MANAGEMENT OF INNOVATION PROJECTS IN THE CONTEXT OF THE COMPETITIVENESS OF THE ORGANIZATION

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ABSTRACT

The European Commission within the Directorate C - European Research Area: knowledge-based economy (European Commission, Directorate C - European Research Area: Knowledge-based economy), has defined the model of the European Research Area. One of the elements of this model is the "triangle of knowledge", which involves the interaction of education, research and innovation. Therefore, management of research and development, necessarily involves the management of innovation. This study analyzes the importance of change management and innovation to achieve and maintain competitive advantage of organization in today's business environment. Innovation management is discussed in the broader context of managing innovation projects.

Key words: Innovation, project management, research and development

1. INTRODUCTION

Modern business environment of the organization, among other things, makes the increasing rate of innovation. Innovations are present in all areas: in engineering, technology, economics, organization and management. But innovation activity should not be understood as a set of innovations, but as the organization's ability for continuous and steady development of human resources, systems of knowledge and education, but also a new culture that will encourage employees creativity and inventiveness. Progress of research-development and improved work contribute to the faster and better transformation of current knowledge and information to new or modified products, services, processes or technology, or the useful innovations, and in this regard to the ongoing changes. To manage innovation be effectively and efficiently, and thereby contribute to business success of the organization, it must be organized and realized in the form of innovation projects. Following the previous tips in this paper to define the context of change and innovation, and analyzes the importance of change management and innovation in the modern organization, and then reviews the development, structure and processes used by the management of innovation processes.

2. SIGNIFICANCE OF THE CHANGES

Organization is dedicated agreement more than one person in order to achieve specific goals. The organization has three basic characteristics (Robbins, Coulter, 2005):

- purpose, expressed in terms of goals that the organization intends to fulfill
- people or employees who fulfill the goals
- a dedicated structure, developed for employees to perform work and achieve goals
Therefore, the term organization refers to the entity that has a clear purpose, which includes people or members, and who has a kind of special-purpose structures (Robbins, Coulter, 2005). Organizations are now interpreted as a subject that is open and highly interactive with its environment. Rather than just their individual economic interests (anthropological approach), the organization has to respect the interests of the environment which is an integral part of (systemic, holistic approach), which are primarily related to the respect of sustainable development, ethical principles and the development of the social environment.

Changes are inherent factors of development of each organization. Given that development involves a continuous or discontinuous sequence of states, the change can be defined as a transition from existing to new state. This new state may, but need not, involve the improvement of (positive or progressive growth). However, any improvement implies change. Therefore it is widely accepted definition by which changes represent the quality improvement (Ristic, 2003).

Changes imply a rejection of obsolete, abandoning unproductive or, organizational exit, and represent the reality of each organization. Needs for organizational changes are initiated by environmental conditions (state laws and regulations, new technologies, fluctuations in the labor market, economic changes) and internal forces of organization. Internal forces may be the result of external changes and internal enterprise organization (change of structure, changing workforce, the introduction of new equipment).

Process of the change is unique to each individual, organization or company because the contexts in which they place are different. Changes should be implemented in accordance with individual or social needs and in accordance with the specific conditions under which they occur. For the individual, the changes improve the quality of life, for the organization - a way to remain competitive and vital, the company - the ability to join in the global trends of development and to advance. Specificity of conditions is related to environmental factors, management, acceptance of change, level of knowledge, specific risks and so on.

Changes can be quantitative and qualitative. Quantitative changes increase development capacity and effects and create conditions for qualitative change. Qualitative changes are implemented with a view to training for the successful operation in complex and dynamic environment. They can be:

- civilizational changes
- oriented strategic change and
- tactical changes

Civilizational changes are complex changes that involve (Ristic, 2000)

- adoption of new philosophies, concepts, standards, models and solutions for successful functioning in the current world
- changes in attitudes, thinking and behavior in all spheres of life and work of an individual, organization or society
- development and engagement skills and ability to implement changes

Civilizational changes represent a discontinuity and replacement of all that existed with something new, different and significantly changed [1], or discontinuity in which they summarized a large space, time and all matter (Ristic, 2000)

Attempt to understand the current civilizational change requires confronting with the tensions that will follow them in this century (Bel, 1978):

- tension between global and local;
- tension between general and individual;
- tension between tradition and modernity;
- tension between long-and short-term matter
- tension between the need for competition and achieving equality;
- tension between the lightning dissemination of knowledge and people skills to adopt;
- tension between the spiritual and material

Of understanding and ways of overcoming these tensions depends the speed with which individuals, organizations and certain social structures identify, implement and adapt to changes.

