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Methodology for the Identification and Analysis of the Transformation of the Challenges of Spatial Development

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ABSTRACT

The problem of the identification and analysis of the spatial development challenges are studied in this article. The challenges to inclusion of Russia into the global space have been discussed for quite a long time; however, in our opinion, the challenges to integrity and potential of the regional socio-economic systems are not less dangerous. The civilization, spatial and institutional approaches to the study of the territories are justified. The regional socio-economic complex represents the interconnected system of human resources, assets, and economic relations, localized in a specific territory in the region. The basic hypotheses related to the parameters and the nature of the impact on the object are worded. A model analysis of the information flows is created, able to detect the signals about the emerging challenges.

The result of the information flow analysis involves the development and implementation of the management strategy for the internal and external challenges of the spatial development of the region.

Keywords: Territory, regions, internal and external challenges, sustainment, potential, model.

1. INTRODUCTION

The problems of spatial development of Russia and its regions in the globalized world are becoming especially acute in a changing multipolar world. The regions are looking for a place in a global system of division of labor, which is wider than national. It is extremely important in the context of globalization to have not only competitive technologies and companies, but, more importantly, to have a potential demand for these technologies in the local markets of the regions. The economic development now depends not so much on the gross volume of production and natural resources, hidden in the territories, as on the effective strategic management over the resource flows, including the ones on the global market. The priorities of

the state at the moment are focused on the development of the industries, technologies and companies, paying less attention to the importance of the environment challenges. The downturn is a clear indication of the impact of the challenges on the development processes in the world as well as in the regions of the country. As a result, the problem of qualitative transition to a higher level is a major challenge for the modern development of the region.

The development of Russia in the globalized world is, in our view, a humanitarian problem in the changing multipolar world. The dynamic development in the twenty-first century is essentially different from the bipolar world of the last century, when the Soviet Union, being a multinational country, opposed the USA in the scientific and military fields. The collapse of the system, the search for new partners, the competition for energy resources and effective human resources generate new challenges to the economy of Russia (Downie, 2016).

Russia is multinational and diverse in all natural and geographical senses; it is dominated by the processes, especially, of the economic nature: the obtaining of the promising education, the quality health care, the search for the developed labor market, comfortable accommodation and child care, socially secured senility, etc. The humanitarian problems in the conditions of instability and post-crisis recession go by the wayside. National, ethnic, historical roots and traditions are sometimes replaced by the market substitutes, reducing their value to generate a decent mental model of the region, relegating to the consumer use in the field of leisure, entertainment, show business, tourism. The problem is the need to identify the underlying processes, called challenges, giving the momentum acceleration or deceleration of the development of the society, and the search for the strategic directions of the movement towards sustainable, balanced, harmonious development of the society and the individual (Antokhonova, 2015).

2. APPROACHES

The civilization, institutional and spatial approaches, complementing each other, in our opinion, are focused in this paper.

According to the Toynbee *civilization approach*, the local civilization is the main unit of history, the development of which includes facing other civilizations. The civilization with the potential of an appropriate response to the challenges objectively receives the impulse for development. The lack of response results in the breakdown of the civilization, the adaptation and submission to the threats and, eventually, in a decline. The driving force of the civilization, ensuring the response to the challenge is its elite (Toynbee, 2001).

In the process of integration and globalization processes, the increasingly close relationship between the national economies, the spatial aspects are of particular relevance and interest to the science, politics, society and business. The basic studies in the field of spatial development in the context of global and national issues are held complete with the assessment of natural and spatial potential (Kotlyakov *et al.*, 2013). The intensification of political and economic transformations in the territory of the Eurasian space takes place during the past decade. Geopolitically, the problem is the possibility of a non-unipolar world and the objective strengthening of the economic impact of the Asian countries in the Eurasian space.

The single economic space is the space consisting of the territories, where the legally harmonized similar market mechanisms of regulation of the economy are functioning, the single infrastructure is available and tax, monetary, currency, financial, trade and customs policies are coordinated, ensuring a free movement of goods, services, capital and labor. The category is institutional, formed by the power of the territories, motivated by the mutual benefit. However, due to significant national differences, the generation of a real single space is far from being a simple task.

