

## **Ways of Improving the Competitiveness of Cluster Formations**

The globalization of economy in many countries, caused by impact of the endogenous factors, as well as dynamic progress in science and technology, requires new approaches to social and economic development of both, the entire international community and individual states. Increase of national competitiveness is the issue that is now becoming an economic priority for many countries.

The study of the issue of competitive advantage of the leading industrially advanced and developing countries is a challenge for many exporters in emerging markets, including for Russia. However, the policy of development of the competitive advantage is effective when it is pursuing the exact purpose and is based on the adequate understanding of the circumstances.

The term “competitive advantage” is used to refer to firms, industries, regions, states and groups of countries. As for the micro-economic level, in respect of the companies operating in the market at the conditions of competition, the concept is fairly well defined. To investigate the capacity of the enterprises of a certain region to compete with others in the global market the determination of the competitive advantage in respect to a territorial unity – a country or a region - is of interest.

If one takes the two extreme cases, namely, the competitiveness of a region and a company, then the concepts of the competitiveness will have different content. The reason is that there are significant differences in the purpose and the nature of competition in each of these cases. In respect of companies, the successful use of resources and methods of competition becomes important. In a regional social and economic environment, the competitiveness depends on the synergy effect that is provided by a wide range of specialized industrial, technological, financial, commercial, administrative and cultural potentialities, knowledge and skills located in the different regions of the world.

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The drive for formation of the competitive advantage and its increase is based, to a large extent, on the use of the theory of comparative advantages. Arising difficulties are connected with the fact that there is a significant difference between the approach to the definition of commercial competitiveness and the concept of regional competitiveness. The latter is a conceptual structure for understanding of the links between the corporate competitive advantage and the state of the regional economy.

Conceptually, the issues of the regional competitive advantage are developed by M. Porter, professor of the Harvard Business School, who points out that “competitive advantage associated with the location is based mainly on the nature of the industrial environment”.<sup>1</sup> The availability of labor, capital and raw materials does not determine the success of a company, because these resources have become widely available. “Competitive advantage is conditioned more upon the efficiency of use of the capacity at site to produce goods and services”.<sup>2</sup> This approach is more suitable for regions, states or groups of countries, as it corresponds to their primary objective - namely, maintenance and improvement of living. The best way to do this, in general terms, is to increase productivity. Each region should be interested in creating this type of environment that would help companies to be competitive.

The cluster concept is closely related with the works by Michael Porter on industrial clusters<sup>3</sup> and then on regional clusters, where he describes in detail the close relationship between the cluster partnership and competitive advantage of businesses and industries. M. Porter defines a cluster as a “geographically concentrated groups of interconnected companies, specialized suppliers, service providers, firms in related industries, as well as the organizations associated with their activities (e.g., universities, standardization agencies, trade associations) in certain areas competing but at the same time working together”.<sup>4</sup>

Regional cluster is an aggregate of companies, universities and other organizations interrelated in a certain production areas in a certain region, where the synergy is achieved through competition and cooperation between the parties.

The group of the forms of spatial organization of production created artificially by the government agencies includes the Territorial Production Complexes (TPC), industrial parks, science parks, technopolices, business incubator zones.<sup>5</sup>

All of the enterprises of a cluster - from small to large, from private to public - provided the information about their technological equipment which they can offer to

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<sup>1</sup> Porter M. Competitive Advantage: Translated from English: Study book – M. Publishing house “Williams”, 2000. p. 20.

<sup>2</sup> Ibid, 2000. p. 20.

<sup>3</sup> Porter M. The Competitive Advantage of Nations / M. Porter. – 1990.p.20.

<sup>4</sup> Ibid. 1990, p. 25

<sup>5</sup> See: Pilipenko I.V. Competitive Advantage of Countries and Regions in the World Economy: Theory, Experience of Small Countries in Western and Northern Europe. Smolensk: Oikumena, 2005, pp. 413-436

place orders. Thus, the subcontracting system, which enabled businesses to actively use the resources available at each enterprise and save significantly the funds for maintenance and development of the technological base, was built.

The evolution of the production process within a company or within a group of companies can result in creation or expansion of the clusters, which are outside the scope of the industry and are a significant force for economic development. This process depends on the condition of market economy, a variety of business environment, the level of competition, as well as on the state social and economic policy and strategic directions for its further development. An enabling environment for enterprise development contributes to the rapid growth in the number of competitors and the intensity of search for cooperation partners. The clusters of competitive industries that succeed are presented in the form of a vertical chain, consisting of a large number of successive stages of enterprises and suppliers providing equipment and other specialized resources. The formation of clusters accelerates the process in individual industries, results in a burst of innovations and strengthens the ability to compete in the world market. Depending on the changes in the external environment and market conditions, the clusters are formed, expanded, deepened, and may eventually break down and curdle under adverse conditions. Such a dynamism and flexibility of the clusters is another advantage compared with the other forms of economic organization system.<sup>6</sup>

Effective cooperation between the government, educational and research institutions and private companies, promotes innovation and competitive advantage of economy in the international division of labor. An important role belongs to the regional and local authorities whose responsibilities include creation and implementation of innovative strategies for regional development up to the radical change of their specialization in in-country and international division of labor. Achieving by the country a competitive edge at the global level is directly related to the formation and promotion of more efficient forms of spatial organization of production.

