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ISSUES TO IMPROVE CLUSTER FINANCING

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Abstract
The article discusses the economic importance, types and forms of clusters, their role in enhancing national competitiveness, the U.S. experience in the formation of innovative clusters and its specific features. Foreign experience in the nationalization of clusters has also been extensively analyzed. In addition, conclusions and recommendations on improving cluster financing were provided.

Keywords: innovation, cluster, innovation clusters, clustering, trade clusters, local clusters, high technology, ITTKI, Silicon Valley.

Introduction

The word cluster is widely used today in various fields of science. The word cluster is derived from the English word “cluster”, which means a group of different things or people. In economics, a cluster is, first of all, an association of various entities that are territorially close and functionally interconnected, ie organizations, manufacturing and service enterprises, research and educational institutions1. The cluster approach to economic development is a new management technology that allows to increase the competitiveness not only of a particular region or sector, but of the country as a whole. The concept of a business cluster was first introduced into economic theory by Michael Porter. According to Porter’s theory, a cluster is a group of geographically interconnected, interconnected companies, specialized suppliers, service organizations, firms in specific industries, and organizations that are simultaneously competing but collaborating at the same time. (e.g., universities, standardization agencies, as well as trade unions). The scientist believes that the cluster affects competition in three ways:

- The cluster increases the productivity of its companies;
- Creates innovations;
- Supports new business formation.

In his view, the relative advantage in the modern global economy is not in directing financial resources to heavy production, but in the development of science and

education, which allows for the constant renewal of innovations. There are three common definitions of the concept of cluster in the economic literature:

1. Cluster - a territorially limited view of economic activity within related industries attached to scientific organizations.
2. A cluster is a vertical production chain, a narrow range of industries in which the complementary stages of the production process form the core of the cluster (for example, a raw material supplier-producer-seller-consumer cluster). We can include in this category the networks that are organized around the head office.
3. Cluster - an industry with high aggregation (for example, a chemical cluster or an agro-industrial cluster with a higher aggregation).

Clustering, which creates conditions for increasing competitiveness and accelerating innovation, will allow to meet modern requirements of global competition and national and regional development. The peculiarity of the cluster is that it forms a targeted business activity, and each element of it is involved in the production chain of the final product. According to the structure of economic clusters are divided into geographical, sectoral, horizontal and vertical types. In terms of knowledge and science:

- High-Tech cluster (based on the knowledge economy and organized within universities, research institutes - Silicon Valley, East London Technology Campus, Paris-Sacle cluster);
- Clusters based on historical know-how (mainly clusters related to industry or historically leading in traditional industries; the London Stock Exchange can also be seen as a cluster);
- Factor-Based clusters (clusters created by geographic advantage, such as wine (winemaker) clusters);
- Clusters with low production costs (mainly established in developing countries to serve developed countries and often created in the textile, electronics, automotive industries);
- Clusters providing knowledge services (clusters providing programming, engineering, analytical services, mainly operating in developing countries) are different.

One of the types of clusters that has the highest efficiency and has a positive impact on the rapid development of innovation activity in the country is the innovation cluster. An innovation cluster is a group of interconnected companies and organizations operating in the field of innovation, technology, geographically close to each other, and in a cluster of innovation sector a new product or service is created as a result of the efforts of several firms or research institutes. As a result, it will be

possible to reduce production costs and introduce scientific research into practice and production. That is why today in many countries of the world a great deal of attention is paid to the cluster approach to economic development. Specific features of innovative clusters include:

● Innovative cluster system is the top system. Because it can include various clusters (construction, oil and gas, medical, etc.) that are interconnected through the process of innovation activity in the region and aim to create and disseminate innovations in this area;

● As a result of the activities of the participants of the innovation cluster, innovations are created not only in production, but also in management, organization, social work and various other areas;

● Although at first glance the participants of the innovation cluster seem to be "diverse organizations", they have a single concept of development and unite through a single innovation process, in which each participant performs a strictly defined task;

●In order to create an innovation cluster, it is necessary to have sufficient organizations in the field of innovation, as well as competence, technical capacity, logistics routes and communication channels, a system of relations to implement sustainable innovation development;

● Interaction between cluster participants is based on cooperation and competition.

This creates a system of successful cooperation, creating the conditions for the use of the main opportunities and achievements of the participants in achieving the overall result. The cluster approach to economic development is widely used, especially in the United States and Europe. The economies of the Nordic countries are dominated by clusters, with woodworking, biotechnology, pharmaceuticals and communication clusters leading the economy. Biotechnological clusters are common in Germany and the United Kingdom, while food and cosmetic clusters are common in France, while industrial clusters account for half of the industrially employed population in Italy1. As part of the Action Strategy for the five priority areas of development of the country in 2017-2021, about 300 laws and more than 4,000 resolutions of the President of the Republic of Uzbekistan have been adopted to radically reform all spheres of state and public life.

