Unsustainable Models of Regional Clustering

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Abstract: The manuscript is devoted to investigation of unsustainable models of regional clustering. The author examines the nature of the clustering, determines its positive aspects and problems, justifies the need for clustering and offers tools of solving the issue of functioning of unsustainable clusters.

INTRODUCTION

The use of unsustainable models of regional clustering is a significant factor of formation of imbalances of economic growth and development in the modern economy. Negative global economic events of recent years highlighted the inflexibility of the market structure in many countries, its instability and inability to respond to sudden changes in market conditions and the recession. Crisis wave coupled with the government-declared policy of modernization resumed the efforts of creation industrial clusters on the western model in Russia.

The Core of Industrial Clustering: Many theorists and practitioners of regional development consider cluster as a kind of panacea that can help to overcome the gap with the advanced countries, especially in the field of innovative technologies, in the short term. A significant number of articles of Russian authors on the subject of clustering emphasizes the priority of regulation of this process to improve the competitiveness of industries, technological development and innovation capacity [1].

However, clustering has many "side effects", including environmental degradation (during the agglomeration of heavy industry), decrease of flexibility of response to market demands, inertia due to the use of outdated patterns of cooperation, technological unification because of overflows of information, knowledge and highly skilled workforce [2]. Also, in our opinion, to interpret the development of clusters as one of the areas of regional public policy is fundamentally wrong because of the special nature of the processes of integration and the formation of regional industrial structures.

World experience shows that the most effective clusters developed evolutionarily, involving various enterprises from related industries, which not only cooperated, but also competed with each other, thereby improving the quality of products, while reducing costs due to the effect of agglomeration. However, the synergy inherent to naturally-formed branch structures is not observed, if businesses are combined under a common resource and policy framework within the state concept of cluster policy [3].

To determine the nature of cluster lets use Michael Porter's approach ("Competitive Advantages of Nations"), according to which clustering is a process accompanied by territorial or industrial competitive advantage.

According to M. Porter, cluster is "a group of industries supporting each other and operating close to each other", which "creates a competitive advantage for a number of related industries, all of which are competitive

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on an international scale". In accordance with the concept of positive Porter's conceptpositive agglomeration effects are made by the elements of the "diamond of competitiveness", the key ones of which are [4]:

C   Nature of strategy of firm and inter-firm competition in the country, including competitive information, market institutions, level of local competition and other cultural and historical factors that influence the interaction of firms with each other, their employees and the government;

C   Factor conditions, or the main contributions and conditions under which the company is trying to compete (costs associated with the major factors, such as the readily available supply of natural resources or cheap, unskilled labor in comparison with the knowledge and/or technology related to all factors);

C   Demand conditions or the nature of local demand (needs and desires of consumers of foreign and domestic goods, as well as the existence of local industrial demand on related intermediate products);

C   Presence of related and supporting industries, including suppliers and successful competitors (they both stimulate cooperation, the latter also stimulate competition).

The problem of the absence of the synergy in the administratively generated structures can also be explained on the basis of the theory of M. Porter, in which the positive clustering follows from the fundamental properties of the cluster as "means of maintaining of diversity and overcoming excessive concentration, persistence and inflexibility of placement of competitors that slows or blocks the modernization and entry of new players".

For the occurrence of positive externalities of location enterprises should be accumulated in the cluster up to critical mass. Also important is the phenomenon of information technology overflow, as well as its influence on the processes of agglomeration and convergence: it can be either positive or negative, leading to the unification of the technological base and reduce of competition.

We suppose that there are two negative aspects of regional industrial clustering, which allow to suggest against the use of the cluster concept as a universal solution to all the problems associated with the development of depressed regions:

C   Negative effect because of influence of a strong cluster in the balance of powers in the market;

C   Discrepancy of directive cluster policy and characteristics of clustering.

Risks of formation of regional cluster, oddly enough, are associated with the strengths of clustering, namely: high competitiveness and adaptability as compared to a separate entity. Even embryonic cluster, as a rule, is a leader in the industry ahead of the individual companies with a margin. As a result "competition as an incentive to the development and improvement stops to work" [5].

Strong cluster suppresses enterprises left the borders of its infrastructure by taking away their market share due to the benefits in cost and improvement of the product. There is little doubt that these outsiders are small and medium-sized businesses, not to mention the micro-enterprise, which has no chance to survive in the presence of a cluster. This is due not least to the concept of cluster policy in the Russian Federation, focused on modernization and application of advanced technologies for the development of tools which only has a large and supersized business (Figure 1).

