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Cluster Management in the Regional Economy of the Russia: Formation and Development

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ABSTRACT

Currently, with political modernization in Russia underway, the greatest interest in the development of regional economy is the formation and development of business clusters. Since the last quarter of the 20th century, business clusters have become an important factor in the development of commercial relations between economic entities. The regions with business clusters become the leaders of economic development and determine the competitiveness of the internal Russian market. There are many different interpretations of the notion “business cluster”, but the authors are unanimous in the position that “clots of enterprises” that comprise a cluster have a positive effect on economic growth in general. Regional development and growth of competitive advantages are an urgent task for the Russian economy, as is shown in many policy documents. This paper discusses the numerous issues of formation and development of clusters, as well as evolution of the regional economies by means of business clusters.

Keywords: Business cluster, scientific organizations, formation of business clusters, economy, region, cluster development, innovation.

1. INTRODUCTION

In modern conditions, the formation and development of national and regional economy is determined by globalization. It influences the formation of global economic relations never seen before. They also influence the status and location of world powers, region, district, province, and enterprise.

The economic integration is one of the main directions of globalization. Three aspects that form the basis of innovation economy play an important role in current integration processes. These aspects are:

- science;
- innovative industry;
- educational system.

The formation of innovation economy is among the top priorities that provide the development of the Russian Federation and its regions. Innovation is a product of the network economy based on direct links and feedback loops between the stages of the innovation cycle, consumers, manufacturers, the government, enterprises and sales market. This integration creates conditions for the modernization of existing production facilities, as well as determines the growth rates of economic processes, the level of competitiveness of the region and the nation in the domestic and foreign markets.

To implement this principle, new instruments and institutions that were never used before are required. They include a cluster structure of business activity in Russia and its regions.

The global experience shows that cluster structures contribute to the competitiveness of regions and industrial complexes while developing cluster-oriented policy of the Russian Federation. In the regional industrial policy, the cluster approach serves as a powerful tool of development and progress and helps to create competitive industries in the large industrial enterprises, i.e. leaders and sectors.

2. MATERIALS AND METHODS

Theoretical and methodological basis of the paper includes information sources for writing this material, publications and reports, modern scientific approaches to the study of how clusters of small enterprises are formed and develop in the regional and national Russian economy, as well as works by foreign and domestic authors devoted to cluster organization and development and their role in the regional economy. We used the methods of comparative analysis, grouping and system approach, based on comparing theoretical and practical material and on solving practical problems.

The research methodology is founded on the dialectical method, system and strategic approach to the analyzed objects. Scientific provisions, conclusions and recommendations made in this article are based on combined methods of historical and logical analysis, comparison and synthesis, induction and deduction, economical and statistical method and expert assessments.

The information basis of the research is comprised of the laws of the Russian Federation, official statistical publications, the programs of regional economic development, subject collections and directories, information published in scientific journals and periodicals, and Internet resources.

The article also considers the data that characterize the trends of development of special economic clusters in the state and regional innovation policy, and the research on external and internal sales market for the new generation of products and new technologies.

3. DISCUSSION

Currently, an economic cluster is defined as an organization, within the territory of which commercial enterprises co-operate with research-educational complexes partnered with state and municipal authorities in order to improve the competitiveness of industry, the region and the country as a whole.

The cluster approach to the state formation is well recognized in the developed countries. It is applied to economy structuring, as well as helps to justify the policies of economic activity and competition growth. In many industrialized nations, (e.g. Denmark, Belgium, Italy, the USA, India, China and Japan) clusters form the basis of their economic strength and the growth of their main economic and political indicators.

Nowadays, regional clusters of Russia are being efficiently established and modernized. This is one of the factors showing the growth of competitiveness of regional economies. Clusters and their structures provide maximum stability to the regional economy and realize its competitive potential on the basis of synergy in the industry: realization of the product, administration, activities in the field of investment and finance, management.

In their strategic development programs, the regions implement the directions of formation of cluster structures. There are two main strategies in the formation of regional clusters: to use the already existing knowledge and to create new partnerships networks within the cluster.

Depending on the operation and its purpose in the regional activity and the economic policy, the cluster serves as regionally limited forms of economic activity, vertical production chains and industries.

