STRENGTHENING THE REGIONAL INNOVATION POTENTIALS IN FUNCTION OF COMPETITIVENESS IMPROVEMENT
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Summary: The modern dynamic business environment causes permanent changes in business activities. Globalization, advanced information and communication technologies, intensive competition are some of the features of the new economy - the "knowledge economy". Knowledge as a resource of 21st century inevitably arises as the pillar of the modern business enterprise. In this sense, the main objective of this paper is to emphasize the possibility of using knowledge in a function of creating innovations and implementing them at the regional level. Modern competitive struggle is becoming increasingly difficult for companies that must find new ways and strategies to create a more favorable position than the competition. Innovation, whose development at the regional level has to be promoted intensively, represents a strategic instrument to improve competitiveness in today's business environment.

Keywords: innovation, regional development, competitiveness.

1. INTRODUCTION

Modern business environment necessarily highlights the need for improving existing and acquiring new knowledge in order to improve competitiveness of companies, which implicitly leads to greater profits. Long time ago, 21st century has been marked as the century of knowledge, innovation and new technologies that are treated as capital resources for struggling with the competition and economic development in general. Also, creating peculiar relationships between the specific actors of knowledge, innovation and entrepreneurship, describes the analytical frameworks and models in which knowledge, technical change, innovation and entrepreneurship activities are treated as one of the most important factors affecting the sustainable economic development both at the national and the regional level. With the help of such a defined model, it is much easier to cope with competitive challenges of the future by achieving the appropriate results: a) improving the level of regional innovation activities, b) predicting the effects of innovation activities on regional development, c) improving the relative position of the region in terms of competitiveness development and innovation, d) evaluating the impact of technological infrastructure and innovation capabilities not only to regional development, but also to the entire economy, e) analyzing the essence of technological innovation in maintaining and improving the competitiveness of companies in the global market.

2. INNOVATIONS AND REGIONAL DEVELOPMENT

Defining innovation, as the first step in the analysis of their impact on the competitiveness of enterprises, is not an easy task. This difficulty arises from the use of the term "innovation" in different
contexts, in different ways, which often leads to overlapping of interpretation which, in some cases, can be quite contradictory and can cause confusion and loss of substance of the above stated theoretical and practical concept.

First, it is important to distinguish innovation from invention. In this respect, Fagerberg [3, p. 3] points out that "the invention is the first appearance of the idea for a new product or process" and that "innovation is the first commercialization of that idea." Simply put, innovation involves the introduction of new products, services or processes, and finally, the commercialization. Of course, it is necessary to make a distinction between product innovation and process innovation. Highlighting the attitude that "a firm's new product represents a new process for another company and vice versa" [4, p. 3], establishes the relationship between product innovation and process innovation. Tidd and associates [8] emphasize the definition of innovation, "innovation is the specific tool of entrepreneurs, the means by which they use change as an opportunity for different tasks or services ..." "Innovation is the source of the competitiveness of enterprises" [5, p. 126]. Studying the concept of innovation can be based on three key characteristics [4, p. 4] as follows:

- **Novelty** - innovation involves the further development of solutions, opportunities, techniques and technologies leading to the introduction of appropriate novelties;
- **Improvement** - introducing novelty (new features) is not an innovation until it provides superior features and improvements compared to previous solutions and alternatives;
- **Overcoming uncertainty** - the third important characteristic of innovation is uncertainty or situations where past experience does not help in finding solutions to new challenges; only the entrepreneurial desire and perseverance can lead to a departure from the established framework and greater possibilities for overcoming the uncertainty that brings innovation.

Many innovations are tied up to a particular geographic area, resulting in some small and medium enterprises or networks formed by these companies in a particular geographic region. To be more precise, because of such links between innovation and the region, it is necessary to point out certain characteristics [2, p. 10-11] that regional development necessarily imposes.

