



Peculiarities of Isolated Clusters Operation

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ABSTRACT

Many countries with their policy of dynamic development and considered active course of support for commercial activities focused on achievement of socio-economic growth, conduct the process of mobile diversified interaction of various enterprise-wide, branches of many sectors, spheres and levels step-by-step. Many countries of the empyrean with different levels of economic processes have revealed the common pattern that is shown in the most positive formation of diversified unions of enterprises which are grouped round large companies of leaders on the basis of production and technological, scientific, technical and commercial ties within territories geographically limited. One of the main tasks of the paper is consider the conceptual framework of isolated clusters with innovative policy of development. Its main directions of development of isolated systems are specified. The paper also develops the direction of increased efficiency of intellectual human resource application in the innovative process. The purpose of the paper is to analyze the key effective forms of work of innovative isolated clusters of the isolated territory, their impact on modern economic state development, human resource application and value in certain areas of activities.

Keywords: Cluster, Innovation, Power Supply System, State, Region, Competition, Efficiency, Investments

JEL Classifications: A10, A13, M21

1. INTRODUCTION

In these latter days, within debatable discussions on development of theories for economic growth in the Russian Federation in general, and separate economic segments, such concepts as “cluster,” “cluster policy” or “cluster approach” are mentioned with increasing frequency. An attempt specified concepts to be adapted to domestic economic science is caused by a number of factors, the major one among which is the federative framework of the Russian Federation, and also the market principle of economy development that was put by reforms of the end of the XX century.

Attempts to introduce a cluster approach were made in the USSR, however, they did not give result to be expected taking into account that basic principles of cluster policy contradicted planned economy totally. Later, after reforms of the 90s, Russian economists came back to an attempt to introduce a cluster approach as one of the principles of market economy development in the

Russian Federation, thus, having faced the problem of insufficient theoretical readiness of the considered topic.

On the basis of existing approaches to determine the essence of clustering of an innovative sector of cluster development in the sphere of isolated space there were the provisions of isolated cluster theory developed (Claessens and Van Horen, 2014): A definition was specified and expanded value of these types of a cluster is presented, a classification of isolated clusters on the key features allowing to combine them into uniform groups was presented, the basic structure added with innovations as a basic element is proved.

The specifics of isolated cluster activities allowing to create new technologies, to put deep technological modernization and innovative development of industry on the basis of personal or adopted technologies into life, and also to train personnel for work in the conditions of modern industrial and technological formation

is characterized by 3 components such as fundamental, practice-oriented science, innovative industry, developing education.

Together with that, now there is the need to take firm measures not only for innovation recovery, but also for break in this area (Kunelbayev et al., 2016). In this regard, it is necessary to provide the newest mechanisms for increased innovative activities of high-tech industries of domestic innovative economy based on a cluster approach, cluster initiatives.

During the end of the XX century, industrial clusters became an important factor of development socio-economic priority in the conditions of the market and changing world tendencies of political and military relationship. Regions, territories, areas and districts, where clusters are formed, become the leaders of economic development, increase economic capacity, conduct development of confidential products and goods, develop new competitive features, establish competitiveness of economy of this country at the level of the leading world powers.

Having a set of various interpretations of the concept “isolated cluster,” the authors are agree that components of this cluster which are “clots of enterprises” contribute to better growth of all key processes which the state experiences.

The expanded concept of an isolated cluster, presented in the paper, presents it as an economic system, sometimes independent from exogenous factors of production or social impact. It is a set of several enterprises, organizations (production and service ones, universities, research institutes, engineering centers, founders of innovations, technologies, market institutes, consumers) located in the coherent region, hidden or named by certain designations, interacting on a contract basis (on cooperation), without prejudice to any right. These types of isolated clusters affect the achievement of one purpose (to reach economic growth, to conduct subsequent introduction of technologies into areas of activities of production processes, industries, public activities, thus, using key developments of the innovative progress), characterized by certain stability, creating synergetic effect in interaction of between participants.

