

**ISMGE 2020****II International Scientific and Practical Conference "Individual and Society in the  
Modern Geopolitical Environment"****INNOVATIVE SPATIAL DEVELOPMENT OF THE REGIONS'  
ECONOMY IN THE CONDITIONS OF DIGITALIZATION**

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***Abstract***

The article links with the current trends and problems of innovative development of the regional economy in terms of digitalization. The authors have proved strategic importance of effective innovative development of the regional economy in the promotion and modernization of the spatial integration of regional economic systems. The article substantiates an updated conceptual approach to the implementation of the spatial integration of the regional economies in terms of digitalization. The authors argued the necessity of further development of digitalization of the economy which made it possible to develop proposals for the modernization of state policy in this area considering strategic aspects. The innovative development of the regional economy in terms of digitalization is a driver for stimulating spatial integration of the territories, and its effective management allows achieving high innovative results by combining into a single complex of poles and growth zones, innovation clusters that intensify the digital economy of across boundary territories.

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**Keywords:** Digitalization, effective management, innovative spatial development, modernization, regions' economy, spatial integration.



## **1. Introduction**

The issue of the regional economy capacity (at meso-level) to respond to the progress challenges most effectively and to use all Research and Development (R & D) opportunities for achieving strategic goals of the territory development and long-term competitive advantages in priority spheres, industries, and economic activities is very relevant for the public management system of the territory development.

The innovative way of the territory development implies the integration processes intensification, the inter-integration relations of across boundary areas development, the Common Free Market Zone formation with a simultaneous increase in the complexity level of the regional economic entities.

## **2. Problem Statement**

The innovation activity intensification is the key factor in the regional economy modernization, which is designed to ensure stable economic growth and the regional competitive advantages achievement. In the context of rapid global technological development, to ensure national security and the competitive advantage of the country as a whole and regions, in particular, the priority is the immediate reorientation of the existing model of the Russian economy to the digital one. In the modern economic development of countries and territories of any scale, we can talk about the trend of digitalization and the active implementation of innovative technologies that provide the new level of competitive advantages and new opportunities for industrial development (example of Industry 4.0).

## **3. Research Questions**

The spatial integration is the fundamental factor in the socio-economic development and political stability of individual regions and the country as a whole. Modern conditions for the formation of long-term and short-term strategies for the development of regions, economic globalization and integration require adaptation of the regional integration process in the framework of the economic digitalization.

## **4. Purpose of the Study**

The regional economic territory of the Russian Federation is currently a complex, dynamic, open system, which creates the basis for the interregional interaction processes, for integration and transformation processes. The study of spatial transformations in modern conditions is relevant because of the integration processes intensification and the formation of the single socio-economic territory and because of the increased importance of digital technologies.

## **5. Research Methods**

As a scientific material, the authors have used «The Strategy for the Innovative Development of the Russian Federation», «The Strategy for the Information Society Development in the Russian Federation», the national program «Digital Economy», scientific publications on the problems of innovative development of the regional economy, spatial integration, digitalization of the economy. The

article has applied methods of comparative and system analysis, as well as the logical approach, providing the necessary depth of the scientific problem study.

## 6. Findings

At present moment modern technologies are rapidly changing all spheres of life, opening up new opportunities not only for the effective economic development of states but also for the whole society development. Technological advances are designed to promote higher standards of living. The introduction of new digital technologies ensures the growth of labor productivity, provides an opportunity to improve the quality of citizens life. The solution of this strategic task influences the competitiveness of the country's economy.

Depending on the economy size, its complexity and the level of technological development, the regions formulate their strategic objectives differently. However, practically all the regions, to preserve and strengthen their competitive positions, see their future in the digital economy of a new technological order (Pivovarova, 2018, p. 27).

The adopted Decree of the Russian Federation President of 09.05.2017 No. 203 “The Strategies for the Information Society Development of the Russian Federation for 2017-2030” uses the following definition of the digital economy. Digital economy is an economic activity in which the key factor of production is the digital data, the processing of large volumes and the use of the analysis results which, in comparison with the traditional business patterns, allow increasing the efficiency of various types of production, technologies, equipment, storage, sale, delivery of goods and services significantly (President of Russia, 2017). The main feature of the digital economy is that the key factor of production in all areas of socio-economic activity is the digital data.