Innovations occur in a particular institutional, political and social context. The region is the location where all interactions occur and the innovations that are treated as fundamental processes in a particular geographic region, and the ability to innovate, thereby supporting the regional community and regional institutions. The innovative activity of firms is multiply related to specific regions due to the fact that it is based on local experts and other local labor force, the network of local suppliers and partners, local knowledge, traditions, cooperation with local agencies and organizations.

Factor that significantly affects regional innovation is the appropriate social relations at the local level that are developed over time and carry certain cultural values and standards of behavior. Geographical concentration and proximity of the company significantly affect the regional innovation activity. Focusing on a specific geographic area, companies that operate in the same or related industries generate clusters, as a kind of "network" of companies which are associated with other public institutions. Thus, there is a spillover and exchange of knowledge which results in improvement of the regional innovation system. The existence of clusters facilitates individual company's access to information about new knowledge and technologies, and contacts with the local carriers of innovation activities.

Regional development and convergence in the underdeveloped regions of the EU is one of the main objectives of EU development strategy [10]. Development problems are much more intense in the underdeveloped regions that have lower level of economic performance, outputs, productivity and employment compared to the other regions in the EU. These disparities result from structural differences in the factors that influence economic activities and overall development. In order to overcome the imbalances, the EU has defined four main principles, namely: 1) smart growth, 2) sustainable growth, 3) inclusive growth and 4) economic management.

3. REGIONAL INNOVATION CAPACITY MODEL - RICM

In the last two decades of last century, scholars and strategy creators in companies have increasingly become aware of the importance of the region as a place designated for innovation and competitiveness in the global economy. The growing popularity of this theme can be seen through the
rapid growth of networked small and medium enterprises in modern capitalist economies (e.g. in the system of Silicon Valley in the U.S.). All studies conducted on this subject were based on the simple logic that territorial agglomeration provides the best context for the global innovation-based economy for the local process of learning and knowledge sharing based on social interaction.

Proposed Regional Innovation Capacity Model - RICM [7, p. 19-25] can be used for a normative and interpretive purpose in analyzing the dynamics of innovation taking place at the regional, territorial level. Model defines the pillars on which innovation capacity of the local system is established. Thus, the four main pillars are: innovation sources, innovation capacity, innovation processes and innovation results. RICM represents an attempt to model the process through which regional systems derive the knowledge necessary to initiate innovation, transform this knowledge into innovation capacity which manages the innovation process and then uses the results of innovation in generating growth and development. Further on, each of these headquarters of the model is going to be elaborated.

The sources of innovation - In the process of creating value for the regional innovation systems, the so-called traditional (financial, tangible) assets (e.g. infrastructure, financial capital, raw materials), and knowledge resources (people, relationships, practices) as intangible, intangible asset, have an important role. Modern science has brought up new strategic approaches, such as resource-based approach, an approach based on competencies and knowledge-based approach. These approaches have largely contributed to base the competitiveness increasingly on the possession and development of intangible resources and knowledge resources.

Modern regional development depends on its ability to acquire, improve and effectively use the resources of knowledge and intangible assets that are creating them. This type of resource will be one of the most important factors of social and economic development. The greatest progress will be achieved by those countries which are better equipped with intellectual capital, since it is becoming increasingly important in the era of knowledge economy.

Many authors define the concept and structure of intellectual capital differently. “Here, we have accepted the taxonomies of Steward and Roos, which are very much quoted and very popular, and in which intellectual capital is differentiated as: human, structural and relational (capital in relations with external stakeholder).” Human capital within a company is constituted by people both on management and executive positions. On the region level, human capital includes know-how possessed by different actors who function in the region. “Human capital creates structural capital.” Structural capital may be defined as everything that employees, after a certain period of time, create thanks to their skills, knowledge, experience, good practices, and which can be presented as a company asset in the balance sheet. So, structural capital includes all those, by the nature, tangible assets relevant for development, management, diffusion of knowledge as well as all other components connected with structural characteristics of a certain region. Basically, structural capital is made of organizational capital and intellectual property. Relational capital points to the significance of connectivity between actors on the market, especially to the importance of the connections and the relationships between company and its external stakeholders in a certain region. “Company’s connectivity with different stakeholders can lead to creating of new, unique “relational or networked” assets.”

