



Article

Main Directions of Innovative Industrial Cluster Management

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Abstract: In the article, in the management of innovative industrial clusters, it is possible to reduce transaction costs, attract financial resources to carry out large-scale scientific research and experimental construction work, focus efforts and efforts on important areas and directions of activity, and prospects for entering new markets. ways of implementation based on the use of opportunities have been researched.

Keywords: innovative industrial clusters, financial resources, integration, evaluation, types of innovative industrial clusters.

1. Introduction

Today, economic integration is becoming an integral element of economic development, and integration between enterprises and organizations is purposefully implemented by economic entities. They do this on the basis of reducing transaction costs, attracting financial resources to carry out large-scale scientific research and development work, focusing efforts and efforts on important areas and directions of activity, and using the opportunities that arise in terms of prospects for entering new markets. they do.

The rapid development of information technologies has opened up new communication opportunities for enterprises to exchange information, and this situation is speeding up the process of interaction through the network. One of the important directions of the structural changes implemented in the industrial sectors of our country today is to organize the activities of network enterprises on the basis of innovations.

In the conditions of increasingly complicated production relations in the world, the desire to achieve high economic efficiency by reducing production costs and increasing the volume of production at the expense of intensive factors in industrial enterprises is

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increasing. In particular, in today's industrially developed countries, the efficiency of industrial products production in these countries is significantly higher due to the formation of innovative management aimed at the regular application of scientific innovations to production processes in the practice of enterprise management.

Also, one of the important conditions for winning the competition between industrial enterprises in the conditions of the market economy is regular technical and technological updating of the manufactured products, their nomenclature, and production processes. This situation makes it necessary to improve the practice of innovative management of industrial enterprises. It is necessary to give priority to the use of innovations in the implementation of the organizational-economic mechanism of innovative management of enterprises. As a result, newly established enterprises in various sectors of the country's national economy develop their economic activities based on innovative management, specializing in modern management practices.

According to the analysis, in modern management theories, many scientific and theoretical views have been formed on how to achieve intensive development and stability of economic activity in the long term by organizing innovative management in the enterprise. In the analysis of the conditions for the creation of innovative management of industrial enterprises and its development, it is appropriate to clarify the content of the economic category of innovation first.

Taking into account that the research carried out in this direction to date requires different approaches in new conditions, the formation of innovative industrial clusters and their development were studied in the research.

2. Materials and Methods

Until today, a number of researchers have conducted research in the direction of the development of the activities of industrial enterprises in the form of innovative clusters, and these studies have been reflected in the formation of certain approaches and methodologies in this direction.

According to M.Y. Sheresheva, "the advantage of integration is related to the coordination of interests, reduction of risk, significant savings achieved as a result of reduction of information flows"[1,2]. In this, the author recognizes that the non-linearity of the development of integration processes based on synergistic results is the main advantage of integration [3]. Because this aspect allows economic entities to ensure a high level of competitiveness due to the change in the balance of forces in the markets in their favor.

In the area of economic analysis and synthesis objects, G.B.Kleiner's cluster strategy synthesis method was used to justify the cluster strategy [4].

Together with the above researchers, K.Menar [5], I.Gurkov [6] have studied theoretically and practically the issues of increasing the overall innovative efficiency of the industry or enterprises by forming the activity of innovative industrial clusters based on the innovative integration of industrial enterprises.

The term innovation is derived from the latin word "innovation", which means renewal, change. This term was introduced into the economic literature for the first time by Y. Shumpeter, and the scientist defines the economic category of innovation as follows: "new types of consumer goods and services, including the organization of management practices of unusual forms of production processes in order to increase the size of the market occupied by enterprises innovation, the use of new types of vehicles or their implementation is considered innovation. [7] In the approach developed by the scientist to the economic category of innovation, innovation is unusually evaluated as an update of production processes, and it is also important in modern innovation management theories.