2. MATERIALS AND METHODS

Works of classic authors, economic and administrative publications, which determine an isolated cluster, an innovative isolated cluster as a factor of increased competitiveness of the region and state in general, cluster policy development in the state and world powers, domestic and foreign scientists, control over human resources, potential, general organizational development of innovative isolated clusters of enterprises and economic sectors, economic processes of domestic and foreign policy of territorial isolated cluster activities present theoretical and methodological base of the paper.

Methodology of the research is constructed by using a dialectic method, systemic and strategic approaches to analyzed objects (Il'Yaschenk et al., 2015). The scientific provisions, conclusions and recommendations made in the paper are based on use of a set of methods of historical and logical analysis, comparison

and synthesis, induction and deduction, economics and statistics method and scientific assessments.

Informational background of the research was made by the laws of the Russian Federation, official publications of the state statistics, social and labor relationship management bodies in the sphere of cluster policy development, territorial sector, and International Labor Organization data, thematic collections and reference books, data published in scientific magazines and periodicals, Internet resources.

The paper takes account of data characterizing tendencies of development of organizational and social and labor relationship in the system of innovative economy, marketing of research both of external and domestic markets of isolated clusters.

3. DISCUSSION

Formation and development of isolated clusters in the innovative process is non-uniform, formation of this structure is based on increased economic efficiency. This policy of unevenness is, first of all, connected with high-quality changes in the capital, with outdated technology exchange (technical cycles) of its continuous production modernization and updating.

Periodical replacement of fixed assets which came to unfitness promotes formation of the new technological base which gives the opportunity for reorganization of socio-economic relationship connected with dispersal and consumption of main products and goods of building systems such as isolated clusters.

Control over uniqueness and peculiarities of realization of isolated clusters and a prospect of their growth has to be based on innovative policy of a new generation, unique approach to consider the issue and starting a productive process.

A cluster (engineering cluster-congestion-is a set of several same elements which can be considered as independent units). The concept of an isolated cluster in this paper can be expressed in several various interpretations (Chueva et al., 2016).

In particular, the important characteristic of an isolated cluster is development of a product, possessing uniqueness features. It is possible to point out some standard configuration of the schedule of the productive process for regions and districts of the country to processing basic configuration of the production system.

One of the key necessary conditions for increased efficiency of using this product is its spatial isolation compactness.

Various factors of productive processes determine corresponding models of self-organization of enterprises which are parts of this cluster.

Therefore, the main models of self-organization of the following type are pointed out:

- The first one (the level of population in the territory of this cluster is 130-150 thousand people) is connected with

accommodation concentration-there are significant areas of location and application of activities of a cluster;

- The second one (the level of population in the territory of this cluster is 250-300 thousand people) with increased accommodation compactness, decreased area of activities;
- The third one (the level of population in the territory of this cluster is 350-400 thousand people) with the use of the maximum area of activities, obtaining the necessary result.

Thus, it can be said that key self-organization of the territory is one of the main strategies of development and formation of activities of an isolated cluster.

Continuous evolution of infrastructures is restructuring according to more rational main innovative process and activities of a cluster.

The best combination of concentration and deconcentration, centralization and decentralization of systems of an isolated cluster define the result of interaction of a set of external factors and territorial peculiarities of this innovative project location (Asongu, 2014; Kobersy et al., 2015).

However, it is obvious that these private decisions on formation of the main stages of activities of a cluster will not save the situation of process continuity-increased stability of infrastructures of location areas by means of various units and systems of interrelationship should be conducted.

Interaction and coherence of regimes of functioning of development and consumption of a cluster product does not mean a refusal of identical products of consumption.

Sometimes, uniqueness of a final innovative good in technologies of an isolated cluster to a greater extent can provide maximum efficiency of use, reliability and ecological safety.

Thus, extensive formation of an isolated system is for the purpose of compliance of increasing users' demand. Sometimes, in the productive process serious difficulties concerning development of innovative goods, connected, first of all, with higher world prices for necessary resources, raw materials, their low predictability, and also complexity and of the issues concerning finding a balance between economic and social efficiency of functioning and the need for innovative projects take place.

Therefore, there is the constant need to consider a modernized strategy of functioning of isolated clusters of innovative growth in isolated territories (Ksenofontov et al., 2016).