Being relevant to the vast territory of Russia, the *spatial approach* involves the study of spatial problems of development of the local territories of the Russian Federation. Topical is the study of the regional socio-economic complex (RSEC) remaining from the previous state management system, having experienced the transformation of the transition economy, adapting to the market conditions of the federal management. In our view, regional socio-economic complex is a coherent system of human resources, assets, and economic relations, localized in a specific area in the region (Antokhonova, 2014).

The theory and practice of the spatial development has a long history. However, until the 1990s, this problematics was expressed in the individual regional projects and only in the late twentieth century the spatial development became a “standard”, which has gone far beyond Europe and the USA. The study of spatial effects by the methods of spatial econometrics (Anselin, 2006) were developed significantly.

The concept of the spatial development was worded in the second half of the 20th century in connection with the environmental problems of the equation of the development of the global world, on the one hand, and within the industry terminology, having generalized and politically transformed such concepts as the spatial or the regional planning, on the other hand. In today’s European context, this concept refers to a set of organized actions controlling the elements and relationship of the territories, the system of actions and policies, aimed at optimization of the ongoing spatial changes (development).

The spatial development in Europe is carried out mainly :

1. Through the European Union in relation with the European spatial development Prospects (ESDP).
2. Through the Council of Europe in relation with the Council of Europe Conference of Ministers Responsible for Spatial/Regional Planning (CEMAT) and the Guiding Principles for Sustainable Spatial Development of the European Continent.

As it is known, the “Guiding Principles for Sustainable Spatial Development of the European Continent” were adopted in Hanover in September 2000 by the CEMAT. The objective of this document is to determine the measures for spatial development able to help people in all states of the Council of Europe to achieve the acceptable living conditions.

In accordance with the Guiding Principles, the priorities of the European spatial policy are the following:

1. The support for the weak and depressed territories.
2. The programs for the inter-regional cooperation and development of the urban areas.
3. The support for the innovative activity.
4. As well as the special programs for the countries, acceding EC.

Having analyzed this document, it can be concluded that the policy of sustainable spatial development of Europe can be expressed in ten principles:

1. Maintenance of the territorial cohesion.
2. Improvement of the relationship between town and country.
3. Improvement of the transport accessibility.
4. Development of access to information and knowledge.

5. Reduction of the environmental damage.
6. Protection of nature.
7. Enhancement of the cultural heritage.
8. Development of the energy resources.
9. Promotion of high-quality sustainable tourism.
10. Limitation of consequences of natural disasters.

The European integration in the modern history faced new challenges for the integrity of the European Union (Brexit), the flows of ethnic migrants from the Muslim world, the consequences of anti-Russian sanctions for the European agricultural business. These facts actualize the need to study the improved dynamics of the internal and external challenges on the united territories.

Such principles as the access to the territories, knowledge and information; protection of the environment and natural resources; convergence of towns and villages; security, including the security in the field of tourism; the polycentric development and cultural diversity can be taken on board in development of the strategy for development of the territories of Russia.

The studied trends of development of Europe and Russia strongly support a very important conclusion: they all contribute to improvement of the quality of life. On the contrary, the quality improvement is a prerequisite for the implementation of each of the planned trends.

Thus, the spatial development can be seen as a process of transition from one spatial organization of the region or state to another. Let us agree with the opinion of Zhirnel: “The spatial organization is, above all, the system of settlement of the population, that is, the settlements and the relations among them, the production and the use of natural resources. All this is related to the management, carried out at various levels. Speaking of spatial development, we mean the transition from one state of spatial organization to another, with no negative effects of this transition. This is a qualitative development, implying a transition to a higher level” (Zhirnel, 2007).

The institutional approach considers the interconnected system of institutional units (the state, the business and the households), assets and socio-economic relations. It implies a certain ordered set of institutions, creating the economic behavior models, defining the constraints for businesses, which are formed as part of a government structure system. The weakness of the market environment is supposed to be the fundamental cause of the Russian economy slowing down (Kudrin, & Gurvich, 2014). The developing economies tend to the evolution of the institutional framework: the movement from the existing informal institutions to the predominance and cooperation of the formal ones.

3. METHODS

The methodology of the study is the logical system of conceptual approaches, principles, methods of measurement and data analysis, characterizing the object. The object of study includes the components of different nature, combined by the socio-economic relations.

The regional social and economic complex in a planned economy is a stable inertial system that ensures stability, reproduction, completeness of the regional cycle on the basis of the state ownership. The market reforms were the first challenges, which changed the basic institution of social and economic system – the institution of property.

