
The Regional Cluster Initiatives

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Abstract:

The article considers trends and dynamics of the regional development based on cluster initiatives. It should be noted that the current structural changes have a big impact on the economic development of regional and national markets. The object of the research has been selected by the elements such as regional cluster systems operating at the Russian and international markets, tendencies and features of the development. The authors are determined that in the context of the dynamic development of the economics of most countries, that have retained a high industrial potential, is needed an organizational support of industrial enterprises and complexes contributing to increase their competitiveness. Nowadays one of the most effective forms of such support is the increasing of the efficiency of industrial production including the integration and formation of industrial clusters.

The implementation of cluster initiatives contributes to the development of business competitiveness by the realization of effective potential based on effective cooperation of the cluster's participants. It is linked to the geographical position, including the expanding access to the innovations, technologies, "know-how", specialized services and high-qualified staff, and also decrease of transaction costs, providing the formation of preconditions for the realization of joint cooperation projects and productive competition.

Key Words: *The logistic cluster, regional initiatives, cluster, innovative development, clustering theory, competitiveness.*

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1. Introduction

The actualization of modern tools and economy forms at the regional markets of the Russian Federation should be based on the usage of integrative management forms, which include internal and external development factors of a region; investment attractiveness; improvement of the innovative, territorial and economic areas; organization of integration interaction of participants working at the regional market; the formation of globalization process etc (Salimova and Makolov, 2016).

Consequently, the questions of clustering are becoming increasingly topical, which is based on the stimulation of regional economic practices integrated into a single system. This system contributes to the organizational support of industrial, commercial and also the subjects of the organizational forming from the side of local, regional and government structures allowing increasing the competitiveness as well as innovation and investment appeal (Breckova, 2016; Liapis *et al.*, 2013; Faizova *et al.*, 2015; Frank *et al.*, 2016).

There is no doubt that the appearance of cluster initiatives contributes to the effective management of economic, industrial and regional process at the regional level. This article is focused on the consideration of the fundamental bases of the clustering process at the regional markets using the international experience.

The theoretical base of regional and spatial economy is represented in the works of such foreign scientists as F. Tyunen, V. Launhardt, V. Kristaller, A. Lesh, A. Weber, V. Izard.

The research of cluster as one of the elements of competitiveness of the region can be seen in the works of A. Albekov, V. Borisova, E. Andreeva, M. Porter, O. Solven, K. Ketels, M. Enright, D. Fornahla.

The cluster's approach was widely adopted in the Russian Federation from the 20-th century. These studies are represented in the scientific works of G.B. Kleiner, V.P. Tretiak, I.V. Pilipenko, A.Y. Yudanov.

2. Theoretical, Empirical, and Methodological Grounds of the Research

It should be mentioned that the development of clustering at the regional level is the result of long-term and dynamic development of theoretical framework based on the focusing of the social and cultural issues of regional development (Giannarakis, 2016; Kolchanova and Kolchanova, 2016; Ryzhkova and Prosvirkin, 2015; Robertie, 2016).

During the development, the cluster theory has passed through three stages. The first stage is the initial stage of the cluster theory which is based on the research of Alfred Marshall (English scientist, at the end of the XIX century). The idea of this scientist

was to identify the industrial areas, which served as an example of «the first industrial divide». The result of this theory is the emergence of large-scale vertically integrated corporations, whose activities are expressed from external economies of the scale and production of standardized goods.

Due to the integration features, which corporation's data was characterized by the operating enterprise turned out the serious competitors with respect to the small firms. Despite the strong parties' small handicraft firms contributed to the organization of industrial areas, whose activities are carried out at the expense of the economies of scale and industrial atmosphere prevailing within these firms. The industrial zone is the concentration of a large number of small firms of the same type in one and the same area accordingly. Directly these properties, according to the Marshalls' view, have allowed the smaller firms to compete with leading corporations, maintaining their independence

The main characteristic of the industrial areas, according to the Italian school, were represented in 1970. According to this school the industrial area is the association of financial institutions, workers, researchers, educational institutions, which are located in the same areas. They were also characterized by certain socio-cultural types of management, which formed some forms of interaction, certain norms and values in the management field, as well as expansion at the expense of joining supplementary institutions and organizations.