Analysis of the Relevant Literature

Analysis of the literature on the subject Although the cluster approach to the organization of production has not been used in our country for a long time, the founders of competition theory abroad have long been developing this direction. Among them are M. Porter, M. Meskon, P. Druker, A. Thompson, F. Xedouri, T. Brian

et al. Michael Porter is the founder of the theory of the use of cluster schemes in the management of existing Competitiveness. According to Michael Porter, the competitiveness of a country or region's economy depends on factors such as exchange rate, interest rate, budget deficit, cheap labor, natural resources, and productivity. While the growth of productivity in manufacturing enterprises requires the steady development of the economy, enterprises of various industries will have to improve the production process by improving product quality, expanding consumer properties, developing technologies, increasing production efficiency. As a specific tool for ensuring competitiveness, cluster schemes have been proposed, which are defined as a group of interconnected companies and their affiliated organizations located in the same area, which work together and complement each other within the same industry. This theory was later developed in F. Raines's research. F. Raines's economic views on competitiveness, like those of M. Porterniki, are mainly based on the development of the production process and product quality indicators.

At the same time, the practice of creating cluster schemes has been developed on the example of countries with long-standing market economies. Among the scientists working in this direction in the CIS countries, D. Belousov, D. Salnikov, D. Sivakov, T. Gurova, A. Voronov, A. Kidneys can be included. They did not conduct fundamental research on the subject, M. Only those who developed Porter's ideas.

The above-named researchers have studied, analyzed, drawn conclusions, and developed suggestions and recommendations on clusters in a variety of ways as part of their research. The results of the study have been used and are being used in the development and implementation of economic policies of different countries. The application of theories in practice reveals their advantages and disadvantages, and the work on the shortcomings leads to the enrichment of existing theories. In the process, diversity of opinion is conveyed and various theories can be encountered that contradict each other. Given that the concept of cluster is still a concept in the process of formation, the scientific research of scientists in this area will serve to further improve it.

Systematic work has also been done to ensure human rights, strengthen the accountability and transparency of government agencies, and increase the role of civil society institutions, the media, and the political activity of the population and public associations.

Effective measures have been taken to reform the national economy, liberalize foreign trade, tax and financial policies, support entrepreneurship and ensure the inviolability of private property, organize the deep processing of agricultural products and ensure the rapid development of the regions.

Strengthening social protection and reducing poverty has been identified as a priority of public policy, providing the population with new jobs and a guaranteed source of income, qualified medical and educational services, decent living conditions to a qualitatively new level.

As a result of the last five years of reforms, the necessary political, legal, socio-economic and scientific-educational foundations for the establishment of a new Uzbekistan have been created in our country.

Analysis and Results

In-depth analysis of complex global processes and the results of our country's development, in recent years on the basis of the principle "For Human Dignity" reforms aimed at further improving the welfare of our people, transforming economic sectors and accelerating entrepreneurship, ensuring human rights and interests In order to set priorities:

1. The Development Strategy of New Uzbekistan for 2022-2026 (hereinafter - the Development Strategy), consisting of the following seven priorities, developed on the basis of the principle "From the Strategy of Action - Towards a Development Strategy" and its "Year of Human Dignity and Active Neighborhood" To approve the state program on implementation in accordance with:

- Building a people's state by raising human dignity and further developing a free civil society;
- To make the principles of justice and the rule of law the most basic and necessary condition for development in our country;
- Accelerated development of the national economy and high growth rates;
- Fair social policy, development of human capital;
- Ensuring spiritual development and bringing the industry to a new level;
- Approach to global problems based on national interests;
- Strengthening the security and defense potential of our country, pursuing an open, pragmatic and active foreign policy.

In addition to the above laws, several programs also play an important role in the development of innovation clusters in the United States. Examples of such programs are the Regional Cluster Initiatives (2010), the Employment Promotion and Innovation Catalyst Program (2011), and the Innovation Support and Job Creation Program (2012). Today, researchers from Harvard Business School, MIT Sloan Management School, and Fox University Business School at Temple University, led by economist Michael Porter, have developed a U.S. cluster mapping methodology.