Despite the widespread use of the term “challenges” in the scientific and political vocabulary, the study of this event as a phenomenon, the evaluation of the form, the content, the consequences for the object, facing the challenges and forced to respond to them, are almost absent in the field of economic sciences. The specific interest to the challenges in the economic literature was caused by the long preparation for the accession to the WTO (Shuleshko *et al.*, 2008). However, the realities of the entry into the world economy space were unpredictable; the international sanctions imposed on Russia by the USA and European countries have made secondary the WTO problematics.

The estimates below show the relevance of the study and the search for the possible responses in the emerging policies, including the Strategy 2030 at the level of the regions of the Russian Federation and other program instruments.

It should be noted that the life cycle of the economic challenges is much shorter against the civilization ones, but they originate from the depths of the development of the civilizations. This is supported by the papers of Moiseev, including the proceedings of the symposium “On the Essential Features of the Civilization of the Future”, dedicated to the 90th anniversary of the outstanding scientist, the RAN academician.

The object facing the challenges obtains the impulse for development. Depending on the potential, the behaviour may be adaptive or transformational.

The main hypothesis for the development of the strategy is to recognize the priority of the mental models in formation of the economic and social models. The people respond the challenges accordingly, including by generating the ideas, accumulating the resources.

One of the principles of the market economy, namely, the market freedom, offers the opportunities for the development of the object, but also includes the threats (risks). The challenges do not give a clear possibility, because the potential is required for the implementation and they do not represent a threat requiring a defense (Shchedrovitskiy, 2006). The challenges imply the potential of worthy response and the development, the transition to a new level.

Thus, the challenges are different from the risks, the probabilistic adverse situations, requiring the awareness, the insurance, and the diversification. The economy challenges are a form of implementation of the economic activity, addressed to the individual, to a society as a whole, as well as to the business and the state. On the other hand, the challenge is the obtained result of the other object (a partner, a competitor, a bordering territory) both in the external and in the internal environment (Smith, 2016).

The conceptual approach to the study of the socio-economic complex at the level of the Federation is the spatial approach, due to the importance of the territories in the face of fierce international competition, the development of the legal provision of land relations, the uneven settlement and development of the all-Russian space.

RSEC is a complex dynamically developed mixed system, comprising a plurality of objects of different nature (institutional, social, natural, economic, intellectual), interconnected to establish the objective basis of life and quality of life of the population on the territory of the region.

The spatial approach involves the study of the socio-economic complex as a coherent system of human resources, assets, and economic relations, localized in a specific territory in the region.

In the context of the world economy, the transition from a bipolar world to a multipolar world (polycentrism) represents the transformation of the structures and the emergence of new processes and phenomena. Depending on the potential of the territories, the development can be of adaptive or transformational nature of goal-setting. The authors believe that the socio-economic complex, as the

organized recreational space, has the potential to the transformational development (Antokhonova, 2015). The spatial approach provides a wide range of opportunities for research in terms of the grounding of the object, the scope, and the criteria of formation of the common groups (clusters) (Bryukhanova, 2015).

The regional socio-economic complex is a complex dynamic system, which includes a set of objects with a set of relations established among them, creating the objective basis of life for the intra-republican regions. The regions form the strategic documents, reflecting the attempts of comprehension or the understanding of the transformations taking place in the world as the response to the challenges. The problems of transition to a higher level are the major challenge for the modern development of the region.

It is evident that any development or regression can initiate the flow of information, which provides the information about the signals representing the spatial development challenges. The analysis of the information flows is becoming a necessary and sufficient condition for the timely detection of the signals from the external environment. These proactive measures can be taken only with the recognition at the level of the weak or even average signals.

4. MODEL OF STUDY

The information flows analysis model was developed, which can be used in the development of the economic space structure of the region, taking into account the problems of integration of legacy components into the regional socio-economic complex in line with the market requirements (Figure 2.1).

The analysis model for the information flows is also focused on the strategic trends in development of the region in view of the challenges described by Knyaginina (Knyaginina, 2004): “having been formed in the era of the industrialization, the Soviet economy began to integrate into the global market, it has ceased to be closed and self-sufficient, the efficiency was lost both by the individual production and technological complexes (it would be enough to mention the ‘waist prices’ after the disappearance of the centralized control over the prices, a large part of the production from Siberia and the Far East became uncompetitive, as well as their territorial and industrial projection in the form of a settlement system)”.