The experience of small countries in Western and Northern Europe shows the need for the gradual introduction of cluster policy of improvement of the competitive advantage of the regions and the country as a whole, the development of regional strategies for innovative development, the encouragement of the initiatives of private entrepreneurs and local authorities.

Small and medium-sized enterprises of small countries in Western and Northern Europe are geographically concentrated in the clusters that interact with or are a part of global value chains. Small countries are pioneers in conducting cluster policies of improvement of the competitive advantage of the economy, which has become one of the most effective tools in the whole complex of measures.

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<sup>6</sup> Bondarenko V. Small Businesses in the Cluster System\_ [http://innovbusiness.ru/content/document\\_r\\_C5FF1701-B356-4C66-BB3C-39964FC5B027.html](http://innovbusiness.ru/content/document_r_C5FF1701-B356-4C66-BB3C-39964FC5B027.html)



Identification of industrial (national) clusters in Russia by the factor of localization and by the method of input-output balance repeats the studies on establishment of TPCs (region - its original characteristics - industrial structure), but only in reverse. Small and medium enterprises operating in the field of information technology equipment, software, biotechnology, new construction materials, etc., as well as related services, are promising in terms of establishment of new regional clusters. These industries have growth potential and could become a basis of the regional innovation systems in which the main factors of competitive advantage will be expressed spatially in the form of a chain of ideas transformation into innovations: the acquisition of knowledge in universities and scientific and research institutes - the introduction of innovations in technology parks, etc. - the production of high-tech products in the clusters of small and medium-sized enterprises - the interaction with the large enterprises and TNCs. They can also become suppliers of large enterprises of traditional industries, which will use them to upgrade their structure.

A sample of the Tomsk and Novosibirsk regions shows the opportunities of using the potential of improving the competitive advantage of the new promising sectors of the economy in the course of transition to the technical and economic paradigm of innovation development of individual regions. To address the problems of improving the competitive advantage of Russia in the world economy it is necessary to develop the national strategy that would include a set of measures of macro- (federal), meso- (regional) and micro- (local) levels.<sup>7</sup>

The concept of regional development based on competitive clusters is being increasingly understood in Russia. Effective restructuring of former industrial giants and territorial industrial complexes requires a deep interaction between large, medium and small businesses, their constructive cooperation with universities and research institutes in the unconditional support of the state and local governments. Here cluster approach provides the necessary tools and methodologies that make it possible to reach an extended development of small and medium-sized businesses.

The associations of aerospace enterprises in Moscow and Samara, information and telecommunications groups of enterprises in Moscow, a complex of automotive businesses in the Volga Federal District can be given as an example of potential Russian clusters. This region has a lot of universities, colleges, research institutes and consulting firms dealing with the automobile industry. High concentration of automobile companies and related organizations creates a favorable environment for the development of competitive advantage.

Innovation and technological cluster of machinery building and metalworking of Saint-Petersburg was created in October 2008. For that time it included 15 companies, among them JSC «Zvezda», «Svetlana», «Lenpoligrafmash», «Power Machines», JSC «Zavod im. Kozitskogo», etc. Now the cluster includes more than 25 companies, and

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<sup>7</sup> Pilipenko I.V. Op. cit., 2005, pp. 398-399.

along with production companies it involves universities, research institutes, non-governmental organizations, insurance companies and law firms. The enterprises of the cluster employ about 25,000 people, turnover - 39 billion rubles annually.

Modernization of the legislation that would regulate the relations between enterprises continues to be one of the problems of cluster development in Russia. In Russia, the system of liability for failure to perform the contract in time is not sufficiently developed. In addition, one of the challenges of technological innovation cluster as a self-regulating non-profit organization is the development of common standards and the standard procedure for relations between the enterprises.<sup>8</sup>

Active policy for the development of competitive regional clusters is conducted by the administration of the Ivanovo, Omsk and Ulyanovsk regions. The projects for development of the clusters of industrial sectors with an emphasis on their innovative development in 2010-2011 were approved jointly with industry associations. At this we are talking about the sectors being traditional for the areas mentioned, modernization of which will speed up the complex social and economic development of these regions. As the first deputy chairman of the government of the Ivanovo region P. Konkov noted, “the regional government, in the context of the decision to establish modern textile cluster, is interested in active cooperation with the newly established Association of Entrepreneurs of light industry of Ivanovschiny in such a project. It is referred, first of all, to a favorable investment environment and a consolidated position on the issues of long-term, i.e. prospective innovative development of the textile industry”.