However, despite the positive characteristics of the industrial areas, where the main idea is to integrate the companies, there was a clear lack of that analysis, because the application of the theory was based only on the example of Italy, which is characterized by only its historical and cultural values. These provisions have a limited application, so far as it does not take into account such factors as an innovative development of the region, demographic and employment factors, limited the type of business enterprises.

In this regard, it is the constraints that contributed to the emergence of a new scientific school - California.

According to the Californian School, industrial zones can be seen as technological areas, presented by the association and concentrated in one area of specialized and vertically disintegrated enterprises and institutions. The main prerequisites for the emergence of this school were the external factors which have a big impact to the functioning of the subjects, as well as folding transaction costs caused by the inter-branch relations within the disintegrated enterprises. Within these limits there is a need in the formation of flexible production systems requiring a wide range of inter-firm linkages among firms. This association (or agglomeration) allows firms to reduce their transaction costs, minimize risks, increase flexibility to the changing conditions of functioning, as well as to increase the flexibility of firms.

The founder of the evolution of the clustering theory is Michael Porter. M. Porter defined clusters as a closed and geographically located group of interconnected companies and associated institutions in a particular field of activity, characterized by generality and conjugation. According to the scientist, the system of the structure-forming clusters may include the following groups of entities: suppliers, educational institutions, companies, processing and manufacturing, specialized companies, public and government organizations, service organizations (for example: service, marketing, engineering companies etc.) at the regional markets. The integration of these organizations contributes to the formation of vertical and horizontal links within their interaction; in some cases their activities can be independent of firms.

The fundamental aspect of this theory is the limitation according to which enterprises should be geographically concentrated within the same area. This is the fact which indicates that the fundamental enterprises can achieve and maintain a competitive advantage at the market. The clusters are the engine of the country's competitiveness, according to M. Porter. Competition encourages companies to improve its operations all time by developing and using innovative in their working methods and forms of management.

In this connection, it is worth noting that clusters take into account the market mechanisms in which governmental bodies direct mechanisms of action not to separate branches of management but to the group of enterprises, which form a single system of relationships between entities of the cluster.

As a consequence, the idea of the development connected with the innovative development of clusters at the regional and national levels contributed to the emergence of new doctrines of Scandinavian school. The representatives of this school consider innovation as the main element of the economy competitiveness. The main idea of this research is that the economic processes are constantly subject of changes. But the innovation, in this way, is the new direction that promotes innovative development. As a result, innovative processes are taking place in the economic activity enhance inter-firm relationships within the cluster.

Clusters, based on innovative forms, are the engine of regional innovation development for several reasons. First of all, the firms, cooperating within the framework of integrated structures, promote co-operation. Secondly, rapid and effective information support is accelerating the process of information transfer, as well as control of all logistic processes within the cluster. Thirdly, coordination and regional support of cluster initiatives is required.

There is a quite broad base of cluster initiatives in the European Union which is adjusting the development and the formation of regional clusters. In this case, it can be represented by such organization as the European Cluster Observatory, whose main activity is the study of clusters in Europe. The results of statistical reports, knitted with the dynamics of cluster development at European markets, are formed

into a single European Cluster report which contributed to the base of the European Commission.

Also there is such organization as IERC-European Research Cluster on the Internet of Things. The main goal of IERC is to increase the competitiveness of Europe and it is an important factor for the development of the informational economy. The main goal of this cluster is the organization of a platform for cooperation and development of research activities in the European Union; the determination of the international cooperation strategy in the field of research and innovation at the global level; coordination of cooperation in other clusters formed within the EU and in the field of information technology cluster projects.

