knowledge usually occur in those companies that ignore the issues related to culture and people. In the time of fast changes and globalization of business, leadership and knowledge management are becoming increasingly important in the creation and keeping organization's competitive advantage.

Key words: leadership, knowledge management, knowledge, change, competitive advantage

INTRODUCTION

Modern economy less oriented to natural resources, more intellectual aspects of the asset, based on the fact that the competitive advantage of each firm in the knowledge that she possesses. In terms of economic theory terms, it is necessary to build a strategy that will produce super profits, strategy that will enable the effective exploitation of knowledge firms to gain competitive advantage. The assumption is that knowledge in its explicit or tacit manifestations can be managed. The question is how to develop a knowledge management strategy that would capitalize on this valuable resource and protect its value. In this respect the concept of this paper, aimed at not only recognizing the importance of knowledge management in achieving competitive advantage of organizations, but also to define the role and influence of leaders on the effectiveness of the program.

The possibility of knowledge management is becoming increasingly important in today's so-called - knowledge economy (knowledge economy). Creating and disseminating knowledge within the modern organization is becoming increasingly crucial factor in achieving and maintaining its competitive advantage. In fact, the only sustainable advantage derives from the modern organization of what the company knows, how efficiently it uses what he knows and how fast to acquire and use new knowledge (Davenport et al., 2000). Modern organizations in the knowledge era are one that learns, remembers and acts on information and knowledge available at the best possible way.

LEADERSHIP

Leadership is a new phenomenon in the management of which is intensively studied in recent years, the name comes from the English word leadership. As stated in the introduction to the process of conducting, in the narrow sense, it should be understood to mean the first, leading, best, according to which a particular form of leadership inherent in keeping individuals who are leaders. In a broader sense of leadership is used to denote not only the particular conduct, but a new approach to management, which is thought to ensure the best results in business. (Drucker, 2002)

In studying this phenomenon, first to see the existence of two concepts are: leadership and leaders. Leadership means the process by which one person influences the other group members to achieve the defined objectives of the group or organization. A person who influences the other is called the leader. Although the definition of leadership is similar to the definition of management, one can not equate the terms manager and leader, much less between leadership and management.

The successes of leaderships are not dependent on group characteristics, but on how many features match the requirements situation. Woman leaders may be equal in popularity with men, although it is likely to become leaders less than men. But the results show that women leaders, the workers are equally valued, equally good results are achieved as well as men. Various stereotypes are another problem we face with the effort to establish a link between personality traits and the quality of leadership because leadership qualities may remain hidden. Organizations such as the GM, AM International, Xerox, Avon, IBM and Procter & Gamble launched a program of setting blacks and women in leadership positions.

KNOWLEDGE MANAGEMENT

Knowledge management involves the adoption of collective knowledge in order to achieve the business goals of the company (Sajfert et al., 2005). In short, knowledge management has a role to ensure that people have the knowledge they need, where they need and when they need, right knowledge, right place and at the right time. The broadest approach to the concept of thinking about knowledge management as a process that represents the union of three components (Macintosh, 1995): people, processes and technology. The goal of a modern organization is that all business processes are viewed as processes of knowledge. This includes the starting point for knowledge creation (Creation), the conquest of knowledge (Capture), storage of knowledge (Storing), knowledge sharing (sharing) and knowledge application (Application) in a manner that will contribute to the added value to the organization.

As a strategic view of knowledge management, which considers the union between technology and human factors as a basis for survival in the changing environment, says the definition of Dr. Y. Malhotra (Malhotra, 1997) at which knowledge management is defined as follows: "Knowledge management includes the most important critical issues of organizational adaptation, survival and competence in meeting all the faster growing and changing business environment. In essence, knowledge management is the embodiment of organizational processes that seek synergy and combination of data and information that increase the capacity of information technologies and the potential to innovate and create human capacity, "This is the concept of the collective knowledge of an organization whose ultimate goal is the effective application of knowledge in situations in which decisions are decisions. It should be emphasized that this knowledge should be available with really little effort, and that can be applied. The concept of knowledge management is, therefore, "the ability to be a relatively short time to get information that will allow everyone in the organization to make the best decision, whether the market conditions, product, service, process, planned activities of competitors or other information important to the success of the company. In short, knowledge management is the process through which organizations generate value of their intellectual property based on knowledge.

A study of knowledge management, inevitably leads to defining and analyzing the factors which influence the effectiveness of knowledge management can definite as positive or negative, as well as enhancing or limiting, as a motivating or not motivated. In this sense, speaking on leadership as a factor in the success of knowledge management, we have witnessed the almost unanimous approval of contemporary writers, theorists and practitioners in this field, that one of the key sites in the constellation takes leadership. Some authors even the very nature of the concept of knowledge management different from other strategic concepts just by passion, courage and confidence of leaders of knowledge (knowledge leader), to call them. Given the complexity of the modern business environment, globalization, rapid and continuous development of technology, knowledge workers as carriers of innovative and creative process, just as knowledge based

competitive advantage of organizations, we can conclude that the role, capacity and responsibility of leaders is crucial for business contemporary organizations.

THE ROLE AND IMPORTANCE OF THE LEADER IN KNOWLEDGE ECONOMY

An organization that has at its center implemented a program of management skills and fighting for his competitive advantage in an environment of knowledge economy has its own characteristics and specific features that require specific, to the knowledge-oriented leaders or, as we have already named, leadership skills. These leaders are facing a very difficult task is necessary to manage the organization with the following characteristics: priority is the flow of knowledge, the relationship with the customer service is no longer one way, it becomes a partnership that creates a common solution in which the two-way flow of knowledge, an employee whose daily life involves program management knowledge and technical know more about the bottom line, have a better feel for the market and are closer to customers than their employers, most productive factor of such organizations, employees or creative knowledge workers, work best in creative chaos under conditions in which the organizational hierarchy is irrelevant; the primary driving force organization is to control the flow of information and it is subordinate to the Internet and internal network, the basic principles of knowledge sharing among employees is a trust, the office does not represent a symbol of power and importance of informal communication to maximum stresses. (Lončarević et al., 2007)

The questions are what is the role of leaders in this organization of knowledge and what characteristics should a leader to lead the organization towards achieving competitive advantage in the knowledge economy.

As a prelude to our more detailed consideration of the characteristics and skills that a leader should possess the knowledge, we present the results of 11th Annual Global CEO Survey 2008, Price Waterhouse Coopers on competition and cooperation (Compete & Collaborate). What is success in a connected world)? How important to be us to illustrate the success of the company leaders in modern business. The goal of this study was to investigate how CEOs of successful companies see the business environment in which to work. The survey was conducted among 1150 executives (CEO) in 50 countries between September and November 2007 year. (Boljanović, 2008)

We will consider two particular issues, in our opinion, relevant to the subject of this paper. The question: Which of the available skills and characteristics you think are the key to your organization? More than 80% of respondents opted for eight of the ten skills offered. Very high percentages have opted for the ability to adapt to internal and external changes, leadership ability and leadership of others and ability to cooperate. Research results can be seen in Figure 1. (Cavaleri et al., 2005)

Question: "Do you have difficulty to recruit staff with the following skills and characteristics?" Of the executive directors were asked to identify skills that are most difficult to find the employees. Over 60% of respondents believe that the traits that is most difficult to find in employees: a combination of technical and business skills, global experience and capability for development and leadership of others and skills for creativity and innovation (Figure 2). (Cavaleri et al., 2005)

The results of this study we show, on the one hand, what is, in fact, the importance of leadership in the knowledge economy, and, on the other hand, how hard it is to find leaders with appropriate skills that enable him to lead the organization in the right direction - toward achieving and maintaining competitive advantage in the knowledge economy.

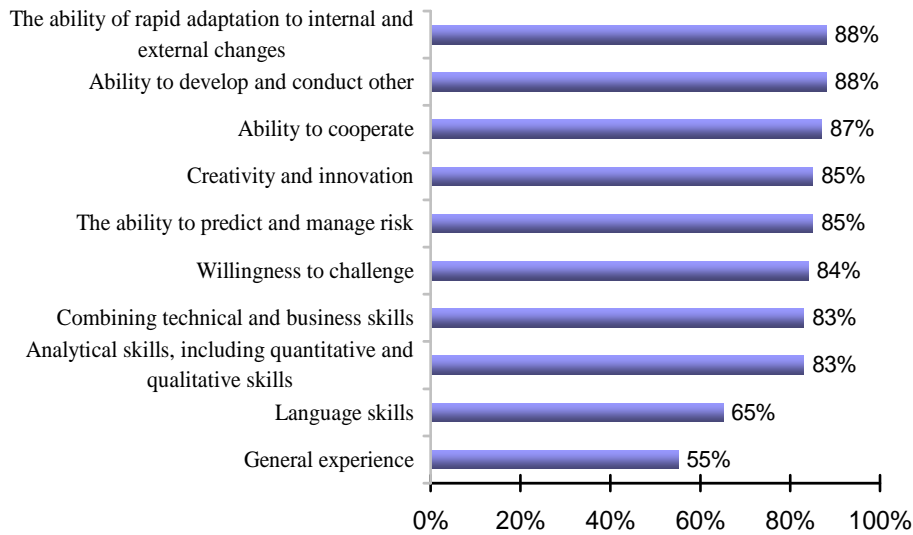


Figure 1: Key skills for the organization (Question: Which of the available skills and characteristics you think are the key to your organization?)

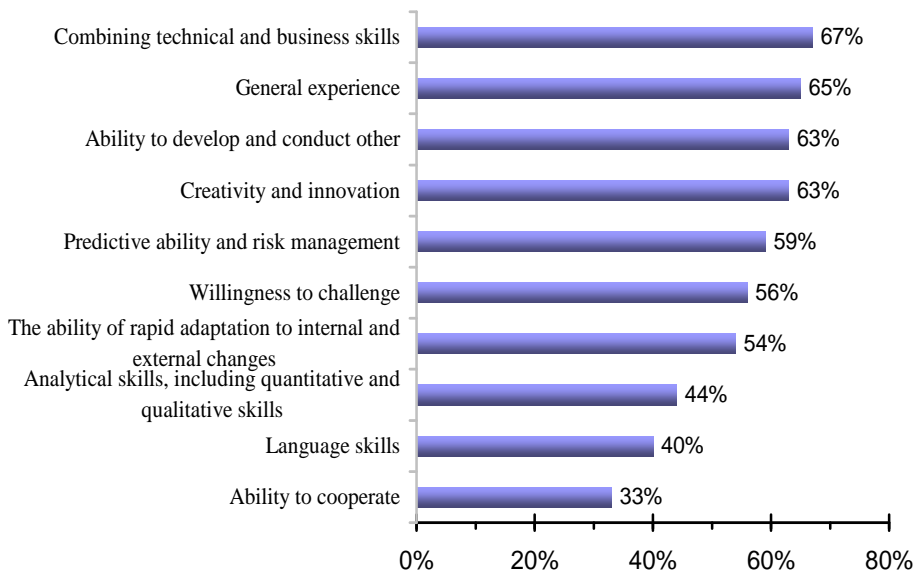


Figure 2: Characteristics of the most difficult to find in the recruitment process (Question: Do you have difficulty to recruit staff with the following skills and characteristics?)

IMPACT OF LEADERSHIP PROGRAM MANAGEMENT SKILLS AND ACHIEVE COMPETITIVE ADVANTAGE

In the words of the famous M. Porter is a potential source of competitive advantage can be found everywhere in the organization. To reach the potential of identifying an organization to achieve competitive advantage, it is analyze each of the components so value chain: five primary (input logistics, production, output logistics, marketing and sales, service and after-sales service) and four secondary activities to support the creation of value (the infrastructure of the organization, personnel management, technology development and procurement). All these activities are undertaken with the aim of creating a bridge between strategy formulation and implementation to.

Chain model of knowledge will enable us to further analyze the status and impact of leadership on the success of knowledge management. The basic premise of the model is that the organization's ability to learn and the success of its projects, a very important component of organizational

success and achieving competitive advantage. Primary activities in the model of value chain activities that are common to the entire organization and which fall under the responsibilities of the knowledge. The five primary activities include:

1. The acquisition of knowledge (knowledge from external sources and undertaking activities that knowledge to become eligible for future use)
2. Selection of knowledge (selection of the required knowledge from internal resources and taking actions that knowledge to make eligible for future use)
3. The creation of knowledge (knowledge creation and discovery of acquiring new or existing knowledge),
4. Internalization of knowledge (updating of organizational sources of knowledge distribution and storing acquired, selected, or knowledge creation) and
5. Outsourcing of Knowledge (embedding knowledge into organizational outputs for release into the environment of knowledge).

In addition to the primary, there are four secondary activities in the model chain knowledge that support the primary activities. Secondary activities include:

1. Leadership skills (establishing conditions that enable and facilitate the beneficial activities of Knowledge Management)
2. Coordination knowledge (managing interdependent knowledge management activities to ensure the right processes and resources at the right time),
3. Control knowledge (ensuring that the necessary processes and knowledge resources are available in sufficient quantity and quality to ensure the set requirements) and
4. Measuring knowledge (assessment value of knowledge resources, knowledge processors, and their development).

An example of successful companies and corporate leaders, authors Cavaleri and Sharon, according to the characteristics of leadership and its connection with the management of knowledge. According to the author, corporate leaders such as 3M, Best Buy, BMW, BP Amoco, Canon, Fuji Xerox, Hewlett Packard, Intel, Nokia, Siemens, Royal Dutch Shell, Sony, Toyota, Unilever and Xerox, routinely speak of the importance knowledge for their success in the long run. Some of these companies, like 3M, Toyota and Xerox, have become little more than companies that use knowledge management. These companies have transformed themselves into knowledge-based organizations (KBO - Knowledge Based Organizations). Leaders need skills to integrate knowledge management with the development of knowledge (knowledge development) and to be sure that knowledge is embedded in activities, management system and infrastructure of the organization. (Shockley, 2000)

Successful leadership is focused on knowledge, but in terms of its utilization to provide additional value to the organization, giving very positive results in practice, which is usually reflected in increasing productivity and agility of the company, enhancing innovation, improving the reputation, improve employee creativity and strengthen their morality. Each of these results is very important for the organization.

We conclude that knowledge management is a major challenge to contemporary leaders. Almost in the literature that there is absolute agreement that theorist's efficiency and success of knowledge management depends primarily on the attitude of leaders on this issue. In fact, chances are that if company leaders do not see the importance of knowledge management, as well as potential benefits for the organization, the program will be doomed to failure. In today's business environment, knowledge and learning are becoming an integral part of leadership, and impact of leadership on the implementation of knowledge management is very large.

Leadership and knowledge management in the Coca-Cola

Effective research means that we can make change for customers at a much broader level than our everyday practice often allows. Coca-Cola is a successful multinational company with operations

in almost every country in the world. The management company has developed processes and structures that enable this effective performance. One key element of success is decentralization, which creates an environment in which managers are given responsibility and the results achieved recognizable success. Also, a large independent business areas and divisions mean that mid-level management has section expertise. Policy of appointing knowledge management wherever possible also help the company best adapted to local conditions. On the basis of this decentralized structure is the principle that people are coming closer to the problem solution. This idea is based on the Coca Cola culture. The downside of this decentralized structure and culture, however, the fact that there are few formal mechanisms for knowledge management and knowledge sharing within the company. Power of multinational corporations over small businesses is the knowledge of every part of the business has developed over time, which may be of use to others in the organization. However, multinational companies and is usually difficult to manage knowledge internally. This is no less the case in Coca Cola. From the research I found that there are few formal mechanisms for knowledge management. The main tools used in Coca Cola are the Intranet, and criticism / evaluation of business meetings, and informal networks. However, my initial assessment is that all these together do not provide an optimal knowledge management.

CONCLUSION

Leadership is undoubtedly an important factor influencing the effectiveness of knowledge management. The conclusion to be drawn from the research relates to the statement that leadership is an important factor influencing the effectiveness of knowledge management. Not only that 35% of respondents in our study to consider, but other results indicate that employees in their leaders see momentum and support for all kinds of changes, including the introduction of knowledge management. The success of the implementation of the program knowledge is required so. Leader knowledge (knowledge leaders), that is. Leader of character, skills, knowledge and energy, directs the organization towards a successful knowledge management program. Such a leader should be turned to knowledge and knowledge sharing, teamwork, innovation and creativity, strengthen confidence among employees and their constant improvement and development. What are especially encouraging are the results of research in which the Serbian companies can identify these characteristics.