The formation of the economic category of innovation in the field of modern management is also reflected in the works of the foreign economist B. Twiss in the formation of theories that were characteristic of this in the early periods: "in the practice of enterprise management, innovation is the giving of economic meaning to a new invention or idea." pushes.[8] Similar thoughts are reflected in B. Santo's scientific research. According to the scientist, "innovation is a form of reciprocal development of socio-technical-economic processes, which leads to higher quality demand due to the use of new ideas and inventions in the management practice of industrial enterprises, as well as in the organization of product production processes. organization of production of goods and services, improvement of production technologies is a process that allows to achieve high economic profit".[9]

We believe that it is appropriate to pay attention to the content of the concept of efficiency before analyzing the methods of evaluating the efficiency of innovative management of industrial enterprises. According to studies, the concept of effect is derived from the Latin word "Effectus", which represents the final result of any action. The concept of efficiency, as an economic category, describes the relative performance of achieving the intended goals. In most cases, in the practice of enterprise management, the evaluation of its effectiveness is based on the ratio between the results achieved and the costs. Also, in the systematic approach to the evaluation of this indicator, the expected and achieved results are compared with each other.[10] The above-mentioned methods

of evaluation of efficiency indicators are used in the evaluation of the efficiency of various socio-economic processes. They are also easy to use.

In the article, based on the opinions of economists and experts on the possibilities of increasing the activity of production processes in industrial enterprises by improving the main directions of the management of innovative industrial clusters, the priority of managing the activity of industrial enterprises through methods such as dialectical and systematic comparison, empirical research and qualitative analysis recommendations on setting directions have been developed.

3. Results and discussions

The institutional theory justifies the need to choose the organizational form of integration, taking into account internal and external conditions, based on a comparative analysis of the costs of economic entities. Many authors call the voluntary merger of enterprises into network structures as quasi-integration and recognize the informal character of the merger as the main feature of such cooperation. Such a merger is based on the exercise of control over the management of legally independent companies in the absence of control over their assets. The analysis of specific aspects of investment and innovation processes testifies that "network inter-enterprise integration" shows relatively higher level of innovation activity than holding structures. This situation is explained by the opportunity to implement "innovative projects that are impossible for individual companies to implement without losing control over their business."

Today, economic entities seek to cooperate and join forces in various forms of integration in the field of innovative activity. The most effective among these forms of integration are innovation clusters.

Below, the following specific aspects of clusters as a form of integration between economic subjects, economic approaches to their study are analyzed.

1. Clusters, as intermediate "links" between independent organizations, industrial complexes and network associations, have a number of specific characteristics, which combine the characteristics of all the above-mentioned systems. This is the basis for evaluating clusters as a group of integrated organizations capable of influencing the processes of developing new approaches to the innovative development of the economy. From this point of view, the economic subjects of the cluster, i.e. the participants of the cluster (state structures, financial organizations, objects of innovative infrastructures, industrial enterprises, scientific -research organizations, higher educational institutions, small businesses) should be informed of continuous and rapid development of innovative activities. mining industrial enterprises can be considered as a management

project in the field of innovative development, and the unique aspects of the cluster as a process of integration between different participants (the composition of these participants may change depending on the stages of the cluster's formation) are taken into account.

2. The multifaceted nature of the emergence of clusters as network structures and -the acquisition of different content, there is a need to develop new methodological bases for the formation and development of clusters in the national economy as a result of the synthesis of institutional-evolutionary economic theory, modern firm theory, systematic economic paradigm and strategic approach. An important aspect in the formation of clusters is the harmony of the economic interests of its participants, since the participants require foundations from the point of view of modern neo-institutional theory. Neoinstitutional theory attempts to analyze and account for the institutional environment. The institutional environment is interpreted as a set of rules of the game that limit the field of action and institutional arrangements for economic agents. Institutional arrangements refer to combinations of various types of district activities formed within these rules to ensure effective support of production and transactions (transactions) " [5]. -It is necessary to apply the rules of modern firm theory to understand the interactions between participants within the cluster. In it, the firm is viewed not simply as a "point" but as a firm with a structure of units around which decisions are made and contractual relationships are built. Systematic economic paradigm and strategic approach allow justifying "the need to apply new strategic process schemes and procedures to clusters" [6].

