

Matrix for Selecting Priorities for Innovative Development of the Territory Based on the Principles of “Smart Specialization” in the Digital Economy

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ABSTRACT

In modern socio-economic systems of different levels, issues of innovative development are relevant. This problem is particularly acute in the digital economy, which is characterized by increased integration of information and communication technologies in the functioning and development of systems. In this regard, scientific theories that help to form strategies for innovative development of the territory, taking into account the trends of scientific and technological progress, are becoming popular in order to switch to new business models adapted to the challenges of the external environment. The purpose of the research is to provide theoretical justification and develop a methodological tool for selecting priorities for innovative development of the territory based on the concept of "smart specialization". The complexity of the issue of choosing priorities for the development of the territory and its specialization, indicated in many scientific works of domestic and foreign scientists, allows the authors to make an attempt to offer their vision of solving the methodological problem, using a matrix approach for clarity. For information and communication support of methodological tools for developing a strategy for innovative development of the region, the use of a platform approach is proposed. The study solved the following tasks: formulates the basic problems in defining priorities for regional innovation development; the developed model is a methodological approach to the development and implementation of the strategy of innovative development of the region; a matrix for selecting priorities for innovative development of Russian territories in the context of "smart specialization" was formed based on two integral parameters: the innovation and structural profile and the industry specialization of the region. The recommendations made will contribute to the further development of the innovative development program for the region in the format of applying the principles of the European concept of "smart specialization" in Russian conditions. The research materials can be used as methodological support in substantiating the directions of innovative development of regions.

Keywords: innovative development, the concept of “smart specialization”, digitalization, regional development priorities, matrix approach

1. INTRODUCTION

In modern conditions of development of socio-economic systems of macro -, meso- and micro levels, there are great opportunities for innovative development offered by digitalization, network forms of communication, new technologies that correspond to the trends of scientific and technological progress. These processes contribute to the formation of new progressive business models in the context of the development of modern socio-economic systems with the possibility of their timely adaptation to the challenges of the external environment, which corresponds to the principles of modernity, denoting the transformation of production and management processes, flexibility and dynamism.

The complexity of such transformations, as confirmed by numerous studies, associated on the one hand with the lack of technology or standards, and with the other formed of rigid organizational structures and low-level culture, inadequate and not capable of rapid change in terms of digitization. It is fair to note here that implementing the change alone is not enough. Its successful implementation requires a deep understanding of the innovation process and universal readiness for its implementation by all participants. At the moment, not all regions and organizations pay sufficient attention to the consequences of their innovative planning in the context of the effectiveness of the implemented development program. In addition, many economic entities still do not have a basic understanding of the key aspects of the digitalization process, and not all the measures taken are aimed at achieving a common goal of territorial development, but are separate, independent from each other activities.

In the era of innovative breakthroughs supported by digital development, it is the ability to adapt that becomes key to the formation of competitive advantages of the territorial system at any level (Federal, regional, or organizational level). Therefore, as part of the strategy of innovative development, it is necessary to transform or transform the territorial system into a constantly developing, flexible structure that can quickly make decisions based on the use of high-quality data and adapt each of its subsystems and implemented activities to new conditions. In this regard, matrix approaches to the selection of priorities for innovative development of the territory, which involve serious transformations of territorial systems at different levels, are relevant.

In this study, we will focus on the regional level, which combines the interests of four groups of stakeholders in the concept of its innovative development, according to the four-link spiral of innovation: government agencies, the business community, science and education, and civil society. This combination and the resulting combination of four institutional components are aimed at "conceptualization, contextualization, design, implementation and evolution of smart, sustainable and inclusive entrepreneurship – the engine of economic growth – and innovative ecosystems at the regional level" [1, 5].

2. METHODS AND MATERIALS

The main interest of researchers in the issue of innovative development of territories is related to the study of General theoretical and methodological aspects of the innovation process [1], the innovative activity of the regions of the Russian Federation and the level of their innovative development [2, 3, 4], using the model "four-link spiral of innovation" [5, 6], the principles of the concept of "smart specialization" [5, 6, 8, 9], opportunities for using the open innovation platform [10].

The purpose of this research is to study approaches and models for forming a strategy for innovative development of the territory for the theoretical justification and development of a methodological tool for selecting priorities for innovative development of Russian regions based on the principles of "smart specialization".