The downstream information flows are formed in the global networks, which have become an effective marketing tool for the penetration the regional markets. The management also uses the global network in the formation of the ideology of the horizontal flows of information, but there are a number of conditions preventing the obtaining of a positive vector of changes.

In the distribution of the key resources of the territory – financial, human, natural and environmental, cultural, consumer, immigration – the influence of marketing dominates, as the public administration system almost lacks the tools of their coordinated use. Various aspects of spatial planning activities are spread over the various departments. The infrastructure reforms (transport, communications, energy, housing) and, in general, the consequences of the implementation of the set of reforms at the territorial level are not coordinated and not harmonised, which also degrades the structure of the horizontal flows of information. The culture of land use planning is actually lost. The analytical model of the new spatial organization of the country is not demanded by the law enforcement and budget processes. The regional socio-economic programs, even adopted at the federal level, are limited to the tax and budget preferences, rather aggravating the internal challenges than responding to them.

Thus, the horizontal flows of information are formed mainly under the influence of the marketing tools, which in turn contribute to or hinder the deterioration or improvement of the structure of the consumer, financial, migration, material flows. They, in turn, determine the nature of the upstreaming information flows.

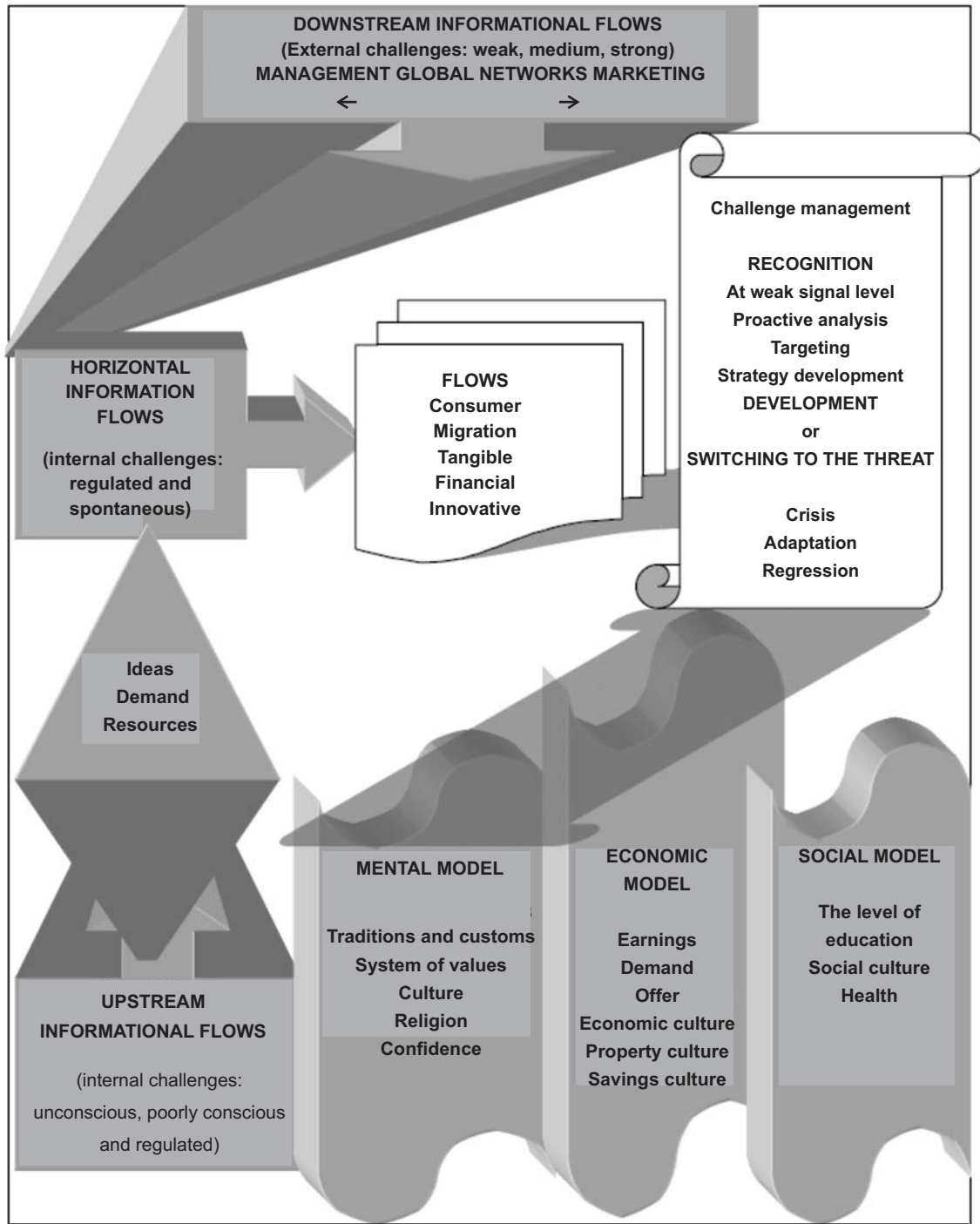


Figure 2.1: The analysis model for the challenges in the information flows

For the purposes of development of the region, the analysis of the downstream information flows should be aimed not only at the study of the potential demand and resources, but also at the idea generating environment. Such an approach to the analysis of the flows allows to determine the specifics of the internal challenges, forming the climate in this environment, which in turn should be considered in the development of tactics and strategy of the challenge and risk reduction management.

The innovation flows in the region are possible only if the upstream flows of information have a positive focus on the generation of ideas aimed at improvement of the quality of life through development of the internal resources. The vector of development of the downstream flows of information is contained in the mental model of the region, which ultimately is the base model for the formation of the economic and social models on the region.

5. RESULTS AND DISCUSSION

The analysis of the information flows should result in the development and implementation of the strategies of management of the internal and external challenges of spatial development of the region at the level of the weak and average signals. Otherwise, the increasing challenges put us in the face of crisis, for which the recovery scenarios include the adaptation to the worse conditions, often based on a false self-preservation instinct and leading to a regression in many cases. The search for the ways out of the crisis also involves the development and implementation of the strategy, but with worse conditions in comparison with the strategy at the level of weak signals.