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SERBIAN NATIONAL BRAND

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ABSTRACT

This paper is about branding, importance of branding as national issue. Serbia has the products for which it is recognizable in the world, and renewing the production of some long ago forgotten traditional products is possibility for creating new brands. Serbia national brand is a multidimensional brand and includes certain categories of value, for example: high quality products and services, high quality of life, business dynamics, creativity, innovation, entrepreneurship and the like

Key words: brands, Serbia, products, image, strategy

INTRODUCTION

As a result of growing accumulation of products around the world, each of which sought to be recognized, the process of branding has become more important and more challenging than ever before. It is quite clear that the brand of Serbia in deep crisis, but what has to be done to overcome the crisis? The problem is that there is no national strategy policy, of Serbia, which would give general guidelines for development and clarify himself and the world what we want. Serbia has a lot of potential, but the problem is that it does not recognize them.

Product branding for export is transformation of the product into brand, in one image in the mind of consumers, promise that the product will meet the expectations of that consumers. Milosevic, war, the Kosovo issue- strongly negative images associated with Serbia since the 1990s. Until recently, Serbia has been regarded as an unsafe destination or associated with wars, international economic sanctions and poverty. Today, the country's image has not improved much. A better image requires time, and – even more important – requires a clear strategy and clear goals. That strategy is called Serbian National Brand.

BRAND AND BRANDING

An effective brand strategy provides a great advantage in a highly competitive markets. What exactly does "branding" mean? Simply put, brand is a promise to customer. It tells them what they can expect from products and services, and what is that distinguishes a product or service from competitors.

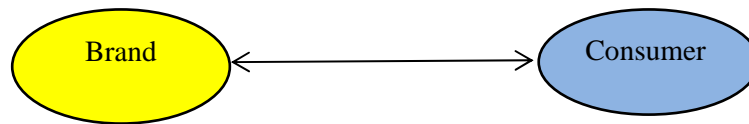


Figure 1: Brand relationship (Source: <http://marketing-pr.fon.rs/predmet/8>)

Modern literature and business practice shows that brand creates a long, persistent, patient and dedicated work on their own offer. Building a brand starts with understanding the key attributes of your products and services as well as understanding and anticipating the needs of your customers. Brand identity is a strategic objective which has to be achieved. For the realization of a brand identity is necessary to properly define all elements of the brand (name, logo, design, personality, voice and message) with which brand communicates with consumers.

The American Marketing Association defines a brand as a "Name, term, design, symbol, or any other feature that identifies one seller's good or service as distinct from those of other sellers." (American Marketing Association Dictionary. Retrieved 2011-06-29. The Marketing Accountability Standards Board (MASB) endorses this definition as part of its ongoing Common Language: Marketing Activities and Metrics Project) It is defined by a perception, good or bad, that your customers or prospects have about you.

According to many experts name is the most important element of brand. Name of brands are usually made up of words, letters and numbers. For example, *Coca Cola* is the name of a brand make by a particular company. The logo is a certain form of letters and the sign or symbol that indicates the brand-for example Mercedes three-pointed star. Unlike name of brand that represents the element that is positioned in the human consciousness, the logo is the element that consumers notice the eyes. He visually identifies and differentiates what brand represents. The Nike brand name is known throughout the world, people can identify the name and logo even if they have never bought any of their products. Under design, most often we mean a choice of colors, vignettes and drawings. The goal of design is to connect consumers with the brand, regardless of whether the subject is a brand company, employees, product or service. The brand has to be likable.

There are brands that are known, recognized and respected worldwide. This brands is the hardest to build. Require a large investment of money and the ability of companies to the individual market segments differentiate their strategies. Examples of the most successful brands, which must be followed, definitely are Coca Cola, Pepsi, Nike, Adidas, Johnson and Johnson, Nivea, Mercedes, IBM, McDonald's, Microsoft, Nokia, Sony, Honda... Most of these brands have a long history, a different approach to customers, different goals, but all of them characterized recognition around the world.

Brand is the most important assets of a company and its greatest value. Having a prestigious brand and loyal customers is the goal of which tend all participants in market. Brand is a very useful marketing tool which is, in the modern business environment, significant source of the competitive advantage.

SERBIAN NATIONAL BRAND

Our brands have a lot of barriers and one of the biggest is a bad image of Serbia in the world. Only when we improve the image of our country in the world, our brands can expect to expand into international market.

In the huge competition of branded products, around the world, producers and processors see an interest in putting on the market the most quality products, particularly products with "higher quality". Higher quality means that the basic quality is reached, one of the strongest arguments in each placement and competition. Products "higher quality" are those with "protected name of origin", "protected geographical indication" and "guaranteed traditional products."

Nowdays it is very popular method called geographical protected product origin. A Geographical Indication is a sign used on a product to denote its origin where a specific quality, characteristic or reputation of the product is essentially attributable to that origin. (source: <http://aces.nmsu.edu/pubs/research/horticulture/ctf21.pdf>)

Only product form Serbia, which has international protection geographical origin is Homolj's honey, 40 products with this label are protected only on national level. Products (natural, agricultural, industrial, and homemade products and services) which are protected by level of geographical origin are those with special quality and characteristics, on market they can achieve higher price than those products with no label of that kind. Protected product associates on particular country, wines and cheeses as synonymous for France, watches for Switzerland and chocolate for Belgium. Serbian national protected products are Užice's proscuitto and bacon, Arilje's raspberries, caviar from Kladovo, fresh and pickled cabbage from Futog, cheese from Srdjig and Stara Planina, Rtanj tea, mineral waters „Knjaz Miloš“, „Vrnjci“, „Akva Heba“ and „Duboka“, wines „Banatski rizling“, „Muskat krokan“, „Ružica“, „Karlovački rizling“, „Bermet“ and beers „Šampion“, „Jelen“, carpets from Pirot, and clothes made of wool from Sirogojno“. (source: <http://glassrbije.org/privreda/srpski-brendovi>)

Strategy called Serbian National Brand

Specifically, the national brand includes: individual production and service brands, social institutions, government, culture, sports, art, natural beauty; events, festivals, events, people, customs and morals, national cuisine, architecture, artistic creativity, cultural and historical monuments and many other things which makes Serbia a unique or different..

Pillars of Serbia brand



Economic resources, brands, Government and politics, Investment and Immigration, People - culture, education, science, sport, Nature and Tourism. National brand is essentially an umbrella brand and whose development based the following columns (source: <http://www.srbijabrend.gov.rs/index.php?id=963>):

- Economic resources (key sectors of the economy, new technologies, business and technology solutions and processes, innovation, mineral resources, energy, transport)
- Brands (manufacturing, service, corporate, institutional brands)
- Public administration and policy (institutions, quality and coverage of national policies, implementation of policies and strategies, reforms, global communication and cooperation, the capacity of public administration and public sector, communications, public relations, cooperation with private and NGO sector, development of social institutions)
- Investment and immigration (the environment for attracting investments, the effects achieved on the national economy, trade agreements and arrangements, the setting for highly educated personnel, the conditions for living and working in Serbia) society, government, culture, sports, arts

- People - culture, education, science, sport (the mentality and value system of people, tradition, heritage, culture, science, education, art, sports, media, monuments, architecture, national cuisine)
- Tourism and nature (tourism offers, events, festivals, events, beauty and priordne resources)

The task of implementing the strategy and supporting documents is to provide as much as possible the contribution of all the pillars of effective national brand development and brand positioning of Serbia. Serbia's national brand pillars represent a set of values and resources that make up the identity of Serbia and Serbian influence the perception of the world and contribute to its visibility and positive image.

Brand identity consists of 12 categories divided into four groups (source: <http://www.srbijabrend.gov.rs/index.php?id=964>):

- Brand as a product (scope, attributes, quality, use, users and the country of origin);
- Brand as an institution (attributes, local and global view);
- Brand as a person (personality of the brand, the brand relationship - public)
- Brand as a symbol (visual identity / metaphors and heritage and tradition of the brand).

We have some food products like Smoki, Bananica, Jaffa bisciut, and for them we can say that they are Serbian brands, but here we will tell something about traditional fruits, athletes, mountains, and spas.

Serbian Fruit Brands are raspberry, plum, blackberry, strawberry, cherry (source: http://www.serbia-business.com/index.php?option=com_content&view=article&id=8&Itemid=100). Raspberry - Serbian red gold (source: http://poljopartner.com/poljopartner/index.php?option=com_tag&tag=crveno%20zlato&Itemid=0) - is one of the most important export products, unique in taste color and hardness. Germans sell our raspberries as their owns (source: <http://www.blic.rs/Vesti/Ekonomija/319174/Nemci-prodaju-nase-maline-kao-svoje>). Raspberries from Serbia arrive in large quantities in Germany, but they are not recognized as Serbian by local consumers, but as their homeland. We send the raspberries in bulk, Germans just pack that and put stick „Made in Germany“, that means that those raspberries are their own brand. Our product is unrecognizable, because of the bad image of Serbia, products of Serbia, and thinking that impacts on sales. Apples from Cac ak have same problem in Germany. Country needs to improve her image, must provide cheaper logistics, so we can package products and sell them at higher price. We hadn't protected our products on time as Greece did with olive oil. Country needs to stimulate raspberries production and purchase equipment for their cultivation and storage.

Serbian raspberry is cheaper than the Italian, Russian, Polish because there is no strategy in manufacturing although Serbian raspberries from Arilje, worldwide, are synonymous for quality, If the results confirm that raspberries have cytostatic effects in addition to the known therapeutic, Serbia has a chance to increase its foreign exchange reserves, and to raise the competitiveness on the higher level.

Plums are considered one of Serbia's most traditional fruits, however Germany protected production of plum brandy, Bulgaria production of plum. Result of that protection is that our plum rots, exploits in the cheap low-quality brandy, even if smaller farms could with the production of plum, prune and plum products make a decent profit.

Athletes have historically been the best export. Novak Djokovic, Jelena Jankovic, and Ana Ivanovic, Dejan Stankovic and the national team's soccer players scattered around Europe bring recognition of this small country as a pool of talent.

Novak Djokovic is the best personal brand in the promotion function of Serbia. In 2011 he was awarded as the best sportsman in the world. He is proud to be Serb and he always points it out. Serbia haven't used that at all till now.

The Exit music festival in Novi Sad, one of Europe's most appreciated music festivals (some people say best European festival), has become a trademark that benefits both Vojvodina's regional government and Serbia. The Guca trumpet festival the number of visitors increases with each coming year. Guča has earned its place on the map of world music festival. Guča is a place of catharsis of the heart and soul while the festival lasts.(source: http://en.wikipedia.org/wiki/Gu%C4%8Da_Trumpet_Festival) Serbia has a lot of cultural events, such as BITEF, Nishville Jaz Festival, they contribute in great deal in building a better image of our country.

Mountain tourism has enormous potential in Serbia, especially in the sports fields (winter sports).(source: <http://www.visitserbia.org/Planine-Srbije-32-9-2>) The most developed and visited mountains in Serbia are Kopaonik, Zlatibor, Tara, Stara Planina, Divčibare. Kopaonik and Tara are the National Parks.

Serbian spas have a very rich history, known already from Roman time (Vrnjaska spa, Nishka spa, Zvonachka spa, the region of Voivodina).(source: <http://www.srbija-banje.com/en/>) Spas in Serbia have a long tradition. The wealth of this country is the variety of its mineral, thermal and thermomineral springs. In this moment, the most popular spas are Vrnjačka banja and Sokobanja. Our spas have great potential to become the world one day But it is first necessary for the state to assist spas, to renovate parks, existing capacities, to create new facilities, medical centers, swimming pools, tennis courts, aqua parks, etc.

CONCLUSION

Work has mostly focused on changing Serbia's image at the national level. Diplomatic circles no longer regard Serbia as a politically unstable state, but rather as a country “guaranteeing stability in the Balkans”.(source: <http://www.balcanicaucaso.org/eng/Regions-and-countries/Serbia/Serbia-Creating-a-brand>) This crucial step has not been further developed. Serbian companies have not enough strong marketing for selling goods in large quantities., they have to strengthen the distribution network and efforts to consumers. Serbia ought to make a clear strategy and mechanisms to protect her companies and products so they can serve a large markets. Country and government and influential figures have to realize that branding and brands are very important in the modern business. Brands have influence on flow of investments, on faster economic development, on increase of export, on quality of products and services, attracting of tourist, better market position of domestic brands, on higher employment, and on development of rural areas.

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THE IMPROTANCE OF LEADERSHIP WITHIN MANAGEMENT SYSTEMS IN HEALTH CARE ESTABLISHMENTS

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ABSTRACT

As one of the main elements of management systems, leadership has taken a side position compared to the rest, even though it has a great and truly meaningful presence within management itself. Many organizations have implemented management systems within their own workplace. But, some of them seem not to have recognized the value of leadership to its fullest potential. This paper focuses on management in health care establishments. We have tried to learn, how management systems have helped improve efficiency, and if there were any negative results in communication between coordinators and medical personnel. This paper is not a critic on the management systems these establishments have implied, but merely a different point of view which can offer new solutions to problems at hand; as it is in the spirit of management, the idea of continuous improvement.

Key words: leadership, management systems in health care, management, continues improvement

INTRODUCTION

It is necessary to first determine the difference between the appearance of leaders and managers. First, the characteristics of leaders are very important and specific. The personality of leaders is bound to create the basic purpose or mission of the organization, and defining strategies for implementation. While the manager more focused on implementing solutions that were created, as well as implementation oriented strategy and its goals. This being the main theory of Kotter (Kotter et al., 1996).

UNDERSTANDING WHAT IS A LEADER AND WHAT IS A MENAGER

It is necessary to determine the very notion of leadership. According to Mr. Milos Jevtic (Jevtić et al., 2007), 'Leadership is the process by which a leader influences the change in attitudes and behavior of his subordinates, using an influence technique that differs from the classical relationship between workers and managers'. We can determine that leadership itself is in a completely different dimension than the other management processes. However, leadership is firmly based on management, because management is the very foundation of leadership and its practices which forms the need to explain poor results and failures, where leadership comes to the scene. Therefore we must not consider leadership and management as two different concepts, but not quite the same either.

Inevitable assumption, which derives from this conclusion, is extremely important skills for working with people of managers in organizations that want to emerge as a leader. Modern

business management in general and the specific nature of management in health care proves to be a difficult challenge. Now we ask the question, what are the right skills needed to help deal with people in such business conditions in order for the manager to gain the role of leader? The answer to this question may be crucial for the successful implementation of management in health care establishments.

A rough classification of leadership styles is the authoritarian, liberal and democratic. Theoretically, we get the best results when applying a combination of all three styles. While monitoring the organizational structure in some health facilities, we were able to perceive that the ratio of managers to employees is based on a combination of liberal and autocratic style of leadership. Decision making and goal setting are the sole responsibilities of top management. Employee's role in these activities is extremely small, almost imperceptible share. In spite of this, employees do have an influence in the decision making process, as well as in everyday existence, fulfilling the mission of the organization. In this particular situation, the leader has an easier job; since liberal leadership style can be achieved only in organizations where employees are fully identified with the organization, as is the case here.

THE ROLES OF LEADERS AND MANAGERS

According to classical theory, the roles of management are: planning, organizing, command, coordination and control. Over time a newly accepted view was formed in which roles are: planning, organization, personnel policies, guidance and control.

But what do we mean by roles? Roles are expected behaviors and activities that are appropriate for any particular position. But, the problem is that this is expected behavior and can be relatively depend on the individual's thinking. Anyone in a position of management may have their own perception, which is correct according to the individual's personal scale of values.

According to Davidson and Blomstrom, there are six roles that management needs to meet: Regulator – others create his behavior while he affects the behavior of others; Innovator - a person who adapts better and faster than the competition; The productive catalyst – one who meets the demands in order to increase efficiency (faster, better and more efficiently); Authorized guardian - the person responsible for quality in use of resources; Mediator - the balance of employees, managers and the ambient; and The leader - one who motivates.

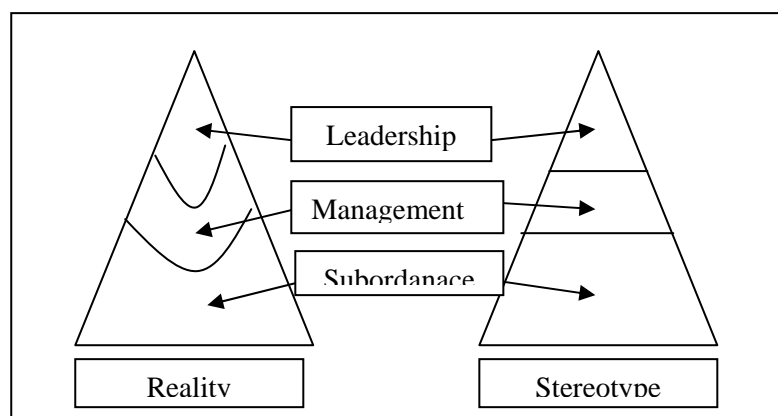


Figure 1: reality and stereotype in organizational hierarchy

While, according to Mintzberg, there are three categories of roles: 1. Interpersonal (figures, leaders, links) 2. Decisional (entrepreneur, the conciliator and negotiator) and 3. Information (monitor and Representative). Although these settings occur at different times, they are linked to by head and position within the organization. Of the activities and roles related to the organizational top and still be treated as incorporative segments of leadership. This leads to the conclusion that leadership and management in practice complement each other.