To achieve this goal, the research used modern tools used in the management of innovative development of regions, scientific works, monographs and articles of foreign and domestic scientists on the issue under study. Despite the great popularity of the studied problems of strategic innovative development of territories and the principles of the concept of "smart specialization", there is currently no unified approach and insufficient elaboration of a theoretical and methodological mechanism that solves the problem of choosing priorities for innovative development of territories. To do this, we used a matrix and platform approach, as well as General scientific research methods (system analysis, generalization, comparison).

In the context of "smart specialization", innovation processes should take into account the specifics of the

region, and therefore differ in regional comparative advantages. Moreover, the specialization of a particular region should logically integrated into the innovative structure at the Federal level, given the priorities formulated in such documents as the Strategy of scientific and technological development of the Russian Federation, Strategy of spatial development of Russia, Strategy of innovative development of the Russian Federation, the Program "Digital economy of the Russian Federation" [11, 13]. The study of these documents was provided in the study as a starting point. This is necessary to ensure that regional strategies are not disconnected from the global economic and scientific and technological context, and are not ultimately reduced to banal imitation of successful regions.

3. RESULTS

As noted by many theorists and practitioners of management thought, there is no single standard approach to the formation of a strategy for innovative development of the territory. Each strategy of innovative development of the region is its unique finding and idea, revealing the essence of its own trajectory, based on its features and competitive advantages. Therefore, in this study it is proposed to use the concept of "smart specialization", suggesting two popular strategic approach on the basis of Russian and European practices. The model of the methodological approach to the development and implementation of the innovative development strategy of the region proposed by the authors is shown in figure 1.

Within the framework of this article, the second stage of the methodology is of scientific interest, the main purpose of which is to select priorities for innovative development of the region. It is the priorities of innovative development that form the basis of the concept of "smart specialization", the use of which is becoming popular not only in the EU countries, but also in the Russian regions. The idea and principles of "smart specialization", which were discussed at the forum of strategists in St. Petersburg, are embedded in the spatial development Strategy of the Russian Federation. This strategy, as a methodological tool, implies the development of a combination of existing in the region and new relevant competencies in the production and scientific and technical sphere, taking into account the regional specifics [3, 11].

Actions related to the selection of priorities for the development of the region form a peculiar process, the essence of which is reflected in figure 2. It is important to understand the innovative climate of the region as a result of a complex interaction of scientific and technological, political, socio-cultural, financial and economic, natural resource and other factors. This approach allows us to consider innovative processes occurring in the territory in conjunction with socio-economic with a multi-variant solution to the problem.

The general approach to selecting priorities includes the following:

- defining specific and achievable goals (goals should be based on current potential and future competitive advantages);
- identification of technological, sectoral (sectoral) and inter-sectoral priority areas (determining the uniqueness of

the region, it is necessary to assume the development of its features in new sectors of the economy);

- identification of horizontal priorities (it is necessary to consider the possibility of using key technologies in aspects related to social innovation, supporting the growth of newly created companies).