In the theory of understanding of an isolated cluster is a volume of basic innovations (a complete system of the newest products and technologies), concoction on a certain period and in a certain economic space both of state and world space.

It is necessary to study and acquire constantly all basic innovations which will be applied to isolated clusters.

Technological parameters of innovations and their main production technologies are subdivided into product and process:

Product innovations include use of the latest and expensive types of materials, semi-finished products and accessories; development of totally new products.

Process innovations include application and development of new methods of the production program organization (nanotechnologies), which earlier were not used.

Innovative development in the production sector taking into account allocation of the isolated cluster policy use, application of its main operation program opens opportunities to solve a lot of economic issues of the state.

Solution of these issues is focused on detection of rational volumes in product and technology updating (Shkurkin et al., 2015), establishment of interaction between two directions of innovations: Productive and process, and also right distribution of the main volume of costs for increased technological process.

In modern economy innovative definiteness is the main characteristic of isolated clusters as it determines their competitiveness over same other innovative projects.

An isolated cluster of the isolated territory represents is an informal union of various organizations (industrial companies, higher educational institutions, research centers and laboratories, bank and non-bank credit organizations, investment and innovative companies, venture funds, state bodies, public organizations, and so on) allowing to use advantages of an intra-firm structure and a market mechanism that gives the opportunity to distribute new knowledge, discoveries and inventions quicker and more effective.

An isolated cluster supplies the cycle continuity "researches-developments-production-use."

Therefore, in its operation process it looks as a form of occupation organization which leads to development of a special form of innovation - "a cumulative innovative product" (Granovetter, 2010; Hsu et al., 2014). Such innovation is a product, sometimes of a confidential production way or confidential application sphere, work of several firms or research institutes that allows to approach their distribution through interrelationship in the Common Economic Space of the region, state and world community, to play leading role in the market of achievements and the latest developments.

Stable development of such isolated clusters to the greatest extent depends on access to advanced sources of scientific knowledge and modern technologies, and also on probabilities of concentration of considerable volumes of financial resources, the subsidized budget, and revenue of the financial stream. The existence of civilized infrastructure of the intellectual and financial capital plays the leading role in the process of innovative orientation of a cluster.

Interaction in an isolated cluster is executed by means of vertical and horizontal ties. Competitiveness of the whole cluster depends on coherence of activities in a cluster, ability of its participants to use internal resources effectively and to mobilize external ones

incoming in the course of interaction with identical industrial formations (Kryukova et al., 2015).

A union united into an isolated cluster creates the quite focused system of distribution of new knowledge, technologies and innovations.

Thus, development of continuous and stable ties between all participants of an isolated cluster is the most important condition for effective transformation of inventions into innovations, and innovations into competitive advantages of goods.

Clusters of innovative activity create a new product or service by efforts of aggregated companies or research institutes that give the opportunity to accelerate their distribution through business interrelationship, to get profit or further programs of developments for the world space or of the state level. The structure of a cluster, namely, joint activity of all partners of this branch, promotes decreased cumulative costs for research and development of innovations with their subsequent commercialization due to high efficiency of the production and technological structure of a cluster. It allows participants of a cluster to organize innovative activity of a production cycle for a prolonged time steadily.

The innovative process is forced in effective operating isolated clusters, and participants of a cluster have such advantages as susceptibility to innovations, business rationalization, advancing growth of productivity, and so on.

Most safe isolated clusters are developed where break in the field of equipment and production technology with the subsequent entrance to the new market is realized or expected.

According to Oreshenkov, their ecologization-orientation to rational exploitation of natural resources and decreased pollution of the environment will become one of the distinctive features of innovations in the XXI century (Silnov, 2015).

Power of technogenic human influence on the environment has achieved such a level that natural systems in biosphere cannot replicate and work without ecological innovations (Porter, 2011).

On the basis of mentioned advantages of an isolated cluster that is an element of development of domestic economy and productive ties, positive sides of innovative isolated clusters should be noted.

Firstly, they possess the created invariable system of distribution of the latest technologies, knowledge, goods, so-called technological network that is based on the collective scientific base.

Secondly, enterprises of a cluster have additional competitive advantages due to the opportunity to realize internal specialization and standardization, to minimize costs to introduction of innovations into productive processes (Aizenman et al., 2015).