In Russia, the cluster approach is a quite new direction, stimulating regional development. This direction for the regions of Russia is very promising due to the fact that the complex is formed by the direction of development of the regions. The main advantage of this approach is the possibility of analyzing and determining the missing entities whose participation will form a single cluster system. At the same time the use of this mechanism will ensure the functionality not of the individual entities, but rather will develop a set of measures to ensure the control and development of all areas of management. Thereby, it will stimulate the creation of surplus value, as well as continuous monitoring and improvement of the system. Russia, on the way to becoming a cluster policy, has taken a series of steps presented in Figure 1.

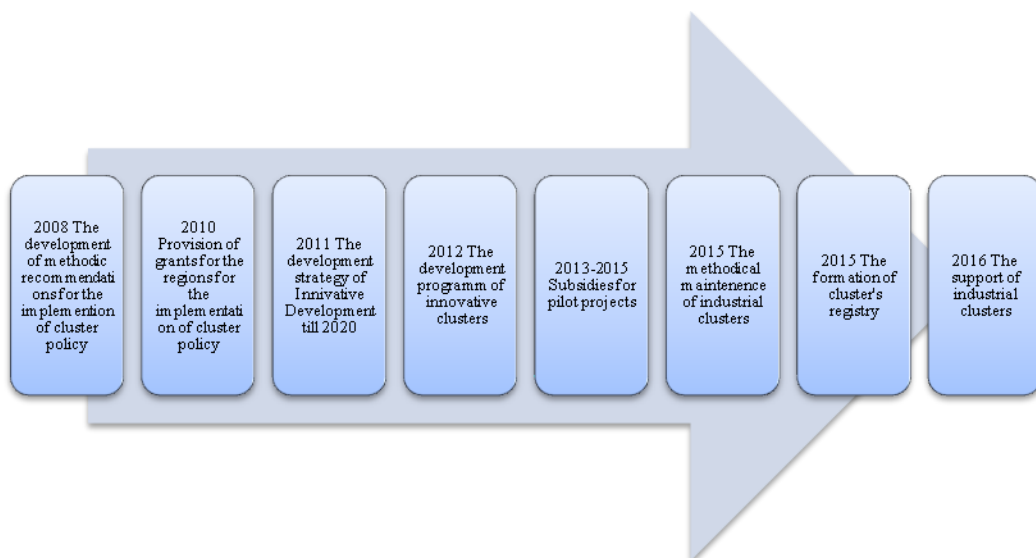


Figure 1. Institutional development of cluster policy in Russia

Furthermore, there is a number of government documents, which monitor and develop incentive measures for the development of cluster initiatives in the territory

of the Russian Federation as well as at the international level. The documents regulating the activities on cluster development are represented by:

- The order of the Ministry of Economic Development of Russia from June 27, 2016 № 400 "About the priority project of Economic Development of Russia" The development of innovative clusters – are the leaders of investment attractiveness at the world level development”
- Government Resolution of July 31, 2015 № 779 "About the industrial clusters and specialized organizations of industrial clusters"
- The Strategy of Innovative Development in Russia till 2020
- The long-term concept of socio-economic development of 2020
- Guidelines for the implementation of cluster policy in the northern regions of Russia
- Guidelines for the implementation of cluster policy in Russian regions
- Documents on regional development (for example, The concept of cluster development of the Rostov region in 2015-2020 - in Rostov region, according to this document, has successfully developed 10 cluster initiatives, such as: Innovation and technology cluster "Southern Constellation"; Innovative regional clusters of marine instrument engineering" Maritime systems", innovative regional cluster of machine tools, innovative biotechnology cluster, innovative territorial clusters "Don dairy products ', the cluster of information and communication technologies; Wine territorial clusters" Valley of the Don', the cluster of agricultural machinery; cluster "LegTeksDon"; helicopters cluster.)