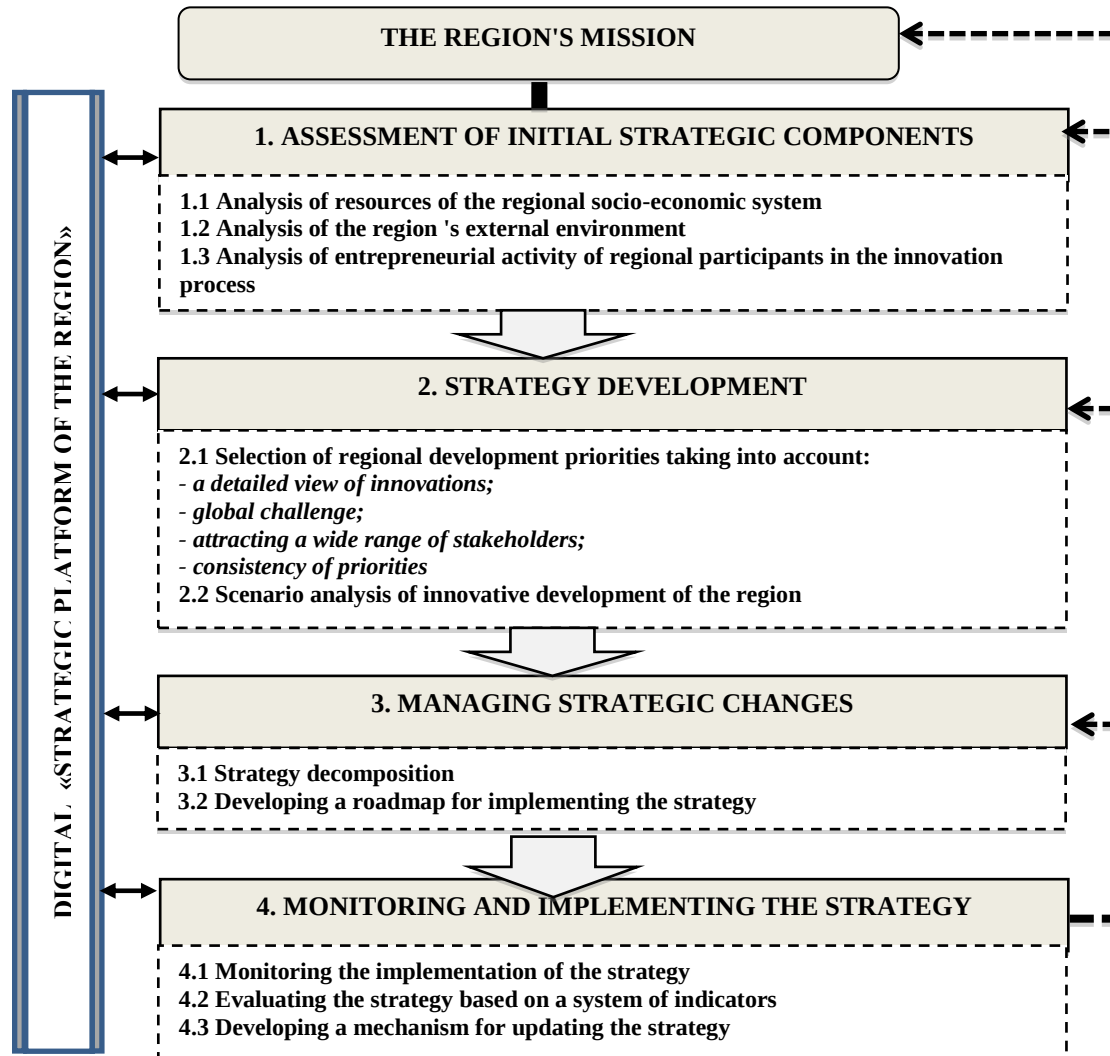


Figure 1 Methodology for forming a strategy for innovative development of the region [2]

In methodological terms, the problem of choosing regional priorities is divided into two steps:

- substantiation of the most promising points of contact between scientific, technical and innovative development;
- justification of specialization of innovation activity centers formed in the region.

Some guidance for substantiation of perspective directions in strategy of innovative development of the region can serve as data for the sub-indices of innovation activities, status, socio-economic environment and the index of priority of the development of innovation-oriented production in various fields, taking into account trends in technological structure [7].

For this stage, the process of entrepreneurial search and consideration of opportunities for the dissemination and application of key enabling technologies are important. Entrepreneurial search is not a typical idea search. An entrepreneurial idea is a reflection in the minds of representatives of the business environment of a clear idea of how and by what specific actions an innovative need can be formed and met. Key enabling technologies as achievements of science and technology can act as a source of ideas and require good awareness in this area and significant intellectual work.

On the one hand, this approach is aimed at finding specific forms of combining existing achievements of science, technology and technology, and on the other – opportunities for creating and distributing innovations. When choosing priorities for innovative development of the territory, the determining aspect is the possibility of creating a critical mass – the amount of resources that the region has to bring the innovative development project to

the level of a decent income. Therefore, we can talk about critical innovation potential, which should be studied and intensively developed in the selected priority areas. The European practice of using the concept is based on the document "Guidelines for the development of research and innovation strategies for smart specialization" with the placement of necessary information on the specialized website of the "smart specialization Platform" [4].