Thirdly, isolated clusters are important for small business building. They supply small firms with a considerable extent of specialization serving a concrete enterprise niche as thus access to

the capital of an industrial enterprise is more available, and also there is an active exchange of ideas and transfer of knowledge from experts to businessmen, from firms to enterprises, from enterprises to the state.

However, clusters are not an ideal element for economy as the list of advantages can also add the list of shortcomings of innovative isolated clusters, namely:

- Excessive concentration of enterprises on internal interrelationship and environment contradiction outside a cluster can lead to obsolescence of technologies and their decreased competitiveness in domestic and foreign markets;
- Secretiveness of a cluster can become the reason of participating enterprises' elasticity reduction;
- Lack of competitors within an isolated cluster "destroys" the need for continuous updating of productive and marketing processes;
- Uniqueness of each cluster leads to considerable complication of an assessment of its operation efficiency as there is no opportunity to compare with other clusters;
- Dependence of consequences of the whole cluster work on productivity of activities of each of its participants.

As the world experience shows, regions where isolated clusters are developed, take the leading positions, beings concentrated forms of economic activity which is conducted in the closest interaction with knowledge infrastructure.

Works of various scientists show that uniqueness of modern economy is development of strong innovative isolated clusters. Today, many countries of the world use a cluster approach to possess micro and meso-economic processes.

The domestic innovative system development taking into account a cluster nature of competitive productions is the main priority of modern economic policy.

The leaders of many countries and regions of the world take considerable efforts to develop innovative isolated clusters in the territory. Thus, a cluster approach greatly changes the structure of state industrial and innovative policy. Efforts of national governments are aimed no at support of some enterprises and branches of economy, but at formation of relationship between suppliers and consumers, final users and producers, producers and state institutes.

4. RESULTS

Domestic economy clustering is not an absolutely new mechanism of innovative development, but is a prototype of territorial and production complexes constructed in the conditions of command economy.

Isolated cluster development in Russian economy, in fact, is a "clone" of a territorial and production approach to introduce productive forces in the country. Modern domestic economy has experienced certain organization of such structures, however, in the conditions of creation and development of the national innovative system (Fang et al., 2014).

The clustering process is of special importance and is a mechanism of development of regional innovative systems developing the national innovative system.

A mechanism of isolated cluster development in the region is conducted on the basis of joining efforts and competences of various participants which are industrial enterprises for production and processing of raw materials, commercial organizations for production distribution and marketing of products, service companies in logistics, finance, consulting, research and educational institutions, operating and regulating organizations.

Separate activities of all participants of a cluster are consolidated in one direction to obtain the maximum result assuming the considerable level of competitiveness in the domestic market.

Clusters conduct their activity not only by an effective mechanism of regional development, but also create the conditions for effective interaction between business, science and the state.

Practice shows that the highest level of competitiveness of the domestic market is won due to innovative isolated cluster development.

Integration interaction of enterprises of science and education with manufacturing enterprises supported by government institutions plays important role in the course of development of an isolated cluster.

The clustering process is conducted more effective in regions which actively create an innovative infrastructure to axe industrial potential with scientific, innovative and educational potential.

5. CONCLUSION

Thus, the presence of innovative isolated clusters in the state, region, area or other formation changes economic policy when efforts are not aimed at support of single enterprises, but at boosting the system of relationship between economic subjects and state institutes.

Economic policy has to create competitive advantages on the basis of development of innovative isolated clusters as an effective mechanism of realization.

Innovative cluster policy is a master plan of innovative development not only with initial branch configuration, formed round new key regional technologies, but also a concrete system of developing production and technological schemes taking into account the existing resource, infrastructure, and market conditions.

An isolated cluster is a dynamic system, providing self-development on the basis of the synergetic effect execution. Promoting development of an initial system of ties on production

of innovative products in the state, cluster policy has to determine a nature of technological promotion at certain stages, creating the conditions for development of the research base and increasing educational potential. Innovative business development that can conduct breakthrough technologies both in domestic and in foreign markets has to become one of the priorities of innovative isolated cluster development.

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