The process of digitalization means the maximum use of the digital technology potential. At the same time, digitalization is not a separate industry or a set of technologies but an algorithm for developing relations in society and its cultural environment. It should be noted that for sustainable economic growth it is necessary to develop all its constituent elements (Anokhina, 2018, p. 9). At the same time, the driver for stimulating the spatial integration and a source of long-term success and the national economy prosperity in terms of digitalization is the innovative development of the regional economies.

The innovative development is the main sign of the effective territory development, which provides the long-term reproduction of the region's potential (social, resource, innovation, intellectual and other components) in the mode of balance and social orientation (Gagarina, 2012, p. 140). Undoubtedly, the basis of the regional economic development is an innovative trend of economic sectors, which creates the framework for forming the long-term regional development strategy. The choice of an innovative way of development is explained by many well-founded factors, including the fact that innovation is the main basis for sustainable socio-economic growth and an important factor in influencing the internal and external competitiveness of business and economy (Soldatikova, 2015, p. 63). The innovative development of the regional economy aimed at improving its competitiveness, reflects the region's ability to develop, relying on the innovation activity intensification, in comparison with similar entities having the same resources. Therefore, the innovative competitiveness of the region is identified with a set of

opportunities for achieving strong competitive positions based on innovative development aimed at improving the life quality of the population and ensuring sustainable economic growth of the territory.

The Strategy for the Innovative Development of the Russian Federation for the period up to 2020 has noted that the national economy transition to the innovative development model has been recognized as the insurance of Russia's leadership positions on the world stage, and also of achieving the high level of the population welfare (Consultant.ru, 2018). The strategy sets large-scale economic tasks for a long-term period, which are directly related to sustainable economic growth in the future. Thus, at the state level, the innovation activity has been approved as a priority for development directly influencing on the level of economic growth.

Currently, the innovative orientation of the economy has acquired the importance of the economic process locomotive ensuring the progress of further informatization, robotization, industrialization and digital development of the region. Creating a favorable innovation climate in the region is the main task of the public administration authorities, the solution of which allows solving many other problems, namely: attracting investment, developing the innovations market, creating conditions for technological transfer, developing innovation infrastructure, providing innovation activity, etc.

The innovative development of the regional economy is impossible without its digitalization. In our opinion, the emergence and use of digital technologies in all sectors of the economy can be characterized as a manifestation of the innovation economy, and in this regard the term “digital economy” focuses only on the economic sector that develops more active and innovative today.

The digital economy is, first of all, the economy of data and processing technologies which leads to an increase in the productivity of the existing economy, the emergence of new markets, business models and services. The innovative development of the regional economy based on digitalization solves the problem of overcoming technical and technological backwardness, generated both by the physical deterioration of the technical apparatus of production and its obsolescence.

Considering the innovation process as one of the most important factors in the regional development in terms of digitalization, there are following problems related to the specifics of each region:

- increase in technological inferiority;
- physical and moral obsolescence of the material and technical base;
- undetailed design of the concept of the regional innovative development;
- disintegration of the regions in terms of investment in fixed assets with the level of innovation.

The key problem of the innovation development of the regional economy in terms of digitalization in the aspect of enterprise modernization is the transformation of their technical and technological base, which is represented by the category of fixed capital. The effective functioning of enterprises is the basis for the sustainable socio-economic development of territories and it is characterized by significant opportunities for influencing the level of socio-economic development of regions. Enterprises modernization is the whole systematic process of transformation of both the economic and production systems. The starting point for the Russian enterprises modernization is the change of their type, the formation of a new, market-based production system through the transformation processes of

digitalization. Enterprises modernization is a regularity of the transformation process since it expresses the necessary, stable ties and dependencies and emerging trends in the digital economy development.