When the main social and economic strategies of the regions of Russian Federation is being developed, the regional cluster management system is organized as a general system.

There are 4 main types of clusters:

- infrastructural and innovative cluster. This cluster is formed around new technological solutions;
- cluster with fundamentally new infrastructures. It is established in a new place, which has not been used before;
- ultra structured meta-industrial cluster. On the basis of this cluster, the industry is created that aims to reconstruct the current types of industry;
- cluster that borrows and adapts the leading technology platforms to the system of Russian industry. This cluster establishes a new industrial way and analyzes the conditions for the development of technology.

These four are ideal types, which are used in decisions regarding how to establish a regional cluster and to build its development policy; in reality, the created cluster requires combining several types.

The main factor in the development of the designated cluster type is a mixture of fundamental science and innovative research, which determine the potential of the innovation in the region. It is also necessary to understand to which practical purpose it is actually connected. The entire process of creating and developing a cluster may be related with at least four factors on whose basis the types of regional clusters are formed (Kashbieva & Vasiliev, 2010).

In the programs of development of the Russian Federation and its particular regions, the interest in clustering technology is explained by the fact that there is a need in effective restructuring of former industrial giants and territorial and industrial complexes that became inefficient and ceased systematic operation activities.

In some regions, the cluster formation projects are under development, for example agro-industrial cluster in the Kaliningrad and Rostov Regions, the Volga region automotive cluster, etc.

Formation and development of regional clusters is a process that requires large investment, while not all organizations have such funds (Ragulina, Lebedev & Popov, 2013). The state then undertakes the greater part of the financing from federal and regional budgets.

The commonness of the cluster infrastructure, favorable conditions for the exchange of knowledge and support for new ideas, a unified labor market and low organizational and informational barriers allow companies and organizations within the regional cluster to take advantage of geographical proximity. Participation in such network structures becomes an important factor in the development of their own competitiveness.

The cluster policy of regional economy consists of a sequence of connected steps functioning in cooperation, which allows to increase competitive advantages of the region on the domestic and global markets. Thus, the process of cluster formation is to be organized at the level of the region. It will increase the level of social and economic development and improve a number of characteristics of the region:

1. From the perspective of the synergy, the state as a result of self-organization of the society should and is obliged to provide for a continuous process of self-organization at the regional level.
2. Because of the active globalization of economic processes, regionalization should constantly be growing (Bashkov & Silnov, 2015).
3. The world experience shows that the tendency to intensify the specialization of regional industries is becoming more important. It is reflected in an effort to combine certain types of production in the regions, which have certain advantages, and leadership criteria in the market;
4. Local authorities use economic and legal tools that have an impact on cluster development programs and have the regional budget at their disposal.
5. Local authorities are in closer proximity to the economic entities than federal authorities are.

The process of formation and development of a Russian regional cluster represents a number of consistent administrative decisions, which refer to industrial specialization, participants involved in the process, geographic location, facilities and other basic parameters of the cluster. Therefore, it is necessary to develop an algorithm of regional clustering and to understand how to manage the cluster development of economic area (Ragulina & Zavalko, 2013). This algorithm is based on a systematic approach and takes into account all the factors that influence directly and indirectly on the process of cluster formation.

The basic approach to the regional cluster formation determines the composition of the working group that prepares the development of a cluster program and its implementation.

When determining the initial objectives of the cluster activities, we should take into account the relationship between the cluster formation and the goals of participating enterprises, as well as the goals of regional development.

When creating a cluster, assessment of conditions and opportunities of a Russian region involves the study of economic, resource and organizational factors.

The economic factors include concentration, cooperation, competition and competitiveness of the region, both within the domestic and foreign markets.

Resource factors include natural resources, scientific-technological, informational, administrative, basic material and technical infrastructure, human and financial resources.

Organizational factors are the levels of readiness of business, the government and the society to form clusters “from scratch”.

Based on these factors, the formation of a model of regional cluster system “from scratch” involves the definition of its constituent parts - the leadership body, the chains of organizations and enterprises related to it. This stage of cluster formation involves statistical survey of organizations in the leading regional industries.