The mere expansion of the concept of leadership leads to the necessity of separating the leader's activities from management activities, as well as the adjustment of these activities in certain areas. But, we must accept that management is only part of the implementation of leadership because leadership has its application in the process of connecting direction and inspiration of people's goals.

CHARACTERISTICS AND SKILLS OF LEADERS

During the years, numerous studies were conducted to determine whether great leaders have innate abilities and characteristics that make them "natural leaders". Due to the large variety of properties, it was found that effective leaders are not born but created. The research was mainly based on determining the characteristics of those who are leaders and then comparing them to those who are not. Table 1 gives an overview of characteristics and skills that Stogdil found in his studies.

Table 1: Characteristics and skills that leaders possess

Characteristics	Skills
adaptability to situations	intelligence
openness to social environment	conceptual skills
ambition, success oriented	creativity
Acuteness	tact and consideration
Cooperation	eloquence
Determination	expertise
drive, arduousness	organizational skills
Dominance	power of persuasion
Persistence	
Confidence	
willingness to accept responsibility	
resistance to stress	

Speaking of skills for dealing with people, which are important for leaders, among these the following: skills to motivate and direct the struggle against pessimism, ability to increase confidence, the ability to build trust among employees, the right attitude towards mistakes and etc. When we add to this list the characteristics of leaders such as strong will, perseverance, initiative, aggressiveness, ambition, integrity, charisma, confidence and knowledge with expertise; we get a true leader. Of course, there is no evidence that there is such a thing as universal characteristics of leaders. Nevertheless, the features and capabilities of leaders and their behavior in specific situations in practice are the most critical categories that impact followers, and condition the behavior of most employees and their attitude towards work, and therefore the results of the organization.

Ability follower motivation - the motivation of followers is one of the most important parts of leadership. But how does the process of motivation in management of medical institutions differs from the classical management we find in literature? From the surveys of employees we have conducted in health care establishments, we have come to the conclusion that 90% of respondents believe in the positive effect of motivating them, like rewards and advancement. This fact is really helpful for managers. Also 90% of respondents believe that motivation is very important in the process of implementing change. If we look at the current state of these establishments, and the opinion of employees in these organizations, with certainty affirm the importance of positive motivation, and the similarity between the management of medical facilities and the classical form of management. What does this mean for a potential leader? To maintain this trend, the leader must take into account the particular motives of followers. One way to learn and follow the motives of his followers is to find out how many people in his environment have clear goals.

The main goal is to motivate, and if the goals of the followers agree with the objectives of the organization, we would have employees who are motivated to achieve organizational goals. When formulating the objectives, reality should be taken into account. According to one study, only 7% of people have clear goals and try to implement them, and most important of these are related to life and career. For an organized social group to become whole and make significant progress, leaders are required! However outdated models, beliefs and attitudes do not lead to achieving goals. Turbulence of the contemporary environment makes it necessary to leave the "comfort zone" and go through changes. At this point we come to yet another formal skill of leaders - building confidence in followers. Leadership role in fostering self-esteem of employees is extremely high, especially because leaders typically those with already constructed and expressed confidence, can successfully convey that attitude to others. If a leader notices that the employee has low confidence, it is their job to help the employee to discover their hidden potential and to use it to its maximum.

Although small, a number of respondents 10% pointed to a very dangerous phenomenon - pessimism. Pessimism is essentially a passive attitude towards everything that is happening in the environment. Today, people easily lose their faith that they can be better, and then confidence. If allowed to dominate the workplace; resentment, frustration, anxiety, the manager will soon makes it difficult for the manager to motivate anyone. To cope with the pessimism, the leader must primarily to keep the focus on positive thinking and try as much as possible to transfer this to his associates.

One of the prominent dilemmas any manager has to face is whether the employee, in case of failure, has to be punished or forgiven. Considering the human factor, it is clear that errors happen. For best results, the leader recognizes that improper types of employees should be punished, and those with conscience should be forgiven. In medicine, conscientiousness of special importance and this makes it more difficult for the employees. Consequences of malpractice in this case can be fatal. Those who go into medicine have same interests, to help others. It is a part of their personality, a part of who they are. They are conscientiousness and faithful.

Creating positive interpersonal relationships with employees and good working conditions can only result in primarily increasing efficiency, and then raising the satisfaction of employees.

LEADER BEHAVIOUR

The first survey was conducted at the University of Ohio, which found two broad categories of leadership behavior, noted that the responses were dependent on the factors (tasks were either directed to activities or the human relations): 1. *Considerate behavior*: friendly behavior towards subordinates, gives support, shows concern, cares about the satisfaction of employees and so on. 2. *Structured behavior*: leader defines and coordinates the activities of his subordinates in order to achieve the goals of formal groups.

At the same time studies were conducted on the same topic, but this time at the University of Michigan. The results showed three types of behavior, as independent variable categories:

1. Behavior oriented to tasks
2. Behavior oriented to relationship
3. Participative management.

CHANGES WITHIN THE ORGANIZATION

In health care institutions of Serbia, primarily in hospitals, in recent years has begun the introduction of resource management, to support the administration. The positions of manager were filled with people who have some knowledge of this science. The assumption is that it is precisely this knowledge that should enable them to successfully work, however in some facilities; there have been some disagreements on the need for this type of organizational change. Disagreements

are usually associated with resistance to changes that occurred with the employees, especially those of medical profiles.

Resistance to change is an ordinary reaction to anything new. Since managers are expected to manage the resistance in the right way and to facilitate the adjustment process of employees to the change. From the survey we conducted, we found that it is not just the event itself that's the problem, but to the employees concerned the reaction of patients to which these changes are largely related to.

Also, we would like to note that in recent years private and state universities have a new study-program - health care management. In addition to academic education, there are various training programs, in order to better meet the needs of this profile. In the future, this could prevent the problem we have referred to in the paragraph above.

MANAGERS AND LEADERS IN HEALTH CARE INSTITUTIONS AND THEIR ROLE

Developing and improving the quality of operations, as in all other spheres as well as in everyday healthcare attracts more attention. Unlike traditional management, which is characterized by an analytical approach, contemporary management is characterized by a synthetic approach, and transdisciplinary problem solving.

In contrast to previous division of health to medical and non medical staff, at the present time in these institutions in order to achieve a common approach to planning. Of course, this is not easy to come across because in certain cases these two spheres differ, but needed to be worked on. In health care facilities there are not enough medical staff to have knowledge only in medicine but also knowledge of management and vice versa, the management representatives in these institutions acquire the necessary knowledge in developing, establishing and functioning of health systems.

In addition to health care managers must be leaders and must have a vision, they must be innovative, flexible, they must respect the knowledge and experience of staff at all levels of health institutions, must promote teamwork and communication between departments and agencies, and must reward teams and staff for quality work. Also, it is necessary that the manager observes what is it in the current business that could apply to be the best way to respond to customer requests, in this case patients. This gives patients the highest level of professional care, ie. successful treatment.

THE SURVEY RESULTS

During the research we have conducted, a survey and interviews of medical and nonmedical staff of two health institutions in Serbia-General Hospital "Đorđe Joanović" in Zrenjanin and Subotica General Hospital. The aim of our study was to observe the problems (if any) in the employees and their attitudes towards today's increasingly popular management systems in these institutions.

We asked the employees how familiar are they with the concept of leadership and managers in these institutions, and if they think the role of their leaders was the same. From the results of non medical personal conducted in Subotica, we found that about 50% has no clear understanding of the roles of both, the leader and manger. Or in many cases, their thoughts do not differ when comparing the two. Mostly, the role of manger consists of coordination and promotion, while the leader is generally thought of as a director. Another interesting fact is that the medical personal had more of an understanding of the roles and responsibilities of managers and leaders. And through informal conversation, we could sense that the medical personal were very open to the idea of a manager with leadership skills, clamming that someone like that would be really beneficial to the Hospital.

CONCLUSION

After completing the analysis of surveys and interviews we have conducted, we have asked the question "How and where to find a solution to this situation?" With the exception of the social factor and a negative trait of our nation, the (admittedly) very low threshold of tolerance, how to find solutions in which the medical and non medical staff able to work in harmony. The attitude that occurs in some "I know best what to do, and nobody will tell me how my job should be done" is not acceptable in a time of change that has already begun and that is still ahead. The differences must be overcome, and it is necessary to increase the level of communication between managers, leaders and medical staff. If the institution is able, additional training of staff members should be done. This will help both parties become more familiar with the duties of each other, and thus opens the door to a better future of business.

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IMPACT OF THE QUALITY ON LEVEL OF COMPETITIVENESS OF COMPANIES IN SERBIA

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ABSTRACT

This paper analyzes the significance of the current approach to managing organizations. Today's business is characterized by more dynamic and frequent changes which impose constantly advancing and improving. Emphasis is placed on the application of quality systems to achieve business excellence and competitiveness in the modern economy. Quality as a measure of business performance determines the significance of a particular company's business, because the way the application of quality standards is dictated market position. Companies that satisfies the requirements of ISO 9001 have a much better chance to strengthen their competitive position in the global market and to occupy a stable market position in their country with prospects for further market growth. Also monitoring of technological changes is required with the application of quality standards.

Key words: quality, ISO 9001, competitiveness, Serbia.

INTRODUCTION

In many organizations because of pursuit of certificates which represent a confirmation for the invested efforts, neglecting the basic functions of quality, and that is to improvement. The quality of the companies is like a condition for increasing competitiveness. During the last twenty years there are new conditions of bussines which indicate that changing competitive retations is a major feature of modern markets.

Modern business is characterized by globalization of markets, the speed of many changes, the rapid rate of technological change, development of technology and informatics. Companies have to invest in the way of leading and organizing the business to adapt to the challenges and trends in the market, therefore brought their competitive position to the highest level. Customers or users can opt for products and services at lower cost with generally larger amounts or over a specific product features or price. In terms of global markets , the key is to achieve optimal price-quality relationship, based on the continuous improvement of business productivity (Djordjevic and Cockalo, 2004, p. 18). The price of the product under conditions of free competition at most companies dictate the market leaders with a significant impact volume demand. Due to the existence of such conditions, to increase the competitiveness of the lower operating costs, while with them and lowers the cost per unit of product, ie. services.

If someone expects success in a harsh business world he must understand that innovation and new knowledge are essential driving forces in the history of economical development. Innovation and productivity are the main leverage in the struggle for competitiveness, and improving knowledge is imperative to achieve long-term competitive ability.

Improving knowledge directly affects on the productivity improvements and business, which affects the quality improvement business, which that results in a better competitive ability (Djordjevic et al., 2011, p. 6) . As companies become more aware of their own intellectual capital, so their management requires constant supervision.

Improving the knowledge is certainly a issue for most countries in transition, including the domestic economy. The new conditions in our country creates the need for new business strategies. To be called as a developed country, it must have at least 20% of highly educated people (Vujadinovic, 2011). In Serbia, budget is allocated on 3.5% for the entire educational system, and it is estimated that only 0.7% dedicated to higher education.

To create a well educated workforce, it is need highly educate bring to the next level. Emphasis should be put in the field of quality management that would be committing an opportunity to gain a greater extent and improve knowledge in these areas, which will result in people who would be willing to raise Competitiveness not only your company but also their country.

The introduction of standard provide a clear picture of the company, this application really is running faults and strengths. It provides guidance for the advancement of each segment in a particular company.

THE ROLE AND IMPORTANCE OF QUALITY

Quality becomes the main weapon in the fight for a better market productivity and competitiveness in the global market. The possibilities for application of quality are without limit. The quality of the business means management access. The quality of the business involves three dimensions (Djordjevic & Cockalo, 2004, p. 20): market, business and social.

The market aspect of quality: customer satisfaction, convenience for use , market position, competitive advantage. Business aspects of quality include: increase efficiency, reduce costs, increase productivity, increase profits, long-term survival. The social aspect includes: the protection of human health, environmental protection, consumer protection. Excellent company must satisfy all of these aspects of quality business.

Is it not the end of possibilities for application of quality, tells us the existence of standards ISO 9004, then the model of business excellence and the various management models that lead to improvements, which were developed by large international companies to increase opportunities for streamlining operations.

To be competitive, organizations must improve and maintain quality levels. Accordingly, as shown in the first picture organization is the center , connected through the region and the state with the global environment.

The role of quality has different levels of understanding and application. The most prevalent is certainly related to the quality of products and services. Quality assurance is a system of measures which an organization undertakes to provide customer confidence in meeting the demands for quality products and services. A higher level is the existing model of ISO 9001, which in addition to quality assurance, and treats certain aspects of management.

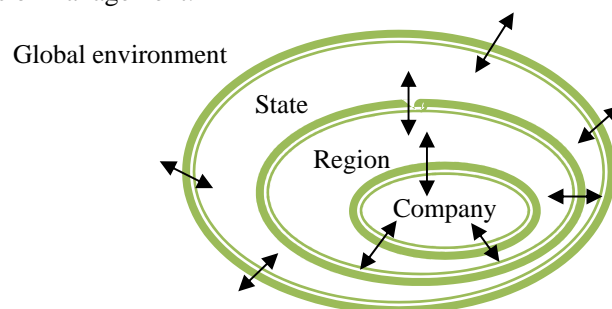


Figure 1: Global aspects of quality (Arsovski and Arsovski, 2010)

Depending on the case studies considered in the model quality is always two-way connection with the higher system. This means that the observed entity effect on a higher system and inversely. The influence of the region indicates the result of state influence over macroeconomic policy and national economic conditions, on which affect the global environment. The influence of the global environment is evident due to the global economic crisis. The global economic crisis has affected too on the behavior modification companies when it comes to maintaining competitiveness (Djordjevic et al., 2011).

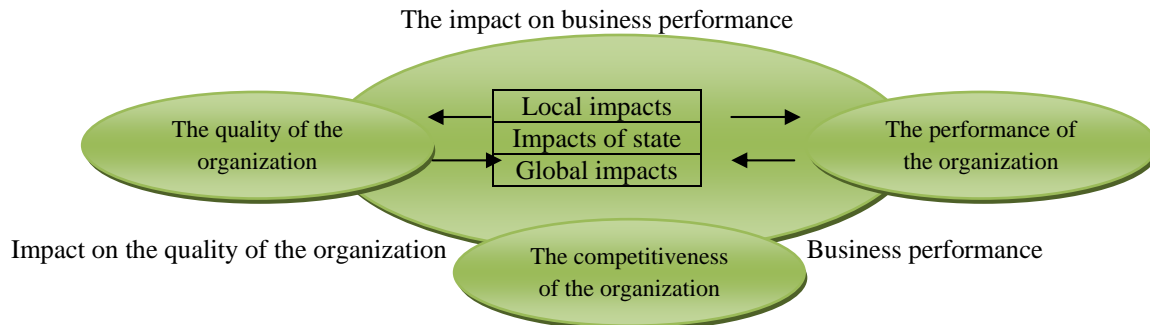


Figure 2: Relationship of quality and competitiveness of the organization (Arsovski and Arsovski, 2010)

The competitiveness of companies is increasingly reflected in the application of quality. The way of business dictate rules whether the competitive position can showed business success of a company which depends on many influences, which explains

The main motive of business quality improvement related to cost reduction. Depending on the type of activities and products, cost structure and production impact on the quality of each type of cost is different. A big umber of organizations that implement standard ISO 9001 makes a higher profit level.

Looking at the quality of one of the gurus of quality F. Crosby, it is considered that the quality is free, because the small cost of prevention will always be lower than the costs of establishing and elimination errors and mistakes cost them selves (Pavlovic, 2006, p. 44). Given that we reduce the cost of quality, we can conclude that the monies would be invested in the debugger can be used to innovate and improve technology, processes, and products themselves. By investing in innovation and improve the ultimate outcome will have a better and more innovative products to market which directly affects the competitiveness of enterprises, as well as the very niche market. Creates the possibility that a company with that kind of work is progressing from the position of the followers to a leader, but also creates conditions to strengthen its leading position in the market.

In today's business it is very important to strive for more competitive positions on the market. A key prerequisite for good positioning in the market is the creation of the brand, its quality will be able to be more competitive. Given that the market position and brand creates a period of time, it should be noted that good product should not be the ultimate goal, but should focus on the its ongoing maintenance. Quality makes a crucial support to create the brand, because the emphasis is on objective indicators of quality and sustainable features and performance of products, as well as the operating system and the relationship with the environment. A positive relationship with the environment is reflected in the confidence of customers, users, business partners, government and society as a whole.

