

The Formation of Territorial Innovation Models

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Abstract

Background: The article presents the authors' vision of the strategy selection process, according to which the external and internal conditions of the region development provide opportunities for sustainable competitive advantages in the formation of an adequate territorial innovation model. **Methods:** A refined methodology has been developed as a synthesis of system, evolutionary and spatial-temporal approaches. System approach allows studying the organizational and institutional structure of the region, all elements of which are interlinked and complement each other. Using an evolutionary approach one can understand and appreciate the internal dynamics of the system, the relationship between the actors and the basic blocks in the conditions of evolving internal and external environment. To expand and complement the ideas the spatial-temporal approach is proposed, which involves the use of a multi-dimensional system of spatial-temporal coordinates. **Findings:** In accordance with the proposed approach to the analysis of the territorial context of the innovative processes development the article singles out the main types of innovation territorial models and discloses features of the formation of the appropriate critical elements and relations of the innovation infrastructure. Holistic vision of the problem of the formation of territorial innovation models is proposed, the process of the formation of center-periphery mechanisms for the innovation potential differentiation of the regions is discussed; the features of their place and role formation in the process of generating and using knowledge and technology are defined. It has been shown that the development of the innovative strategy is an effective way to develop competitive advantages of the territories and it is associated with the nonlinearity of the innovation process, with the need to accumulate and search constantly for new knowledge, as well as with the successful adaptation to the changing business environment. The article substantiates the need to develop an innovative strategy based on the individualization of territorial innovation models proceeding from the regional context. For this purpose, the analysis of secondary sources of information highlighted the main stages of the strategy creation and key success factors in the selection of innovative development strategy, which should help the region in the development of specific territorial capital, providing higher profits for certain types of investments that are best suited for this territory. **Improvements:** The provisions put forward in this article can be used as a theoretical model that defines the relationship between the factors and variables. On the basis of this model it is possible to develop specific hypotheses about the innovative strategy success.

Keywords: Innovative Strategy, Innovation Process, Model of Territorial Development

1. Introduction

Notwithstanding considerable increase in mobility and availability of the production factors within the framework of globalized economy, today the location of the companies still plays an important part as a source of social, economic and technological development, generating effects of localization and territorial concentration

of economic activity. Current qualitative changes in the economy predetermine the growing importance of the regions as places of competition and strategic planning. They are associated with forming the new system of inter-related drivers, caused by rapidly growing opportunities for development and for realizing the entrepreneurial capabilities within the structures and the territories, resulting from ever-increasing significance of knowledge and

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innovations in improving the efficiency of the economic activity and in creating sustainable competitive advantages¹. In this regard, the role of innovative activity changes considerably as well as the nature, the character, the regulations and mechanisms of its systemic effect on forming dynamic, structural and qualitative parameters of developing territorial space of national economies.

Modern processes of globalization and regionalization create new balance of powers stipulated by the effects of global and regional integration. This phenomenon, called “glocalization”, represents a bilateral process in the course of which the relations between the economic agents become more localized and more transnational simultaneously. Changing business environment, associated with the transition toward innovative competition, sets new requirements to forming regional policies, to priority selection, to the models and instruments for their implementation. Availability of innovative activity elements in a territorial space is today the most important factor for the successful development of the economy and social sector; with that, the region obtains enhanced opportunities for preventing and for mitigating the negative effects produced by changes in both external and internal environment².

Presently, notwithstanding the great number of works dedicated to the issue of regional innovative development, investigating this issue is still urgent, as far as this process is quite complex and controversial; many aspects have not been sufficiently investigated, which makes it difficult to apply the effective models, adequate to the peculiar nature of regional environment. In this regard, the most important issues that are discussed in many studies are the issues of what type of innovation model should be applied for this particular territory, is it possible to create innovation model for every region, which types and which scope of innovations should be introduced to the region in order to create a successful innovation model? Now, modern literature fails to give proper and unambiguous answers to those questions.

2. Literature Review

Theoretical basics for the mechanisms of territorial development have been initially studied by³ who introduced the ideas of “localized industries” and “industrial districts”. Over the 20th century, the studies on territorial development have been gaining popularity; thus, S. Cruz and A. Teixeira estimate the increase in the share

of publications dedicated to different aspects of localized industries from 5% in the 1980s up to 30% in the beginning of 2000⁴.

