European Experience of Regional Cluster Policy Realization

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Abstract—**The article covers the experience in implementing the cluster approach in the economy of some European countries. It is revealed that nowadays industrial progress is provided not by isolated companies but by their associations, groups and clusters. The authors analyzed the activity of the European organizations implementing integrated cluster policy, and defined the key modes of cluster formation and development in the foreign economy. The scientific significance of the paper comprises the findings of the perspectives of cluster policy realization in the Russian Federation in order to enhance the competitiveness of industrial companies on the basis of the analyzed foreign models.**

Keywords—cluster; European Union; region; industry; economy; competitiveness

I. INTRODUCTION

The relevance of the problem of increasing the competitiveness of the Russian regions economy dictates the need to examine the experience of the European Union (EU) in existing regional clusters formation and development. The formation of cluster is one of the most effective methods for the development and improvement of a regional economy in order to increase competitiveness in world markets. This fact is proved by the experience of developed European countries [3].

Nowadays, the main objective of economic policy of both developed and developing countries is to provide national resistance to competition, strengthen the share of national companies in domestic and world markets and increase their productivity [5]. Cluster systems are up to the mentioned problems. It is a kind of cross-sectoral set which is similar to the «growth points» of the domestic and regional economy. At the same time, clusters are aimed to overcome structural barriers as well as the diversified structure of the economy. Popularization of technologies and standard activities serves the development of specialists training system and facilitates staff movements between entities, that leads to future spread of knowledge.

Clusters are the revolution in the economy, the new method. That is why inter-corporate integration has been widely applied all over the world and more and more countries are promoting it day by day. In developed countries the practical application of cluster technologies began in the early 1990s. The record popularity the cluster approach has received in EU where it stands on a par with the public policy.

II. METHODOLOGY

In the world practice the three main centers of cluster development have already been formed. All of them with their special characteristics were put in the innovation cluster model: North American, Western European and Asian. It is important to mention that the Asian model consists of the North American and Western European has the own distinctive features. The specific of the mentioned models is shown in the Table 1.

TABLE I. THE SPECIFIC OF THE CLUSTER MODELS (COMPILED BY THE AUTHORS)

North American	• Weak state intervention with attention and support. • The lack of documentation and concrete structures at the state level related to the strategy of national economy development on the basis of cluster approach. • Start-up capital for the clustering is provided by the budget of the state government, then developing at expense of commercial participants funds. • Research centers, universities and companies- industry leaders are initiators of clusters creation. • Clusters, formed on the basis of research centers or universities, take precedence.
Western European	• Governments take active part in clustering policy. • Cluster policy is discussed in Euro Parliament and has to be fixed legislatively. • Governments contribute the development of links between research centers, universities and companies. • Governments encourage the involvement of foreign producers in national cooperation; • Clusters are formed in the spheres of science and high technologies. • Thanks to innovative clusters there is an improvement in the value of economic indicators in underdeveloped areas. • Trans-border clusters are formed and protected by the EU.
Asian	• On the basis of eastern customs. • Economic expansion (Asia had to develop occupied niches and prove itself in severe competition, whereas it was isolated from the world market in the past). • Protection of domestic producers. • Strong government support for promoting national products to the world market.

For a long period of time cluster policies were developing separately, that led to the emergence of 3 absolutely different models of cluster development. Furthermore, clusters were formed because of dependence on natural resources, government role, traditions and customs, which have historically developed in the regions.

Theoretical aspects in the geography allow making a conclusion of the difference in the volume of both domestic and foreign markets for the mentioned regions.

III. RESULTS

More than 50 % of the leading States use and develop cluster policy to improve their economies. In the USA more than the half of companies is involved in clustering, that has a positive impact on the GDP. The best example is the "Silicon Valley" where the employment rate is 2.5 million people and total salary is 125 thousand dollars per year. Silicon Valley generates a third of all venture investments in the USA. They develop innovative clusters in order to use them for accelerated high-tech products promotion. It has to affect the effectiveness of budget distribution.

In 1992, approximately 200 companies from the optical sphere (mainly aerospace industry) united to the Arizona optical industry association. As a result, one of the most famous photonic clusters all over the world has emerged, with total sales rising from 100 million dollars to more than 340 million dollars in 15 years [1].

There are more than 2 thousand clusters in the EU, where 40% of the population is employed. The main users of cluster theory in industry are Finland, Denmark, Norway and Sweden.

Finland is in the world rankings as a leading and competitive economy due to the transition to the innovative model of development. The cluster of forest industry is one of the most important for the country. Finland has 0.5% of the world forest resources, and provides 10% of the world exports of wood products and 25% of high-quality paper. The share of telecommunication products after clustering increased twice. In addition, the company "Nokia" is from Finland, the cooperation around which consists of more than 100 companies specializing in the production of chips and software. All these mention Finland clusters belong to the category of "strong". Their characteristics include harmony in the development of main and auxiliary industries, high competition within the cluster, the potential for world-class innovations.