Moreover, the questions of clustering connected with the formation of unified cluster systems not only at the regional level, but also aimed to the formation of the integration features into space, will enable enterprises to gain a competitive advantage, not only at the regional level, but also the opportunity to enter the international markets, integrating and forming a global logistic international system.

3. Results

According to the results of the international experience of cluster policy, it should be noted that the biggest number of the leading clusters is concentrated in countries with large airports and sea ports, which are focused on the highest bandwidth, namely Amsterdam, London, Oslo and Rotterdam. Besides these countries, clusters, which are based on the logistics centers, are also located in the Benelux countries and around Vienna, but the total size of the largest clusters is modest, in comparison with other emerging industries. The most successful clusters of international logistic service are represented in Table 1.

Table 1. Top European logistics clusters in 2012

№	Name	Country	The number of workers	Income	Annual increase
1	Noord-Holland	Amsterdam	44490	42541	7.01
2	Oslo og Akersburg	Oslo	33278	70941	8.25
3	Darmstadt	Frankfurt am Main	93257	46570	1.90
4	Outer London	London	82867	45680	1.28
5	Zuid-Holland	Rotterdam	48841	39543	1.26
6	Bratislavsky kraj	Bratislava	31626	9351	25.35
7	Antwerpen	Antwerpen	30140	37740	2.54
8	Niederosterreich	St.Polten	28894	35017	-0.60
9	Luxembourg	Luxembourg	19648	45263	4.46
10	Nord-Norge	Tromse	9077	53021	4.44
11	Zeeland	Middelburg	7164	34159	12.53

The cumulative level of organizations’ innovative activity in international markets also is taken into account during the assessing of the resulting indicators for the implementation of the cluster policy. The total level according to the countries is diagrammatically summerized in Figure 2.

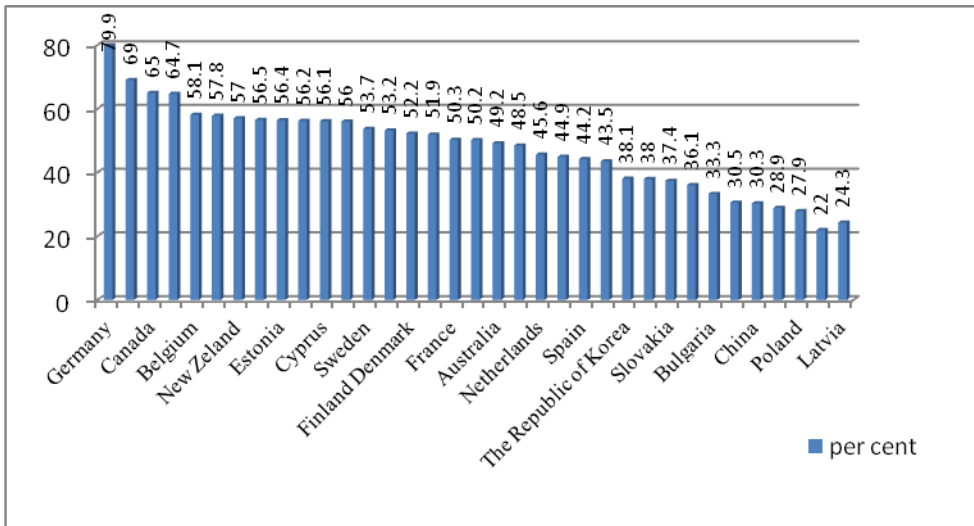


Figure 2. The total level of innovation activity of European countries

It should be noted that the part of innovation’s decisions is located in Germany. It shares about 80% of innovations. Furthermore, according to the statistics information presented in Table 1, it is also included in Germany TOP best clustered objects. It should be taken into consideration that there is a clear dynamics of the level of innovation activity in all European countries. The Russian situation according to these indicators is represented in the figure 3.