The most important works helping understand the processes of forming the innovative development models are represented by the studies where the modern changes in organizing the process of innovation are reflected. Thus, it has been shown that they are now characterized by transition from linear (industrial) models to nonlinear ones (neo-industrial), suggested by⁵⁻⁷ etc. In this context, open innovations are formed, associated with large-scale outsourcing and with the creation of the global value chains⁸. Under modern conditions, the process of creating innovations becomes even more interactive, and the new potentials for growth appear in the economy. The widespread network structures and clusters, forming special ecosystem, facilitate massive generation of innovations, and help the agents of cooperation obtain mutual advantages⁹. Transformations and the new functions of universities, businesses and the state, as well as the changing nature of their interaction in forming regional innovation activity have been described by Triple Helix model¹⁰.

Many studies have demonstrated the effects, produced by the level of regional innovative activity on their economic and social development, on structural diversification of the production and service sectors, on human potential quality. Besides, basic elements of regional innovative models have been studied together with the existing interrelations and factors, required to achieve the desired results. These models have been analyzed and classified by a number of researchers^{7,11-13}.

However, the existing approaches have a considerable disadvantage. Often, based on analyzing a successful development model in some particular region, the efforts are undertaken to apply this experience to other territories without taking into account their specific characteristics. At the same time, according to¹⁴ “positive effects, studied by the economists, were observed within the context of a particular region and did not represent the fundamental laws of territorial development”. In this regard, the most important thing today is to rethink the prevailing ideas critically and to develop a more realistic approach to forming territorial models.

3. Method

Theoretical prerequisites for the investigations undertaken within the framework of studying the issues of

territorial models for innovative development have been related to such schools of economic theory as innovation economics, evolutionary economics, institutional economics and regional economics. However, existing scientific approaches to studying this phenomenon are still unsatisfactory. Thus, note that customization really represents a serious and widely discussed problem, but the concrete methods and methodologies in the sphere of applying territorial innovative models remain identical¹⁵.

To give a relevant description of the processes determining the specific features of forming different models for innovative development of the regions, a methodological approach has been suggested, based on specified paradigm of investigation as a synthesis of systemic, evolutionary and space-time approaches.

Systemic approach makes it possible to investigate the organizational and institutional structure of the region, all elements of which are interrelated, complement each other, and jointly fulfils the basic functions, entrusted to territorial model of innovative development. By means of applying evolutionary approach, the internal dynamics of the system, the interrelations between actors and the basic blocks can be understood and estimated in the context of the evolving internal and external environment. To enhance and to supplement the ideas of those approaches, it is suggested that the space-time approach should be applied that implies using a multidimensional system of space-time coordinates, including cultural-value, organizational-institutional, technical-economical, cycle-time dimensions. This system of coordinates can take into account the basic types of effects (benefits) that occur depending on regional capabilities to create these or another forms of organizing the innovation processes.

The meaningful content of the suggested approach is that it facilitates considering each territorial formation as an open, complex, dynamic system that exists in specific cultural, institutional, technological and territorial space, is restricted in terms of resources and maneuverability, possesses internal structure and is self-developing, co-evolving together with the external environment; the information on changes is accumulated and the new features are acquired by territorial formations, based on developing and realizing their dynamic capabilities, which creation depends on the activity of entrepreneurial structures and organizations.

4. Results

Relying upon theoretical prerequisites and the ideas of the fundamental approaches to the theory of innovative development of regions, given the great number of published results of the investigations dedicated to territorial innovative models, this study represents an attempt at integrating the available contemporary and classical studies. The result of this study should consist of developing a detailed methodology as a synthesis of systematic, evolutionary and space-time approaches. Thereupon, a comprehensive vision of the issue of forming territorial innovative models has been suggested; the published materials have been studied reasoning from this vision.

According to the suggested approach to analyzing territorial innovative models, their basic types have been identified and the peculiar features of forming the relevant elements and interconnections of innovation infrastructure have been shown. Studying the processes of interrelations existing between the subjects of regional innovative processes based on the suggested model typology makes it possible to describe the mechanisms for generating and propagating new knowledge among all participants, and based on this, to make the process of regional development more manageable, as well as to determine the factors of competitiveness in the region playing the most important part. Upon analyzing the secondary information sources, the key factors of the innovation strategy success have been identified together with the restrictions introduced by the models in selecting the strategy for innovative development.

The ideas postulated within this study can be used as a theoretical model, characterizing the interrelations existing between factors and variables; thereupon, hypotheses can be developed to estimate the success of innovation strategy and to test it empirically.