The next stage of cluster formation involves an organizational aspect of a cluster model and determines functional responsibilities of the members of the cluster with the division of responsibility for achieving these goals, as well as for developing ways of interaction with the regional authorities, including government agencies supporting development programs.

At the final stage of formation, the organizational and legal issues are solved. The legal status of the regional cluster is determined, and its main documents are developed. These documents govern its formation and the production process.

The final characteristics and the borders of the regional cluster are determined by the agreement on its establishment and further development. The formation and development of the economic cluster should take into account a model of its structure and functioning conditions.

4. RESULTS

As a practical matter, modern domestic regional cluster systems are functionally and economically interconnected organizations on the borders of a Russian region. They make a single chain of the production process.

Companies of this type tend to be local economic mainstays or to play the “structural – axial role” in the economic activity of the region. The formation stage and the development of clusters in Russian regions are justified by the integration of sectorial interests and key of the regional socio-economic players. One of the main criteria for the development of cluster associations at the regional level is a multi-level system of mutual interest between member-organizations of identical structures and the most important factors of areas of these companies’ presence (Lavrikova, 2012).

To improve the competitiveness of regional economy and the integration and diversification of the national economy, a program of increasing the effectiveness of regional cluster development potential is used.

Forming the cluster potential (or of a company), it is necessary to implement and comply with three main economic effects: social, economic and budgetary.

The social effect is expressed in creating new jobs in the region. It satisfies consumers with the quality of manufactured goods or services, as well as with the possibility to acquire a profession, position or skills in a particular area of the cluster.

The economic effect is a good offer for the businesses of the regional economy in the implementation of any planned production project. The development of small and medium-sized businesses and the entire

business area and the increase in the number of businesses has a positive impact on the revenue of budgets of all levels.

The introduction of the cluster approach to the regions of Russia could become an important tool in ensuring rapid growth of economic activity and diversification of the economy. In the political sphere of regional activity, it is important for enterprises to be given a status of cluster member, because this infrastructure and the area potential become attractive to the investors and contribute to the development and improvement of commercial activity at both national and international levels.

The state and local authorities in Russia are now ready to provide financial support for cluster formations and structures in their development.

This state policy is provided in order to intensify the process of social and economic development of Russian regions and the formation of clusters, to activate investment programs and to stimulate small and medium-sized businesses. The result of the cluster policy is the increased innovating by cluster members and the increased efficiency of scientific and educational process in the region.

In education technologies, which are necessary for cluster development, the region needs to implement continuing education system and to provide cooperation between the main cluster environments in the following categories:

- ensuring the participation of all cluster sectors and categories in the development of state programs, state orders, and training of human resources;
- joint efforts in the development of educational programs;
- joint educational programs in cluster activities;
- implementation of externship in organizations of the regional cluster.

Another direction of development of regional cluster policy in Russia is to attract more targeted investments and implement investment programs, which are the necessary condition for cluster formation in industry, engineering, transport infrastructure and housing projects that take into account the objectives of cluster policy.

In order to form integrated structures, it is necessary to use integration strategies with programs of regional clusters formation, as well as with economic programs of Russian regional development and federal targeted programs.

One of such programs in the activity of a Russian region and the entire state is the support of cluster development:

- providing the region with subsidies for the realization of major activities within the development of innovation clusters;
- changing and adjusting already functioning or emerging targeted programs of cluster enterprises;
- encouragement and motivation of large businesses implementing successful regional cluster policy.

To implement regional cluster policy, it is necessary to provide the effective co-operation of all structures by means of special mechanisms (Abashkin, 2012).

Therefore, to realize the main directions of cluster policy in Russian regions it is necessary to neutralize the following shortcomings:

- a lack of mechanisms of methodological, informational, consulting and educational support to Russian regional clusters;
- a lack of target orientation of the federal executive bodies, regional and local authorities and enterprisers that implement cluster policies;
- a limited set of financial supporting tools for cluster projects from different budgets.

To develop the infrastructure of a regional cluster it is necessary to use various forms of project financing. Assistance to cluster formation and promotion of their organizational development are mainly provided by the executive authorities of the region. When introducing and implementing a federal target program in the regional formation and development policy, special mechanisms are used. They are the mechanisms of financial support from the federal budget provided to the cluster and its main activities.