Innovation capacity - The concept of innovation capacity is relatively new within the theoretical (academic) and business circles as a kind of abstracted concept which indicates actual and potential capabilities of the system to convert knowledge into innovations that will be able to direct the creation of long-term economic growth and wealth. There is a growing awareness that economic development and competitiveness of the region largely depends on the capacity of businesses in the region to innovate. The importance of building and improving of the regional innovation development environment is characterized by power systems (clusters), such as regional innovation systems, industrial districts, and new industrial spaces and so on. In particular, one must consider the fact that innovation requires long-term cooperation between investors, entrepreneurs, researchers, companies, public authorities and consumers. Such relationships occur more easily at the regional level, enjoying the benefits of short distances in order to facilitate the establishment of formal and informal contacts. Regional cooperation networks are ideal resources of knowledge and entry points for information exchange and presentation of new ideas. Innovation capacity is often characterized as the ability of a specific geographic area to produce and commercialize innovative technologies in the course of the long term.
Innovation capacity depends on many factors, but those typically emphasized are the power of the common innovation infrastructure, the environment for the benefit of the innovation process, but also the strength of ties between the two previously mentioned factors. Regional innovation capacity also requires deep study and understanding of the nature of competencies and skills that must be mastered to achieve the appropriate level of innovation performance. The theory adopts the concept of "regional innovation capacity" which refers to the ability of regional stakeholders to address the changes in accordance with adaptive and proactive behavior in order to improve the dynamics of innovation taking place at the regional level by directing regional development. It is possible to define three main factors that influence regional innovation capacity: 1) regional stakeholders, for example actors who operate at the operational level, 2) networking, for example synergistic relationships that connect stakeholders both within and outside the region and 3) local context, for example regional space and related resources in which there are stakeholders with their mutual relations. There are two main types of actors. The first type includes companies, including their suppliers and customers. The other type of actors includes research centers and institutes of higher education - universities, research institutes, as well as agencies, business associations, and financial institutions.

**Innovation process** - Traditionally, the study of innovation processes relates to how and why innovations appear, which would guide the region towards sustainable development. “American Association for the management of product development has defined six phases of the process. These are: 1) phase of research and idea generation, 2) product concept development, 3) assessment of the feasibility of the project, 4) prototyping, 5) market test and 6) commercialization” [5, p. 140]. Innovation process is very demanding in terms of respect of various stakeholders’ demands, both in and out of the enterprise. Any such process carries a certain amount of risk which intensity depends on the strategic role of innovation in the future development of enterprises.

In the presented model, the process is defined as the phenomenon of integration and exploitation of capabilities that transform inputs into outputs. RICM provides the influence of two main innovation processes at the regional level: 1) dynamics of regional learning and 2) transformation of knowledge. The dynamics of the regional learning highlights the importance of wider use of the knowledge system and the potential benefits of functioning in a business environment characterized by a rich source of knowledge and extensive networking opportunities. The process of knowledge transformation, simply put, is the dynamic transformation of knowledge of actors at the regional level into innovations. Many factors, such as material resources, management and organizational skills, enterprise characteristics, etc., affect the effectiveness of the transformation process. The final aim is a successful commercialization of innovation at the regional and even global markets.

**Innovation results** - When it comes to innovation results, RICM emphasizes the importance of research of both the regional innovation outputs and regional innovation results. Knowledge from different sources and different processes can have significant differential effects. This indicates the possibility of different paths through which different types of knowledge can affect various aspects of innovation activities in the region and therefore the regional sustainable development. Basically, the regional innovation results can best be evaluated if the exploitation of knowledge is observed with the aim of improvement of the regional development performances.