5. Discussion

5.1 Comprehensive Vision of the Issue of Forming the Regulations for Territorial Development of Innovative Processes

The idea of “innovative process” as well as the idea of “innovative system” can be treated in both narrow and broad sense¹⁶. As strictly understood, innovative system includes the functions of research and development

assigned to educational institutions, state and private research and development institutes and corporations, thus reflecting the “top-down” approach in linear innovation model. In broader context, regional innovative system includes all elements and aspects of economic structure and institutions^{7,17}. This corresponds to the “bottom-up” approach in an interactive innovative model.

To rethink the fragmentary ideas and to construct a comprehensive vision of regional innovative process development, as of the part of its implementation within the framework of national and global economies, it is crucial to proceed from the fact that the peculiar features of forming the regional models are stipulated by territorial type classification affected by dissimilarities in both external and internal environment, reflecting the character of their engagement in generating and multiplying innovations, their unique role and function in the economic development of the country. Within the framework of the created central-peripheral mechanism of regional interrelations, affected by different resource potentials, innovative competences and capabilities, the different sized wave fluctuations occur. They are generated by specific territorial combinations of technological, cultural-value, institutional-organizational and cycle-temporal variables, and are associated with the changes in the basic principles of territorial economy organization, principles of structure, composition and correlating factors of economic growth¹⁸.

Accumulation of knowledge and technologies within the technical-economical paradigm takes on the S-curve shape. Thereupon, the processes of technological, infrastructural, financial, scientific and educational, social and cultural differentiation of the regions are developed.

Differences in competitive advantages of the regions are predetermined by different types of innovations. At the initial stage, the alternative fundamental technologies compete with each other; as soon as the dominant technology is established, the competition proceeds within the framework of its different options, often based on “price-quality” correlation, under the conditions of emerging mass market; the cutting-edge innovations are then replaced by incremental or step-by-step innovations that acquire a complex nature. Now, geographic centers are established possessing high innovation potentials and developing quite fast due to the most favorable environment, as well as the peripheral and semi-peripheral territories that are transformed predominantly due to innovative diffusion and depending on the peculiar

nature of the process of interrelations between formal and latent knowledge in the context of nonlinear innovative processes.

Positive and negative effects of scale in territorial concentrations of economic activity, representing the manifestation of cumulative and synergetic effects of the peculiar influence produced by territorial factors, should be interpreted as a result of implementing three types of externalities (external effects): 1. The effect caused by natural and geographic factors; 2. The agglomeration effect, including the effects of localization and urbanization; 3. The innovative-territorial effect, caused by the influence of spatial non-material factors and by the processes of territorial development intellectualization, affecting generation, diffusion and application of knowledge and technologies. Global experience shows that in the course of industrial evolution the role of the first type of factors becomes less important in forming territorial competitive advantages, while the role of the second type of factors becomes considerably more significant, and further on, the role of the third type of factors, namely, the role of the regional factors of innovative development, becomes even more important, drastically transforming the nature and the mechanisms for improving territorial competitiveness; the effects of scale in large industrial companies lose their former significance and the interaction between business, governmental organizations, scientific and educational institutions gains much more importance.

Today, in Western countries the transition toward the new stage of technological development and the creation of competitive advantages are directly related to neo-industrial paradigm of the economy renovation⁶. Re-industrialization becomes a key trend, envisaging intellectualization of the production process, support of priority directions in developing science and technology, system of education and staff training, as well as encouraging innovations and the processes of returning jobs in the country, of engaging small and mid-sized businesses in the added value chains.

5.2 The Analysis Approaches to Forming the Territorial Models for Innovative Development

Current discrepancies existing in the approaches toward forming the territorial models for innovation development are largely stipulated by the fact that those models, due to great diversity of external and internal

environment, possess multiple structural and dynamic characteristics that can be subdivided in differently classified groups depending on the selected classification criteria. Investigating the characteristics of regional innovative processes makes it possible to classify them, thus systematizing the knowledge and clarifying the mechanism for generating and applying the innovations, to compare the opportunities for creating competitive advantages, to evaluate alternative approaches and the ways for further development of the regions.