In Italy 43% of the labor force is concentrated in the industrial cluster, which brings more than 30% of national exports. Pharmaceutical and IT technology clusters are particularly successful (57% and 28% of the volume, respectively). Pisa region became one of the world leaders in research and development, which are carried out by firms and universities. 90% of Italian cooperations are represented in the form of single-industry, which specialize in food nutrition and consumer goods. The production of ceramic tiles reaches almost 4 billion euros per year and 220 firms are involved in intercorporate integration. This gives the country almost 2% of revenues from total export.

Excellent results were achieved by cluster policy in Germany (chemistry and engineering) and in France (food production, cosmetics). Germany is home to 3 of the world 7 high-tech cooperatives located in the cities of Hamburg, Munich and Dresden. In France, Cosmetic Valley includes 600 enterprises, among which there are even state laboratories, and is the absolute leader in the production of cosmetics worldwide.

There are 4 types of cluster policy, detected by analysis of European countries clustering:

1. The first type – 13% of the total volume of programs, it includes: programs, the purpose of which is to examine and correlate each cluster to the region; trainings and public scientific presentations on the essence of clusters and their impact on the economy, the algorithms of their development and the correctness of approaches; popularization of cluster ideas and initiatives.

2. The second takes 18% of the events, aimed to increase competitiveness, expand cooperation and develop clusters.

3. The third type is 49%. The program includes measures for the development of the territory, the region, the country with a competitive economy. The main idea is to stimulate innovation and support all sectors of the economy in need; strengthen clusters in the region and leading industries. In this type, the focus is on social goals that relate to improving the standard of living (environmental problems, quality of education and medicine, the distribution of labor in the region).

4. The fourth is 20%, which are programs to stimulate specialized cluster sectors and also examine the intra-cluster correlation.

The EU uses the term "milestones" at the planning stage of the cluster initiative. At the time of program selection, the following questions should be considered in detail: on the use of tools to achieve the goals; what time-frame should be set; what is necessary to obtain funds (especially when the issue concerns enterprises and universities).

It is worth highlighting the cluster processes control in Norway. "Innovation Norway" is a company that has been implementing government programs for investors since 2004. "Innovation Norway" in addition to supporting SMEs and entrepreneurship is engaged in the development of an innovative environment, which includes programs for the development of networks, clusters and other forms of business partnerships, the scientific community and the state [4]. There are two more innovation agencies involving in clustering process: SIVA, the Research Council of Norway.

"VDI/VDE-IT" is a private German company in the field of innovations development and implementation, the operator of the Federal cluster program. There is a wide practice of transferring some functions to private organizations related to the support of clusters in the world - it is another feature of many foreign organizations, similar in functionality to the centers of cluster development in Russia.

More often, we are talking about multi-level functions, such as cooperation, exchange of experience, training of cluster managers, information support of cluster initiatives, development of cluster networks, promotion and presentation of clusters at the regional, national and international levels. Another example of a country implementing such functions is France and its Association of French clusters – " France

Clusters (CDIF)", which cooperates with about 100 clusters in all regions of France.

There is such organization in Denmark as REG X – The Danish Cluster Academy, specializing in consulting services in the areas of research activity, knowledge and experience sharing, networking and clusters. The government of Denmark finances two cluster programs implemented by REG X. The first program is dedicated to the cultivation of management personnel (their educational modules include cluster strategy, value chain analysis, international promotion of the cluster, communications in the cluster, etc.). The second one has a modern innovation policy and innovative programs as its specialization. The target audience of such a program is persons, belonging to the business community, the scientific community or public authorities, who are capable of making a quick strategic decision [4].

The result of the large-scale study of cluster policy in Europe, conducted by Oxford Research AS, was the following: in more than 13 European countries, at least two ministries are responsible for supporting clusters; the direct implementation of cluster policies in most European countries at the national and regional levels is carried out by agencies (part of the ministries). At the same time, the majority of the studied EU countries has up to three agencies, whose responsibilities include the task of cluster development. The leaders of the trend are Ireland and Finland with their 7 and 8 agencies, respectively.

IV. CONCLUSION

In Europe the complex system of cluster support was created. However, the success of regional cluster policy depends on the complex government support. In Russia such support is short-term because of weak coherence of government programs, insignificant integration of the cluster approach ideas, the lack of responsibilities and authorities to support clusters at the regional level.

The variety of existing effective industrial regional cluster systems allows creating domestic adapted ones, bringing the Russian economy to the new innovative level, raising the competitiveness and prestige of the state worldwide [2].

Cluster approach is a promising area of increasing the product competitiveness, and effective mechanism of innovative processes activation. And precisely these processes allow uniting efforts of state, business communities and society to mutually beneficial cooperation. The adoption of this approach will allow Russia to take a worthy place in the world economy in the future.

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