In the Omsk region it is planned to create a cluster of biomedical technologies and medical instrumentation. According to the Regional Ministry of Industry, this cluster will be formed on the basis of public-private partnerships. The main task of such a “polygon of industrialization” is the production of competitive modern medical equipment, intended especially for the early diagnosis and treatment of cancer, cardiovascular disease and diabetes. Commodity and technological base of the cluster is made in this area by more than 10 kinds of innovative medical devices, which show a growing demand in Russia and CIS countries.

As for the Ulyanovsk region, the local cluster is also created on the basis of the traditional industries in the region – aircraft engineering. And along with modern workshops for the production of machinery, components and other products for the aviation, here, in the coming years, the Higher Aviation Academy of the RF will be opened with assistance of the Oxford Aviation Academy (UK).<sup>9</sup>

In the Lipetsk region, a task is set to create a cluster for the production of high-tech competitive products and development of the regional innovation system that includes all the necessary elements: innovation infrastructure, innovation management

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<sup>8</sup> Usmanova E. Cluster Approach // [http://strf.ru/material.aspx?CatalogId=223&d\\_no=24270](http://strf.ru/material.aspx?CatalogId=223&d_no=24270)

<sup>9</sup> Chichkin A. Industrial Clusters Will Be Created in the Regions // <http://www.rg.ru/2010/04/13/regiony.html> // “The Russian Business Newspaper” No.745 (12) // 13.04.2010



system, promotion of innovations improvement of the training system of innovation management staff. With the participation of Rosnano, it is planned to create a venture capital fund in the area of nanotechnology, whose funds will be allocated to support promising innovative projects. And the platforms are created to implement them. Lipetsk Tekhnopoljus Economic Zone of technical innovation type, whose purpose is the development of innovative business, appeared in the region. The issue regarding establishment of technology parks in the cities of Elets and Gryazi is being studied. All this will make it possible to increase the share of the enterprises implementing the technological innovations, to 18-20 per cent by 2013, and up to 30 percent - by 2020.<sup>10</sup>

To measure the competitive advantage of the regions of Russia (IRP INDEX), the Institute for Regional Policy has developed a special index that takes into account 130 parameters of development - from fiscal capacity to the level of education of the population. This index has been approved by the public council of the Ministry for Regional Development. According to the specified index, for example, the Leningrad region was included among 20 entities - leaders in terms of this indicator.

Integrated assessment enables the region to take the 17th stage of rating in the country and the 2nd - in the North-West Federal District. The most powerful competitive advantages of the region include the level of the profitability of the agricultural enterprises assets, rate of renewal of fixed assets, net financial result of organizations per capita, the share of the entity in the total volume of the goods shipped within Russia as a whole, the export orientation of the economy.<sup>11</sup> High territorial capacity is coupled with the economic success of the region. The investment attractiveness of the region is conditioned by the upgraded technology base, a favorable business climate, the capacity of the regional market. However, in our view, the role of inter-regional, inter-cluster of economic ties is essential. Among the characteristics of the regional clusters it should be noted the importance of openness, extending beyond the intra-regional networks and having a goal to use external resources.

Since the beginning of 1980's, the activity of the enterprises in many countries of the world has become heavily globalized and the regional self-sufficient production networks began to be replaced by global production networks. In these circumstances, to preserve and enhance the competitive advantage of the products of different regions of the countries it is necessary to encourage actively the inflow of capital, intellectual and human resources of foreign firms and research institutions in the region, strengthen partnerships and exchanges within the region, and to enter into partnership with foreign

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<sup>10</sup> The Lipetsk Region: Region Will Become More Attractive for Investors // <http://vneshmarket.ru/NewsAM/NewsAMShow.asp?ID=310307>

<sup>11</sup> The Leningrad region: Competitiveness is On the Top // <http://vneshmarket.ru/NewsAM/NewsAMShow.asp?ID=302622> // 14.10.2008

clusters. In other words, the regional cluster should become a place, where human resources, organizations and technologies are circulating continuously. The international inter-cluster exchange can be useful in this regard.<sup>12</sup>

This issue was discussed in detail at the end of 2010 at a special conference “Modernization of Economy and Inter-Regional Relations”. It presented the regional projects facilitating the diversification of the economy of the RF entities and contributing to the modernization of the economy as a whole. As the discussions of the projects at the forum organized by the Committee of Interregional Relations and National Policy of Moscow together with the Public Chamber of the Russian Federation showed, the course of the modernization of the country will require a revision of inter-regional relations. In the course of discussions of the projects it was clarified that even the regions of Siberia and the Russian Far East being the most remote from the capital have great potential for the development of inter-regional cooperation.<sup>13</sup>

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<sup>12</sup>Semyonova N. Clustering - a New Phenomenon in the World Economy and Politics // <http://www.nanonewsnet.ru/blog/nikst/klasterizatsiya-novoe-yavlenie-rol-v-mirovoi-ekonomike-politike>

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