Strategically oriented changes are changes that prepare the organization for quality responses and reactions to developments and events in the future outside world (Ristic, 2000). The organization's strategy defines the hierarchical structure of oriented structural changes. This structure is often referred to as strategic change, including all types and levels of changes to be implemented on existing solutions. To ensure the maximum effect it is necessary to implement all the defined changes, regardless of their importance.

Tactical changes are changes in specific situations provided the best results and effects on the solutions that have already been carried out strategically oriented changes (Ristic, 2000).

Tactical adjustments are primarily related to changes in the product or service and the organization's activities in specific market conditions.
Effects of the current discontinuities are reflected in organizations. Organization is confronted with the necessity of implementation of changes, starting from changes in perception of the organization as a relatively independent, encircled manufacturing business totality, through changes in concepts and models of operation, to the change of specific goals and objectives.

3. INNOVATION AND INNOVATION ACTIVITY

Small-scale changes are called innovation. Though it is difficult to define the limit when the innovation turns into a change, among them there are fundamental differences. Changes primarily involve organizational change, while innovation means introducing something new as a result of practical (scientific-technical) winning innovation. Innovation is a new product, process, technology or services with unique features, created using own or others' results of scientific research, discovery and knowledge, through its own concept, idea or method of its creation, which is with the appropriate value placed on the market (Brain, 1991). Considering the areas in which they arise, innovations can be: technical, technological, economic, organizational and managerial.

Set of actions which transform scientific knowledge into new products, services, processes or technologies and their commercialization activities, represents the innovation process. Innovation process can be seen as:

- comparative and continuously carry out scientific and technological activities, investment and marketing;
- life cycle of production;
- investment project.

Key innovation process is the flow of technology and information between people, companies, universities, institutes and other organizations.

Innovative activity is undertaken in order to create new products, technologies, processes and services or to change existing, in accordance with market needs. Innovation activities except the innovation process, includes market research market sales of goods, their consumer properties, competition, and complex technological, managerial and organizational control measures which in its totality leads to innovation, a new approach to information, consulting, social and other types of services. innovation activity should not be viewed as a set of production and technological innovation, but as the ability of the organization and its staff for continuous and steady development of knowledge organization. In the process of innovation activity system of knowledge must be constructed rationally and effectively controlled.

Goal is to create innovative activities of long-term competitive advantages. Primary means of achieving this goal is the innovation strategy. Implementation of innovation strategy requires the formulation of concrete goals that the final result in quantity and quality indicators.

4. MANAGING CHANGE & INNOVATION

Its base interest: survival, growth and dynamic development, organizations can achieve only if she implement quality changes in work and behavior, and if she manage them well. Main reasons for deterioration of the organization are, first of all, the non-implementation of change and failure to achieve the required quality in the implementation of changes. Changes may represent chaos and disaster if they are not managed, but also base for survival, growth and development if they are well managed (Ristic, 2000).

For quality change management it has been developed a strategic model of participatory governance. It allows the management of all elements, activities, processes and changes in enterprise. Changes are treated as part of the regular functioning of the enterprise (Bobera, 2003)

Model also allows the definition and implementation of strategic-oriented changes, which means that, first, emphasizes the development of available resources (especially human resources), and then their quality commitment in achieving the objectives of the organization. Emphasizing the importance and evaluation of human resources implies their active participation in process of decision strategic-oriented decisions (participation in decision-making).

Strategy, as basic document for the implementation of governance, defines (Ristic, 2000):

- system of strategic goals and objectives, which organization wants to achieve
- system strategy-oriented changes or structures necessary, the existing solutions, in order to provide quality response to changes in the outside world and give its full contribution to achieving its own strategic goals and objectives
- specific directions regarding the manner of implementation of major changes in the company
Strategy refers to three categories of change: change in structure, changes in technology and changes in people.