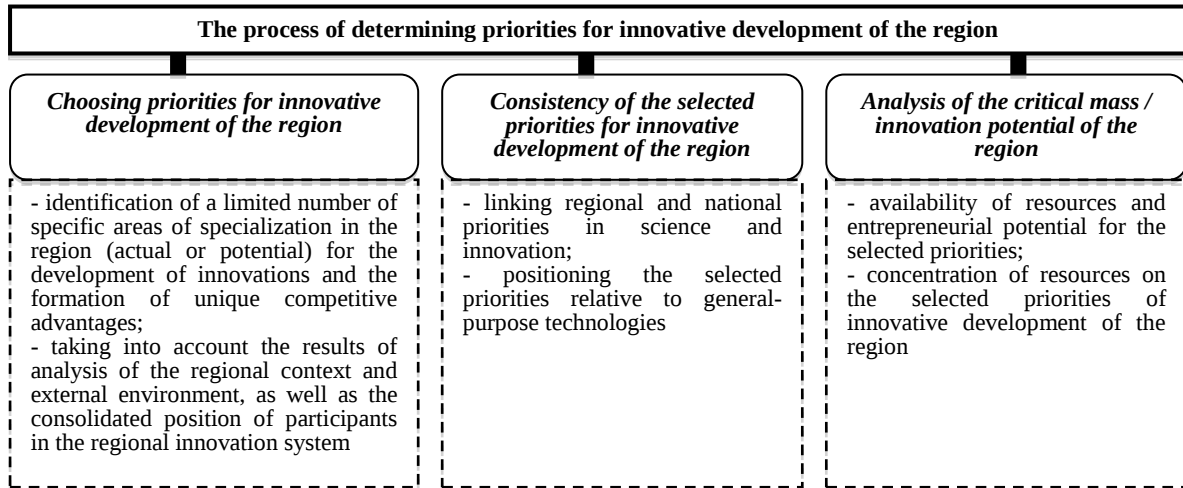


Figure 2 Characteristics of the process of determining regional development priorities

To support the strategic process with information and communication, legal, methodological and managerial mechanisms, the concept provides for the distribution of functions by levels:

- the national (supranational) level sets the General conditions for forming a strategy, selecting priorities, and creating a single database;
- the regional level directly selects priorities for innovative development, forms its own strategy for innovative development, and creates coordination structures necessary for the implementation of the strategy [5].

The model proposed by the authors (figure 1) provides a mechanism for informational and analytical support of the strategic process in the region – a digital "strategic platform for the region". The digital platform is necessary to ensure the implementation of the stages of the process of forming an innovative development strategy: assessment of the initial strategic components, strategy development, management of strategic transformations, control and implementation of the strategy. The "strategic platform" should become a virtual space for interaction between real stakeholders of the innovation process in the region. This approach is absolutely logically embedded in the context of digitalization, which is actively developing in society [10].

The principles of functioning of such a platform should be the following aspects: timeliness, efficiency, flexibility, security, reliability and relevance of information. According to the authors, the basic basis for the platform should be four active blocks that correspond to each stage of the strategic process (assessment of the initial strategic components, strategy development, management of strategic changes, monitoring and implementation of the

strategy), which will offer the necessary information for four groups of stakeholders (government agencies, the business community, science and education, civil society) with the mandatory development of a system for ensuring interaction in the work of stakeholders. Thus, the main task of the digital "strategic platform of the region" is to provide a process of entrepreneurial search for choosing priorities for innovative development of the territory, taking into account its specific competitive advantages.

The analysis of innovative development of Russian regions and the study of strategic documents of the subjects of the Russian Federation on the basis of open sources of information and statistical data allowed the authors to identify problems in determining the priorities of regional innovative development. The main ones are as follows:

1. High level of differentiation of innovative development of Russian regions.
2. The innovative activity of the region is determined by the existing potential and historically established way of life in traditional areas of activity for the region.
3. Priorities are selected on a top-down basis from the Federal to the regional level without a bottom-up initiative.
4. Lack or insufficient elaboration of the innovative component in the region's development strategy.
5. Lack of clear methodological and organizational support for planning and forecasting processes in the context of determining regional development priorities.
6. Formal involvement of representatives of business, science and civil society in the process of entrepreneurial search to select priorities.
7. Formal and "document-centric" nature of strategic documents without sufficient attention to the assessment of

the final performance of strategic activities, the interest and responsibility of performers.

8. Development of strategic documents based on the principles of outsourcing, without involving experts, regulating their actions and maintaining a balance of interests of interested groups of participants in the innovation process.

9. Low quality of statistical data for evaluating the initial strategic components of the region.

10. Lack of methodological approaches to assess the convergence vector of innovation, industry and regional policies in the formation of a regional development strategy. The identified problems allow us to speak about the lack of elaboration in the theoretical and methodological plan of issues of forming priorities for innovative development of territories. Here, it is important to note that within a single region, within the framework of its development strategy, programs can be simultaneously implemented to create new, grow, weaken and even terminate the activities of individual sectors of the economy. On the other hand, uneven economic progress in different regions emphasizes their "differentiation".