Given that the presence of micro-and small businesses is a factor of overcoming of poverty in the region, artificial clustering can lead to a paradoxical decrease in the standard of living of many social groups, while increasing indexes per capita. Not least, it is caused by the fall of the attractiveness of private business, the other factor is the price distortion resulting from inefficient resource allocation policy [6].

It can be resulted in the emergence and deepening of regional "underdevelopment whirlpools", formation of depressed areas around large clusters [7]. Completely give up the advantages of clustering at the present stage of economic development is not possible. However, there if need for the replacement of directive policy of creation of artificial clusters to program of support of potentially effective structures that are in an embryonic state.

We found the follow individual factors of integrated cluster development in the domestic literature, which seem to us important for the preparation of the current ideas about the evolutionary branch structure [8]:

C   Geographical isolation of productions ("regionality") and the emergence of territorial combinations of enterprises from different sectors of the economy;

C   Emergence of sustained structural interrelation between cluster members;

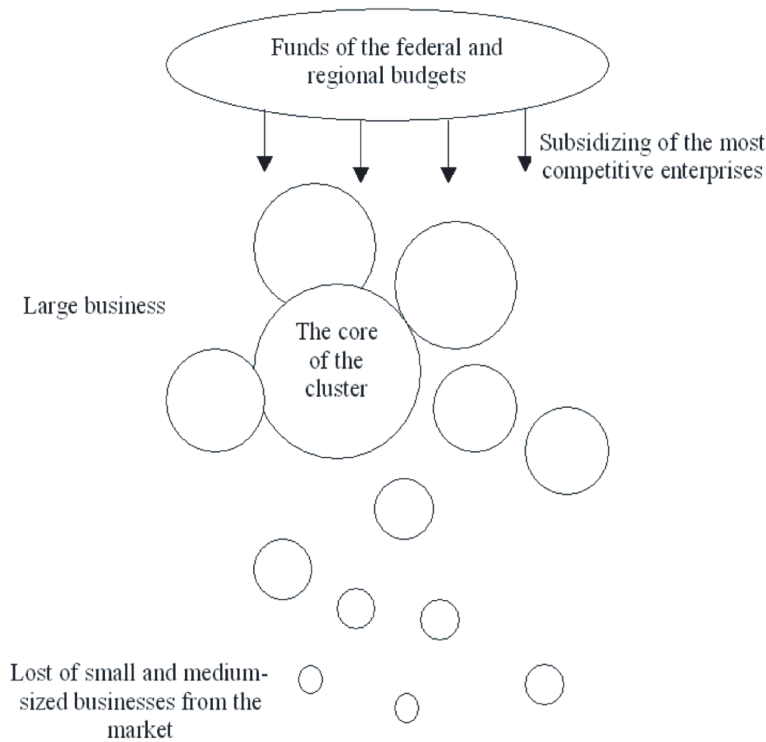C   Rational interaction of small businesses to large (outsourcing);

Fig. 1: The situation in the market as a result of the irrational cluster policy

C Innovativeness of products, based on cooperation with research institutes and universities (however, in some European countries, particularly in Spain, clusters specializing in traditional industries operate successfully);

C Conditions of developed market economy, interest of enterprises in enhancing of their competitive advantages while maintaining independence;

C Availability of skilled labor;

C Presence of a "strategic vision" of the leaders of the cluster;

C Focus on global needs and markets;

C Diffusion of knowledge and information ("smart play").

Analysis of local markets and individual companies should be made on the basis of not inherited but created factors of production. We also should not focus on the study of cluster leaders: world experience shows that most of the gross domestic product is created in small and medium-sized enterprises. In developed countries such as the UK, Germany, the USA, Italy, France and Japan, the ratio is above 50%. According to the B.Z. Milner, these factors of economic growth and a substantial increase in GDP scope can not be compared with the development of Thus, clustering should be based on the creation and

integration of firms in the cluster (by facilitating access to private capital and "liberation" of market) and not on the consolidation of existing infusion of funds by federal, state and local funds (Figure 2).

Small businesses is an important element of the structure of the cluster contributing to development of competition and providing the necessary flexibility to quickly react to new needs. Small and medium-sized enterprises also are a sort of "testing ground" for innovations: "startups" with small-cap generate ideas that can be overbought or supported by the players from the core of cluster [9].

