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### **DEVELOPMENT OF THE REGION IN THE CONTEXT OF INNOVATIONS – OPPORTUNITIES AND THREATS**

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### **ROZWÓJ REGIONU W KONTEKŚCIE INNOWACJI – SZANSE I ZAGROŻENIA**

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**Summary:** Regional development in the globalizing economy is a result of many factors. At the same time, this process may take different forms. Undoubtedly one of the factors that influence the development of the regions are innovations. Innovations are unquestionably a chance but at the same time a great challenge for regions. The article attempts to identify the importance of innovations in the development of the region.

**Keywords:** disproportion, space, development of the region, endogenous resources, innovation, innovation system.

**Streszczenie:** Rozwój regionalny w dobie globalizacji gospodarki jest wynikiem wielu czynników. W tym samym czasie proces ten może przyjmować różne formy. Bezspornie jednym z czynników, które wpływają na rozwój regionów, są innowacje. Innowacje są niewątpliwie szansą dla regionów, ale są także wielkim wyzwaniem. W artykule autor próbuje przedstawić znaczenie innowacji w rozwoju regionu.

**Słowa kluczowe:** dysproporcja, przestrzeń, rozwój regionu, zasoby endogeniczne, innowacyjność, system innowacji.

## **1. Introduction**

The modern economic processes occurring in the space have two contradictory features: a tendency to accumulate and disperse. In the recent years, along with the changes in the paradigm of development (i.e. the evolution of the knowledge based economy) the former one clearly started to dominate. As a consequence the presence of such tendencies produces the effect that the individual elements of socio-economic

space develop at different rates, which translates into the growth of disparities in the level of their development. Over time this diversification is deepening, which eventually leads to a large divergence of living standards in various regions. Shaping these relations in such a way can be described as regional disparities, by which the process of diversification of the level of development of parts of the country is understood. In practice this phenomenon is widely recognized in a cross-section of regions. Therefore today the need for changes is not seen, though they are perceived as the probability of survival and development, having become an immanent feature of the present reality. At the same time the diversification quite commonly emphasises that the basis for the development of spatial units, which are regions, has become innovation.

At this point it should be accentuated that space is not only physical dimension. The contemporary space cannot be captured only in Euclidean form or through strictly geographical aspects. From the point of view of socio-economic phenomena it can be assumed that modern space is the result of work and division of labour, simultaneously the objectification of this what is social and consequently the spiritual one. It means that also behind the process for preparing in space, values systems are hidden. This results in the conclusion that space can be determined by different values for different communities [Sieracka-Nowakowska 2011]. Moreover, it is connected with the fact that every social group, as Wallis emphasises, uses and shapes space in three ways [Wallis 1990]:

- giving it specific shapes,
- assigning specific functions and values for the created shapes,
- adopting appropriate forms of behavior and attitudes to the shaped spatial frameworks.

In view of this, it can be concluded that the final state and form of space is always the resultant of influence of four factors, such as [Gaczek 2003]:

- natural environment,
- level of development of techniques and technologies,
- system of values and categories of culture,
- entities (actors) creating space.

The forms of spatial development are defined as areas with a specific purpose and functions with common material equipment (utility infrastructure) and localized devices [Jałowicki 1996]. As part of these forms is the space of production, consumption, trade and symbolism. Each point in this space has a specific geographical location and three basic characteristics, i.e. narrowness, resistance and diversity [Budner 2004]. Therefore, the modern region should be recognized through the prism of these categories and its development seen as a multidimensional process, while the level of this multidimensionality is the result of a multiplicity of activities that shape it.

## **2. Contemporary base of regional development**

In the latest theories of regional development the role of endogenous resources (especially specific ones) is strongly emphasised in this process. The positive aspects of these resources are cumulative with each other and lead to the economic growth. At the same time a characteristic feature of the modern development of regions is not only the search for solutions within the framework of the existing potential, but also the exploitation of new resources of unique characters and creative solutions for ensuring the long-term development capacity of the spatial unit. This development, in such a perspective, becomes a creation of new solutions and values (it means changes; by implication innovations). The approach includes the idea of treating these resources of peculiar character in the same important way. A misunderstanding is *a priori* assigning dominating meaning to their concrete dimensions. Such an approach does not serve the proper implementation of the development process and indeed in many cases creates a barrier, which is reflected in many areas of our country. Since the individual resources are heterogeneously arranged in space and in addition their use takes place in different degrees and with different intensity, it causes the problem of uneven distribution of formation development phenomena in space, which is referred to as polarization. One of the most important reasons for this is the knowledge perceived as a fundamental resource of the modern economy, which emphasizes the significance of the interactive learning process in the spatial (local, regional) dimension [Perenc, Hołub-Iwan 2011]. This learning process is revealed in innovativeness. Innovativeness as a feature not only of internal entities but also entire societies and economies, establishes the ability to create broadly defined innovations [Prystrom 2012]. It manifests itself in engagement in innovative issues and taking actions in this direction. Innovativeness is conditioned by skills of participation in the processes of creation, implementation and absorption of innovations. It can manifest itself both as an individual and organizational section, as the general public and macroeconomic one [Świadek 2013].