As part of the research, the authors studied approaches and methods for forming a strategy for the development of the territory based on the rating of innovative development, the methodology for identifying and evaluating the depth of industry development. The works of domestic and foreign scientists on the distribution of industry specialization between regions, typology of territories by various characteristics, the nature of structural changes in the economy of regions, the relationship between changes and the geographical proximity of large agglomerations are studied. The rating assessment of innovative development of Russian regions prepared by the Institute for statistical research and knowledge Economics Of the national research University Higher school of Economics allows studying innovative profiles of Russian regions in the following areas [2]:

- socio-economic conditions of innovative activity (main macroeconomic indicators, educational potential of the population, level of development of the information society);
- innovative activity (innovative activity of organizations, effectiveness of innovation, costs of technological innovations, small innovative business);
- scientific and technical potential (scientific personnel, funding of research and development, effectiveness of research and development);
- quality of innovation policy (regulatory framework for innovation policy, budget expenditures for science and innovation, organizational support for innovation policy).

Thus, for the " smart " use of industry specialization, as well as the existing competence and innovation- structural profile of regional economic systems, a methodological tool is needed to select priorities for innovative development of the region. As a tool, the authors propose a matrix for selecting priorities for innovative development of Russian territories in the context of "smart specialization", presented in table 1.

The matrix is based on two integral parameters: the

innovation-structural profile and the industry specialization of the region.

The innovation-structural profile of the region characterizes the resource and productive component of the innovation potential of a particular territory. In determining the profile of the region, emphasis is placed on the socio- economic, scientific and technological conditions in the region, as well as its geodemographic state. These factors are the basis for the identification of four types of regions, taking into account the innovative and structural profile:

- 1) regions that do not develop innovative technologies (unacceptably low level of innovation activity);
- 2) regions that are beginning to develop innovative technologies (low level of innovation activity);
- 3) regions that implement innovative technologies in relation to existing products and technological processes (average level of innovation activity);
- 4) regions that specialize in innovative industries (high level of innovation activity).

Industry specialization of the region is defined as the concentration on its territory of specialized types of production that meet their products not only their own needs (at least 10 %), but also the needs of other territories. Regions of the Russian Federation can be divided into the following groups according to industry specialization:

- industrial regions (25 subjects of the Russian Federation);
- agro-industrial regions (18 subjects of the Russian Federation);
- diversified industry structure (14 entities);
- agricultural regions (11 subjects of the Russian Federation);
- raw materials regions (9 subjects of the Russian Federation);
- financial and economic centers (3 subjects of the Russian Federation) [2].

The combination of innovation - structural profile and industry specialization of the region allowed the authors to differentiate the priorities of innovative development of territories in the context of "smart specialization". The compositional interaction of parameters is shown in the matrix in the form of gray quadrants that focus on landmarks in the territorial development of regions that are similar in terms of innovation and structural profiling and industry specialization.

Regions that have switched to an innovation-oriented model of economy should set ambitious goals, supported by the specifics and features of their effective development. One possible way to achieve these goals is to take into account the interests of regional stakeholder groups in addition to the priority selection matrix. As noted above, in the process of selecting areas for innovative development of regions, attention should be paid to the interests of state authorities, the business community, science and education, and the civil society, with an emphasis on a detailed understanding of innovation and taking into account global challenges.

Key of these challenges in terms of innovative development of territories are: increasing the scientific and technological development of the national and as a

consequence of the regional economy; emphasis in competition on the factors that determine the competitiveness of national and regional innovation structures; changing climate conditions, health challenges, as well as food and information security on a global scale. We will test the method on the example of the Oryol region, which is related to a low level of innovation activity in terms of its innovative and structural profile. According to the matrix, the main priorities of innovative development of the Oryol region are: formation and development of the knowledge industry and industry

portfolio in the field of trade; focusing on the sphere of scientific and educational services; strengthening the importance of human capital.

In the process of evaluating the interests of different groups of stakeholders in the Orel region, the authors propose to use indicators that reflect the socio-economic and scientific and technological priorities of the region's development. The weight coefficients for each factor indicator, taking into account their significance in the region's innovative development, are shown in table 2.