Necessity of Clustering: The need for integration of small and large businesses to improve the efficiency of the system is unequivocal and is actively maintained in the modern world practice. J.L. Tryuel indicates a trend of sharp increase in the number of small and medium-sized businesses in clusters: in France, where traditional focus on large corporations kept for a long time, from 2005, small and medium-sized companies became to prevail both numerically and in gaining of support [10].

The forms of cooperation include mainly outsourcing of small-series production (search, updating and development of new test products), cooperation in R&D. But there are examples of integration of small enterprises
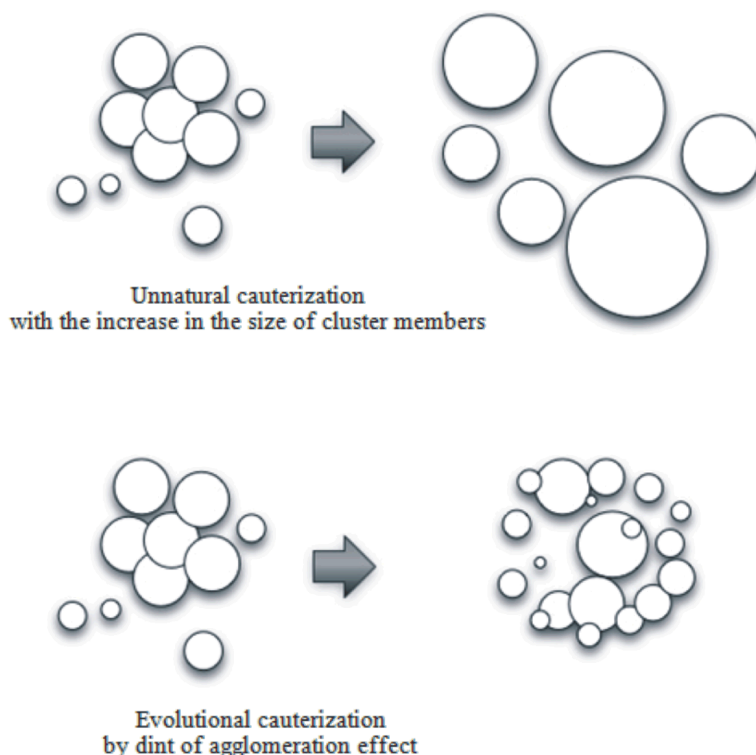
Fig. 2: Conceptual scheme of formation of heterogeneous territorial and industrial structure

in the industrial structure of large corporations while maintaining the independence of the former. Subsystem of planetary type develops evolutionarily, when resource gravitation appears around the core of cluster, attracting small businesses seeking to integrate into this field.

Evolutionary is a primary characteristic that determines the effectiveness of the integration process [11]. In a free market and in the absence of the pressure of administrative structures responsible for the policy of artificial clustering in the region, large firms naturally seek to fill the lack of flexibility in its activities by establishing of not competitive and cooperative relations with small business. Otherwise, efficient allocation of resources among all players cluster do not take place.

Cluster policy is a fairly stagnant mechanism of support of development of production structures. It can not take into account the presence of players of different sizes in a cluster and provides preferences mainly for the most important administrative resources to support and replenish the budget of the regional enterprises - traditionally, large corporations with high levels of performance and providing a significant amount of tax revenue.

This is not unique to Russia - in China, where formation of clusters is similar and is caused by the effect of the clearly prescribed program, the researchers observe unreasonable allocation of resources (usually in depressed areas that require attention of the economic authorities) with a preference for large and medium-sized state-owned enterprises to the prejudice of small and medium-sized private businesses [12]. The absence of free market determines the low level of development of marketing - accordingly, difficult communication within the cluster, cooperation becomes ineffective.

Success of the Western model of clustering that Russia trying to adopt at the moment is determined by the presence in the European and American clusters of particular historical path of development, which helped them to consolidate on the most suitable for the emerging industrial structure territory, development of complex feedback mechanisms, establishing communications relating to all aspects of the participants - production, supply, sales, logistics, marketing, legal, etc. Historically caused territorial attachment has particular importance for operation and development of innovative tech clusters in which businesses establish relations with universities and research institutes.

Clusters are heterogeneous, that is manifested in free interaction of businesses of different sizes and organizational forms of business, government institutions, educational and research institutions, infrastructure units, the variety and diversity which is a factor of success [3].

Stable branch structure can not be created where competitive advantage is not pronounced, but there is the volition of administration to the construction of enterprise systems to a certain profile.

