

Innovation Clusters as a Basis for Effective Functioning

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Abstract: This paper examines issues related to searching for new approaches to organizing and managing innovative activities at the national level, as well as creating a favorable environment for the generation, dissemination, and commercialization of innovations.

Keywords: industrial clusters, innovation, entrepreneurship, efficiency, innovation infrastructure, service.

With the deepening of globalization trends, increasing competition, the complexity of socio-economic processes, and the expansion of product and service diversification, significant attention is being paid to the effective utilization of innovation potential. The establishment of clusters in any country provides a strong impetus for the innovative development of small businesses and large enterprises.

The development of innovation clusters is implemented through the intensive introduction of research results into existing industrial companies, as well as the creation of new small and medium-sized enterprises within the value-added chain of large corporations based on public-private partnerships.

In Uzbekistan, sectoral approaches dominate the management of innovative activities, which, in turn, hinder the complete innovative renewal of the national economy. The science-intensity level of GDP remains low. Therefore, the search for new approaches in organizing and managing innovative activities at the national level, as well as the creation of a favorable environment for the generation, dissemination, and commercialization of innovations, is of pressing importance.

In the modern economy, a cluster-based approach is considered one of the most effective tools for developing regional economies and enhancing the competitiveness and innovation activity of organizations. The experience of economically developed countries demonstrates the significant role of clustering practices in fostering economic innovation.

The economic development of the global economy is characterized by the emergence of new economic concepts, the production of high-tech computer-information products, and an increase in the production of knowledge-intensive goods. These processes shape economic sectors, influencing investment climate changes, competition development, human capital attitudes, and support for innovation-driven economic growth. As a result, high-tech manufacturing industries contribute to the formation of an agro-industrial cluster system within the agricultural sector.

In the agricultural sector, the acceleration of innovative development mechanisms is achieved through the establishment and development of agro-industrial clusters. The initial scientific

developments regarding innovations were introduced by J. Schumpeter in the 1920s and are also known as "diffusion of innovations."

Since the late 20th century, global economic transformations have led to the formation of new economic management systems in various countries. These transformations involve creating a "cluster system," which includes geographically proximate enterprises engaged in production and service activities.

The organization of the agricultural sector in response to contemporary transformations has introduced terms such as "cluster," "clustering," and "cluster policy." Agricultural clustering policies contribute to the establishment of new agricultural structures in different regions, enhancing the competitiveness of local producers and leading to the emergence of new agricultural products driven by innovative impulses.

"Clusterization played a significant role in the development of the German economy, positioning it as a growth driver within the European Union. It also demonstrated high growth rates in the Finnish economy." ¹Additionally, "a significant portion of organizations in the U.S. economy operate based on this model."²

The organization of clusters in the agricultural sector involves the collaboration of closely located enterprises within a district or region, integrating agricultural enterprises and related service providers while fostering innovation-driven activities. This approach focuses on producing new types of agricultural products.

Many scholars emphasize that all clusters, to some extent, contribute to innovative development by accelerating innovation processes. Some clusters are even specialized in fulfilling this function. This concept forms the foundation of the innovation cluster model. Innovation clusters are inclined toward innovation, which is evident in the organization and development of firms, the production of goods, and the sale of products. They enhance the adoption of innovations by economic entities, optimize business operations, and improve productivity.

Summarizing the above-mentioned approaches to the interpretation of the concept of "cluster," an innovation-industrial cluster can be defined as a geographically localized complex of complementary and competitive economic entities within a specific region. In this framework, cluster entities collaborate with one another, as well as with government and local administrative bodies, to create a favorable environment for the dissemination of innovations. Moreover, they unite with the aim of enhancing the innovation activity of the cluster participants, regions, and the national economy, thereby strengthening overall competitiveness.

The cluster structure consists of three key components:

1. **The "Business" Component** – includes producers, complementary industries, suppliers of resources and services, distributors, consumers, and scientific-educational centers.
2. **The "Local Institutions" Component** – comprises universities, business schools, various associations, chambers of commerce and industry, and similar organizations.
3. **The "Government and Regional Administration" Component** – encompasses state institutions and local government authorities.

The primary objective of establishing clusters is to achieve a specific economic outcome—namely, the production of competitive products. This, in turn, enhances the efficiency of individual enterprises and accelerates economic development as a whole.

¹ Dzhukha, V. M., Kuritsyn, A. V., & Shtapova, I. S. (2010). *Economics of Sectoral Markets: A Textbook*. Rostov-on-Don: Phoenix.

² Akat'yev, V. P., Alekseeva, M. B., Bogachev, V. F., et al.; edited by Bogachev, V. F., & Stolbov, A. G. (2009). *Formation of Industrial Clusters within the Concept of Regional Innovation Development*. St. Petersburg: Info-da.

The key task in implementing the cluster model is to transform the mindset of entrepreneurs, fostering their understanding of the unique opportunities for honest, transparent, and mutually beneficial cooperation within the framework of shared economic interests.

The expected economic benefits of cluster formation include:

- **Trade-production cooperation**, which enables more efficient utilization of the total potential of cluster participants, particularly those located in border regions.
- **Reduction of modernization costs** by delegating specific tasks to specialized partners.
- **Increased efficiency in raw material and supply chain management** through the establishment of long-term partnerships.
- **Optimization of management functions** via labor division, specialization, and the involvement of specialized organizations.
- **Enhancement of investment-financial cooperation reliability** through improved inter-organizational trust.

Clusters serve as an essential foundation for the socio-economic development of a country by acting as an innovation system. The cluster-based approach promotes the emergence of innovative scientific and technological trends, expands commercialization opportunities, and indirectly supports education, science, and business, thereby laying the foundation for a knowledge-based economy.

The distinctive feature of innovation clusters compared to other economic associations lies in the fact that companies within a cluster retain their legal independence and do not fully merge with one another. Instead, they establish interaction mechanisms that enable close cooperation both among cluster members and with external enterprises.

In the modern economic landscape, innovation clusters are recognized as the most effective means of achieving high competitiveness. They integrate various organizations—including industrial companies, research centers, governmental bodies, and public associations—by leveraging the advantages of both hierarchical corporate structures and market mechanisms. This approach facilitates the faster and more efficient dissemination of new knowledge, scientific discoveries, and technological innovations.

The innovation policies of developed countries have evolved, introducing new distinctive elements, which are primarily reflected in the following aspects:

- The core principle of innovation policy is to stimulate the innovation activities of all economic agents through the formation of specialized knowledge networks within a cluster strategy framework. Presently, a new cluster-network principle of innovation policy is emerging.
- The nature of interregional innovation cooperation is also undergoing transformation. The implementation of cluster strategies and the formation of regional innovation networks have facilitated the development of transnational interactions and interregional network structures. These structures, created by the regions themselves, integrate common goals of innovation-driven development while maintaining both regional and supra-regional characteristics.

For the effective functioning of innovation clusters in the republic, it is necessary to establish favorable conditions for innovation development, ensure comprehensive government support, foster active cooperation between the state and businesses, and implement cluster policies through the creation of national innovation infrastructure.

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