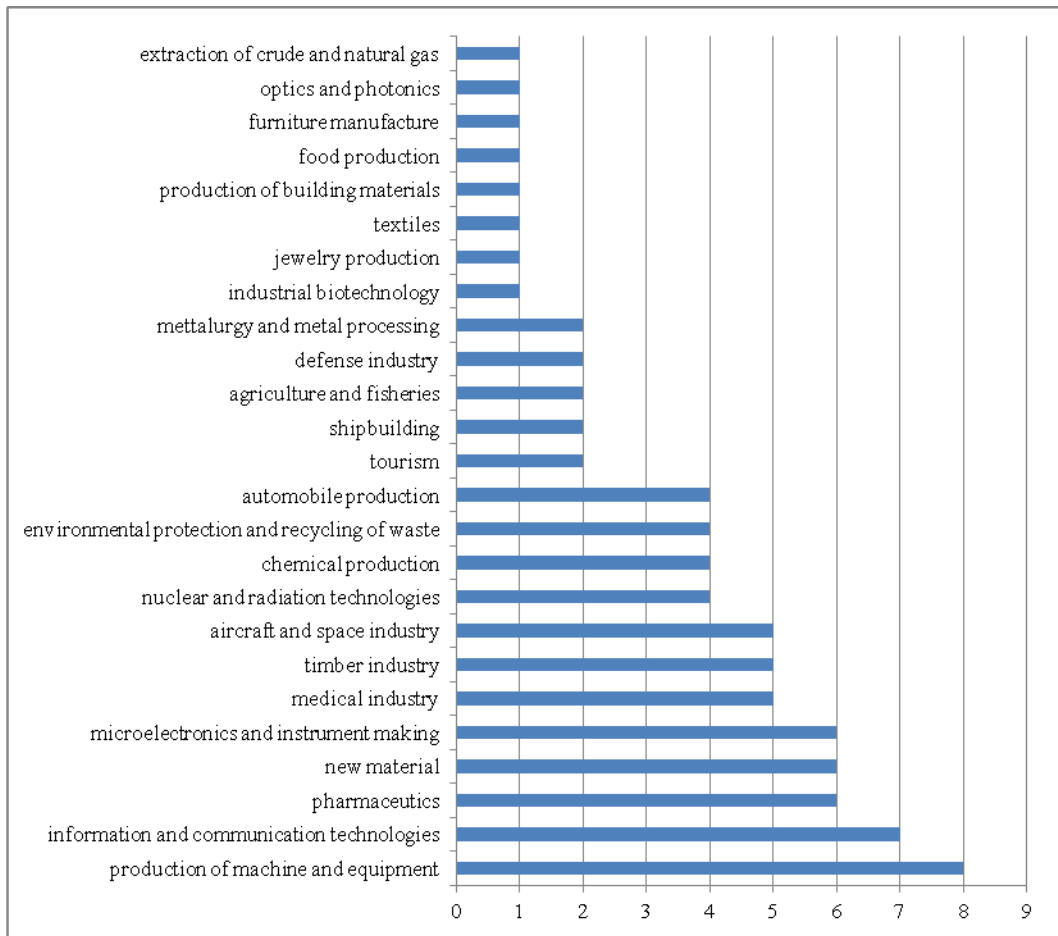


Figure 3. Specialization of cluster initiatives in Russia

During the integrated management of logistics processes within the logistics cluster, fundamental solution is not only an analysis and forecast of economic indicators, but also a reflection of the market's and the region's development dynamics in order to identify priority areas of the market's development.

The basic conditions of formation and successful functioning of the logistics cluster in the regional markets are the amounts' presented in Figure 4.

