

## FORMATION OF THE ECONOMIC CLUSTERS AS THE IMPULSE OF ECONOMIC GROWTH

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*Wisdom of all everyday affairs, it seems to me, doesn't consist of learning what it is necessary to do, but in the nobility of what to do before and what to do after.*

L.N. Tolstoy

**Abstract:** Deals with the direction of the industrial policy of the state, the basis of which are becoming not the policy of alignment, but the policy of support of the growth points. The theoretical aspects of the formation of an economic cluster (growth point) on the basis of the zoned approach based on the earlier formed "Marshallovsky" industrial areas and the preserved scientifically-educational and technical potential. Marked clusterorientational regional policy, determined by the patterns of the world globalization and its influence on the formation of some new microeconomic communications, identifying specific status and location of each state, region and separate enterprise in the structure of international division of labor on the basis of the intracluster alliances.

**Keywords:** Cluster, business, science, production, technopark, innovation, industrial group, alliance, industrial enterprises, scientific organizations, educational institutions, innovative economy.

### 1. INTRODUCTION

One of the main tasks of the modern Russian economy is the activation of innovative processes (Definitions and terms: Russian cluster observatory). In a number of the state initiatives the thesis about the necessity of the transition of Russia to the innovative model of economy was put forward, that means, in fact, that the ideology of modernization and the cluster policy had been formulated.

During the last few years the cluster paradigm in the world was replaced by the innovative one, and the role of clusters became not less, but increased even more (Hilkov, n. d). Clusters are recognized as the mechanisms for the successful realization of any innovations. The innovative cluster approach is defined as the tool for the analysis of dynamics of the industrial development and the political initiatives, for the growth and economic development (Cluster approach; Lenchuk and Vlaskin 2010)

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Nowadays the category of a cluster continues to remain as a subject of discussions, despite a large number of cluster researches, and in the theory of management specifically evidence-based model of management of such an object hasn't been formed yet (Paltsev 2010).

The aim of this research is the identification of the economic essence of a cluster. In mass media it is noted that the activation and development of clusters are a new approach to the formation of the innovative economy in our country and the beginning of this rate is dated for 2005.

The word "cluster" (the English word "Cluster" is congestion, concentration, group, a bunch, a brush, a swarm) came to us from the works of the English scientist Alfred Marshall, who investigated the industrial districts of Great Britain at the end of the XIX century. He was one of the first who offered the idea of the industrial localization in "The principles of the economic theory" (1890) (Barro and Challah - and - Martin 2010). The characteristic of the local concentration of any specialized activity consisted of three blocks:

- the presence of an available skilled work;
- the growth of the supporting ancillary industries;
- the specialization of different firms at various stages and segments of production.

Marshall paid attention to the synergetic effect of the nearby enterprises reached at the expense of such factors as easy access to suppliers, an exchange of the knowledge and experience, innovations between the enterprises and also qualified labor personnel, which was "grown-up" and possessed the knowledge of some specifics of a branch. There is the Marshallovsky "industrial area" and the economy of agglomerations, as a historical basis of the cluster approach, on the one hand, and - Shumpeter's innovations, promoting economic growth inside of the regional agglomerations, on the other hand (Kurkudinova 2010) Thus, two main functions in a cluster are realized at the same time:

- the expenses become lower thanks to the close neighbourhood of the related firms;
- the innovations from one firm to another extend, providing continuous growth of the productivity in a cluster in general.

The founder of the modern concept of clusters and their influence on the competitiveness is M. Porter (Porter 2000). Under his management the basic researches of the processes of clustering are conducted at the Institute of Strategy and Competition of the Harvard University. M. Porter possesses the basic definition: "A cluster or an industrial group is a group of the adjoining interconnected companies and the related organizations, operating in a certain sphere and are characterized by a community of activity and complementary of each other". A.A. Migranyan

defines a cluster as the concentration of the most effective and interconnected types of the economic activity, i.e. a set of some interconnected groups of successfully competitor companies which forms the “golden ratio” (diamond - diamond) of all economic system of the state and provides competitive positions in the branch, national and world markets (Migranyan 2002; Hilkov, n. d). By definition of the Ministry of Economic Development of the Russian Federation the territorial cluster is understood as a set of the enterprises (List of innovative territorial clusters), placed in the limited territory, and the organizations (participants of a cluster) which are characterized by the existence of:

- the research and production chain, which united the participants of a cluster in one or several key types of economic activity;
- the mechanism of coordination of activity and cooperation of participants of a cluster;
- the synergetic effect, expressed in increasing of economic efficiency and productivity of activity of each enterprise or organization due to their high concentration and specialization.