Today the digital economy is involving all aspects of life. As a result of increasing population, the need for various goods and services is also rising. Therefore, e-economy is not limited to the framework of e-commerce business but goes beyond it including and affecting social areas: education and science, culture, health and others.

The digital economy is becoming an increasingly important driver of economic growth and plays a significant role in accelerating economic growth increasing the productivity of existing industries, shaping new markets and industries and achieving inclusive sustainable growth. An important aspect in the formation and implementation of the digital economy is the implementation of state regional policies, which should be focused primarily on: increasing the investment attractiveness of regions and innovative activity in them; development of industrial and social infrastructure; minimization of regional disparities in the field of socio-economic development; strengthening interregional ties; rational use of human potential.

The government takes an important part in the development of digitalization, becoming a catalyst for innovation processes in a national scale. The development of the digital economy using of artificial intelligence and spreading of digital technologies are the priorities of the Strategy for Scientific and Technological Development, approved by Decree of the President of the Russian Federation of December 1, 2016 №64. By the order of the Government of the Russian Federation dated July 28, 2017 №1632-p the program «Digital Economy of the Russian Federation» was approved, during the implementation of which it is planned to digitize all spheres in Russia (Consultant.ru, 2017). This Program develops the main provisions of «The Strategy for the Development of the Information Society in the Russian Federation for 2017-2030».

The digital economy has got a great potential for promoting regional economic development, is becoming more important driving force of global economic growth and plays a significant role in increasing the productivity of existing industries, creating new markets and industries and ensuring comprehensive sustainable growth and development (Avdeeva et al., 2017). The world experience shows that it is possible to achieve perceptible economic growth, increase in labor productivity, and the creation of new sectors with a competent foundation of the mechanisms for the functioning of the digital economy, including legal documents (G20, 2016). According to the World Bank, the impact of digitalization on economic growth is carried out through inclusion mechanisms, i.e. involvement of the maximum number of citizens in social processes, increase of efficiency and development of innovations. These mechanisms contribute to increased trade, capital and labor, which, in turn, leads to increased competition (The World Bank, 2016).

In 2017, the Russian Association of Electronic Communications held a researching called «The Economics of Runet» which showed that the contribution of the digital economy to the gross domestic product of the Russian Federation is approximately 2.1%. Taking into account the mobile economy, the total contribution is 4.35 trillion rubles (Prime Economic Information Agency, 2017). However, over the past two years (2016-2017), the growth of the digital economy in the Russian Federation has slowed. The share in GDP in 2016 was 2%, which is 10% higher than the value of 2015, and the contribution to total

GDP increased from 1.5 trillion rubles in 2015 to 1.7 trillion rubles in 2016. The average growth rate for the period 2010-2016 amounted to 4.8% (in US dollars) continuing to remain below the similar indicators in the leading countries (Scandinavia – 6-7%, the United States and the United Kingdom – 8-9%) and significantly lagging developing countries (China – over 20%) (Center for Strategic Research, 2017).

According to the BCG rating, Russia takes 39th among 85 countries in the development of the digital economy (Babkin et al., 2017, p. 15). Among the reasons for the current situation are underdeveloped digital infrastructure, a significant gap in the level of technology development in various sectors of the economy, insufficient information security and staffing, insufficient investment in the digital sector by the government and business.

The digital economy of Russia is characterized by disproportions in the development of digital technologies between regions. So, Moscow accounts for 40%, and ten out of 85 regions account for 80% of total government spending on information technology. By level of digitalization, Moscow and St. Petersburg can be compared with world leaders (Kapranova, 2018, p. 64).

For the successful development of the digital economy and reducing the gap with the leading countries of Russia, it is necessary to increase personnel, intellectual and technological advantages, to form a flexible regulatory framework for the introduction of digital technologies in all spheres of life. The strategy of intensive digitalization of the economy and staking on its full-fledged transformation, which implies a fundamental restructuring of the state's approaches to decision-making, will lead to the preservation of competitiveness in the global market and the achievement of positive results (Basaev, 2018, p. 37).