**The change in structure.** Structure of the organization should enable the achievement of goals. With the regard that the the goals of the organization defines the organization's strategy, structure should follow strategy changes. Restructuring of the organization is conditioned by the dynamics and the uncertainty of surrounding. Global competition, increased product innovation of competitors and increased demands in terms of high quality products and services, are examples of dynamic force environment that require a flexible structure capable of responding to rapidly and uncertain environment changes. Changes in the structure include any change in relations with authorities, coordination mechanisms, giving authority to employees, changes in job descriptions, etc (Robbins, Coulter, 2005).

**Technological change.** Technological changes include changes in the methods and processes work and the equipment that is used. Technological changes in methods of production of goods and services are initiating technological developments, which in turn contributes to new technological changes. Modern technological changes are most pronounced in information technology, bioengineering, new materials, robotization and computerization. Faster tempo of technological changes promotes the view that the different epochs in the development of human society does not differ in what they produced, but in how they produces. While creating new technology implies uncertainty, high risk, trial and error, and the different alternatives, its materialization as innovation or changes creates opportunities for productivity growth and therefore represents a driver of economic development organizations.

**Change in people.** Changing men involves changing their attitudes, expectations, perceptions and behavior. Term organizational development, which often refers to all types of changes, basically refers to the techniques and programs for changing people, nature and quality of interpersonal relationships. Employees can be drivers of changes but also to impede and hinder the implementation of changes. Because of this is required preparation of employees for the implementation of changes, and timely resolving the problem of resistance to changes. People often do not accept changes, because changes replace what is known by something that is ambiguous and uncertain. The most common reasons for resistance to changes, besides uncertainty are: habits, ignorance, inertia, fear - concern for the personal loss (position, money, authority, comfort) and the belief to changes are not compatible with the goals and interests of the organization. Vercoming the resistance and taking people for changes often represents a long and exhausting process. Implementation of the strategy depends fundamentally on the quality of engagement of the available current knowledge, information and technology solutions, or the capacity and quality of research and development and improvement work, which it actual knowledge, information and technology solutions transform the current changes. In the structure of intellectual work, the decrease in share of routine duties and tasks, and increasing the participation of analytical, research, development and improvements operations is evident. This indicates the need for continuous development and improvement of human resources, knowledge systems, conditions for the development of a knowledge base and educational system of the organization. Knowledge is future key competency of the organization and its stable competitive advantages, a source of innovation and changes and a tool of ensuring their high results. Thereby the same importance is given to institutional and non-institutional education, organized and individual education and education and training for solving practical problems (Ristic, 2000).

The way in the organization solves the problems is an organizational culture. More specifically, organizational culture is a system of mutual understanding and belief which members of the organization, to a large extent, determine the actions of employees (Ristic, 2000). The organization must develop a culture that will encourage creativity and inventiveness. Creativity refers to the idea of combining the skills and inventiveness to take creative ideas and turning them into new useful products, services or business methods, or in innovation.

The processes that create conditions for the implementation of changes are related to the processes that (Ristic, 2003):

- enhance results;
- builds capacity to implement changes;
- define the direction of movement;
- evaluates the existing culture and works to develop positive cultural norms;
- determine strategies to accomplish own goals;
- strengthen the internal conditions which contribute to change;
- is monitored, evaluated (valorized) own process, progress, success and development.

Environment that encourages innovation form three groups of parameters that relates to organizational structure, human resources and organizational culture. Modern business environment of the organization is characterized by: globalization of business activities, increasing implementation of information technology, reduction of product life cycle and high rate of innovation. The increasing rate of innovation indicates that it
is a phenomenon that must be planned, organized, managed, coordinated and controlled. The process to develop innovation, their commercialization and profitable exploitation have a character of the project (ISO 10006:1997).