## **3. Innovations as a factor stimulating the development of regions**

Taking into account the previous considerations we can assume that innovations are created by associating information with knowledge and transforming them into new products, services and new organizational or market solutions. Therefore, knowledge and information are essential factors of competitiveness of both today's enterprises and regions. If knowledge acquired by operators of the region is original and difficult to obtain for competitors it is possible to get the key competences based on it. The competences fix the operators' strong competitive position relative to the others, and

the innovations introduced in the region will stimulate its development in a sustainable way. Innovation itself can be understood in two ways, as a result of specific actions or as a multi-step process. In the first case innovation is treated as the application effect of a progress, a piece of knowledge and an invention. Additionally in terms of process the innovative phenomena include not only the final result of the realization of specific technical solution, but also actions prior to its occurrence. Innovation is then a process which consists of the formation of ideas, R&D, design works, production and dissemination. Internally differentiated and multi-phase innovation process is a complex of activities essential to the establishment and practical application of new solutions that involve new or modified products, manufacturing processes and organizational changes. Innovation in spatial terms is understood as a process of creation of resources, which the target effect is technology and that involves equally company and its surroundings. The area (region) is not an exogenous factor in the creation of innovation and technology, but participates in it directly, and that is why the spatial context of economic activity becomes an essential element of this process. In determining catalysts for innovation in the region, the issue of the role of creative people with high professional competence in the processes of economic growth, who define new directions and areas of knowledge use, has been increasing in the recent years. The same innovation as a result of a cumulative process, which by the way of trials and errors leads to specific modifications and new products or processes, is performed by the transformation of the economic structure of the region. At the same time, the nature of innovation has to be summarized in the statement that the economy works not only in space but also in place (innovations arise in a particular location and their diffusion takes place in the geographical space and not in virtual one). The spatial dimension of innovation sets characteristic organization of the process of its formation as a part of dynamic network of internal and external relations towards the innovative milieu. That is why it is so important, because the innovation processes are spatially (locally) rooted both socially and culturally. In turn, the same development of the region and its competitiveness are largely culturally determined, preceded by certain cultural patterns, social awareness and specific attitudes. From this point of view, it is extremely significant to develop the awareness of innovations, eliminating misunderstandings and concerns about new products and expanding propensity to change. Then not only economic factors become important, but also those that are identified with the community of the region and its elites.

The innovativeness of enterprises depends on the quality of network connections within the economic systems (not only industrial ones, but also regional ones) with other entities generating knowledge and innovation. The concept of innovation system takes into account this relationship; it refers to a characteristic of non-linearity and networking nature of innovation process in the functioning of the region, whose development is based on innovations. According to this concept, apart from the institutions that generate knowledge and innovation in some area, such as enterprises,

research and development institutions, universities, technology transfer centers and consulting firms, an integral part of the economy are intense and complex interactions among these entities. That is why the innovation system is a configuration of institutions and relationships among them, thanks to which the economic system of a region is an efficient mechanism for distribution and processing of knowledge. Knowledge has character of the holistic cooperation of both institutional, informational, economic (including financial relationships) or organizational nature.

As indicated by P. Hlavacek in the book titled “Actors and mechanisms of the regional development”, these relations are both formal and informal [Hlaváček 2012]. According to the definition developed by the OECD an innovation system is [Wojnicka 2001]:

- the network of institutions in the public and private sectors, whose activities and interactions initiate, import, modify and diffuse new technologies,
- the elements and relationships which interact in the production, diffusion and use of new, and economically useful, knowledge and are either located within or rooted inside the borders of a nation state or region,
- set of distinct institutions which jointly contribute to the development and diffusion of new technologies and which provide the framework within which governments form and implement policies to influence the innovation process.

Taking into consideration the spatial criterion in defining the innovation system the following types of systems can be distinguished: national innovation system, regional innovation systems and more rarely occurring local innovation systems [Miszczak 2006].