A product whose quality is confirmed by an accredited certification, as well as principles of business excellence, which requires the application of the quality of a company puts in an enviable position in the market compared to its competitors.

RELATIONSHIP QUALITY AND COMPETITIVENESS

The introduction of quality systems is means for achieving competitive advantage, which is the basic assumption of the concept of total quality management (TQM) in industry. The base for increased competitiveness is the implementation of quality systems, according to the requirements of a series of

standards ISO 9000. According to the analysis of Lloyd (research on a sample of 200 firms), firms that have adopted the system of quality achieved 2-3 times better than those who do not. In less developed countries introduced system of quality affected on the realization of significant cost savings and up to 75% (Stanisavljev et al., 2011).

The experience of foreign companies which have introduced a quality system indicate the following advantages (Djordjevic and Djekic, 2001, p 18):

1. Operating costs are lower by 50%,
2. Productivity is increased to 50%,
3. Profit increases of 30-50%.

According to a Competitiveness Report for 2010 year, published by the World Economic Forum (WEF, 2010), Serbia was at the 96 position (table 1). This result indicates on a decrease of three position compared to 2009 year and 11 position compared to 2008 year. Only one solution for increasing the competitive position of our country is the application of standards in an increasing extent. The role of government should put emphasis on encouraging and advising the entire economy on the positive role of standards implementation.

The introduction of quality management systems according to ISO 9000 assumed long-term and planned approach to quality issues, developing and promoting the concept of quality management. It also applies to the application of modern principles and techniques of management. The use of quality management system certainly requires investment funds, which represent an investment character from the point of organizational structure, business operations and strengthen the competitiveness of our companies in the international market.

Table 1: The competitiveness of national economies in transition countries (WEF, 2010)

	2008			2009			2010		
	Level – AC	Level – TC	Index	Level – AC	Level – TC	Indeks	Level – AC	Level – TC	Index
Estonia	32	1	4.67	35	2	4.56	33	1	4.61
Czech Republic	33	2	4.62	31	1	4.67	36	2	4.57
Poland	53	6	4.28	46	4	4.33	39	3	4.51
Slovenia	42	3	4.50	37	3	4.55	45	4	4.42
Lithuania	44	4	4.45	53	6	4.30	47	5	4.38
Montenegro	65	10	4.11	62	8	4.16	49	6	4.36
Hungary	62	9	4.22	58	7	4.22	52	7	4.33
Slovakia	46	5	4.40	47	5	4.31	60	8	4.25
Romania	68	11	4.10	64	9	4.11	67	9	4.16
Latvia	54	7	4.26	68	10	4.06	70	10	4.14
Bulgaria	76	12	4.03	76	12	4.02	71	11	4.13
Croatia	61	8	4.22	72	11	4.03	77	12	4.04
Macedonia	89	14	3.87	84	13	3.95	79	13	4.02
Albania	108	16	3.55	96	15	3.72	88	14	3.94
Serbia	85	13	3.90	93	14	3.77	96	15	3.84
Bosnia i Hercegovina	107	15	3.56	109	16	3.53	102	16	3.70
<i>Average</i>	<i>64.1</i>	<i>8.5</i>	<i>4.17</i>	<i>64.4</i>	<i>8.5</i>	<i>4.14</i>	<i>63.2</i>	<i>8.5</i>	<i>4.21</i>
<i>The median</i>	<i>61.5</i>	<i>8.5</i>	<i>4.22</i>	<i>63.0</i>	<i>8.5</i>	<i>4.14</i>	<i>63.5</i>	<i>8.5</i>	<i>4.21</i>

AC – level of all countries

TC – level of countries in transition

When we talk about the role which the state has in the introduction of quality, it should be mentioned that the National Agency for Regional Development announced a public call for grants for the development of business in accordance with the requirements of international quality standards. From this we can see that the Serbian economy is focused on investing financial resources in an integrated management system, resulting in a need to strengthen the economy and its competitiveness.

When we talk about quality improvement in Serbia also should be mentioned that the agency for certification by TUV SUD is present over 10 years in our country. TUV SUD Serbia doo promotes and encourages the increase of knowledge in Serbia through the support of Serbian economic operators to

adapt European legislation and meeting the requirements of European and other standards in the export of their products and services abroad. It can be said the leader in providing quality innovations, products, services and management systems.

The introduction of ISO 9000 in the organization affect on raising the quality control to the next level. The aim of its introduction is possibility to minimise errors. Control that takes place continuously reduces the risk of errors, which directly affect the monetary losses that may befall the organization. Series ISO 9000 includes all functions in one organization, emphasizing that the organization is viewed as a whole. Quality helps us that as soon as possible give the maximum results, contributing to the leadership position, while the basic dimensions of quality is improving the competitive position of companies because of planning long-term development goals of the company.

LEVEL OF COMPETITIVENESS OF COMPANIES THAT APPLICABLE STANDARD OF QUALITY

When we talk about business excellence of the one organization the customer satisfaction is the most important factor, he is closely related to the objectives of quality management. The key to improving the quality of operations of local companies is to look for the appropriate use of knowledge. Education and knowledge are the creators of the new competition. Total increase Serbia's competitiveness depends on the commitment of the individual participants in the process of economic development, namely: the state, its authorities and institutions. Everyone has a role in creating competitive Serbia. Productive and interactive relationship between all stakeholders in this process is a prerequisite for progress. However, the basic condition that is a prerequisite for the progress of the nation's commitment to the advancement of the nation.

The Company has available a variety of measures to increase productivity, and therefore better access to all resources at its disposal. In any case, the firm must constantly monitor all elements of which depends on productivity and keep them in acceptable limits. Only when is possible that the total operating result to be satisfactory (Peric, 1994). The introduction of the ISO 9000 standard, is achieved by meeting certain measures aimed at increasing productivity and thereby creates the opportunity for better market position.

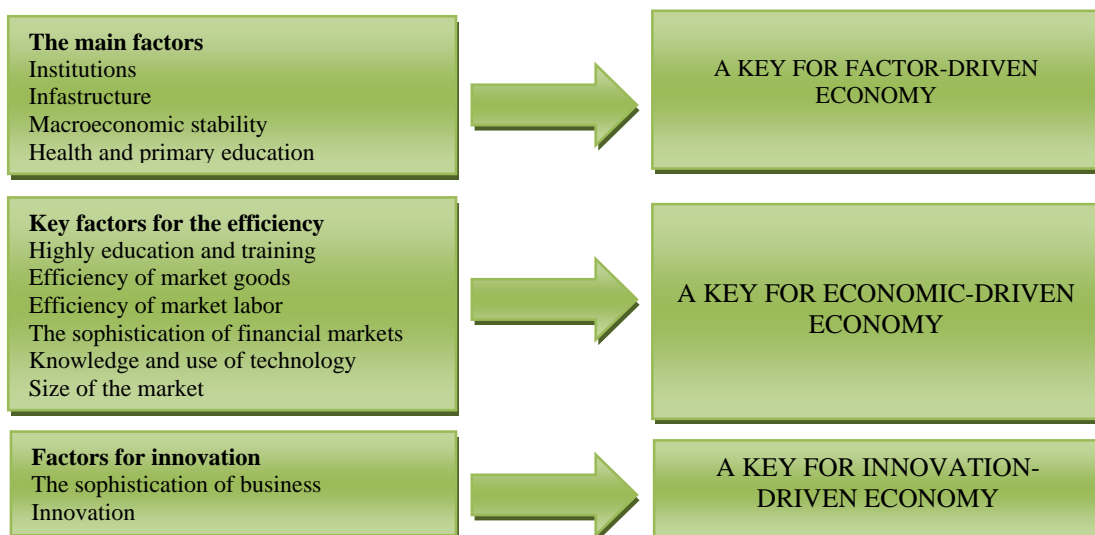


Figure 3: The 12 pillars of competitiveness of World Economic Forum (WEF, 2010)

When we talk about competitiveness we need to mention the global Competitiveness index. The Global Competitiveness Index of the economy of the country is calculated based on the phase in which the economy of the country is. He starts from the assumption that many factors affect and explains the competitiveness of national economies. The GCI is a measurable indicator by which we can assess the level of economic developments. Its major feature is that all indicators divided into 12 categories, ie. the methodology of the World Economic Forum, there are 12 pillars of competitiveness, which are shown in figure 3.

Introduction of ISO standards is voluntary, but it is often condition for the tenders, as a precondition for the operation of foreign traders. Also, companies in Serbia meet with companies who want their suppliers to those who have introduced standard ISO 9001. ("Fiat" is an example of one of these companies). Because of these advantages in Serbia 80% of cases just for that reason decide to introduce the standard of quality, because of considered that it will help to gain a better competitive position. In our country it was introduced only about 3,000 companies. The fact is that the global economic crisis affected the slowdown process of ISO standards in Serbia, but also were the incentives.

CONCLUSIONS

Quality is much more than just a business function that has its place in the hierarchical structure of the business functions of companies. Modern business conditions dictate that quality is the level of corporate governance, with the aim of improving business.

The economy of economically powerful countries have long used quality as a main weapon in the fight for greater market productivity and competitiveness in the global market, where customers will win the one who can offer a quality product and meet all his needs and wants. Quality and competitiveness are linked.

Implementation of quality has for result such operations (production) that the user can guarantee a constant quality at a higher level of competition. With the promotion should be explained and emphasized what he receives in return for paying a higher price for this product. What the final outcome is intended to increase the quality of the product provides by TQM concept. Its main goal is customer willingness to pay more (a) the price for a product or service, as reflected by the reduction of production costs, thus increasing the profits of companies. Quality as a fundamental impact on the competitiveness of firms in the market, enables the strengthening of business processes and greater motivation of employees. This phenomenon at the global and national level will prevent the occurrence of inflation, shortage of products on the market, as well as the deterioration of the economy.

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MARKETING COMMUNICATION IMPACTS ON SALE OF PRODUCTS AND SERVICES

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ABSTRACT

This paper describes the importance of marketing communication to the product and the services, which are used as channels of communication and it points out how much is appreciated the importance of marketing communication in traditional and electronic markets. How far are local companies from effective combination of marketing mix. Also, we are facing with one of the most important forms of communication word-of-mouth communication, ie. recommendation or personal message "from mouth to mouth". Then, we have behavior of consumers, their basis of buying decisions and how we should act on them.

Key words: communication, marketing communication, word-of-mouth communication, consumer behavior, attitude to consumers.

INTRODUCTION

Communication is the process of making connections between people. The goal of communication is the influence on the interlocutor, on his feelings, emotions and actions. If the goal is not achieved, then practically there was no communication. Communication is the process of transferring information between people, communication and transmission from sender to recipient and vice versa. The process of communication consists of three elements: sender, messages and the recipients (Djordjevic and Besic, 2005, p. 11).

For most companies the question is not whether to communicate, but how, what and who to tell. Marketing communications is one of the most important prerequisites of successful business enterprises in a market economy, it involves many different activities and includes a number of different people. Communication, as a marketing skill, is the most valuable when a company is surrounded by competition, or when the company is competing with other companies that have adopted marketing techniques and specific approaches to capture the competitive position.

The system of mass communication in the world affects on the equalization of consumer tastes and desires, and habits in the use of emerging products and the globalization of new products to the suit habits (Sajfert et al., 2006, p. 114). The main forms of marketing communications, which company uses to communicate with their customers are personal selling, commercial advertising, sales promotion and publicity, also known as public relations. Every form of communication has special characteristics, which enables the efficient management of knowledge forms of communication, and achieve maximum efficiency of investment. Different products and services, as well as different categories of customers and consumers require different ways of communicating with them.

Marketing communications is a key component of modern marketing, which includes all communication activities between the organization and its target groups. It is very important for the

successful functioning of the organization and for increasing sales results. Importance of marketing communication is increasing everyday as well as marketing. The goal of marketing communications is to familiarize consumers with products and purchase shares through the position of the decision.

SIGNIFICANCE OF MARKETING COMMUNICATION

Marketing communication is the most important opportunity for the company to convince potential customers in the quality level of its products and services. Using marketing communications they ensure the success of product sales. Companies that want a better competitive position in the market have to do a lot more than making good products, great prices, and making products easily accessible.

To be in top of the market, product needs to be created with the help of informatives and stimulating content. The goal of message is to meet the needs and desires of consumers towards product. Marketing area is in a constant change, especially in the last few years. Competition among companies had big influence on role of marketing communication. Then, the size of the retail facility, same or similar brand sales, etc.

Marketing communications is one of the major factors when it comes to company success, and vital part of marketing program. Companies needs to properly communicate with consumers, and to provide them two way communication, such as getting praised or criticized. Marketing communication is a constant process of two-way communication with current and potential customers with the aim of achieving long-term business. In this way the company is acting as its own promoter.

Through marketing communications company sends the message about product to consumers. Marketing mix should represent the effort of companies to meet customer needs (Djordjevic and Cockalo, 2004, p. 55). With his help, recipients of messages are using this to eliminate or reduce the uncertainty in the determination of purchase, and to take certain actions. This kind of communication must be based on comprehensive, holistic and well-conceived marketing plan.

When we are talking about services, marketing communication represents what people are talking about, how they behave, how they seem to provide services, what kind of machinery and resources are used, what kind of services are provided, how they behave towards consumers, etc. That being said, we can conclude that it is very important to provide certain services, such as physical appearance of product, as long as paying attention to the behavior towards consumers/users. If we are effective as service technicians, we will achieve very good results. Because of this customers/users will talk about us and spare us on the market and collect our new customers. These leads us to the word-of-mouth messages.

Main instruments of communication mix are (Djordjevic and Cockalo, 2004): Economic propaganda; Personal sales; Word-of-mouth; Direct sales; Sales promotion; Internet; Loyalty programs

Growth of the active role of consumers took affect on the structure of marketing mix. Kotler and group of authors pointed out that traditional structure of marketing mix shows seller view, but company needs to adopt perspective which is oriented on customer.

One of the main elements of this management process is a clear, continuous communication with customers, which provides a constant flow of information and constantly reminding consumers that they are important, that the retailer "thinks" on them, and that he respects their needs and habits, as we can see on figure 1.

Successful control of marketing communication depends on measuring the effectiveness and efficiency of marketing communication. For measuring the efficiency and effectiveness, there is a basic rule which consist on the objectives of marketing communication. The activity and effectiveness of marketing communication is established through:

1. Measuring the effects of communication and
2. Measuring sales or economic effects.

Communication effects are known as direct or indirect effects. They are occurring as a direct result of promotional activities such as perception, memory, attitude change. Measuring these effects is called - measuring the effectiveness of communication.

Economic effects appears as indirect consequence of the promotional activities (sale increasment, market shares, profit). Measuring these effects is called - measuring the performance of communication.

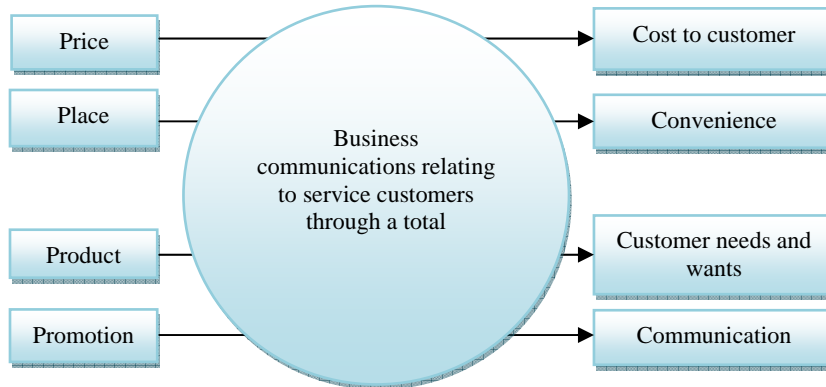


Figure 1: The transformation of the marketing mix (Stanković, 2009, p. 153)

OBJECTIVES OF MARKETING COMMUNICATION

There are three main objectives of marketing communication

1. Informing current and potential customers
2. Assurance of quality of product and encouraging of purchase
3. Reminding customers of products and services

Every form of marketing communication is carried out to fulfill a certain goal. Generally, the objectives are achieved through various forms of advertising, sales staff, various signs in shopping areas, attractive packaging, publications delivered to your home (direct mail), samples, etc.

The main goal of marketing communication is to thruth fully present the brand, otherwise they have done more damage than good, because they risk to lose their regular or potential customers. Marketing communication has vital role in activites of the company's market action.

Some countries use millions of euros on marketing communication, but this is not case in our country. In Serbia, there is a stereotypical way of thinking by some owners of companies, and this is the problem that slows our progress. Because we living in this hard times, people are scared to make investments, which presents with risk, and without risk there is no success. Companies operate by old standards and they are unable to keep pace with the time.