Any challenge should be regarded as the signal, the strength of which evidences the possibility of emergence of the threats and the existence of the threat to the successful spatial development. Therefore, the most urgent is the problem of the study of the nature of the challenges, the recognition and the analysis of challenges at the level of weak signals using the tools and methods of forecasting.

Currently, the nature of challenges becomes threatening, and only a reasonable justification for the strategic ways of spatial development and their methodical implementation can serve as a respond to them.

The model of analysis of the information flows is based on the hypothesis that they can initiate any development or regression in the modern world. Consequently, the information flows can incorporate the information about the signals, representing the challenges of spatial development. In this case, the analysis of the information flows becomes a necessary and sufficient condition for the timely detection of the signals from the external environment, the changes in the internal environment and the conditions for formation of internal challenges. Based on the analysis of the information flows in order to identify and to understand the external and internal challenges, it is possible to develop the tactics and the strategy of management and control over the challenges.

The tactics and the strategy of management and control over the challenges should be aimed at extraction of the innovation potential out of the structure of the economic space of the region, taking into account the problems of integration of the inherited components into the regional socio-economic complex in accordance with the market requirements. The challenge management means the coordinated control over the flows increasing the creation of the added value in the region:

1. Control over the consumer flows.
2. Control over the population mobility.
3. Control over the financial flows.
4. Control over the material flows.
5. Control over the cultural flows.
6. Control over the natural and environmental flows.
7. Control over the innovative flows.

The challenge management also includes the process of synthesis of all the ideas in the upstream information flows, their support and formation of the innovative space as the basic component in the economic space structure. The challenge management can be based on the principle that the human capital and its development are the key factors in spatial development. Therefore, the changes in the mental models of the region as a basis for economic and social models are directly proportional to the changes related to human as the main wealth, implying the harmonious development of a human life space (Bryukhanova, & Polukhina, 2016).

6. CONCLUSION

The recognition of the need to develop a spatial development strategy is suggestive: what should the strategy be like and how it should differ from the previous strategies? At this stage, only some regions managed to develop a thoughtful and reasonable spatial development strategy, addressing also the challenge management problem.

However, the formal approach to the development of the strategic document, determining the fate of the whole region, which is also a challenge requiring the respond, prevails. The detailed analysis of the information flows, containing also the information about challenges, allows to avoid the formal approach and to take into account all the strengths and weaknesses of the spatial development.

Thus, the country and the region are facing the objective necessity of the development of the fundamental projects aimed at the long-term study and monitoring of the spatial development challenges, alike such “big projects” as the Index of Human Development.

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