3. Clusters, as a form of "soft" management, allow to qualitatively increase the innovative activity of economic entities and ensure the continuous innovative development of the national economy based on the strengthening of technological connections between industries. This is ensured by developed competition and effective government policy. The advantages of economic development on the basis of clusters are the increase in the efficiency of the activities of economic entities and the reduction of costs, the comprehensive use of innovative potential by cluster participants in the creation of new products, processes and methods, the creation of innovative capital for future innovative development as a result of the implementation of innovative activities at a qualitatively new level. finds the expression for z.

4. Grouping and unification of innovation potential and innovation capital of all participants of the innovation process takes place in cluster conditions. This, in turn, -leads to the activation of the processes of integration of industrial enterprises with scientific research centers, educational institutions, state organizations and the business

sector. Clusters are a driving force in industrial development. They are based on reliable cooperation and coevolutionary agreements between participants. These agreements ensure a reliable balance in the realization of the interests of the participants as a result of full and proper coordination of integrated relations and innovative activities.

The world experience of creating clusters shows that it is appropriate to apply this technology to the development of regional innovative systems in the republic's economy: the structure of the economy is structured on the basis of clusters, science, education, risky innovations, export activities are supported by the state. allows to increase, and also, in the conditions of this integration, it creates the ground for the emergence of new opportunities for the innovative development of business and creates conditions for the increase of social and environmental responsibility of enterprises. Practice shows that the highest level of regional competitiveness is achieved due to the formation of innovative industrial clusters.

The official definition of the term innovation cluster first appeared in 2000 at the International Conference on Innovation Policy and Technology. It was at this conference that the types (typology) of innovation clusters were proposed (Table 1).

The creation of an innovation cluster is carried out on the basis of the interaction and relations of industrial enterprises with scientific and higher education institutions, with the support of state structures, in the interest of implementing an innovative policy for the development of the region. At the first stage, such communication and relations are usually formed between economic entities in the same region (of course, we are not talking about virtual clusters here, because the activity of such clusters goes beyond geographical boundaries and the development of innovative ideas and implementation stages, but where the manufacturing process is not actually implemented). Taking into account the fact that the enterprises belonging to the cluster belong to different sectors and sectors, it is possible to talk about the aspects of interaction between these economic entities not only related to the territory, but also related to the sector and sectors. When developing the policy of clusters in the development of the national economy, it is necessary to give great importance to the territorial localization of innovative cluster projects and the uniqueness of innovative clusters in terms of economic sectors.

Table 1. Types of innovation clusters

Innovation cluster type	Description	Author comments
Dependent or	It consists of technologically interrelated enterprises, sometimes territorially dispersed,	This type can be considered as the initial stage of the creation

cut type	That is, unorganized. Activity will be limited to a set of typical functions (resource extraction, processing, enrichment, shipping). Modern but not advanced technologies are used. New technologies enter production in the form of ready-to-use products	of an innovation cluster, that is, at this time there will be no stable relations with scientific organizations and state institutions.
Industrial type	A group of companies that produce similar products and services and work together. The use of new technologies is limited by quality management and personnel management.	There is no scientific basis for cluster activity, development prospects are not considered
Innovative – industrial type	A group of companies that produce and work together with products and services that require regular updating, quality improvement, and the introduction of new functional capabilities. Constant and stable relations with scientific -research institutes and educational institutions are established.	This type of cluster is based on the implementation of scientific research and development in the practical activities of the industrial enterprises connected to it
Pro-innovative type	An innovative cluster of companies aiming to quickly acquire the necessary knowledge and technologies in order to increase the current level of competitiveness	does not reveal the mechanism of realizing the innovation potential of its participants
Innovation oriented type	A cluster of companies that determines the industry, investment and social life of the region. Forms a dynamic group of companies using advanced knowledge and technologies, attracts talented labor resources from all over the world, is a consumer and creator of venture capital, scientific research of universities and other scientific institutions. defines and directs	This type of cluster is able to ensure national competitiveness and envisages a comprehensive approach to the innovative development of its participants. It is recognized as the highest level of innovation cluster development

1st table reveals the signs of innovation clusters in terms of the composition of participants, the nature of the technologies used, the basis of operation, but the typology is very conditional and it is connected or disconnected cluster based on the high level of development of the innovation cluster, allows to reveal the process of transformation into a cluster oriented towards innovation.