The digital epoch is challenging regions to change and use modern technology to support competitiveness and survival. The regional economy is transforming. The process of digitalization of the economy affects not only the innovative development of the regional economy but also changes the concepts and methodology used in the framework of the implementation of their spatial integration.

The imbalance of regional economy leads to the preservation of disproportions in spatial development, which, in turn, slows down the pace of innovation of the national economy of the Russian Federation. In the context of a shortage of resources, it becomes necessary to create additional growth drivers in the region which contributes to the effective use of the competitive advantages of individual territories. At the same time, drivers are not always unambiguous, since they are focused on more developed territories. Besides, the shortage of resources is replenished at the expense of the periphery. At the same time, traditionally large regional centers form the centripetal vector of polarized development of territories.

Economic development in a spatial aspect changes from central to peripheral areas, i.e. the Russian Federation is characterized by uneven economic development from a territorial perspective: districts developing to the center develop faster, creating the necessary prerequisites for the development of zones lagging in terms of independent socio-economic development, acting as growth drivers and forming various functional sectors (Ketova & Ovchinnikov, 2014, p. 70). The growth of independence of domestic regions, the pace of urbanization and population mobility in these territories determines the significance of the spatial transformation of the economy (Borodatova, 2013, p. 308).

The regional economic policy focused on innovative modernization of the country aims to create a favorable institutional environment, interregional integration systems, as well as to form a multipolar economic structure of the regions, develop competitiveness centers by supporting new poles of economic growth, which primarily include large cities broadcasting innovations to the periphery through spatial economic integration of territories.

Spatial integration of regions is a complex systemic formation and meanwhile assumes both a result and a process. As a result, spatial integration reflects the state of the interconnection of individual regions. Spatial integration as a process is the merging of previously differentiated separate regions into single unity.

Spatial integration of the territory involves the process of convergence of managing regional systems based on the intensification of commodity, resource, information and technological exchange. Spatial integration of the regions aims to ensure the stability of the functioning of the economies of economic entities and their economic growth, information security and sustainable development of the regions through the sharing of competitive advantages of the regions, their natural resource, technological potential.

The formation of a rational spatial integration of the regions is possible by identifying points of sustainable economic growth, the choice is not only industries and directions of development of regions, not only the digital transformation in modern conditions, and above all priorities for the development of human resources as sources of capital and innovative economic growth.

The development of digital technology has significantly changed the economic landscape. Indeed, in the conditions of the digital economy, management activities for the implementation of spatial integration cannot be applied unchanged – it should be updated, directed to contemporary challenges, adapted, transformed goal setting, and introduced a «smart» model of planning and development. The conceptual approach to the implementation of the spatial integration of the regional economies needs updating in terms of digitalization through the intensification and strengthening of interregional relations and based, among other things, on ensuring the rational use of regional resource base with the use of innovations.

The state policy in the field of spatial development lies a systematic approach to stimulating the creation and diffusion of innovations, which implies spatial development, aimed at integrating networks and trade to accelerate economic growth. At the same time, the adoption of regional inequalities in the development of the digital economy as a starting point for the implementation of the policy of spatial integration should be one of the new benchmarks of the policy of stimulating the development of regions compared to previous decades.

It should be noted that the differentiation of the levels of socio-economic and digital development of regions and their potentials do not constitute a barrier to the development of their integration interaction, since the effective realization of the potential of some territories provides an additional effect and, as a result, influences regional growth processes. This once again argues the fact that one of the integration factors that determine the qualitative transformations of regional space in modern conditions should be the state and intensity of digitalization processes. Without creating and maintaining the region's digital space at the proper level, it is impossible to modernize production and management on time, to

develop the region in an innovative format. Thus, the region's digital space is designed to ensure the efficient production, preservation and efficient use of available resources.

Ensuring the growth of competitiveness of regions and the achievement of goals of innovation-oriented development of regional economic complexes is impossible without taking into account the spatial factor, as well as identifying and maintaining state authorities of promising territorial entities that have significant resource potential and are characterized by readiness for innovative transformations (Krotova, 2014, p. 29). The ability of the regions to introduce digital technologies, effectively use scientific ties and attract budgetary co-financing to help new high-tech companies determines the regional potential for the implementation of spatial development policies.