MARKETING COMMUNICATION AND CONSUMER BEHAVIOR

Attracting customers is done in series of offline activities such as promoting products or services about communication with consumers, direct incentives on purchases (gifts, samples, using a product for some time ...), support services, identifying the characteristics and needs of individual consumers, sending the original or electronic mail to consumers. Online activities include the use of a website, for the purpose of attracting the attention of potential customers and encouraging existing customers.

"Marketin with permission" – showing product to customers only if they allow us to, represent an instrument which companies can use to be allocated in the crowd and build customer loyalty (Kotler and Keller, 2006).

Godin gave five steps about implementation of effective marketing with permission:

1. Encourage potential customers to participate (eg, free samples, sales promotion or competition).

2. Offer potential buyer the opportunity to learn more about the product or service.
3. Give more incentives to the potential buyer would continue to have a license.
4. Offer additional incentives to consumers to get more permissions.
5. Take time to route permit consumer behavior toward profits. (Kotler and Keller, 2006)

Two basic models attempt to describe how consumers process informations collected in the process of making buying decisions and how to choose between several options on the market.

The first model, "Consumer Processing Model (CMP)" describes the behavior of consumers as rational, logical behavior, or behavior as a reason. According to that model, the consumer goes through eight stages in the process of processing information. These are:

1. Exposure to information
2. Selective attention
3. Understanding collected informations
4. Agreement with the collected information
5. Retention of accepted information in the memory
6. Using information from memory
7. The choice between decisions
8. Action taken by decision

The second model, "The Hedonic, Experiential Model (HEM)," which explains the behavior of consumers when making buying decisions as a result of feeling, fun and fantasy, that is making decisions based on emotions. The greater involvement of emotions that is in the election, the greater is the impact of experiential process.

Companies retain customers conducting a series of business and communication activities and techniques for the purpose of maintaining business relationships with customers. Activities and techniques include personalization, organization of promotional activities, such as discounts and shopping benefits, organizing C2C (customer-to-customer), interacting via e-mail groups, forums and chat.

Activities and techniques tends to retain and motivate consumers of buying products or using certain services and retaining customers which visit the companyweb site and carry out online purchases, and to motivate re-visiting the web site and shopping.

It is harder to maintain business relationships with consumers online, than on the offline market. Visitors of websites are mostly people who like to search for information on the electronic market products and services, but they are also prepared to move on to the next website, if the previous was uninteresting or difficult to search.

The study results conducted by Forrester Research, shows that a large percentage of internet users and participants in the electronic retailing makes the population from 55 to 64 years of age. In addition, this segment of customers have average yearly income of 60 000 USD (Korper & Ellis, 2000, p. 61). Research shows that they are seniors, who despite a life experience and have specific business experience.

Educational level and the level of living standards in developed economies, are important factors for consumers. These factors enable customers to accept changes in their business by the companies that already offer, or gradually introduced into their business, search and sell online.

Unfortunately this is not the case in our country. Consumers in Serbia, like searching the electronic marketplace of products and services. They are ready to participate a very active marketing communication, especially regarding commenting about the look, meeting a certain standards or quality of products or services. In the case of online purchases, customers are becoming skeptical. Search engines, as well as the small number of customers are mostly people older than 30 years, 45 years. Due to the extremely low purchasing power in our contry results with low procent of online purchases.

Integrated communication paradigm so more turn to expansion entered is interactive communication in the communication aspect of marketing two key changes:

- The modern consumer in the marketing communication is increasing his role of the sender encodes his needs and desires, not vice versa as in the traditional model (the mass media propaganda put aside and asks her substantial transformation),
- Modern companies will have to invest in marketing eligibility based on the flexibility of technology, knowledge and integrated marketing communications. (Jovic, 2006, p. 297)

Meeting the needs of consumers, especially providing after-sales services are successful and an important element of customer retention strategies. If company fail to provide any of these services, the trust that consumer have toward product can be under threat. This event may jeopardize the issue of future cooperation. For luxury products and products whose purchase carries a high degree of planning and risk, this is extremely important.

Creating a positive relationship with customer means „deeper“ and better communication and business relationships with the most profitable segments of customer. Relationship with customers intends to increase consumers environmental values , which means constantly improving the quality of servicing that leads to additional value in the process of buying, consuming products and services. Only straghtening relationships with customers consists of raising the quality of services, suggesting complementary products and higher quality.

Integrated communication paradigm is conditioned by the growth of interactiv communication due to influence of technologies, the changed position of consumer, media and distribution.

U suštini od svih instrumenata međunarodnog mixa tehnološki napredak (posmatran kroz ekspanziju telekomunikacija i kompjuterskih programa) gotovo da je najviše promena uneo u definisanje distribucione i komunikacione dimenzije savremenog marketinga posmatrano u globalu, a i sa stanovišta potrošača. njihov položaj, uloga i mesto su značajno promenjeni. Dok je ranije u marketing sistemu, odnosno mehanizmu tržišta dominirao proizvođač ili trgovina kao izvor informacija, tehnologija je omogućila da sa povećavanjem stepena informisanosti iz raznih izvora, potrošač dobije ključnu poziciju, jer ne zavisi samo od informacija koje mu nude ili su mu namenjene od strane pojedinačnog proizvođača ili trgovine za donošenje konačne odluke o kupovini. Možemo pogledati na sledećoj slici 3. primer evolucije tržišta i marketing komuniciranja. (Schultz, 1996)

Essentially whet it comes to instruments of international mix, technological progress (seen through the expansion of telecommunications and computer softwares) brought in most changes in the definition of distribution and communication dimensions of modern marketing, speaking in general, but also from the consumer standpoint. Their position, role and place are significantly changed. While earlier, in the marketing system and market mechanism, manufacturer or trade as a source of information was dominating, technology has enabled us to increase the level of information from various sources, the consumer gets a key position because it does not depend from information that he was given by individual manufacturer or shops to make the final purchasing decision. We can that on the figure 2, example of market evolution and marketing communications (Schultz, 1996).

CONCLUSION

The need for communication with customers and the importance of communication itself does not become obsolete. Due to fierce competition and the existence of both traditional and electronic forms of communication, importance and role of customers hence and with that their importants. Changes in last twenty years took affect on importance of communication with customers. (Sajfert et al., 2006, p. 113).

The company is subject to the life and work on the market. Business results achieved in the market indicate the future of the company and its market position, stability and development opportunities. By increasing the flow of information from both external and internal environment, it increases the

pressure to take advantage over competition. Marketing communications helps such aspirations and suggests that the process of making a choice of one of several possible solutions.

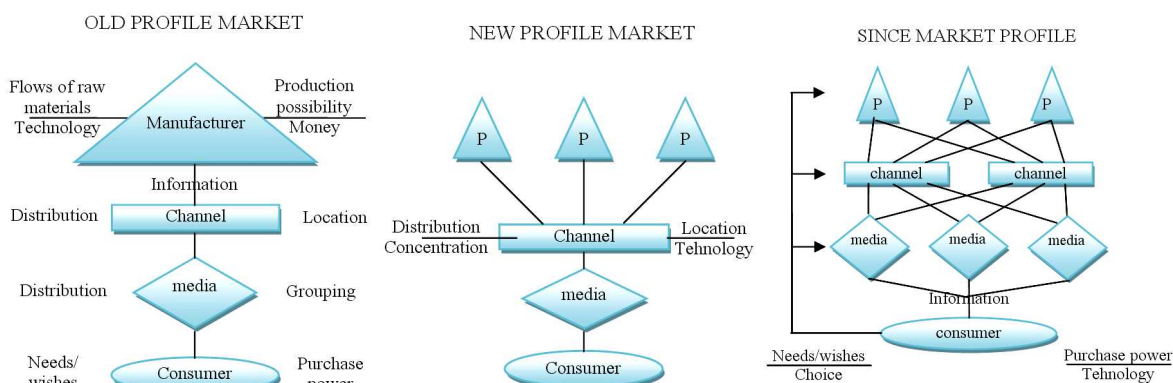


Figure 2: The evolution of markets and marketing communications (Schultz, 1996.)

The complexity of the purchase decision process is based on the fact that the consumer now have choice of different products and services. Consumers create their own picture of the specific products and services which affects their buying choice. If a company can see the needs of the market, successfully coordinate their capabilities to meet the requirements and succeed to perceive the opportunity and the risk of market activity, is considered to be successful.

Modern business market is very dynamic and is burdened by frequent changes, which are expressed at the level of technological innovation. Also, media owners are becoming consumers, so they are defining their needs for a specific product. Therefore it is essential for marketing communications sector to follow the development of science and technology, it will thus contribute to its competitive position globally.

What employees of local companies needs, is new knowledge, so they can adopt new approaches and methods of business management. There are number of agencies in Serbia that are dealing only with marketing communications. Some companies are confused about that, but they should instead of building a network of efficient team of experts for this type of communication. As we already said, without effective communication, there is no company success.

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MARKETING INFORMATION SYSTEM

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ABSTRACT

The Internet is rapidly changing the way business views marketing information systems. New business models present challenges and opportunities as organizations seek to adopt “e-business” methodologies in the search for competitive advantage. Organizations of all sizes are feeling the “ripple effect” of Internet-enabled customers, supply chains and competitors. This pressure is particularly acute in the marketing function where information technology touches the customer and is increasingly becoming the key to creating superior customer value. The purpose of this paper is to provide an overview of the MkIS as it is evolving into an Internet-based system.

Key words: Marketing Information Systems, data warehouse, data mining

INTRODUCTION

The internet very quickly changed the way companies gave important marketing information. New business models provided challenges and opportunities for organizations to try to integrate e-business methods in the search for a competitive advantage.

The importance of marketing information is apparent while the economy continues to emphasize that service is the primary source of value. Services largely depend on information. Information at high speed in itself became a service. Even in industries that are primarily engaged in manufacturing, information about the content of the final product growth can be found. Mass customization is often described as a marketing "one on one" whereby customization of products and services is available for a particular client, and it depends heavily on the comprehensive and timely information on consumers.

DEFINITION OF MARKETING INFORMATION SYSTEM

Business of almost every company today cannot exist without the use of modern information technology like the internet. These technologies have allowed the collection, processing and use of information that is called the database. Companies are then able to deal with the dynamic environment in which it engages its business activities.

Marketing Information System is a set of interrelated parts to the appropriate entity (system), which represents a set of people, machines, processes and information contained in interaction within a given business transaction. This structure is necessary so that businesses can adapt to each organizational unit within the company.

The definition of marketing information system is as follows:

- It is based on the collection, processing and use of certain information;
- MIS is based on the communication lines between organizational units of the company;
- MIS uses specific marketing models to solve business problems.

MARKETING INFORMATION SYSTEM - FUNCTIONAL COMPONENTS

Marketing information system consists of four main components: (1) user interface, (2) software applications, (3) database, and (4) Support systems.

User interface - A key element of the marketing information system are managers who will use the system. System design will depend on the type of decisions that managers must make. The interface includes the type of hardware to be used, how to analyze information, formulate and present, and how reports should be prepared and distributed.

Software applications - These are programs that decision-makers in marketing use to collect, analyze and manage data in order to develop information for marketing decisions.

Database – Marketing databases are systems in which marketing data is organized and stored. Data can be collected from internal and external sources. Internal sources are largely the results of transactions. They provide data from e-trading network, a result of sales, delivery data, inventory, and product profitability. External sources are market research, competition, credit bureaus and financial institutions.

Support systems - This component consists of a system manager to manage and maintain a system of property, including software and hardware, network, monitor activities and provide them in accordance with organizational policy.

MARKETING DECISION SUPPORT SYSTEM

In 1979, U.S. professor John Little formulated the basic concepts of Marketing Decision Support System which was later (1984) more fully developed in cooperation with Michael Cassettari.

MDSS can be treated as a relatively new stage in the development of MIS or as an integral part of the conception of these systems.

In explanation of important concepts in MDSS Little and Cassettari cited:

"Directors, as never before, are in a position to do business in the middle of which is characterized by a very sharp (and growing) competition. They are forced to react much faster than they did in the past, and the consequences of their decisions reach further and deeper. The more data available, the more difficult to make a decision and it takes more than one manager".

Definition of MDSS

MDSS is a coordinated set of elements (data, models, analytical tools, hardware and software) that an organization can use, first to gather information from business and the markets, and then to turn that information into the basis for action.

If well designed, MDSS allows a fast and efficient monitoring of the effects of new ideas (related to the promotion, packaging, packing, etc.).

In order to allow MDSS to produce the desired effect, Little and Cassettari recommend:

- Properly selected software (if you choose the wrong software - MDSS will not meet customer requirements, which will eventually lead to the disintegration of the system);
- Applying the proper methodological approach in the design and implementation of MDSS-a;
- Establishing a system to maintain service within the company

One of the effective methods used to determine what type of data you should include is the critical success factor method.

With this method we learn:

- what information is needed for managers,
- sources for the compilation of data,
- various uses of information in the company and their impact on decision-making process.

Marketing decisions - FUNCTIONS OF SUPPORT SYSTEM

Typical MDSS functions includes models and tools for:

1. Sensitivity analysis
2. Setting goals
3. Reporting of exceptions
4. Prediction models
5. The simulation model

MDSS analysis

People in marketing often used MDSS models and tools to analyze markets, customers, competitors, and internal operations. The following list represents some of the most common types of questions concerning the MDSS analysis:

1. Analysis of market segmentation
2. Analysis of market share
3. Analysis of competition
4. Analysis of pricing
5. Cost Analysis
6. Sales Analysis
7. Forecast sales
8. Sales productivity
9. An analysis of advertising
10. Distribution
11. Simulation
12. User satisfaction

DATA WAREHOUSING (DW)

Data Warehousing is now considered the most comprehensive architecture that combines all previous concepts of subspecies and information systems. The essential philosophy of DW is based on the concept of data integrations. Data integrity is more valuable than the sum of the parts data.

According to the definition chosen by the William H. Inmon, data warehousing is a subjective oriented, integrated, time-dependent and substantially unchanging set of data, with the overall goal being to help managers in making decisions.

Subjective orientation data - means that they are organized around an object, as to give accurate information on specific subjects within the functional areas of the company instead of the current operations.

Integrated - data is compiled into a database from various sources and always stored in the same format, and is therefore displayed in a consistent manner.

Time – dependent - all data in the data warehouse are linked and are identified with a specific time period, which means they are historically traceable.

Immutability of contents – data in the warehouse is stable once inserted into the warehouse. This allows the company management and anyone who uses the data warehouse to be sure of the stability of its answer, regardless of time or the frequency of inquiry.

Data Warehouse Architecture

Data warehouse system consists of the following layers (levels):

- Data sources
- Extraction / Propagation
- Transformation / Cleansing
- Data refining
- Physical database model
- Logical database model
- Metadata information
- ODS - Operational Data Source
- Data mart
- Analysis and Presentation tools

DATA MINING

Data mining is the process of extraction (extraction) of accurate, understandable, and previously unknown information from large databases, and using it to make critical business decisions. Extracted information can be used to create models for prediction, to determine the relationship between database records or to review the data base from which to draw data. Data mining consists of many operations, each supported by a number of techniques such as finding rules, neural networks, and other conceptual clustering.

Identification and use of information hidden behind the data implies the fulfillment of the following requirements:

- First, the collected data must be integrated into the reports of the organization in general and not specific reports in parts of the organization.
- Second, the information that makes up an integrated data must be drawn ("excavated")
- Third, the information collected with data mining must be so organized as to enable decision making.

Areas of application of data mining

There are many subfields of data mining. Some of the most important are:

- **Classification:** Classification is one of the most common tasks. It consists of observing the characteristics of new buildings and their classification into a predefined class from the set of such classes.
- **Clustering:** detection of groups (clusters) of similar items to input data. Clustering is a form of uncontrolled learning that involves scanning the input data base for spontaneous caused divisions among the individual data. These divisions share the information into logical groups called clusters.
- **Estimation:** Unlike classification, which results in a discrete value of the target variable, estimation gives the same value for continuous variables. It is based on a set of input variables which are determined by the value of a continuous target variable, such as income. Estimation is usually combined with the classification.
- **Grouping by similarity:** determines which objects are similar, for example, that products will meet in a shopping cart. Retail Chains using this method can plan the layout and arrangement of products on the shelves, store windows, catalogs.

SYSTEM OF THE USER MANAGEMENT

Companies use integrated methods to view and control all information about customers and marketing. Marketing companies often maintain multiple databases for each business activity that contains information that is not easy to integrate strategic and operational use. A new generation of computer-based programs on the Internet, gathers information from the customer services, Web sites, direct mail, telemarketing, vendors and suppliers, in order to manage the processes of marketing, sales and customer service. Most of these applications are divided into two major groups, SFA (Sales force automation) and CRM (Customer Relationship Management).