In 2016, The Ministry of Economic Development of the Russian Federation expanded the program of supporting local innovation clusters in Russian regions by including the Perm cluster of optical technologies. As reported on the department website, Artem Shadrin, the director of the Department of Social Development and Innovation of Russia, announced this during the brainstorming session called “Local Clusters as drivers of innovation development in the Russian Federation” during the Krasnoyarsk Economic Forum.

In 2013-2015, the twenty-six clusters included in the program received 98 billion rubles from the budgets of different levels, as well as 362 billion rubles of non-budgetary investments. The Ministry of Economic Development has subsidized cluster projects since 2013. Initially, the subsidy contained 1.3 billion rubles; in 2014, it increased to 2.5 billion rubles. Nevertheless, due to the reduction of budget expenditures in 2015, the subsidy was reduced by half. According to Shadrin, about 70% of the funds allocated under the subsidy are directed into the development of infrastructure clusters.

According to the Ministry, in 2015, the clusters included in the program produced goods worth about \$ 2 trillion rubles. This is 0.5 billion rubles more than in 2013. Among the most successful clusters, Artem Shadrin named Bashkortostan petrochemical cluster, the cluster of pharmaceutical, biotechnology and biomedicine of Kaluga region, the cluster of information technology of Novosibirsk region, the aerospace cluster of Samara region.

The list of clusters receiving the state aid is approved by the Government of the Russian Federation. Originally, it consisted of 25 regional cluster projects.

The cluster development in Russian region creates a favorable atmosphere for new alliances that unite educational technologies.

These associations of research and development and centers of the innovative product introduction stimulate and improve the innovation activity of a cluster enterprise in the region.

During the development of integrated regional cluster structures, innovations are mainly supported, because innovative processes ensure the long-term prospects of Russian regional development and improvement of its main indicators of competitiveness and activity. We should also mention the fact that the unique feature of cluster formation is their focus on innovations.

Thus, while implementing and introducing the programs of regional innovation development, it is necessary to apply the cluster approach to organizing of integrated structures of the new type (Lavrikova, 2012).

Nowadays, under constant influence of external and internal factors of political changes and cooperation between the states, in a climate of rejection of branched economy and restructuring of industrial enterprises, it is necessary to implement a new approach to the development of management structures of businesses, authorities, educational programs and other organizations. In the atmosphere of the constant change and modernization of political cooperation and economic structure, the cluster approach to regional development is required. This approach helps to form the latest integrated structures, to expand and improve business activities and the social climate of the region, as well as will strengthen the region's advantages in the increasingly competitive markets.

5. CONCLUSIONS

On the basis of the material studied, we can conclude that the formation of new assets and the development of innovative and investment projects, both for small and for medium-sized regional businesses are very important tasks of today. To this end, it is also required to develop new financing mechanisms of investment project and to create institutions that are able to invest the funds in patents and their implementation creating special investment schemes for it.

The formation and development of the cluster and its management policy in the regional policy are important components of economic growth in the region. Even if the region's economic activity is fully functional and successful, there still is a need to create clusters. They ensure the continuing growth of productivity, help to improve the competitiveness of the region, the creation and production of innovative products, to achieve leadership positions on the market, etc.

In general, not only the competitiveness of individual elements in the cluster increases, but also of the entire region. Therefore, the social and economic development improve by means of polarized formation.

The cluster management structure allows the newly created elements included into the structure to accelerate their improvement, to implement innovative products and programs in their work, to attract investment, to strengthen the market position by means of the leading partner companies and to strengthen the human resources component of these entities.

In order to stabilize the domestic economy and the market, it is most profitable and acceptable not only to create regional clusters as stable subcontracting schemes, but also to build clusters with foreign partners (most importantly with Finland, Norway and China) that would strengthen the competitiveness of Russian border territories by means of intensive exchange of resources, technologies (both production and management ones), know-how, original business models, through the creation of common information space, etc.

Participation in these axes forms the background that further allows Russia to take its rightful place in the world economic system.

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