Returning to the region, it must be assumed that its ability to spur innovation causes the effect of creation of a strong system of network links (internal and external), through which individuals belonging to the network have an access to the jointly generated benefits (external and internal) e.g. the economies of scale, the advantages of proximity, therefore the benefits of agglomeration, the benefits of urbanization or the benefits of metropolisation offered by large urban systems with complex metropolitan functions. It should be emphasized that innovative region characterizes not only the ability to produce and absorb innovation, but also the ability to further innovation processing in terms of own developmental needs and purposes according to the broadly defined market [Korenik 2003].

As mentioned before, since the region is a complex economic system, its level of innovativeness can be determined by setting the level of innovativeness of individual groups of factors that have a significant impact on the production, diffusion, absorption and transfer of innovations in the region, i.e. [Chądzyński et al. 2007]:

- innovativeness of enterprises located in the region,
- research and development potential of the region,
- the existence and level of organization of the milieu of entrepreneurship,
- level of social and human capital in the region,
- innovativeness and entrepreneurship of public authorities in the region.

Therefore, more and more often expressed opinion is that innovation forms grounds for growth of region's competitiveness, sustainable growth and improvement of economic conditions. It is worth pointing out the gaining competitive advantage by a region to the decisive degree is determined by the ability to respond to external changes, to learn and use endogenous resources in a way to trigger the creation of an innovative character, which will bring certain benefits in terms of more dynamic development processes.

In the context of above dissertations, it should be remembered that in practice there are no regions permanently innovative or deprived of innovations, just as there is no comprehensive model of building an innovative region. Every region requires an unconventional approach and different policy. Whatever strategy will be adopted in some region, there are three key assumptions within supporting regional innovation policy by decision-makers:

- activation and support of innovative regional resources to strengthen the collective capacity for cooperation, development and application of new technologies and services,
- coordination and inclusion of these resources into a regional innovation network for the integration of all possible actors/participants of innovative process related to business, higher education, politics and economic-social partners,
- integration of these regional networks in the region, national strategies and innovative networks by creating efficient contact points and support for interregional cooperation, and as a result increase the competitive ability of regions.

This raises the need for cooperation of various people and institutions to the creation of innovation (business, science, the milieu of entrepreneurship, regional and national authorities), which is neither easy nor simple.

In this context, innovations are becoming an opportunity not only for high developed and central regions but also for backward and peripheral ones. It results from the fact the increasing value of immaterial factors, especially knowledge and information, creates new chances for these regions in the productive development. These abilities are contingent upon, among others, the change of location criteria of economic activity, involving the larger significance of quality criteria [Dolińska 2010]. For example, peripheral regions, which meet preferred today qualitative criteria for the location, have a chance to accelerate the development and build the knowledge based economy. Thanks to forming the appropriate innovative milieu and favoring the location and development of industries and branches of industry based on high technologies, backward regions have the potential of leaving the state of secondary importance and are promoted to the group of the areas of key significance [Janasz, Koziół-Nadolna 2007] for the cross-national and international economy.

## 4. Conclusions

In conclusion it should be emphasized that the growing dominance of innovation in the processes of regional development causes significant changes in the functioning of their community, which calls for projects related to the preparation of these communities to understand, and even more importantly, to accept the ongoing transformations, which directly leads to the transformations of institutional grounds for the economic space. In the case of informal institutions it is a very complex undertaking, especially in the context of the re-evaluation of the existing system of values. This results in the necessity of reorientation and recombination of regional development factors.

In the light of the aforementioned remarks, it can be stated that the basic criterion of modern development is an adaptive susceptibility of spatial structures to the occurring changes. Unfortunately, in addition more developed regions usually faster react to the new realities adjusting their structures to them, which leads to a concentration of production factors in areas characterized by a multifunctionality and which, in turn, is not harmonious with the assumptions of the polycentric concept of spatial development and with the theory of convergence. As practice of recent years shows, all participants benefit from the advantages of liberalization and integration of markets in a globalizing economy, though they do not provide the regular division neither in the territorial dimension, nor in the social one. The effect of accumulation of globalization process in specific and closely spatially defined locations begins to intensify and at the same time the growing importance of the so-called sector IV (which affirmation becomes innovation) is imposed on this process, which is the basis of creating knowledge-based economy [Korenik 2007]. As a result, innovations have emerged not only as a developmental opportunity for the regions, but also as a serious threat to their marginalization in the contemporary economy. Unfortunately the latter possibility applies to the most spatial units. Therefore it should be accepted that innovations are becoming an important factor in the currently ongoing "game" of the development of the region, but the final result is burdened with high uncertainty and additionally only a few of these regions will be successful, although this is not a process of zero-one.

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