Sales force automation

Sales activity is meaningful support in a manner that provides the user with easy access to information that would be more effective in their work. This segment includes the following functionalities:

- sales management - management of potential clients, identifying a favorable moment for selling, customer care, customer contact management,
- analytics and forecasts – sales analytics and forecasting, sales planning, planning cross-sell and upgrade sales
- Information about products and services – catalog of products and services, product description, product management, client management, offers and orders, the basic functions of the system documentation.

Customer Relationship Management

The basis of any CRM solution is a unique view of the client. This means that all the information about customers are in one place, and therefore collection and upgrading can be done in an organized, unified way.

The basic functionality of each CRM operating system is contact management. This functionality allows every interaction with the client evidencing such that the effectiveness of communication and cooperation with it increases, and within the company provides the ability to track events related to the individual client. Tracking individual standard and custom information such as company, address, phone, contact, role in the company, preferred mode of communication, customer favorite hobby, etc. belong to the core functionality of CRM software solutions.

CONCLUSION

The rapid acceptance of Internet-based technologies, and development of e-business applications and electronic commerce have had a revolutionary impact on the marketing discipline. Marketing information systems in the development of these new technologies transformed to integrate themselves into the activities of marketing, sales and customer support. The main motive for the development of MIS is to create a valuable offer to customers, at faster and lower costs. Future implementation of marketing information systems will increasingly involve the client in the process of creating value to more effectively align the company and its supply chain with the changing market conditions.

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THE INFLUENCE OF FMEA METHOD ON QUALITY COSTS

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ABSTRACT

Reducing undue costs in a company, where poor-quality costs have a significant role, is one of the best ways of achieving profitability and competitiveness. Errors may occur during all the phases of product life cycle, having increased layoffs as a consequence. If these errors are not eliminated, they will cause unsatisfactory quality and customers' dissatisfaction. A key for quality improvement is process maintenance and improving. This paper analyses FMEA quality tool, which directly influences the cost reduction in the designing phase. FMEA is a comprehensive method for process improvement, used for analysis of errors' types and influence. It is conveyed parallelly with the process of construction and/or process designing, from the stage of preliminary design review to the stage of final design review.

Key words: FMEA, costs, quality.

INTRODUCTION

Use of adequate tools is essential for realisation of continuous quality improvement process. Use of quality tools and techniques has the role of quality system support in terms of process analyses, realisation planning and process improvement. These tools and techniques have the task of helping the perception of factors influencing the final product and service quality, and ensuring quality through influencing these factors. Certain quality tools and techniques are data collection, summarizing and data presentation, problem clarification, planning, problem source identification, establishing relationships between process elements, performance measurement, process capability assessment, process analysis, process management and such.

QUALITY COSTS

The notion of quality can be used in the context of use safeness. Due to the need to satisfy the customers' needs, quality costs arise during production process. A frequent topic nowadays are costs due to poor quality. Since competition is ever-strengthening, more and more companies try to reduce their non value-adding costs, so as to increase their own competitiveness.

The term 'cost' implies any organisational layoff which can be categorised or related to certain activities, activity bearers or results. Numerous companies have tried to calculate the poor quality costs, but encountered serious problems meanwhile. It was proved that a lot of these costs is not easily measurable and that they are often latent. (Kokić Arsić and Janković, 2005).

Process quality costs make up 30% of entire sale. There are situations where costs are two or three times greater than the revenue, thus their reduction leads to profit increase. Figure 1 represents the quality costs-profit ratio.

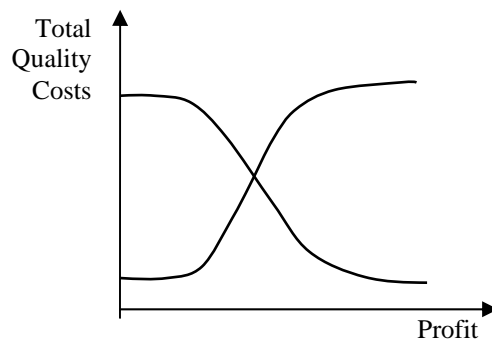


Figure 1: Quality costs-profit ratio

Total quality costs consist of quality control costs and poor quality costs, as represented in Figure 2.

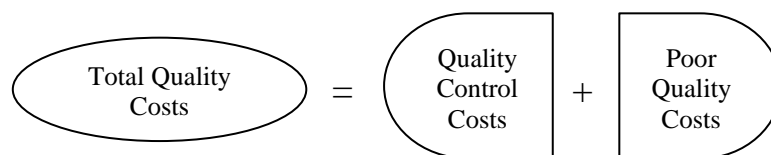


Figure 2: Quality Cost Factors

Quality costs arise from undertaking activities related to production process control from planning, over realisation, to product placement to the end customers, as well as the complaints and product retrieval from the market due to the customers' dissatisfaction. Quality control costs comprise prevention costs, leading to failure prevention and assessment costs, arising after a product's release from the manufacturing process. (Balažević, 2008). Poor quality costs comprise internal costs due to poor quality, arising inside the production process itself, and external costs due to poor quality, arising after the product has left the company and been delivered to the customer. These costs are usually a consequence of finishing, write-offs, complaints or sales loss.

According to other authors (Stoiljković et al., 1994), quality costs are a part of total costs (production, process, design and such) and fall into one of the following categories:

1. Costs caused by errors (inconsistent) – this category holds all the direct and indirect costs related to correction of errors of any type. The later the error is identified, the greater the correction costs are.
2. Adjustment costs – the objective of managing these costs is the provision to the customer/consumer of what he expects. These costs comprise:
 - a. Estimation costs – costs of measuring and assessment of quality compatibility of products, along with the costs of probing, controlling, testing, checkups and such.
 - b. Prevention costs – the costs of all the activities undertaken in order to prevent the occurrence of inconsistency. They comprise all the measurements and techniques which prevent the errors, including the ones related to the quality management. These are the costs of training, quality checkups and market research.

The results achieved through quality system application are shown in the Figure 3.

The figure shows the effects of preventive treatment of overall quality costs and is made based on a company's dollar amount of costs over the seven-year period.

Depending on what the customer expects from the product, quality measurements are conveyed in order to determine whether the desired quality is achieved. Measurement results are compared to specified requirements and the quality is assessed. In case that the requirements are not met, corrections will occur and discrepancy costs will occur. Quality measuring itself belongs to quality costs, more precisely, prevention costs. This measuring enables dermination of the type of cost, its value, indication of need for improvement and confirmation of improvement.

Quality costs are related to the product price, i.e. the price includes the write-off costs and their prevention. Prevention costs are several times lower than the correction costs, which occur when the discrepancy or write-offs are already present. Apart from quality costs, poor quality costs related to product (not the process!) occur. If the process encounters the occurrence of poor quality, the costs are significantly greater if the error is identified at a later stage. The reason is that poor quality costs increase with every phase of process realisation (Figure 4).

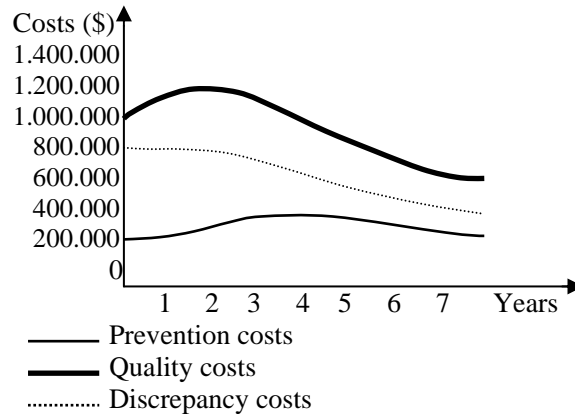


Figure 3. Quality costs (Cruchant, 1995)

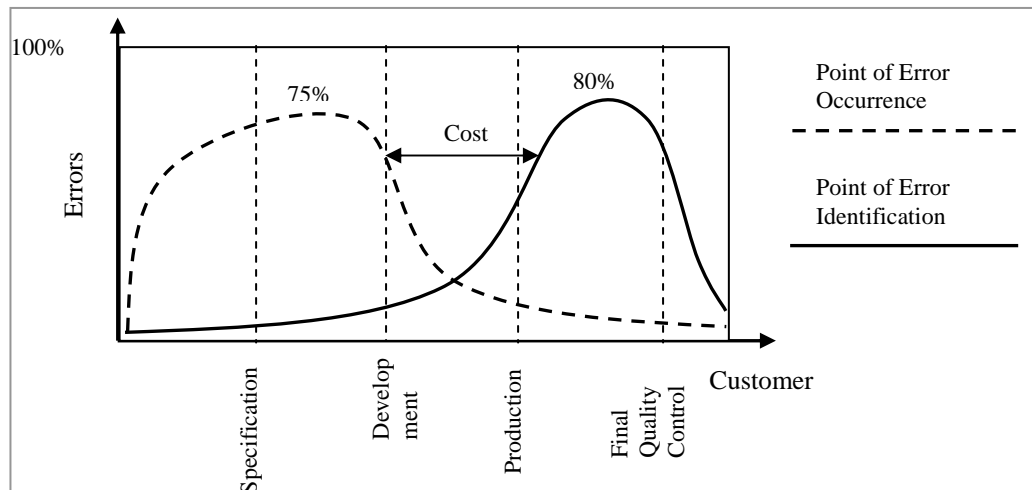


Figure 4: Error occurrence and Identification, according to SIEMENS NMA analysis

The Figure shows that about 75% of all product errors occur while the phase of development or desining is still ongoing, while 80% of all errors are identified only just on final parts or finished products.

A number of methods to (directly or indirectly) influence the quality costs reduction, among which FMEA, are known. FMEA method's structure is based on defined basic principles, specified course of analysis conduction, as well as on certain forms, all adjusted to the needs of the analysed system. (Bursać, 2006).

FMEA AS A QUALITY TOOL AND ITS INFLUENCE ON QUALITY COSTS

Under conditions of great product offering, customers' demand is ever-increasing, competition is stronger every day, legislation tougher, i.e. the demands regarding a technical product's quality are greater. All the phases of product life can meet an error, which consequentially lead to increased costs, and if the errors are not eliminated, they will lead to unsatisfactory quality and customers' dissatisfaction. FMEA method was developed to make their review better, bring easier manipulation, assessing and corrective measures and such. Its full name is 'Failure Mode and Effects Analysis'. It was primarily developed in order to assess products and processes, with the objective to prevent or mitigate

the errors which show their consequences just when the buyer has them bought. Nowadays, it represents a planning component of quality management system.

FMEA is a comprehensive method for process improvement, used for analysing types and influences of errors, according to the principle: 'It is always better and more economical to prevent an error than to identify and correct it later, i.e. bear the costs of error's consequences.' (Đorđević and Čočkaló, 2006). It is placed parallelly with the process of designing a construction and/or process, from the stage of reviewing the preliminary design, to the stage of reviewing the final design.

The objective of each producer is to undertake the measures to prevent errors in all the phases in the process, while the goal of FMEA analysis is to identify potential errors during the process development and prevent error occurrence through adequate measurements. FMEA method is a planning instrument through which the quality is implemented in the process. This method's aim is to prevent the flaw occurrence and it is used in the starting phases of product's construction defining, as well as technological solutions of production process.

Several types of FMEA analysis can be distinguished (Pavlović, 2006): FMEA in system; FMEA in construction (R&D); FMEA in process; FMEA in service.

FMEA in system is different than the other three, because it is used in the earliest phase of designing and regards potential errors and their consequences on conceptual design of product/process. The latter two are its upgrade, as a complement to the analyses of potential errors and their influence on already-defined structural solution and processes before these solutions are pronounced final.

Purpose of FMEA quality tool (Heleta, 2008):

- Developing system requirements in order to minimise the errors' possibility.
- Developing designing methods and system analyses in order to ensure error elimination.
- Customers' demands assessment in order to prevent the potential errors increase.
- Identification of development characteristics which contribute the error occurrence, minimization and elimination of these effects.
- Marking and managing potential designing risks. This help eliminates the same mistakes in future projects.
- Ensuring that any mistake which can occur will not threat the consumer's health or have a dangerous impact on system.

The advantages of FMEA method application are as follows: it is easily understandable and realisable; relatively affordable for conveying, but giving significant results; it ensures thoroughness in analysis; it provides the basis for prediction of reliability of analysed elements; there is a large quantity of FMEA software (e.g. RELEX).

Some of FMEA disadvantages are: focus on individual failure states, more than on their combination; lack of identification of hazards which are non-related to these failure states; human error analysis is severely limited; requiring the expertise about the analysed process or product.

The basic value of this metod is priority value of risk (PVR), which is calculated using the value of following factors: error occurrence, error cause and error consequence. If PVR is greater than the allowed value, it is necessary to introduce adequate measures. These measures should prevent the error occurrence or enable its timely identification. Based on suggested measures, a new PVR is established, which, as a rule, has to be smaller than the old one. This divergence undoubtedly points to the applied measures' efficiency. At the same time, the number of errors comprised by FMEA method, according to the rule '30-70', should not be greater than 30%. FMEA method application on the specific example represents correction of errors identified on final product in the planning and production phase. (Stoiljković et al., 1994). The influence of early error identification is adequate to the relation shown in Figure 5, which also represents the activities in FMEA method realisation.

In order to convey FMEA analysis, it is necessary to form FMEA tim which consists of a responsible person (team leader) and a number of experts. Organisation of FMEA analysis is defined through

adequate organisational instruction within the company and a person responsible for forming FMEA team is delegated. It is the best if that person is also the manager of the project. Figure 6 shows the general structure of FMEA teams

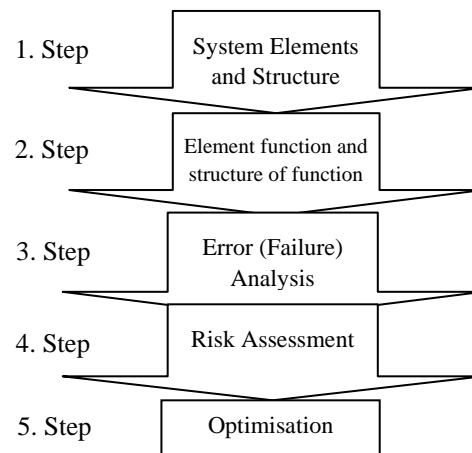


Figure 5: Activities (steps) in FMEA system realisation (Kostić, 2008)

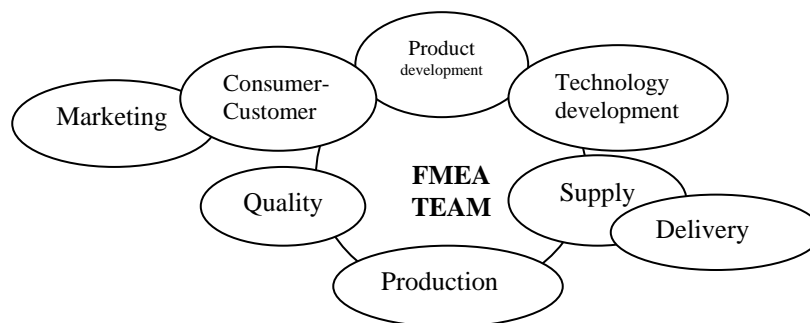


Figure 6: FMEA team structure (Kostić, 2008)

FMEA is the most frequently used analysis in practice, applicable to any system, with any desired level of details – system, subsystem, set or component. The order of failure’s manner and effects is as follows:

- Failure – deviation from the planned function or behaviour; impossibility of a system, subsystem or component to perform a necessary function.
- Failure mode – the way the element fails; shape or state in which the element is after the failure.
- Failure cause – process or mechanism responsible for triggering the failure. Processes which can cause a component’s failure are, for example, physical failure, model flaw, production defect, environment influence and so on.
- Failure effect – failure’s consequence on elements’ and systems’ functioning or status.

FMEA is a preventive quality tool which enables the cost reduction through process monitoring from its conception to its realisation, by identification of potential errors in the early phases of designing and their occurrence prevention. Prevention costs relate to error correction costs according to the '1:10:100' rule (Stoiljković et al., 1994). FMEA quality tool enables prevention of error correction costs and removes the mistakes which could occur during the process planning and which are tenfold of prevention costs. Also, they prevent error correction cost occurrence in the realisation of the process, which are a hundredfold of error prevention cost. Applied to a specific example, this would mean that if error prevention costs one money unit, than the error correction during revision costs 10, while error correction costs 100 money units (Figure 7).

Quality costs make an essential part of total project costs. The goal is to minimize quality costs. Quality system implementation and functioning temporarily increase the quality costs, more

precisely, compatibility costs. However, consistent use of FMEA quality tools brings reductions in number of errors and incompatibility costs start declining. After a certain period of time, this reduction overcome the cost caused by FMEA quality tool application, and total quality costs begin to decline. Although it is not the primary goal, quality cost reduction is one of the main functions of quality systems. Furthermore, if the FMEA quality tool is applied in the development phase, it will bring a significant decrease in error percentage in final production phases and final products. This means that the quality costs will decline in later phases of production.