Here lies another error of cluster policy, foundations of which are covered in decision-planned economy, namely, the concentration at the industrial aspect, while the focus in the drafting of the Action Plan should support the study of points of economic growth and centers of economic activity, public expediency of release of certain products.

Besides the fact that the concept of cluster policy is highly linked to the traditional industry structure, the spatial boundaries of the clusters are often set on the basis of "political expediency", which entails undoing the axis of interregional cooperation. In other words, access to resources outside the region is difficult.

Tools of Solving the Issue of Functioning of Unsustainable Clusters: implementation of models of new economical geography into distribution of cluster-building processes can become the solution of the issues of industry clustering. The origins of this concept originate in the national school of the concept of "spatial development". According to it, a key condition of the optimal cluster policy is to improve the techniques of identifying emerging clusters.

Algorithm of development of the strategy for development of regional industry clusters can be based on the study of the Western experience of clustering. The ultimate goal is to implement existing infrastructure, to establish close cooperative ties between competing (directly or indirectly) members of the cluster.

Designed program of activities includes three main stages:

C   Analysis of the external environment of creation of cluster.
C   Formation of policy of cluster development and the development of an action plan for the construction of the cluster infrastructure.
C   Implementation of the strategy of establishing regional industry cluster, cluster performance monitoring, forecasting its development.

One of the results of implementation of this algorithm is to ensure the effective participation of administrative structures in the development of the cluster by developing effective strategies to support and use of feedback channels. An important aspect of the process of creation of clustering strategy is to encourage the participation of small and medium-sized enterprises in the cluster at all stages of its formation and evolution. Naturally, the solution to these problems involves obtaining an intermediate form of marketing research in the analysis of the regional market of the final product manufacturing cluster, the competitive advantages territory and report on the state of the existing infrastructure in the region.

The program of events cannot be limited solely on the primary activities of the business combination on a common resource and territorial basis. It needs for a clear regulation for monitoring the effectiveness of the cluster, forecasting and trends of development.

The task of economic science is to deeply study the input parameters of the cluster model to ensure its viability and sustainability. Only by developing a clear understanding of the effective cluster, the main characteristics of which are the heterogeneity and the natural evolutionary development, we can overcome the current practice in the areas of artificial clustering and ultimately contribute to the emergence of the free market.

Another tool of solving problems in the functioning of unstable clusters is foreign investment. In particular, partnerships with foreign companies can play a major role in bridging the gap between imports and domestic production in high-tech industries.

Formation of a stable cluster system in the region at this stage prevents a lot of problems both methodological and practical challenges. Financial component of the cluster strategy of regional development, in particular, is not well defined. Solution of this issue will make organizing of receipts of investment funds to the real sector of the regional economy possible.

Low inflow of FDI per capita has a negative impact on regional development, increasing investment risks of individual territories. This is due to the low investment attractiveness, the actual lack of positive changes with respect to the investment climate in most regions.

The main problems in the development of high-tech sector, preventing the attraction of his foreign investment are:

C   Restrictions on access for foreign investors in most high-tech industries. The need to harmonize transactions with government increases organizational and time costs for investors increases the risk of government intervention in the operation of enterprises and reduces the investment attractiveness of the sector.

C   The low competitiveness of Russian high-tech products in the global market. The level and the dynamics of the high-tech sectors do not contribute to their investment attractiveness for foreign investors. For example, the share of high-tech production in Russian exports from 2000 to 2009 double decreased and the share of Russia in the global high-tech exports has dropped from 0.34 to 0.29%, significantly lower than that of China, Malaysia, India.

C   Lack of effective system of measures to encourage the inflow of foreign investment in Russian economy.

CONCLUSION

A lot of problems both methodological and practical challenges prevent formation of a stable cluster system of regions in modern Russia. In particular, financial component of the cluster strategy of regional development is not well defined. Solution of this problem will make organization of receipts of investment funds to the real sector of the regional economy possible.

The program of activities to improve the sustainability of the cluster cannot be limited by activities of the primary business combinations on a common resource and territorial basis and needs for a clear regulation of monitoring the effectiveness of the cluster, forecasting and trends of development.

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The level of development of infrastructure in the region is a key factor in ensuring the long-term cooperation with regional investors. Constructing of innovative structure at this stage of economic development is not possible without deliberate policies to ensure the conditions for the formation of industrial clusters.

We need to emphasize the importance of the evolutionary path of cluster development. Legislative creation of such structures does not lead to the emergence and expansion of synergy, formation of really working competitive and cooperative ties.

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