Table 1 Matrix for selecting priorities for innovative development of the territory in the context of "smart specialization", author's development

	Innovative and structural profile of the region			
	Unacceptably low level	Low level	Average level	High level
Industry specialization of the region	Priorities: - focus on the sectoral structure of more developed regions with an emphasis on trade and services; - focusing on the development of information technologies in the economy.	Priorities: - formation and development of the knowledge industry and industry portfolio in the field of trade; - focusing on the sphere of scientific and educational services; - increasing the importance of human capital.	Priorities: - structural changes in the region's industry portfolio; - improving the socio-economic status of the region; - focusing on the development of agriculture and the transport and logistics sector.	Priorities: - structural changes in the socio-economic processes of the region; - development and strengthening of the current industry portfolio; - focus on smart services and breakthrough technologies in industry; - formation of an appropriate level of innovation culture.
1-industrial regions				
2-agro-industrial regions				
3-differentiated industry structure				
4-agricultural regions				
5-raw material regions				
6-financial and economic centers				

Table 2 Weight coefficients for each factor indicator, taking into account the degree of their importance in the innovative development of the region, calculated by the authors based on their regional reporting indicators

Factor indicators	Weight, %
1. Socio-economic priorities of the region's development according to stakeholders	100
<i>1.1 Building educational capacity (OP):</i>	<i>22</i>
1.1.1 Increase in the proportion of the population aged 25-64 years with higher education in the total population of the corresponding age group	11
1.1.2 Increase in the number of students enrolled in promising educational programs of higher education -bachelor's, specialty, master's programs, per 10,000 people of the population, people	11
<i>1.2 The emphasis on the improvement of macroeconomic indicators (MP):</i>	<i>56</i>
1.2.1 GRP growth per person employed in the regional economy, thousand rubles	11
1.2.2 Renewal of fixed assets, %	15
1.2.3 Growth of the share of people employed in high-tech and medium-tech industries in the total number of people employed in the region's economy, %	15
1.2.4 Increasing the share of people employed in knowledge-intensive service industries in the total number of people employed in the region's economy, %	15
<i>1.3. Emphasis on the development of the information society (IP):</i>	<i>22</i>
1.3.1 The increase in the share of organizations with Internet access with a maximum data transfer rate of at least 256 Kbit / s in the total number of organizations in the region, %	11
1.3.2 Increase in the share of households with Internet access in the total number of households, %	11
2. Scientific and technological priorities of the region's development according to stakeholders	100
<i>2.1 Increasing the share of research and development funding (FNI):</i>	<i>24</i>
2.1.1 Increase in internal research and development costs as a percentage of GRP, %	8
2.1.2 Growth of the share of business sector organizations in the total volume of internal research and development	8

expenditures, %	
2.1.3 Optimize the ratio of the average monthly salary of employees engaged in research and development to the average monthly nominal accrued salary in the region, %	8
2.2 Нарастивание человеческого капитала и уровня инновационной культуры (ЧКиИК):	24
2.2.1 Increase in the proportion of people under the age of 39 in the number of researchers, %	8
2.2.2 Growth of the share of research and development employees in the average annual number of employees in the region's economy, %	8
2.2.3 Increase in the proportion of people with a degree in the number of researchers, %	8
2.3 Improving the effectiveness of research and development (NIR):	25
2.3.1 Growth in the number of advanced innovative technologies developed in the region, per million people of the economically active population, units.	8
2.3.2 Increase in the number of articles published in peer-reviewed journals indexed in the RSCI, per 10 researchers, units	8
2.3.3 Growth in the number of patent applications for inventions submitted to Rospatent by national applicants, per million people of the region's economically active population, units	9
2.4 Improving the quality of innovation and technology policy (ITP):	27
2.4.1 Increase in the share of organizations that implemented technological innovations in the total number of organizations (by industrial production organizations), %	9
2.4.2 Focus on improving the region's development strategy and having a specialized section on innovation support	9
2.4.3 Creation of specialized regional development institutions (funds, agencies, development corporations, etc.) with the functionality to support innovative entities and / or implement innovative projects	9

In this study the rating and the weighted integrated assessment of the priority directions of innovative development of the Oryol region taking into account the interests of state bodies (GOV), business community (BS), science and education (NiO), civil society (HS). The evaluation results are shown in table 3.

The weighted average assessment of the identified priority directions of innovative development of the Oryol region according to the opinions of stakeholders is shown in figure 3. The interests of stakeholders allowed us to specify the priority directions of innovative development of the Orel region, which received the highest ratings in their factor groups (OP2, MP3, IP1, FN12, ChK&IK2, NIR1, ITP2).