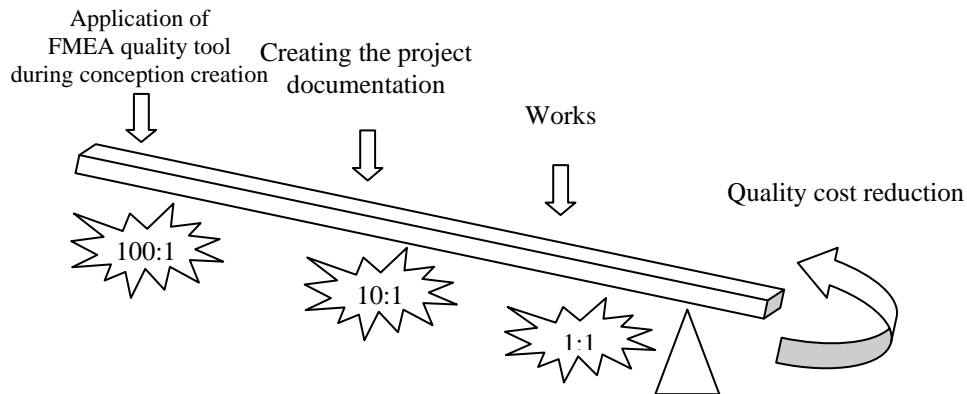


Figure 7. Quality leverage

CONCLUSIONS

Based on everything mentioned in the paper, it can be easily said that FMEA quality tool has become a basic tool for gaining competitive advantage. FMEA is a method which helps companies monitor their performance, which influences the consumer/customer, which has improvement of competitiveness, efficiency and overall company running. The idea that 'quality is a thing of quality experts' should not be obeyed in the future. It depends on each individual's performance in an organisation. Quality has to become a 'way of life' for each individual.

FMEA is focused on problem prevention, but also on corrective measurements realisation. In the end, it is important to emphasise that if a company opts for FMEA quality tool implementation, so as to reduce costs and increase profit, it has to realise the importance of quality in an organisation and advantages brought upon by it. By realisation of all necessary activities regarding quality in a way used by big international companies, an organisation can count on success.

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DECISIVE KNOWLEDGE MANAGEMENT FACTOR IN MODERN BUSINESS

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ABSTRACT

Abstract: Nowadays, knowledge is rated among the most important factors in creating the economic and market value, as a basic resource not only of traditional production systems but also of services and high technology. The ability of individuals and organizations in modern business to acquire and master new knowledge has been recognized as a key competitive advantage, so that knowledge management and skills of employees represent an essential resource to the organizational success in modern business, and continuing education and development in step with modern business in market, are becoming necessity.

Key words: knowledge management, modern business, competitive advantage, explicit knowledge and intellectual capital.

INTRODUCTION

Operations of business organizations are increasingly under the dominant influence of external environment factors. In such circumstances there is no universal formula for achieving business success or the impact and merits of individual functions can be overemphasized. Timely and adequate response to positive and negative signals from the environment, with optimal utilization of all companies' resources and capabilities, is a reliable foundation for its growth and development.

In the changing and unpredictable environment in which companies seek a way to maintain and create competitive advantage, knowledge the organization possess is becoming one of the decisive factors in the battle for market dominance, at the transition from industrial to knowledge society. The aim of a modern organization is that all business processes are viewed as knowledge processes. This includes creating, acquiring, keeping, sharing and applying knowledge as a phase of knowledge management life cycle.

XXI century is the century of knowledge. Knowledge moves through any organization by means of knowledge market in order to create additional value and competitive advantage for the company. Market knowledge has its vendors, customers and brokers. Knowledge management is a means for turning challenges of the changing environment into opportunities of business progress at the knowledge market.

Knowledge management is a solution used which organizations use for creating, sharing and applying of knowledge that will move the company forward. What one organization and its employees know is actually the basis and essence of the functioning and progress of the entire organization. Knowledge management sets the critical goals of organizational adaptation, survival and competence in dealing with the growing discontinuity of the changing environment. Essentially, it embodies organizational processes that require a synergistic combination of data and information processing capacity of information technology, and creative and innovative capacity of human beings.

CONCEPT FOR CREATING A COMPETITIVE ADVANTAGE OF KNOWLEDGE MANAGEMENT

The only competitive advantage is the ability to learn and change.

Michael Porter

We live in a time of faster, more dramatic, more complex and unpredictable changes. Technological, market-economic, political, social and global factors influence the speed of change, and designing theory and practice of economics and management. The concept of "*Knowledge Management*" is increasingly a key concept in creating competitive advantage in the new economy and management.

Knowledge management is the most often described as a process in which knowledge creates, acquires, keeps, shares and applies. This is the concept of the collective knowledge of an organization whose ultimate goal is the "efficient appliance of knowledge in decision-making situations". Such knowledge must be relevant and useful, as well as applicable in decision-making and enforcing decisions processes of the organizations. (Sajfert et al., 2005)

The period we live in is characterized differently, such as: the digital revolution, information age, digital economy, the Web economy, knowledge economy, knowledge society, an age of discontinuity, the third wave, time of speed and the like. For about three decades we are in the era of digital technology, and Internet and Intranet environment fundamentally changes the ways of doing business.

NEW UNDERSTANDING OF THE COMPETITIVE ADVANTAGE OF THE COMPANIES

Companies that want to develop long-term successful business needs to act globally. Rapid technological progress has created the conditions that the technology is available to everyone in the world and under reasonable terms. On the other hand, the rapid spread of technological progress has resulted in the reduction of monopoly over knowledge, further resulting in the possibility of all organizationally and financially ready entering into fight for the world market.

For the company to achieve market success, it is necessary to have a competitive advantage in the form of lower costs and product differentiation, with the long-term strategy of providing products and services of high quality, with constant innovation. Companies need to invest greater effort to meet all requirements of better informed and more educated consumers and users. In such conditions, the quality of operations is a fundamental element of competitive advantage, which is based on improving productivity and knowledge. (Sajfert et al., 2007)

The process of globalization of markets and international competition requires companies that, if they want to survive in their positions, must own three key resources: financial resources, new technology and knowledge.

THE ROLE AND IMPORTANCE OF KNOWLEDGE MANAGEMENT

Intellectual capital includes all knowledge employees have in an organization. Unlike real or tangible property, consisting of land, buildings, equipment, etc., intellectual capital is intangible. It comprises the knowledge of employees. "Intellectual capital is intellectual material - knowledge, information, intellectual property, experience that can be used to create riches. It is difficult to identify - even more difficult to develop it efficiently."

Knowledge management involves identifying groups of people who have a need for knowledge sharing. The aim of knowledge management is to improve business processes by knowledge development, transfer and spreading of knowledge throughout the organization, as well as

promoting and ensuring quality development of new knowledge. The purpose of knowledge management is to maximize the effectiveness of organizational activities related to knowledge. Knowledge management creates, restores, builds and organizes managers to efficiently distribute and apply knowledge inside the company.

Characteristics of the organization of knowledge: the free flow of knowledge, two-sided relationship with the customers, broad creativity of employees, access to information, free knowledge sharing, open corporate culture, informal channels of communication and exchange of experience, the irrelevance of the organizational hierarchy, and in the center of this organization is the concept of knowledge management and processes of creating, acquiring, keeping, sharing and applying knowledge.

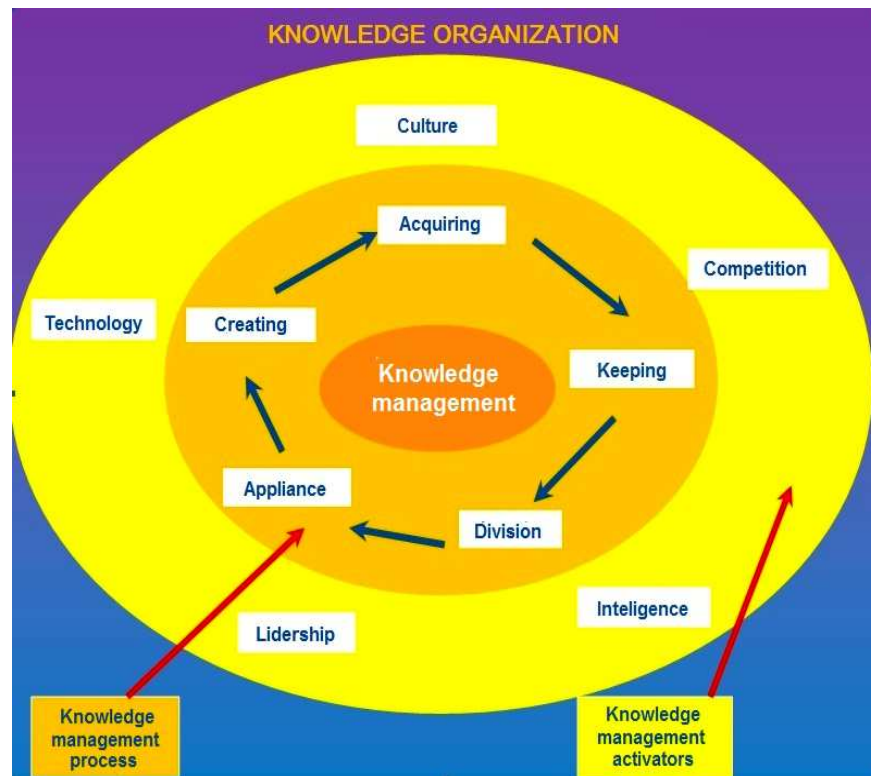


Figure 1. The organization of knowledge

CONCEPT OF KNOWLEDGE MANAGEMENT

Reviewing the concepts that shape the theory and practice of management and contribute to creating competitive advantage, at the beginning of XXI century is not at all an easy research project. Collective learning, explicit knowledge and intellectual capital, become the bases of modern management concept at the end of XX and the beginning of XXI century. To list the most important ones (Sajfert et al., 2005):

- Learning organization
- Core of competencies
- Knowledge Management
- TQM (Total Quality Management)
- Downsizing
- Outsourcing
- Business process reengineering
- Strategy as revolution
- Patching
- Enterprise Resources Planning (ERP)

- Balanced Scorecard (BSC)
- E-commerce.

The concept of knowledge management has grown onto the concept of "learning organization", "core competence" and TQM. We can freely say that significant part of the other components of concepts fits perfectly into the concept of knowledge management. For example, BSC, which connects the long and short term, business process reengineering BPR, E-commerce and the like.

Knowledge management is emerging interdisciplinary business concept that has in its focus the organizational knowledge. It is rooted in many disciplines including business, economics, and psychology and information systems management. For nowadays' companies the issue of management is the ultimatum necessary to acquire competitive advantage. Knowledge management involves people, technology and processes as interconnected and overlapping parts.

The aim of the modern organization is that all business processes are viewed as knowledge processes. This includes creating knowledge, its spreading, upgrading and appliance throughout entire organization. Modern organizations are seeking ways to create additional values through identifying, appliance and use of knowledge in a unique way, a process that is partly science, partly art, and partly As a strategic view of knowledge management, which considers the union of technology and human factors as a basis for survival in the changing environment, the definition of Dr. Y. Mahotre is accentuated according to which the knowledge management is defined as follows: *"Knowledge management includes the most important critical issues of organizational adaptation, survival and competence in meeting all the faster growing and changing business environment. In essence, knowledge management is the embodiment of organizational processes that seek synergy and combination of data and information that increase the capacity of information technologies and and create and innovate potential human resources."*(Malhotra, 1997) This is the concept of the collective knowledge of an organization whose ultimate goal is the effective application of knowledge in situations where decisions are made. It should be noted that this knowledge should be available with really little effort, and that can be applied. The concept of knowledge management is, therefore, *"the ability to, in a relatively short time, come into possession of information that will allow everyone in the organization to make the best possible decision, whether it is about the market conditions, product, service, process, planned activities of competitors or other information important for the success of the company."*(Shockley, 2000)

In a way the issue of knowledge management is a matter of survival in the new world, the world of contest and competition, the world which challenges to duel the traditional ways of solving problems in which the focus is not on finding the right answers, but on asking the right questions. What succeeded yesterday, it might, but it might not succeed tomorrow. The point is not "doing the right thing" but "doing things the right way", so that the basis of competitiveness becomes the basis of stiffness and incomppliance in the future. ."(Malhotra, 2000)

Challenges in applying the concept of knowledge management are:

- To explain what knowledge management is and how it can contribute to the corporate environment;
- Assessment of knowledge that the company owns;
- Learn how knowledge can be collected, processed and utilized;
- Focusing on the neglected area of cooperation;
- Continuing with the exploration of knowledge management to confirm its benefits;
- Learning to cope with "tacit knowledge" and convert it into explicit, i.e. organizational knowledge;
- Involving employees in the process of knowledge management;
- Try for technology to manage knowledge management;
- The dynamic, not static knowledge management;
- Distinguishing information from knowledge;

Some benefits of knowledge management are obvious at first sight, while others are very difficult to define. An effective program of knowledge management should help the company to do any of the following:

- Accelerate innovation by encouraging the free flow of ideas;
- Improve customer service;
- Keeping the attention of employees by recognizing the value of their knowledge and their rewards;
- The improvement of all activities and operations and reduce their costs by eliminating unnecessary procedures.

WHAT IS BEHIND THE CONCEPT OF KNOWLEDGE MANAGEMENT

The question is why we need a knowledge management today. We can certainly say that the main factors that explain the need for studying and integrating knowledge management into modern business are as follows:

- Markets are more competitive and the speed of the emergence of innovations is increasing;
- Reduction of staff creates the need for informal knowledge to be replaced with formal one;
- Competition pressure reduces the work force that keeps precious business knowledge;
- The value of time devoted to the experience and knowledge acquisition is reduced;
- Retirement and increase of labour mobility leads to the loss of knowledge;
- Changes in strategy can result in the loss of knowledge in a particular area.

Knowledge management can be defined using only three components: information, people and information technology. In essence, knowledge management requires a unity of information technology on one side, and creative and innovative capacity of human beings, on the other. Managers should have a greater sense of an invisible and intangible assets of people featured in the minds and experiences of employees. Without these assets, companies are unequipped with vision and ability to predict the future.

CONCLUSION

There is still no single generally accepted definition of knowledge management. Implying the continuous process of constant adaptation of company in the changing environment, where environment is constantly influencing the company, and the company itself, also, is influencing the environment in which it exists and to which it is adjusting.

Company's strategy is defined as the way the company tries to present itself differently than its competitors, using its relative strength in order to better satisfy customer needs. Consequently, attempts to achieve superiority over its competitors and create capacity to meet customer needs better than competitors are expressed by the knowledge management. It is by knowledge management, therefore, determined the way to achieve competitive advantage.

There is no doubt that the ability of an organization to learn and change, to learn faster than others, and transfers learned quickly into action, represents the biggest advantage that it may have. Collectively, the explicit knowledge and intellectual capital, in the broadest sense of "intangible assets", becomes more thermonuclear competitive weapons of our time. The key source of sustainable competitive advantage is the way the company creates and shares its knowledge. Knowledge is the essence of the success of the modern organizations. Improving knowledge, the productivity of business is improved. Knowledge becomes the basic business resource.

The aim of a modern organization is that all business processes are viewed as knowledge processes. This includes knowledge creation, spreading, upgrading and implementation throughout the organization. Modern organizations are seeking ways to create additional value through the

identification, implementation and use of knowledge in a unique way, a process that is partly science, partly art, and partly luck.

In progressive, market-oriented organizations today, especially in the future, the three key directions of development will be: fast learning, greater memory and creative thinking. Intellectual – invisible capital becomes a crucial factor for the development of the company.

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THE INFLUENCE OF WORK ENVIRONMENT AND THE ROLE OF LEADERSHIP IN ENHANCING EMPLOYEE CREATIVITY

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ABSTRACT

Enhancing creative performance of employees is a necessary step if organizations want to achieve competitive advantage. To remain competitive, organizations must develop and introduce new products and services to external markets. When employees are creative, they suggest novel and useful ideas, products or procedures which implementation enhances an organization's ability to respond to opportunities, to adapt, grow and compete. Also, there is an important role of leadership in fostering creativity in organizations. Therefore, leaders must ensure that their employees will make creative contributions. Leaders can successfully encourage organizational creativity by designing the organization to foster an environment that is conducive for creativity to flourish. This paper aims to present components of employee creativity, different factors of work environment that enhance creative behavior and the role of adequate leadership style in making organizational atmosphere in which all employees will feel free to bring out their creative potential.

Keywords: employee creativity, work environment for creativity, leadership and creativity

INTRODUCTION

"There is no doubt that creativity is the most important human resource of all. Without creativity, there would be no progress, and we would be forever repeating the same patterns".