Analyzing the processes of forming the territorial models, it seems advisable to proceed from the assumptions that their most important parameters create a multilevel system within territorial context, that there are complex system of interrelations and mutual subordination between them. To develop an approach that could help systematically interpret the processes of forming unique territorial trajectories for innovative development, ensuring successful creation and realization of competitive advantages, special priority should be given to applying the typology of innovative activity in the regions based on the character of their participation in the processes of generating, transferring and multiplying innovations stipulated by peculiar features of interrelations existing between productive-technological, cultural-value, organizational-institutional and cycle-temporal factors¹⁸.

Within the framework of the considered approach, three types of regional innovative models are identified fulfilling the fundamental function in understanding the regularities of forming the innovative profile of territorial development^{7,12,19}.

The first type of model is represented by the region-oriented model of innovative territorial development. It predominantly implies satisfying regional needs for innovations with minor engagement of universities as the producers of knowledge. In this case, significant relations between companies and universities primarily exist in the sphere of applied researches. Innovative companies usually co-operate with the companies of the same region and practice cooperation with competitors (co-opetition). The results of such activity are, as a rule, represented by innovations of improvement, developed to solve some applied tasks. This type of regional innovative models can be exemplified by networks of small and mid-sized businesses in industrial regions of Italy, or by the innovative business-centers located in these regions⁷. In their operational activities, the companies mainly use synthetic knowledge. New knowledge is usually created as

a result of the induction processes of tests, experiments, computer modeling and practical work, and not as a result of deduction and abstraction²⁰.

The second type of model is represented by the nation-oriented model that implies meeting the national needs and the international market needs for innovations. In this model, special attention is given to fundamental researches in the universities and organizations that intensively interact with the producers of knowledge and with innovative companies from other regions. This type of regional innovative models can be exemplified by technopolises created in such countries as France, Japan, Taiwan and that are characterized by limited interaction between innovative companies within the boundaries of these polises, as well as by the developed vertical relations with non-local companies. Large companies in such regions are, as a rule, treated as anchors of technopolises. Research functions of universities and corporations are predominantly focused on creating radical innovations.

The third type of model is represented by the regional-national model, aimed at meeting both regional and national needs for innovations; principal producers of innovations are companies as well as universities. This model is characterized by promoting research and development ensuring the creation of radical innovations and the innovations of improvement; the innovative companies intensively interact with the universities and the companies located in this particular region. This model, associated with the network approach implementation, is quite characteristic for Germany, Austria and for Scandinavian countries. The research competence is usually of a mixed nature, oriented to both fundamental and applied researches, focused on meeting the needs of the companies. There is a very intensive interaction between the producers of knowledge, the government and the business sector of this region¹⁹.

To undertake a more detailed analysis of the specific features of forming the parameters of innovative activity within the framework of those three basic types of regional development models, it seems advisable that other criteria attributes should be applied as well. Thus, the following foundations can be identified for classifying regional models of innovative processes: completeness of innovative cycle, nature of interaction between the companies and the producers of knowledge, the extent of governmental interference, international orientation, stage of a life-cycle, statistical index of innovations etc^{12,15,16,21-24}. Those variables can be regarded as instruments for a more

detailed description of the innovative model specific features within the territorial context.

Today, business practice shows that, under the conditions of turbulent environment, the presence of a considerable space-time gap between the centers of development and the production centers results in lower competitive power. Innovative competition is won by the producers who have those two centers located close to each other, which helps them react fast and adequately to the changes of the market situation. In this regard, a correction of the existing approaches to organizing the process of innovation should be considered taking into account the increased significance of territorial factor.

5.3 Infrastructural Support of Innovative Process Development in the Regions

Infrastructural support for innovative processes is the key prerequisite for their successful development. Creating that or another variant of innovative infrastructure in the region is predetermined by the type of innovative activity stipulating the need for this infrastructure to fulfill relevant and specific set of functions taking into account the conditions of the internal and external environment of the region.

Successful innovative development of the territory-oriented region implies creating the infrastructure support facilitating predominantly the development of innovations of improvement, implemented to solve the applied tasks. At the same time, the infrastructural support should help fulfilling the following functions: identifying the needs of businesses for innovations, given the technological and the market trends; selecting innovations from multiple external and internal proposals; determining the type of innovative strategy (complete copying, partial creative imitation, innovation with high degree of novelty); developing and implementing staff training programs; adapting business-processes applying innovative solutions; releasing innovative products and services.

Principal elements of the infrastructure in this type of models are represented by innovative centers, technological parks and research and development organizations. The availability of educational programs for staff training is also of great importance. A key factor of business success is represented by localized training processes facilitated by geographical, social and cultural affinity without any considerable interaction with knowledge producing organizations.