5. PROJECT MANAGEMENT

The basic characteristics of innovative organization is the skill to focus creativity into useful outcomes: new or modified products, services, processes or technology. Introduction of innovations effectively and efficiently is realized through innovation projects. The project is a unique process that consists of a set of coordinated and controlled activities with start and end dates, that is executed to achieve the goal that meets specific requirements, including restrictions on time, cost and resources (Nouks, 2005). The project represents a temporary efforts undertaken to create a unique product or service, or to introduce innovations. Basic features of the project are:

- uniqueness (in terms of the specific objectives of the project);
- temporary nature and uniqueness (the project has a clearly defined beginning and end, the end of the project represents a moment when you realize the project goal, or when it becomes clear that the project objective can not be achieved);
- triple limitation (in terms of the limited scope of the project, time and cost of its implementation);
- increased risk (considering that the project is planned and carried out in conditions of uncertainty and risk).

Except that creates a unique product and/or service, the project changes the ways and methods of adapting technology and market conditions. The project provides a modern organizational structure, in which the organization is changing faster and better than in a cumulative process of adaptation.

The need for effective and efficient achievement of project objectives with the existing limitations and the need for simultaneous implementation of several projects in the organization, implies the necessity of project management. Managing the project or project management represents a application of knowledge, skills, tools and techniques to project activities to achieve project requirements (Kerzner, 2004). Failures in project management reduce the organization's ability to accomplish its mission in an effective and efficient way (ISO 10006:1997). The basis for the development of project management, represents general systems theory. General systems theory provides the basis and prefers a comprehensive understanding and solving problems, in contrast to previously existing views about introducing a whole based on an analysis of its integrative elements. Project management has been arised by management systems and it is considered to be applied management systems. The terms project management and systems management is now used interchangeably (Systems Engineering Fundamentals“, Supplementary Text, 2001). Tempo of introduction project management in the organization followed the tempo of technological development. No project-driven organization have based their existence on products and services, but have had very few projects with identified profits and losses (to 1960). Realistically, many do no project-driven organization have become hybrids, because they eventually formed the project-driven sectors (1960 - 1990). Modern project management is still a hybrid, but with a large number of projects and the predominant orientation towards marketing, engineering, research and development, and not only to project-driven sectors. Organizations recognize the benefits of project management and becoming more and more project driven organizations.

Project processes can be divided into six main groups:

- Initialization process - the decision on how to execute the process;
- Planning processes - defining objectives and criteria for project success and development of alternatives for achieving the goal;
- Implementation process - coordination of people and other resources to achieve goals
- The processes of analysis - analysis of the planning and execution of the plan and deciding on the necessity of implementation of corrective measures;
- Control processes - the determination of necessary corrective actions, their coordination, determination and application;
- Project closure processes - ways of the formalization of the project and its final closure.

Framework for the management of the project consists of (ISO 10006:1997) interested parties (persons involved in project activities or interested in their execution: the project sponsor, project team, support staff, customers, etc.);

- areas of knowledge (the necessary knowledge and on that basis, developed competency management)
tools and techniques (supporting the project realisation, including: gantt, methods and techniques of network planning, analysis of critical path/series, software for project management, etc.)

The basic fields of knowledge of project managers are: managing the project scope, project time management, cost management and quality management project.

Auxiliary fields knowledge, among others, are: human resources management project, managing communication in the project, managing project risk, project supply management, project management integration.

Management of innovation projects should not be considered in isolation, but in a broader organizational context that includes research and development, in order to achieve competitive advantage organization.

6. CONCLUSION

Survival and development of a modern organization depends fundamentally on the level of project management. Some of the benefits that the organization acquires with the introduction of management innovation projects are: new, competitive products, services, processes and/or technology, better control of changes, increased profitability, better collaboration with customers, increased efficiency and effectiveness by developing a new organization culture, higher levels of quality environment, ie. reduced impact on the living environment etc. Therefore it is necessary to create conditions for successful realization of innovation projects. One of the processes that it is contributing to that is the management of innovation projects. Understanding of potential problems by defining features that should be followed (or ignored) and threats to be answered (or accept), developing and controlling the response to potential risks and initiating the need to improve project management plan, management of innovation projects is the best way to contribute to achieving the objectives competitiveness of the organization.

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