Edward de Bono

At its heart, creativity is simply the production of novel, appropriate ideas in *any* realm of human activity, from science, to the arts, to education, to business, to everyday life. Creativity has always been at the heart of human endeavor. Since the business world is becoming more complex and competitive, many companies turn to developing creativity as relevant and permanent source of competitive advantage. It is now recognized as central to organizational performance. The capacity to harness intellectual and social capital - and to convert that into novel and appropriate things - has become the critical organizational requirement of the age. The shift to knowledge economy has been abrupt and there is a flurry of interest in creativity in the workplace.

Therefore, a large number of companies, irrespective of their size, are actively involved in search for how to be more creative. While some firms have good defined and developed production and delivering services processes, others are creating and managing ideas related to creativity and innovation. The necessity of toughening and fostering creativity is widely accepted and most leaders know that being successful for a long time means developing strong innovative culture that will enable it. In that regard, we need modern leaders, managers and employees that, in conditions of great economics uncertainty and rapid technological changes, with their creative efforts can contribute to effective realization of business goals and development policy.

Employees need such a creative organizational culture and climate in which they will feel safe, stimulated and free to take risks and express their ideas, which will run their intrinsic motivation

for creative behavior and force them to give maximum of their creative potential. Employee creativity could contribute into competitive advantage of the organization therefore it is considered as one of the most significant aspect of organizational environment.

On the other hand, leaders must face the challenge of how to capitalize on every individual potential and turn it in order to produce organizational creativity, so it is very important to emphasize that through appropriate style of leadership, their own motivation and giving personal example leaders can create an environment conducive for creativity to flourish.

Creative organizations should attract, develop and retain creative talents if they want to remain competitive. They must first employ people with the potential for creativity, and then they must structure their employees' environment in order to bring out this creative potential. The rapid economic development requires creativity and new knowledge that must be in accordance with innovations from environment, as it is one of the important conditions for survival in today's volatile global market. The competitive position of each business system in such a business environment depends on its flexibility, creativity, ingenuity, innovation and focus on the quality of its employees.

COMPONENTS OF EMPLOYEE CREATIVITY

The Componential Theory of Creativity assumes that all people with normal facilities have the capacity for solid creative work in a domain and that the social or work environment can affect both the level and the frequency of creative behavior. This theory consists of three major components of individual creativity: expertise, creative-thinking skills, and intrinsic task motivation, each of which is necessary for the manifestation of creativity in any given domain.

Creativity is most likely to occur when people's skills overlap with their strongest intrinsic interests - their deepest passions - and that creativity will be higher, the higher the level of each of the three components. This is the "creativity intersection" depicted in Figure 1. Managers can directly influence the first two components, but doing so is costly and takes time. They can make a more effective difference by boosting the intrinsic motivation of employees.

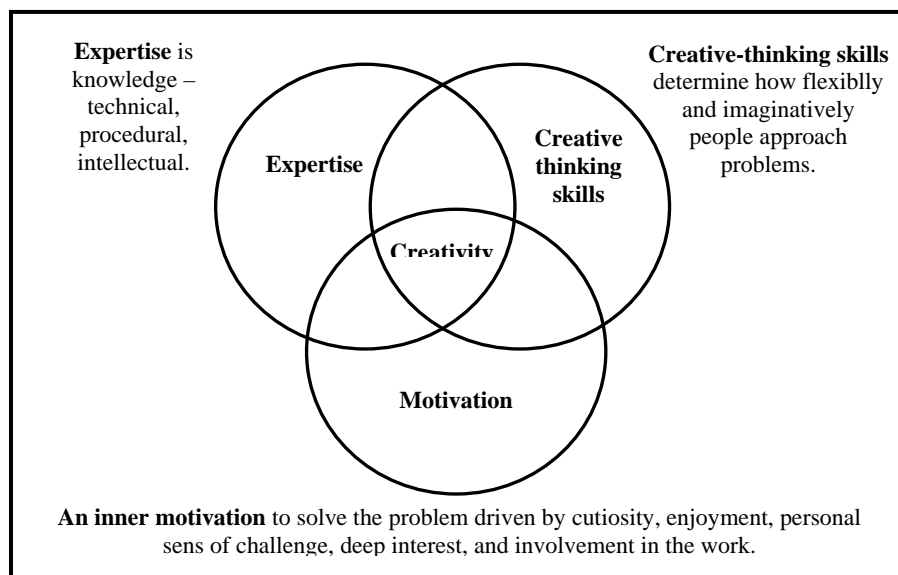


Figure 1: Components of employee creativity

The foundation for all creative work is expertise. It is a set of cognitive pathways that may be followed for solving a given problem or doing a given task - the problem solver's "network of possible wanderings". The expertise component includes memory for factual knowledge, technical proficiency, and special talents in the target work domain.

A step forward in the realization of creativity provides the second component – the creative-thinking skills. Assuming that the employee is professionally prepared and well motivated to perform certain activities, job will be done “technically good” or “adequate” however he will not produce creative work if creative-thinking skills are lacking. These skills include cognitive style required for understanding the problem from a new perspective, the application of techniques or “heuristics” to explore new ways of thinking, and working style characterized by vigor and persistence. To some extent, creative thinking depends on the psychological characteristic such as independence, self-discipline, propensity to take risks, acceptance of diversity, perseverance in times of frustration and lack of need for social acceptance. Certainly, creative-thinking skills can be enhanced by learning and practicing techniques that enhance cognitive flexibility and intellectual independence.

The task motivation component is the one which determines what employees will actually do at the specific task, regardless of the level achieved in the two previous components, which are based on individual abilities. Motivation is the factor that actually determines the extent to which the person’s expertise and creative-thinking skills are to be fully engaged in the service of creative performance. Motivation can be intrinsic (driven by deep interest and involvement in work, curiosity, pleasure or sense of personal challenge) or extrinsic (guided by the desire to achieve a goal that is outside the work itself – such as achieving a promised award or meeting deadlines). Although internal and external motivations usually are combined, in a particular job only one prevails, and the intrinsic or internal motivation will be more appropriate for the awakening of creativity rather than external motivation. To some extent, a high degree of internal motivation could actually compensate the certain lack of expertise or creative-thinking skills. A person led by intrinsic motivation is likely to use and combine the skills and knowledge from other fields, or to put more effort in order to acquire the necessary skills in the target domain and have more willingness to fulfill the task. Although the development of expertise and creative-thinking skills can be affected to some extent by the social i.e. work environment, the strongest and most direct impact of the work environment is precisely on the motivation of each employee. The internal motivation of the employee starts the moment when the conditions for enjoying the work are established.

ORGANISATIONAL FACTORS THAT FACILITATE CREATIVITY

Proximal factors

Complex and challenging jobs. To encourage intrinsic motivation, which is prerequisite for the growth of creativity, it is essential that employees decide how to accomplish specific business tasks, which can be achieved by giving them complex and challenging jobs. Motivation increase is reinforced by the sense of urgency because in workers’ perception it creates the impression that a certain task or project is worth solving. By performing complex tasks and jobs employees feel motivated, stimulated, happy and productive, which leads them to become more creative. Complex and challenging jobs require diverse skills and talents, enable the employee to participate throughout the entire process gaining an impression of the whole task, provide the employee with freedom and discretion in determining work procedures and schedule, giving each of them information on the effectiveness of job execution, and perform substantial impact on the lives of others, both inside and outside the company. In contrast, the simple and routine tasks inhibit employees’ attention and delight, reducing their creative potential, and furthermore, in some cases during execution of a routine operation – usually carried out by well-known schemes, processes and information - creativity can be detrimental because it introduces unnecessary changes which reduce the effectiveness of the work.

Managerial behavior. Another proximal factor influencing creativity is managerial behavior. Managers can influence employees’ creativity by setting strong values, beliefs and assumptions and by their reaction to critical situations, especially when they see conditions as opportunistic and when they are proactive. Free exchange of information, diversity of opinions, open questioning, challenging of assumptions, maintaining group diversity, guiding careers, coaching and mentoring are also valuable managerial tools for promoting creativity. Cummings and Oldham (1997) identify supportive and non-controlling supervision as one of the most important factors influencing individual creativity. Supervisors are supportive when they praise good work and reward good performance, show concern

for employees' feelings and needs, encourage them to express their own concerns, provide positive and informational feedback and facilitate skill development among employees,. Also, supervisors are non-controlling when they refrain from always checking on employees' work, involve employees in decision making, do not closely monitor employee behavior, and do not pressure employees to think, feel, or behave in certain ways. Controlling supervisory behaviours shift an employee's focus of attention away from his own ideas and toward external concerns.

Diversity. Diversity is also an organizational factor that enhances creativity. It is a broad concept and includes different disciplines, personality types, and different ways of thinking about problems, all of which are believed to lead to increased number and variety of ideas. However, diversity also tends to increase tension in organization that, if not resolved successfully, can lead to organizational conflict and chaos. When working successfully, diversity creates new dialogue that opposes existing ideas and strategies of the "legitimate system." In fact, creativity occurs outside of the legitimate, status quo system and is often in direct conflict with it. Creative changes work their way into the dominant system through persuasion, political maneuvering, and ultimately, through re-education.

Stimulating co-workers. Having stimulating co-workers also promotes creativity by adding excitement and energy and the potential for synergy (Cummings and Oldham 1997). Employees with creative personal characteristics need to be surrounded by colleagues who help excite them about their work but do not distract them from it. The potential of interactions with others may provide important further motivation, stimulate interest, add complexity, and introduce competitive pressure – all of which can lead to enhanced novelty, usefulness, employees' contributions and individual and group creativity. Team work is very important for organizational creativity because it creates new and unexpected combinations of an organization's past knowledge in ways that individuals or more formal organizational structures do not.

Affective context. The fact that the affective context has essential influence on creative problem solving is more and more evident. Creative people are open to emotional experience and express high level of positive energy, and these features make better impact on creative problem solving. Many studies have shown that positive mood has numerous beneficial effects on cognitive and social action, including effective decision making in complex tasks as well as innovative approaches to negotiating. In contrast, creative problem solving is less likely when people are depressed, unhappy or under stress; negative moods tend to limit their attention and lead to stereotyped responses. In this context we should consider the relationship between emotional functioning and creativity, and the influence of labor relations, events, and other factors in the work environment on positive and negative mood of employees and their creative efforts.

Distal Factors

Resources. Resources are very important not only for functional support, but also because the possession of adequate level of resources for the particular task or project affects the employees' perception that the project is valuable and worthy of organizational support. Resources include funding, time, physical space and information. Amabile (1998) argues that the two main resources that affect creativity are time and money, stressing the importance of quantity of time and money that should be given to employees because they can either support or reject creativity. It is suggested that there is a "threshold of sufficiency" in which the appropriate level of resources can positively influence creativity, and above that it has negative effect.

Organizational adaptability. Generally, organizations with significant adaptability more support creativity. Adaptability means continually and deliberately changing work routines in order to find better ways of doing business. Flexible organizations participate in the "opportunistic surveillance", which means scanning the environment to anticipate new opportunities and problems, and react to them with new methods and approaches. Organizations that show a low degree of adaptability demonstrate a high degree of centralized control over decision-making and rigid adherence to rules and regulations have a negative impact on creativity. Centralized decision-making and strict adherence to the rules reduces the intrinsic motivation of employees, lower creativity and ability to cope with the problems and requirements, all of which drastically decrease the potential of the entire organization. Generating

new ideas requires the free flow of information and access to knowledge, so centralized decision-making and control, by restricting their flow, substantially hampers the creativity of workers.

Internal strife . Conflicts and internal strife increase stress which, in turn, causes the resort of familiar strategies and behaviors, rather than using new approaches. Stress also creates a negative mood and anxiety, which, as mentioned above, prevents the creative act. Stress is a potential inhibitor, but it also can be a catalyst of creativity (Stacey 1996), especially if associated with a positive challenge (Antonovsky 1987), because creativity arises from the conflict between the existing organizational system and emerging covert “shadow” system. While existing “legitimate” system in the organization usually seeks conformity and hierarchy, creativity that occurs in the “shadow” system is characterized by diversity, ambiguity, discussions and reflections caused by the new ideas that threaten the existing norms. For organizations that act as “on the edge of chaos” at times, in fact, sudden changes alternates with periods of stability, while for the bureaucratic organizations with a high level of centralization is pretty difficult to move in a creative way, as they have a limited flow of information and weak ties between individuals. Rich flow of information, reciprocal linking, the diversity of behavior and perspectives provide raw material for new ideas. Whether or not such turbulence will be implemented as creativity depends on how well the organizations, groups and individuals are able to cope with the anxiety created by the challenges in the current system.

A LEADER’S ROLE IN ENCOURAGING CREATIVITY

To develop creative spirit in any organization, it is necessary to understand the role of leadership in encouraging creativity. Leaders can successfully foster organizational creativity by creating such work environment for flourishing it. They can achieve this by building unique and friendly working conditions for their employees because the appropriate social structure of the organization helps employees to feel safe and accepted which emphasizes their creative potential. Therefore, leaders must respect, value and make the most of the wealth of employees’ ideas, knowledge, backgrounds and attitudes and let them use their unique personal qualities and experiences in order to contribute to organization development. Also, the leaders must appreciate creativity themselves and enthusiastically look at fostering new developments, which provides essential challenge and opportunities for employees to be creative.

Strategic goals and inspiring vision of leadership help create a work environment where every employee can fully participate and accomplish professional and personal growth achieving a common vision. Leader is the one who motivates people in the organization to bring out their creativity through creating a shared vision of the type of organization that should be built. Such work environment is associated with creativity, while such kind of leadership causes changes in employees that have positive influence on their creative behavior.

Leaders must stop treating the employees as machines, but rather than living beings and start to look at organization as a living system filled with creative spirit and force that exist in all of their followers. This attitude will help leaders to be more effective and build organization filled with people who are adaptable, ready for changes in their environment and capable to innovate purposefully. Therefore, the only way leaders can harness this creative spirit that exists throughout the organization is when they engage the whole system inviting everyone to participate in solutions and in the creation of the organizational processes.

By stimulating creativity, leaders can help their organizations achieve it. They do this by challenging and freeing employees to produce fresh solutions to problems and asking questions that cause their followers to think freely. The leader who is stimulating creates changes that make work in the organization imaginative. This type of leadership relaxes employees and focuses their intelligence and creativity on solving organizational issues and achieving goals in different, new way. On the other hand, when organizational culture speaks and works against creativity, it is then the most difficult obstacle to creativity to overcome. This kind of culture encourages the belief that the way the organization functioned in the past should not be changed. The fear of failure, poor organizational politics and discomfort about anything new or different are the main reasons for such behavior. Only creative leaders are able to accept changes and encourage employees to question why the organization does

things on certain way, and then look for alternative ways of doing things. Such leaders stimulate employees to take risks, try new ideas, and even to fail and make mistakes.

Many organizations have barriers that prevent employees from contributing their skills, ideas and energies to the organizational success. Those organizations and their leaders do not realize the importance of managing diversity. The purpose of managing diversity by leaders is to harness the differences of the workers for a more efficient functioning of the organization. This means that the organizational leaders understand, values, and make the most of the individual differences found in every person. This means that leaders must design the social structures of the organization in such a way that all of the workers have a sense of belonging and make all members of the organization feel a sense of worth, security, and acceptance that allows them to give much more of their talents and creativity to the organization. The presence of diverse opinions, attitudes, thoughts and personal characteristic of employees enhances creativity, flexibility, problem solving and innovation. When people with different skills and talents join an organization, they have the potential to inject new ideas and challenge the organizational beliefs. In essence, the creativity of an organization depends on:

- How the leaders design the organization and create the environment that allows creativity to develop;
- How they encourage and manage diversity in the organization;
- How they inspire employees to bring out their best creative sides and use that to help lead and transform the organization.

CONCLUSION

From all the above, it is evident that achieving employees' creativity is not easy, but it is worth fighting for and it is worth encouraging it because it can help organizations to abandon some old habits, adapt to the complex market conditions, take on new risks and bravely deal with uncertainty. Organizations must demonstrate a strong commitment to creativity which is adopted and transmitted by the top leadership throughout the organization.

Organizational leaders should start to think about human motivation at work as a complex system in which is possible to achieve synergy between employees and their work environment. Maintaining employees' creativity at work depends on the maintenance of their intrinsic motivation. This means two things. First, they need to do what they love i.e. to find a job that is in perfect harmony with their expertise, creative-thinking skills and strongest intrinsic motives. Second, they need to love what they do i.e. to find a work environment that allows them to maintain internal motivation focus and support exploring new ideas. Leaders who understand this formula will recruit people who have necessary working skills and experience, and furthermore – in whom smolders a sparkle of passion for their work. But also, they will whip up that sparkle creating the work environment that reduces barriers, encourages diversity and boosts creativity. Only then their organizations will be prepared to harness creativity in order to achieve business success.

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