The funding of innovative activity is effected by local banks, regional governments, associations, grant and loan systems at the regional level. The degree of federal participation in managing innovative activity is usually small exactly due to the localization of innovative activity²⁵.

Infrastructural support of the nation-oriented innovative model is characterized by the fact that the cooperation between the organizations is predominantly associated with the projects focused on developing radical innovations. This could be exemplified by clusters of research laboratories of large companies and/or those of governmental research and development institutes in “scientific parks”. They could be located close to universities and technical colleges, but the participants of the scientific parks, maintain, as a rule, relations with local businesses²⁶. In this respect, it seems important to use the opportunities of scientific parks and technopolises for improving competitive advantages of local manufacturers (especially, those of small and mid-sized enterprises)^{12,13}. In this type of territorial innovative models, funding is centralized, and most of the initiatives and actions within the framework of innovative activities represent the results of the state policy.

Regional-national model is characterized by the fact that the regional cluster of companies is located in the center of innovative infrastructure facilities ensuring successful development of both fundamental and applied researches. The network approach is most characteristic for Germany, Austria and for the countries of Scandinavia¹³. Such model implies implementing the complex measures of governmental support focused on developing the innovation potential of the region and on developing cooperation between small and mid-sized businesses that could mutually complement each other's competences by new knowledge in order to create radical innovations and innovations of improvement. Most of the companies cannot exclusively rely on the informal localized training, instead they should be granted access to broader set of both analytical and synthetic knowledge at national and global levels. Cooperation between the companies and the local producers of knowledge, universities and research and development institutes, organizations facilitating technology transfer and the support centers can provide such access to information and to competences that could supplement the local competences of the companies, thus improving the innovative potential of the region. Funding of innovative activity in the region is regulated by the agreements established by banks,

governmental organizations or agencies for innovative development, and by the companies.

Thus, specific features of regional innovative development are the reason to apply different models of innovative infrastructure that differ in the scope and roles of the participants and in the character of their interaction. In this regard, for example, the presence of a university is not considered the key prerequisite for successful innovative activity in the region in all types of models, as many economists assume. According to K. M. Tornquist and L. A. Kallsen, “geographic proximity of businesses and the higher education institutions is not such an important factor for creating and transferring technologies as it was earlier assumed”²⁷ and noted that “no doubt, a respected university establishes a certain status for a city or a favorable image for an innovation center; however, it is still a matter of argument whether a university presents a base of scientific data for successful development of innovative business in the region”¹⁹.

5.4 Role of Territorial Innovative Models in Forming the Innovative Strategy in the Regions

Asynchrony and asymmetry of territorial economic system development stipulated the necessity to elaborate theoretical and methodological apparatus focused on forming the unique trajectories of innovative changes in line with their identity and their specific advantages²⁸.

Presently, there is a widely popular approach, the supporters of which accentuate the necessity of some basic elements characterizing some universal territorial innovative model together with the relevant connections between them. If in the course of comparing it to a “benchmark” model, some components is discovered missing, then it is suggested that this disadvantage should be eliminated. In practice, such copying of successful experience without taking into account the differences in innovative models usually results in inefficient managerial decisions. There is another approach, promising but requiring further elaboration, the adherents of which note the continuously changing nature of the regional system and the cardinal differences in different regional systems^{14,29}. It is important that in the course of comparing the forms of organizing innovative processes at regional level similar types of models are considered. In this case, the following recommendations can be applied: “based on the results of analyzing the strong and the

weak aspects of the region, the missing factors should be substituted applying the method of adapting certain mechanisms that have already proved their efficiency in similar situations or by way of creating the new ones, if no suitable mechanisms exist”¹⁷.

Innovation potential could belong not only to the regions with well-developed preconditions but also to traditional industrial and agricultural regions. However, peripheral regions are different with respect to the levels of innovative activity development and with respect to the specific conditions for its implementation. Now, a considerable empirical material has been accumulated testifying of the fact that regions and cities can create successful innovative models, even if, for example, no universities or qualified workforce are available, if there are neither developed research base, nor any other factors considered prerequisite within the framework of classical interpretations of innovative models. Thus, innovative development of Lahti region in Finland was successful without any local university³⁰. City of Sophia-Antipolis in France ensured the successful development due to only one important advantage, namely, due to the well-developed infrastructure³¹. A province in China possessing an underdeveloped research base and unqualified labor market, proved to be successful by creating favorable business environment and by strengthening external links under the conditions of strong governmental regulations at all stages of innovation and support development processes³².