Table 3 Integrated weighted average assessment of the priority of innovative development directions in the Oryol region, calculated by the authors

Factor indicators	Weight, in fraction	Rating estimation				Weighted average rating, %				Priority of directions
		GO V	BS	NiO	HS	GO V	BS	NiO	HS	
1. Socio-economic priorities of the region's development according to stakeholders:										
1.1 Building educational capacity (OI):										
1.1.1 Increase in the proportion of the population aged 25-64 years with higher education in the total population of the corresponding age group (OP ₁)	0,11	0,326	0,307	0,385	0,355	0,03586	0,03377	0,04235	0,03905	0,037758
1.1.2 Increase in the number of students enrolled in promising educational programs of higher education - bachelor's, specialty, master's programs, per 10,000 people of the population, people (OP ₂)	0,11	0,555	0,638	0,792	0,682	0,06105	0,07018	0,08712	0,07502	0,073343 (II)
1.2 The emphasis on the improvement of macroeconomic indicators (MP):										
1.2.1 GRP growth per person employed in the regional economy, thousand rubles (MP ₁)	0,11	0,484	0,385	0,339	0,296	0,0532	0,0424	0,0373	0,0326	0,041375
1.2.2 Renewal of fixed assets, % (MP ₂)	0,15	0,251	0,382	0,192	0,32	0,038	0,057	0,029	0,048	0,043
1.2.3 Growth of the share of people employed in high-tech and medium-tech industries in the total number of people employed in the region 's economy, % (MP ₃)	0,15	0,243	0,470	0,385	0,445	0,03645	0,0705	0,05775	0,06675	0,057863 (II)
1.2.4 Increasing the share of people employed in knowledge-intensive service industries in the total number of people employed in the region 's economy, % (MP ₄)	0,15	0,191	0,268	0,17	0,166	0,02865	0,0402	0,0255	0,0249	0,029813
1.3. Emphasis on the development of the information society (IP):										

1.3.1 The increase in the share of organizations with Internet access with a maximum data transfer rate of at least 256 Kbit / s in the total number of organizations in the region, % (IP ₁)	0,11	0,659	0,644	0,404	0,609	0,0724 ₉	0,0708 ₄	0,0444 ₄	0,0669 ₉	0,06369 (II)
1.3.2 Increase in the share of households with Internet access in the total number of households, % (IP ₂)	0,11	0,447	0,1	0,185	0,303	0,04917	0,011	0,02035	0,03333	0,028463
Integral factor estimation ($\sum v_k \beta_k$)	1,0	-	-	-	-	0,375	0,396	0,344	0,387	0,3755
2. Scientific and technological priorities of the region 's development according to stakeholders:										
2.1 Increasing the share of research and development funding (FNI):										
2.1.1 Increase in internal research and development costs as a percentage of GRP, % (FNI ₁)	0,08	0,049	0,155	0,202	0,037	0,00392	0,0124	0,01616	0,00296	0,00886
2.1.2 Growth of the share of business sector organizations in the total volume of internal research and development expenditures, % (FNI ₂)	0,08	0,539	0,321	0,198	0,126	0,043 ₁₂	0,025 ₆₈	0,015 ₈₄	0,010 ₀₈	0,02368 (II)
2.1.3 Optimize the ratio of the average monthly salary of employees engaged in research and development to the average monthly nominal accrued salary in the region, % (FNI ₃)	0,08	0,096	0,193	0,388	0,219	0,0076 ₈	0,0154 ₄	0,0310 ₄	0,0175 ₂	0,01792
2.2 Increasing human capital and the level of innovation culture (ChK&IK):										
2.2.1 Increase in the proportion of people under the age of 39 in the number of researchers, % (ChK&IK ₁)	0,08	0,064	0,278	0,133	0,058	0,00512	0,02224	0,01064	0,00464	0,01066
2.2.2 Growth of the share of research and development employees in the average annual number of employees in the region 's economy, % (ChK&IK ₂)	0,08	0,485	0,54	0,482	0,493	0,0388	0,0432	0,03856	0,03944	0,04 (II)
2.2.3 Increase in the proportion of people with a degree in the number of researchers, % (ChK&IK ₃)	0,09	0,458	0,114	0,119	0,398	0,04122	0,01026	0,01071	0,03582	0,024503
2.3 Improving the effectiveness of research and development (NIR):										
2.3.1 Growth in the number of advanced innovative technologies developed in the region, per million people of the economically active population, units (NIR ₁)	0,08	0,458	0,317	0,43	0,689	0,03664	0,02536	0,0344	0,05512	0,03788 (II)
2.3.2 Increase in the number of articles published in peer-reviewed journals indexed in the RSCI, per 10 researchers, units (NIR ₂)	0,08	0,321	0,567	0,477	0,269	0,025 ₆₈	0,045 ₃₆	0,038 ₁₆	0,021 ₅₂	0,03268
2.3.3 Growth in the number of patent applications for inventions submitted to Rospatent by national applicants, per million people of the region's economically active population, units. (NIR ₃)	0,09	0,684	0,496	0,0	0,0	0,06156	0,04464	0,0	0,0	0,02655
2.4 Improving the quality of innovation and technology policy (ITP):										
2.4.1 Increase in the share of organizations that implemented technological innovations in the total number of organizations (by industrial production organizations), % (ITP ₁)	0,09	0,539	0,433	0,244	0,392	0,0485 ₁	0,0389 ₇	0,0219 ₆	0,0352 ₈	0,03618
2.4.2 Focus on improving the region's development strategy and having a specialized section on innovation support (ITP ₂)	0,09	1,0	1,0	1,0	0,0	0,09	0,09	0,09	0,0	0,0675 (II)