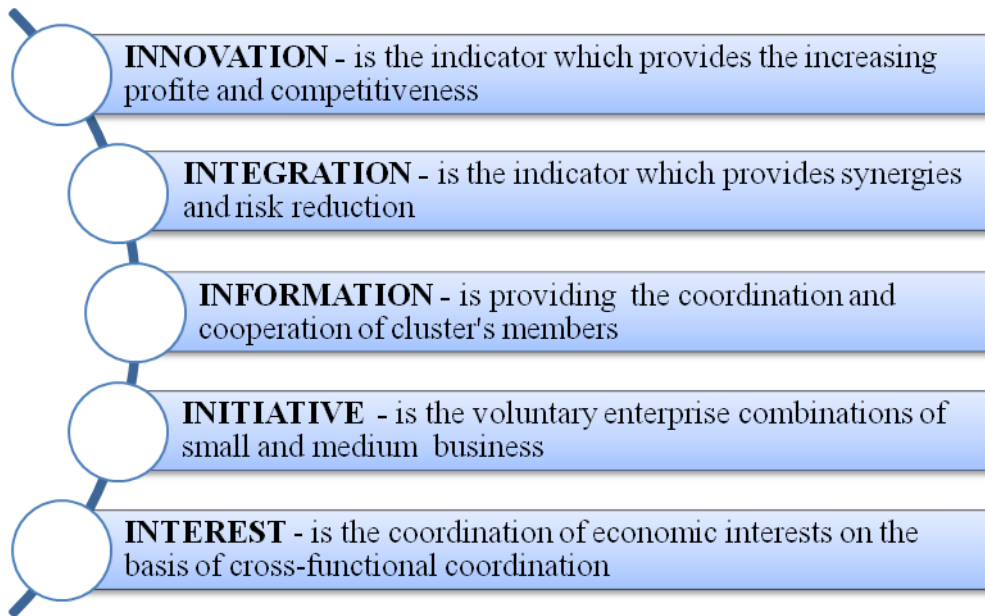


Figure 4. Key indicators of the effect of the logistics cluster's use in Rostov region

Having followed these indicators, it helps to identify the following key indicators of the effect:

- the profits' increase of participating companies of logistics cluster, using innovation in their work, for example: the increase of the volume and quality of logistics services; the reduction of the transportation costs, costs' reduction
- the quality's improvement of logistics services, including the delivery of goods in the proper quantity, in the proper amount; improvement of procurement functions
- the quality's improvement of the logistics service, including accurate order fulfillment, control over the timeliness of deliveries; reduction of transportation costs, processing time is order, improvement the quality of information services.

4. Conclusion and recommendations

Accordingly, the regional clusters are the communication system that provides the integration of all entities which are included in to the cluster system. Formation of the cluster will ensure the competitiveness of the industries' operating entities, forming and shaping the logistics cluster at the regional level.

The effective functioning of the regional logistics cluster can be achieved through the optimal process of organization of the logistics cluster structure, the basis of which is represented by the state authorities and the Coordinating Council, which provides the formation and regulation of the logistics cluster's functioning.

On the basis of the generated logistics cluster structure, the formation of a common information base (Figure 5) of logistics operations' management and control, integrated information and logistics base, is ensured. This base is aimed at information and material flows' collecting, analyzing and monitoring, using such characteristics as: innovation, integration, the information content of the initiative and interest.