Modeling the development of innovative activity in the region is an important tool for developing and implementing its innovation strategy that represents a complex process consisting of the following principal stages: estimating the strong and the weak aspects, opportunities and risks of innovative activity in the region; analyzing alternative directions for innovative development of the region and establishing the type of territorial innovative model; identifying the parameters that characterize strategic priorities for innovative development of the region corresponding to its capabilities and to the trends in technological and market situation; developing the complex of measures to form the productive-technological, organizational-institutional, cultural-value and nonlinear-temporal relations, focused on successful development of competitive advantages in the region; monitoring strategy implementation.

The results of studying secondary information sources show that the following factors are the key components in successful innovative development of the regions:

- It is important that the innovation strategy of the region should meet the requirements of systematic approach and that it should be in line with the laws of the ecosystem development. It should be systematic, adaptive, institutionalized, creative, interactive, proactive, taking into account the nonlinearity of the innovative process.
- The most important prerequisite for developing a successful model for innovative development is understanding its place and role in implementing the innovative cycle, identifying technological and market opportunities of the region, and thereupon determining the key competences and the specific innovative profile.
- Common corridor (vector) for territorial development should be set by the base of knowledge and by the principal technologies, resources and competences, by the matrix of culture-value orientations and institutions. The key factors of success, the scope and the roles of participants in innovative environment, the balance of external and internal development factors, the nature of relations between the economic agents, formed on this basis, should be unique and should take into account the innovative profile of the region ensuring its effective participation in the value producing chain of the innovative product.
- The strategy should keep certain balance between the existing key competences and resources, on the one hand, and the processes of their renovation, on the other hand, ensuring dynamic development of specific territorial capital including material and non-material assets, given the ever-increasing importance of the latter in generating higher profits.
- In implementing the complex approach to forming the regional innovative model, its strong and weak aspects should be taken into account, special attention should be paid to coordinating the activities of participants and authorities in the system of space-time coordinates, introducing changes to productive-technological, organizational-institutional, cultural-value and cycle-temporal parameters ensuring successful development of competitive advantages in the region based on creating favorable entrepreneurial environment and innovative infrastructure.

Today, changing priorities of regional policy is largely associated with the fact that it is now very much focused on developing competitive advantages by means of intel-

lectualizing the activity of entrepreneurial structures and by means of increasing the level of innovations, thus revising the traditional competitive policy oriented to low wages and low prices; creating highly efficient working places based on innovations and on diversifying the production processes.

Thus, the role of territorial innovative models in selecting the strategy for regional development is characterized by the fact that they represent theoretical and methodological apparatus; in other words, they act as tools for modeling the trajectory for developing innovative activities in regional context.

6. Conclusion

The approach based on systemic-evolutional paradigm makes it possible to enhance the subject field of investigations studying the development of innovative processes in the regions that possess scarce resource opportunities, specific competences, abilities to change, strategic motives, objectives and methods for generating and implementing innovations.

The undertaken analysis of territorial aspects of innovative activity testifies of the fact that this activity can be introduced into different environment and it can bring about different results depending on the type of the strategy and depending on the effects produced by other various factors. Innovative activity should help the region develop its competitive advantages by means of intellectualizing the production processes and by means of strengthening its positions in innovative competition. It helps the regions that do not possess the resources for research and development to grow and to take part in competitive struggle, obtaining new knowledge in order to create their own innovative technologies and products.

Upon analyzing the studies on the issues of developing innovative activity in the regions, a conclusion can be made that it is very important that proper approaches should be applied to selecting the strategy ensuring adequate estimation of the place and the role of the region in the process of generating, transferring and multiplying knowledge and technologies.

Successful innovative activity in the region depends on the conditions of business environment, on business ability to overcome external and internal barriers associated with disadvantages in management structure, staff potential, product supply, market positioning, limited

financial and time resources etc. In this regard, it is important that within the framework of strategic management at the regional level, based on analyzing the strong and the weak aspects together with threats and opportunities, a complex of measures should be developed and implemented including cultural-educational, structural-innovational, organizational-institutional and financial-economic measures ensuring successful development of resources and capabilities in different sectors of the region facilitating its efficient integration in national and global economies.

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