4. **REGIONAL OPEN INNOVATION SYSTEM - ROIS**

In the economy of the 20th century, the practice of innovation within the company has been represented for a long time. The company with its resources and its professionals creates the innovations that are either commercialized or stored for future strategic moves. This practice was stopped in 1990s, when a great frequency of different technologies on a global scale appears and when the market for new technologies is created. This intensive development of new technologies leads to increased use of results of external research and development.

Taking into account the growing importance of regions in the global innovation process, there happens a formation of a completely new model called the Regional open innovation system. Specifically, “the ROIS represents an innovation network which consists of different actors, working towards the creation of innovation in a particular region” [9]. “The model provides a framework for integration of the regional innovation systems, triple-helix model and paradigm of open innovation” [6, p. 16].

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Regional innovation systems can be briefly defined as "an institutional infrastructure that supports innovation in the production structure of a region" [1]. In order to encourage innovation at the regional level, it is considered as a necessary precondition to formulate regional innovation policies, which will create the necessary institutional requirements for development in the region and the whole economy.

The regional innovation system is bipolar, which means that, on one side, there is a subsystem of the exploitation of knowledge, and on the other side, subsystem of knowledge generation [6]. In the first subsystem there are companies, clusters as the main "consumers" of innovation, the mechanisms that commercialize ideas of research and development centers. The second subsystem consists of institutions for "creating" innovation such as laboratories, universities, and research and development centers and so on. The existence of multiple interconnections and relations between the two subsystems is a necessary prerequisite for the creation of new knowledge and expansion of new products at the market.

The regional innovation system is only a part of so-called National Innovation System (NIS) as a kind of framework that is used to analyze the technological changes that are crucial for long-term economic development. Historically, the NIS was established as a separate part of the national economy in which the company achieves intensive cooperation with various organizations and institutions that undertake innovative activities. As it can be seen, within this concept the company has a decisive role in the initiation of innovative activities. However, there are contemporary trends that are shifting the emphasis from the businesses to other actors in the innovation process.

One of such approaches is shown through the, so-called, Triple-helix [6, p. 19] model that represents the unbreakable relationship: university-industry-public institutions in the process of innovation creation. In Triple-Helix model, primacy is given to universities (under this name all other research institutions are implied) as the main carriers of scientific research and experiments that lead to the creation of an invention. Companies are engaged in the commercial part of the job. However, between the NIS and the Triple-Helix model there is great overlap, since there are the same actors in both concepts. The only difference refers to the main driver of innovation activities.

The presence of these trends leads to the formation of a new paradigm called Open Innovation - OI. Open innovation can be defined as the use of external knowledge in combination with valuable resources in the enterprise, which leads to a unique product that will be competitive on the market and that competition could not copy easily. The basic idea of the OI is that "not all smart people work for you" [7, p. 31]. Due to the fact that advanced global technology market has a huge number of solutions, each company can find an appropriate solution for its business challenges, innovatively active companies can commercialize their ideas, and the ones that wish to develop new products to stay ahead in the market, can chose outsourcing research and development because it is proved to be a cost-favorable option for the company.

In developing the ROIC model, one must take into consideration that small and medium enterprises, that dominate by the number in the economy, and which, therefore, are the holders of innovations at the regional level, have limited assistance from the state. This is because great public concern in the sphere of innovation activity of small and medium enterprises can bring to their "pupating" at the regional level and to a lack of desire to present the innovation in the global market.

5. INNOVATION STRATEGIES AND THEIR IMPACT ON ENTERPRISE COMPETITIVENESS

In a global economy, regional development and comparative advantage are based on the use of unique skills and resources that drive innovation dynamics. The strategic perspective should focus on how to develop such unique skills and resources in order to nurture innovation and competitiveness. Successful innovation requires articulating a shared vision and strategic direction of a regional expression. This is a key step in the institutionalization of innovation at the regional level.