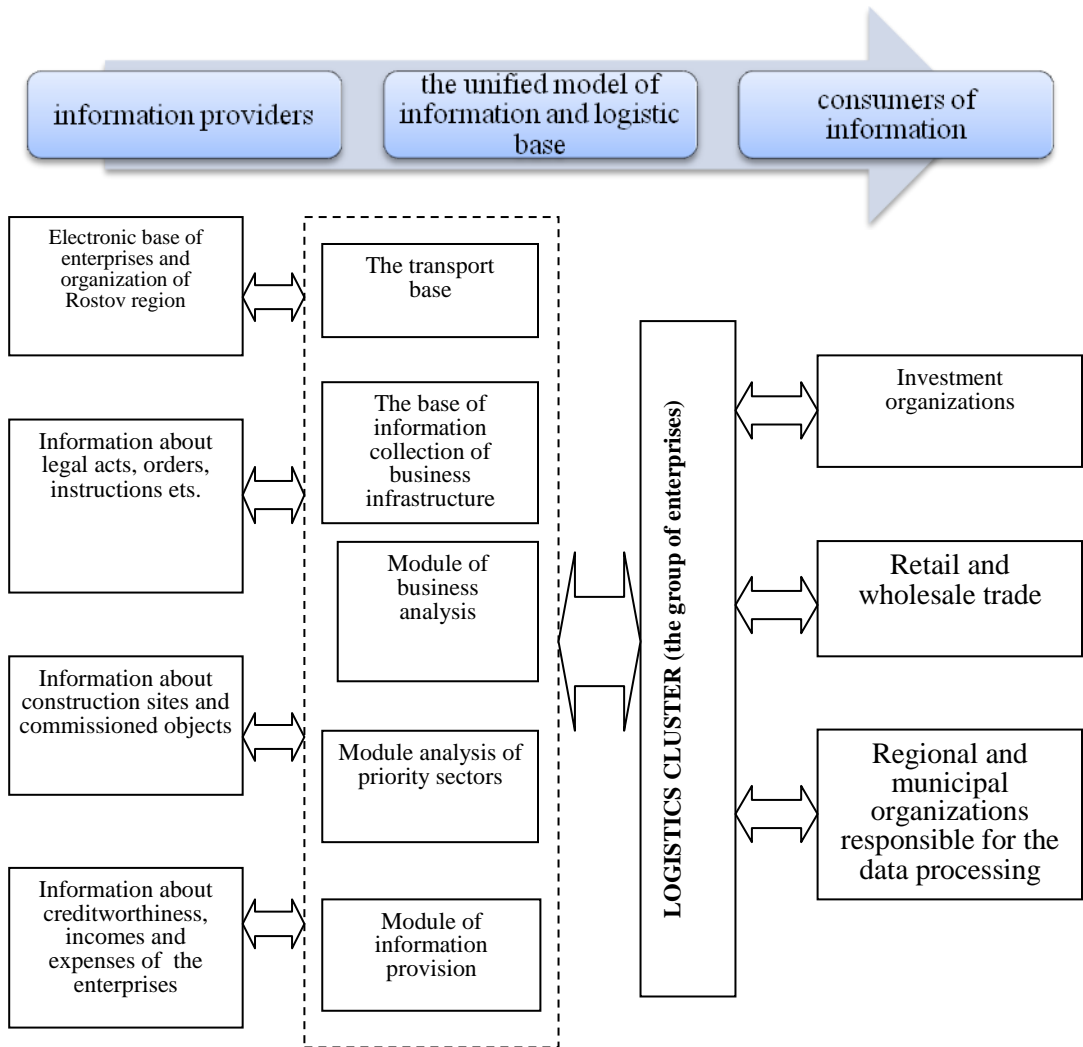


Figure 5. *Integrated Logistics and Information Database*

According to the study we can identify the main trends and features of the logistics cluster development, and consider it as a system aimed at the effective operation of the logistics system:

1) logistics cluster at the regional level includes enterprises of different ownership forms. In this case the main purpose is to increase the competitiveness of the

logistics facility management, regional economic development and consumer market;

2) logistics cluster is formed by market participants that operate in different territories. In addition, not only market conditions between cluster participants are formed but also the conditions of cooperation. This fact is connected with following moment; cooperation is formed by achieving a common goal and common strategic plans and policies.

3) the formation of logistics cluster provides the adaptation and integration of objects of infrastructure to the changing conditions of market's functioning and support for information systems and assistance.

As a result of the analysis, there were formulated the main advantages a logistics cluster's construction:

Firstly, the provision of competitive advantage by integrating economic entities to the logistic cluster, taking into account the long-term relationships;

Secondly, the possibility of expanding the formation channels of logistics cluster including additional subjects;

Thirdly, control of logistic cluster's operation due the development of integration ties with the administrative authorities of state regulation.

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