## 7. Conclusion

The increase in innovation activity is the most important task of the modern state economy. Well-timed and competent innovations' introduction in priority areas of economic modernization allows the regions to occupy stable competitive positions. The promotion of innovation activity provides business entities with competitive advantages, greater stability, strengthens the enterprises' position in the market and expands their business connections. Therefore, in modern Russia, the problem of digitalization of all aspects of the national economy, public administration and the introduction of innovative technologies in the aspect of the digital economy development are one of the most strategic tasks.

The digital economy has enormous potential for promoting economic development and it is the most important driver of innovation, competitiveness and economic growth in the regions. Formation of conditions enabling the integration of the certain region within the spatial transformations' optimization requires shifting priorities in the programs of socio-economic development of territories to the sphere of identifying the key objectives of ensuring the sustainability of the regional economy by increasing its balance in the digital economy development.

Further development of the regional economy digitalization largely depends on the effective policy in the field of digital technologies; this requires not only the efforts of the state but also the interaction of industry, business, the scientific and educational community. There is a need for technological adaptation and introduction of electronic development in this sphere, development of digital public services, an increase in innovation, including the opening of new centres for studying the digital economy, as well as an increase in digital literacy of the population.

The development of legislation, the most elaborate structure of the legal regulation of the digital economy of Russia is also important. This policy is necessary to regulating the processes occurring in the e-economy, reducing offences and crimes in this sphere. The work at the processes of legislative initiatives should consider various economic sectors and the opinion of market leaders, not violate the laws of economic circulation. It needs in the set of measures and actions. They will allow public authorities to control and monitor this sphere, without attracting serious interference to the synthesis of the digital economy in manufacturing the product of society's economic welfare.

In this regard, it is necessary to achieve the implementation of the following measures:



- creating a permanent mechanism for managing changes and competencies in the field of legal regulation of the digital economy, which means the current control of the regulatory framework and its changes;
- abolishing the key legal restrictions and the creation of new separate legal institutions aimed at implementing the priority measures for the digital economy formation, which requires significant changes in many legislative acts;
- forming the complex of legislative regulation of relations that arise together with the fact of the digital economy development, and therefore, reflecting the general principles of the digital economy regulation in the legislative acts;
- adopting a set of measures aimed at stimulating economic activity, which is directly related to the use of modern technologies, the collection and data use;
- creating the methodological basis for competencies development in the field of digital economy regulation, that is, the development of methodological documents for mastering lawyers' competence in the field of the digital economy, and civil servants (training programs, professional retraining, advanced training, etc.);
- increasing the industry competitiveness through the introduction and development of breakthrough business models and technologies, such as digital platforms, in-depth analytics of large data arrays, 3D printing, robotization, the Internet of things, artificial intelligence, neuronic networks, blockchain, etc.;
- raising the citizens and organizations awareness about the projects that are being realized or the projects that are being prepared by the authorities in the field of the digital economy; effective informational and advertising support of the existing IT-products, ensuring the possibility of their quick search on the Internet;
- stimulating the interest in digital innovations and digital culture development, which has a positive social effect;
- creating the key legal conditions for developing the national high-tech companies, which develop technologies and manage digital platforms operating in the global market and form the system of start-ups, research teams and industrial enterprises that ensure the digital economy development.

Thus, under the conditions of the vast territory of Russia, the high level of regional differentiation, diversity of available natural resources, provision of production and social infrastructure, environmental safety, the state regional policy performs the most important function of preserving and reproducing the integrity and unity of the country as a socio-economic system. Within the framework of the strategic territory development, the tendencies toward greater integration of regional economic activities with maximum use of the innovation potential of the territories are manifested today. The innovative development of the regional economy in terms of digitalization is a driver for stimulating spatial integration of the territories, and its effective management allows achieving high innovative results by combining into a single complex of poles and growth zones, innovation clusters that intensify the digital economy of across boundary territories.

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