In economic theory, there are several classifications of innovation strategy, but it seems that the following one most appropriately expresses the essence, importance and the need for establishing strategies for the effective management of innovation in the enterprise. This classification is given by An-Ali Nermien [5, p. 134]:

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1. The strategy of innovation driven by consumers emphasizes, as their primary goal, satisfaction of consumer needs. It is present in the companies which have several clients of great importance in their portfolio. The essence of this strategy is the precise orientation on consumers, their needs and markets with close focus on who the consumer are. This innovation strategy is focused on providing an appropriate choice to consumers and establishing a kind of partnership with them.

2. Internally oriented innovation strategy, led by employees, is focusing on improving efficiency within the company by encouraging innovative skills of its employees. More efficient operations can be achieved by important changes within the company (cost savings, increased capacity utilization, etc.). This will result in providing the best price for the given value, and thereby increase competitiveness.

3. Externally-oriented innovation strategy leads employees to find new business areas by releasing their innovative potential. Allowing free creation and flow of the ideas and innovations, the company differentiates itself from the competition and becomes an innovative leader in the industry. This strategy is usually adopted by companies for which innovation is the essence of survival and development.

4. Technologically driven innovation strategy is based on directing innovation activities in order to achieve victory in the technology race with its competitors. Companies tend to report more patents, develop new products/services, introduce new generation technology, and thus, at least temporarily, establish certain technical standards and laws of the market. The most precious resource of these companies, are highly competent and talented employees. Intensive monitoring of competition, understandably, is an inseparable part of daily business operations selected by this strategy.

"The choice of one of these strategies leads top management to spread the awareness about the need for continuous innovation throughout the entire enterprise, as well as to the adequate selection of innovative methods that selected innovation strategy requires." [5, p. 134].

6. CONCLUSION

Innovation and technology are an important source of regional competitiveness by facilitating cooperation between various parties from both the public and the private sector. In particular, they can promote mutual learning processes and the creation, transfer and diffusion of knowledge that is critical for innovation. Such cooperation and established network helps in translating knowledge into economic opportunities, while at the same time builds the relationships between people and organizations, which can act as a catalyst for innovation. Such action should be extended to all policy areas relevant for economic, scientific and social development and should create a long-term political horizon.

Technology and innovation play an important role in value creation and economic growth, and technology has become one of the most important factors in the growth models. The role of innovation, as a motivating force, is to direct the company to an ambitious and long-term goal and make a wide range of products and services arising as a result of intense innovation activities. Innovative actions stimulate investments which introduce new products and processes that improve the living standards of society, lead to the development which increases the competitive advantage of economy and has a positive effect on business performance and competitiveness of the country in the world market. On the other hand, innovation is very important for the individual companies. First, it acquires new information and knowledge that enables them to create new products, new production processes and marketing activities needed for innovation process. As a result of innovation, the company is able to directly develop new products and processes and commercialize them in the market thus providing an advantage over their competitors. Moreover, innovation enables firms to improve skill development and maintenance capabilities for the adoption and dissemination of technology from external sources and identify, adapt and use new knowledge and technologies produced elsewhere in the world.

Countries and regions need help both to overcome the structural differences and in the development of their comparative advantages. This means, among other things, encouraging the development of economic activities and innovations based on knowledge. That can make a major contribution to the application of RICM and ROIC models, which have a critical role in defining the actors of regional
innovation activities, relationships and connections between these actors, the main innovation activities in the region and so on. The aforementioned models are directed to strengthening the proactive role of regional decision-makers who contribute to or are trying to contribute to achieving goals and improving performance through the definition, support, and implementation and control activities of operational objectives across the region. An important influence on the promotion of regional innovation has the development of a new policy of promoting innovation policies for strengthening the capacity of SMEs to innovate through business networks and clusters and improve their links with the main sources of knowledge, including universities and research centers. Direction of regional innovation activities of enterprises is carried out through the appropriate innovation strategy which ensures company to be competitive in the long run.

REFERENCES