This specificity makes clusters instruments of innovative development strategy of regions and instruments of sector policy. From the point of view of the essence of the activities of the economic entities in the innovation cluster -and the dynamics of the processes of quantitative and qualitative changes in the composition of the cluster, the change of the territorial boundaries of the composition of the cluster participants and their belonging to a certain economic network, the innovation cluster is defined as the development of the region, industrial enterprises and various can be characterized as a large system that creates certain advantages for the development of groups of cluster participants (Table 2).

Table 2. The advantages of creating an innovative cluster in the formation of infrastructure serving the development of economic sectors

Advantages	For the area	For industrial enterprises	For other participants of the cluster
Economic advantages	Growth of investment attractiveness of the territory, increase of taxpayers and tax base	Reduction of transaction costs, investment of risky innovative projects, co-financing of marketing research	Reduction of transaction costs, increase in access to financial resources, reduction of costs for ITTKI, increase in the volume of sales
Social benefits	An increase in the number of jobs, an increase in the efficiency of the vocational education system, and an increase in the standard of living of the population.	Increase in the number of qualified personnel, emergence of new knowledge, implementation of social programs and projects	The formation of a stable network of contacts that ensures the effective introduction of inventions into innovations
Structural advantages	Creation of conditions for structural restructuring of the economy, growth of innovative potential	The cluster creates the effect of scale of production, and the basis of this effect is the innovation core.	Use of the innovative potential of other participants and create conditions for innovative ideas

Thus, the presence of innovative clusters -changes the essence of the economic policy of the region, and the actions are not focused on supporting individual enterprises, but on developing a system of mutual relations between economic entities and state institutions.

Regional policy should be aimed at creating a competitive advantage of the region based on the organization of innovative clusters as a mechanism that gives practical results in the implementation of these strategic goals.

The policy of the innovative industrial cluster represents the master plan aimed at the innovative development of the region, which includes not only the configuration of initial industries formed around new and important technologies in the region, but also the perspective production and technology scheme developed taking into account the existing resources, infrastructures and market conditions. It is necessary to find the opposite.

4. Conclusion

It can be seen that the innovation cluster is a dynamic system that ensures its development based on the use of synergistic results. The cluster policy helps to determine the initial state of relations in the region for the production of innovative products. Cluster policy -should determine the nature of technological progress at certain stages, creating conditions for the development of scientific research bases in the region and increasing its innovative potential. One of the priorities for the development of

innovative clusters should be the formation of innovative businesses that can bring advanced technologies to the surface in the domestic and foreign markets; the basis of the organization of the innovation cluster is the development of the innovative activities of industrial enterprises. Industrial enterprises, as a result of the creation and efficient operation of innovation infrastructures, provide a technological basis for the implementation of innovation processes by cluster participants.

In addition, in some studies aimed at evaluating the efficiency of innovative management of industrial enterprises, the following system of indicators is used:

- coefficient of financing innovative activities of the enterprise;
- time spent on the development of a single innovative project in the enterprise;
- demonstration of effectiveness of innovations adopted in enterprise practice;
- the time spent in the enterprise from the creation of innovative ideas to its implementation;
- coefficient of patenting of scientific developments by the enterprise;
- participation coefficient of scientific and technical employees of the enterprise in scientific publications;
- the ratio between debt and equity used in the implementation of the innovative project in the enterprise.

The above-mentioned indicators are used by experts of international organizations in evaluating the innovative activity of industrial enterprises in countries. Also, the process of compiling statistical data on these indicators is relatively simple and is reflected in the accounting reports of enterprises.

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