P. Schedrovitsky considers that an economic cluster – a structure of the enterprises united by uniform material, financial and information streams (Schedrovitsky 2012). Practical experience in the associations of fitting into the definition of “an industrial cluster” and research of the classical approaches to the definition of “a cluster” (more than 30 approaches are revealed) allowed the author to consider that the cluster is a strategic business system of the elements, interacting and interconnected among themselves and which possesses new synergetic qualities and is aimed at the introduction of the scientific development in production, ensuring competitiveness of the made goods and services, it is, in fact, the transition to the innovative economy. In mass media it is considered that the cluster approach came to Russia being late for 20-30 years. Nevertheless the subject of the creation of clusters - as the main keynote of both federal and regional programs of social and economic development, has its past in Russia.

## **2. THE MAIN PART**

Now the most important problem of the development of the Russian Federation is the modernization of the real sector of economy. The last will allow the state to leave the gas-oil priorities, to restore the new technological level of production of the demanded products, which was lost because of a complex of the reasons in the last 20 years, to enter the international markets with new a number of knowledge-intensive goods, to provide the demanded defense capability of the state, etc. Considering the domestic and international experiment, the most reasonable is to make the development of all innovative productions within territorial clusters

according to the earlier traditional orientation. Kirovsky district of the million city of Perm with the population of 118000 is the territorially remote one and in the time of the USSR the enterprises of a chemical profile were concentrated there, including three large branch institutes and one academic institute (the Institute of Technical Chemistry Ur O of the Russian Academy of Sciences). The largest scientific structure of the area is the Scientific Research Institute of Polymeric Materials which was twice decorated with an order (earlier number of people is 3000), being a component into NPO of S. M. Kirov of the Ministry of mechanical engineering of the USSR. Nowadays Kirovsky district is depressive one: the shortage of workplaces because to the degradation of the enterprises of the area; the absence of any movie theater and the pool, the comfortable parks and the infrastructure of restplaces and entertainments, etc (Center of cluster development of the Perm Krai). The area turned into a sleeping one and has no development prospects. The rod city-forming enterprise of the area was the plant after S. M. Kirov - nowadays Federal state enterprise "Perm Powder Mill" (FKP "PPZ") of the Ministry of the Industry and Trade of the Russian Federation. The objective need of the creation of a cluster "The knowledge-intensive chemistry" is caused by:

- the loss of a domestic production of complicated chemical components and their replacement with the import deliveries from China, France, Japan. That means, that there was a monopolization of the production of a number of strategic chemical components, even by our potential (opponents) competitors;
- the tension when performing State defense order of FKP "PPZ" for modernization of the arms of our Army and Fleet and during the deliveries of the production abroad through the Rosoboronexport;
- the lack of some low-tonnage productions in Russia that results in the high prime cost of the end products (the part of productions was remained in the former federal republics, the part is lost because of the disappearance of a lot of raw materials, aging of experts and the depreciation of the equipment).

At this moment only 3 of the 10 enterprises work in the Perm Krai, which earlier were engaged in the production of the products of low-tonnage chemistry (Pilipenko, n. d). The Perm chemical school of sciences and production competence still remained, new small and medium-sized enterprises of some certain directions of low-tonnage chemistry were created and still work now. In the Kirovsky district the continuous system of training of the specialists in chemistry is supported: lyceums - chemical and technological technical school - two specialized chairs of the "Space faculty" and lyceum of the "Industrial Ecology" of the Perm National Research Polytechnical University.

The initiative group developed the concept and technical offers for the cluster of "The knowledge-intensive chemistry" under the aegis of the regional administration. The main equipment - economic indicators of a cluster for the period of creation

of - 2014... 2015 and till 2020 years are defined (The concept of the long-term social and economic development of the Russian Federation for the period till 2020). The main competitive advantage of a cluster is a high territorial density of various participants and the developed system of communications between them. So, at the industrial sport of FKP "PPZ" JSC Scientific Research Institute of Polymeric Materials, structures of "Ur O and Russian Academy of Sciences", JSC "NPO Iskra", JSC Mashinostroitel, JSC Ashland-Moscow-Shtokhauzen-Perm is deployed in the integrated perimeter. Practically nearby are some other enterprises of the region of the chemical profile: JSC Sorbent (the production of gas masks and chemical reagents for technologies of processing of water, household filters and local installations for water purification), JSC Galogen-Polimer (the production of products on the basis of fluoric connections), JSC Pemos (the production of synthetic detergents) and others. Finally, it will allow to gain synergetic effect by means of an effective form of interaction of the research establishments, developmental and design organizations, serial enterprises, specialized enterprises of small and medium business, educational institutions, the main consumers of the end products and a new control system for participants of the cluster of "The knowledge-intensive chemistry", that will increase competitive advantage of the separate enterprises.