2.4.3 Creation of specialized regional development institutions (funds, agencies, development corporations, etc.) with the functionality to support innovative entities and / or implement innovative projects (ITP ₃)	0,09	0,0	1,0	0,0	0,0	0,0	0,09	0,0	0,0	0,0225
Integral factor estimation ($\sum v_n \beta_n$)	1,0	-	-	-	-	0,402	0,464	0,307	0,222	0,34875

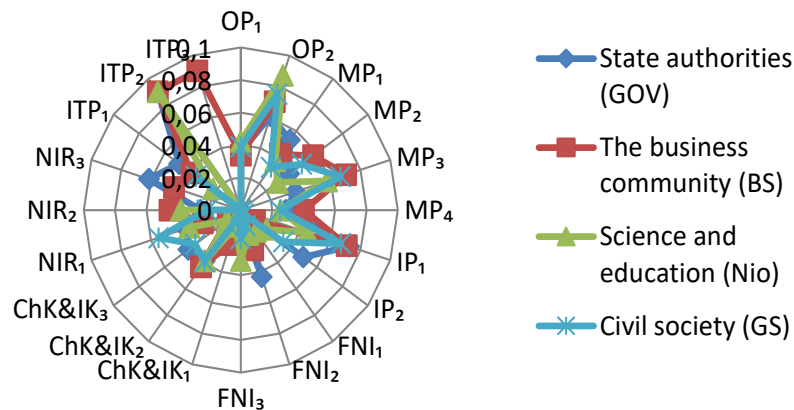


Figure 3 Weighted average assessment of identified priority areas of innovative development of the Orel region based on the opinions of stakeholders

Thus, we can conclude that today the priorities of innovative development of the Oryol region are:

- 1) increasing the number of students enrolled in promising educational programs of higher education;
- 2) growth of the share of employees in high-tech and medium-tech industries of industrial production;
- 3) development of information and communication technologies in all areas of the region's economy;
- 4) increase in the share of business sector organizations engaged in research and development;
- 5) increase in the share of research and development workers in the region;
- 6) growth in the number of advanced innovative technologies developed and implemented in the region;
- 7) focus on improving the development strategy of the region and the presence of a specialized section on supporting innovation.

4. CONCLUSION AND RECOMMENDATIONS

Thus, the conducted research allowed us to identify the main problems of choosing priorities for innovative development of Russian territories. The complexity and importance of this process, noted in the scientific literature and practice of using the concept of "smart specialization" in the EU countries as the lack of a single mechanism and a universal methodological tool suitable for different

regions, is confirmed. The strategy of "smart specialization" is always an individual search for a specific region in choosing its specialization in innovative development. The matrix of choosing priorities for innovative development of the Russian Federation territories in the context of "smart specialization" is an attempt to systematize the available scientific and practical knowledge, decomposing analytical information into two integral parameters: the innovation and structural profile and the industry specialization of the region. The matrix approach can be considered a suitable mechanism for the strategy development stage, according to the methodology proposed by the authors for forming a strategy for innovative development of the region. This is necessary for further actions to conduct a scenario analysis of the innovative development of the region.

The proposed method is tested on the example of the Oryol region. The results obtained play an important role in the process of forming an effective program for innovative development of the region in the framework of promoting the European concept of "smart specialization" in Russian conditions.

The directions of further research are related to the development of a mechanism for involving stakeholders, according to the "four-link spiral of innovation" model, in the process of forming a strategy for innovative development of the territory based on the use of a competence-based approach. The main issue that needs to be addressed is the organization and motivation of the process of interaction between different groups of

participants in the innovation process in the region and the coordination of their interests in the format of entrepreneurial search, as the basic basis for the implementation of the concept of "smart specialization".

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