As the central directions of a cluster will be:

- the synthesis and research of some high-energy polymers of the new generations and the technologies of their processing in charges for engines of various functional purpose;
- the creation of the new technologies for the fight against accidents and natural disasters on the basis of the achievements of the knowledge-intensive chemistry, etc. – but any domestic analogs for the created cluster is not existed.

For the solution of these ecological tasks within a cluster of "The knowledge-intensive chemistry" on the basis of the Perm State National Research University with the assistance of the regional administration and FKP "Perm Powder Mill" the small innovative enterprise JSC "Eco Kama" was created in 2013. The first developments of this enterprise are directed to the implementation of the pilot municipal project of Perm the "Clean air" and the regional program the "Clear water".

The term "cluster" is one of the most popular prospects of development of the Russian economy at any discussion now. It is necessary to expand innovative space, to support science, to be engaged in development of small and medium business, to increase investments. The formation of the model of a cluster assumes the assistance of the state structures and assumes the definition of its components:

- companies of the leader;
- companies of outsiders;

### 3. CONCLUSION

The ministry of the industry, business and trade of the Perm Krai initiated the carrying out the conference with the title of “Competitiveness of the Companies and Territories, Cluster Technologies” on November 28, 2013 with the organization of a teleconference.

Byelik Torahs Arne, the director of the Innovation Performance, Norway, made the message on the subject of “Calls and Possibilities of Development of ICT of Clusters – the Norwegian Experience”.

In the performance the resource of the prerequisites in the formation of a cluster are designated in such order:

- natural resources;
- scientific and technological infrastructure;
- human resources, including the sufficiency of the educational personnel;
- financial resources;
- information infrastructure;
- administrative infrastructure;
- basic material production infrastructure. Clusterings are successful at the effort of the authorities and with the participation of the representatives of the enterprises and organizations, territories.

The Norwegian experience assumes that the cluster technologies

- mean the interaction between medium and small business;
- the constructive cooperation with higher educational institutions and scientific organizations;
- the support and unconditional participation of the state and local authorities. “Any voluntary work is welcomed, the assessment of the work is made on labor costs, but the practice of any definition of expenses wasn’t commented,”- Verner Pamminger, a board member of the International cluster organization TCI, the director of Censterland Upper Austria (the agency of the regional development).

In performance it is noted that the understanding of its essence, structure of participants and their functional loading has to be the basis in the formation of a cluster.

The kernel of a cluster can be presented by one or several independent companies which main functions would be shown in the production of competitive goods, both on external, and in domestic market, in creation of some new workplaces.

Mission of TCI is the consultation of the import and export focused firms; searching of partners in implementation of the complex projects, possessing competences, skills, production technological capabilities; bench-marketing of the innovative technologies.

The partner of Cluster Consulting Group group of companies Penza Yulia Artamonova in her interview - a teleconference made a report under the theme "Practical Experience of the Creation of Regional Branch Clusters in the Penza Region".

The policy of cluster transformations is designed by the prospects of stage-by-stage participation of the state in the process of the formation of clusters according to the scheme of financing:

- I stage - 70% - state; 30% - business;
- II stage - 50% - state; 50% - business;
- III stage - 70% - business; of 30 - state.

The development of the cluster technologies in production of chocolate and products made of chocolate is initiated by the organization of exhibition activity on one market segment. The formation of a cluster is presented as the association of small and medium business, i.e. without participation in merger of the state enterprises. In the author's opinion, it is interesting to compare the formation of a cluster with a "flight of cranes" (they form a wedge and move for the leader) and not less interesting statement is about that the association (the formation of a cluster) can approach the stage of "spin out".

The program of the conference "Competitiveness of the companies and territories: the cluster technologies" organized by the Ministry of Industry, business and trade of the Perm Krai, according to the author, was made for the activization of the innovative interaction of the enterprises and the creation of the accompanying innovative - industrial cluster to the enterprises for the development of small and average business in the region. All programs of this kind give an innovative impulse to the development of technology in the region. The cluster approach is conventional in the developed countries. It is applied to structuring economy, justification of the strategy of economic policy and the increase of competitiveness in micro-mezo-and macrolevel.

The researches of the experience of different foreign countries allow to draw a conclusion that this mechanism is effective as in traditional fields of activity where faster return in reforming branch is reached, and in the sphere of high technologies where risks are high and continuous stimulation of innovative process is necessary.

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