This methodology allows systematization and comparison of all types of clusters available in the country. This methodology is a revised and expanded form of M. Porter's research work "Economic Indicators of Regions" (2003). based on. The research of M. Porter, M. Delgado, S. Stern "Identification of clusters of mixed networks" (2016) contains the latest results of the methodology. According to this methodology, the country's industries are divided into "commercial" and "local". Accordingly, clusters are also divided into “commercial” and “local” clusters4. Trade clusters are a group of mixed industries that serve markets outside the region in which they are located. They are basically free to choose their location and can be grouped in several regions where there are certain competitive advantages. These types of clusters are competitive by other regional clusters as the country is inter-regional. Examples of trade clusters include financial services in New York, information technology in Silicon Valley, and the film industry in Los Angeles. Trade clusters are the “driving force” of the regional economy and contribute to the overall economic efficiency of the region. Local clusters, unlike trade clusters, consist of sectors that serve the local market. They are common in every region of the country and do not focus on the competitive advantages of a particular location. As a result, the number of jobs in a local cluster in a region is proportional to the population of that region. Local clusters are not challenged by other regional clusters because they depend on the region in which they are located. These types of clusters can include local health services pharmacies and hospitals, movie theaters, and commercial services. Information on the role of trade and local clusters in the U.S. economy is provided. From this, we can see that while the share of local clusters accounts for the majority of the employed population (64%), trade clusters demonstrate relatively higher incomes and a higher level of innovation (96.5% of total patents). In summary, local clusters provide the services needed for trade clusters, and both types of clusters are important for the growth of a regional economy. The cluster system paved the way for major changes in a short period of time. For example, in cotton growing alone, fiber processing has increased 2.5 times to 100%. The head of state stressed the need to continue this work and expand opportunities for clusters.

"The main problem is the old way of financing," he said. - It does not meet the requirements for the development of the industry. Cotton-textile clusters are asking for longer loan terms and increased amounts. This old system will now completely change.

Now the financing of the cotton harvest will begin in the plowing period, ie in October. Loans to clusters will be allocated for a period of 24 months, the grace period of which will be extended from 11 to 18 months. The cluster repays the credit it receives after

converting the raw material into at least yarn and fabric. 10 trillion soums will be allocated from the budget for the introduction of this system. To this end, an additional $ 100 million will be allocated to the Agricultural Fund by the end of the year. The clusters plan to increase the yarn recycling rate from the current 50% to 70% in the next two years. As a result, they were informed that new funding mechanisms would be introduced. For example, for the purchase of equipment for dyeing fabrics and the production of mixed fabrics, depending on the capacity of the enterprise, financial grants are provided at the expense of the state. Another $ 150 million will be allocated to finance such projects.

From next year, the practice of mortgaging raw cotton and fiber will be introduced in obtaining loans for clusters processing yarn. The meeting also instructed to further strengthen the legal guarantees for the activities of clusters. From next year, a competition will be held among insurance companies to insure fruit and vegetable crops against climate risk. Clusters and farmers with an export contract will be reimbursed 50% of the insurance premium by the state. Several gaps were identified in Sri Lanka to develop cluster-based lending for SMEs. First, SMEs cannot prepare bankable loan proposals due to their lack of technical and financial capabilities. The strong leadership of SMEs with technical capabilities is imperative to drive the SPV and to keep it alive and sustainable. Second, SMEs lack the motivation to form an SPV because they don't want to reveal their confidential business information. Although there are various associations in all the four target sectors under the ADB's technical assistance (Fruits & Vegetables, Food and Beverages, Rubber and ICT/BPO) in Sri Lanka, their major role is to diagnose various business & technical issues in the value chain and facilitate advocacy campaign to the government.

Table 1. The largest financial-innovative clusters in the United States

Specialized network	**Information about innovation clusters**	**Cluster companies, universities, research institutes, venture funds**
Pharmaceuticals	The Research Triagle Park (North Carolina), more than 80 companies, more than 10 thousand employees	Companies: ● BASF Crop Protection; ● Bayer Crop Science; ● Monsanto Corroration; ● Nufarm Americas; ● Syngenta; Universities: ● Duke University; ● North Carolina State University; ● University of North Carolina at Chapel Hill; ● North Carolina Central University; Venture companies and foundations: ● The Aurora Funds; ● Calvert Bio Capital;

		● Hatteras Venture Partners; ● Intersouth Partners; ● PappasVentures.
	● San Diego University Park (California), 18 research organizations, 3 hospitals and more than 400 pharmaceutical and biotechnology companies.	Companies and research institutes: ● La Jolla Institute for Allergy & Immunology; ● Kyowa Hakko Kirin California Inc.
	● Florida Central University Research Park (Orlando)	
	● University of Pittsburgh Center for Applied Research	
Space technologies	Companies in Seattle, Tacoma, Olympic City, Washington: ● Boeing (aircraft); ● Aerospace Industrial (search and navigation tools); ● Aaco Avionics (special electronic equipment); ● FLAerospace (navigation aids).	
	Companies in Phoenix, Arizona: ● Lockheed Martin Corr. (aerospace equipment); ● Honeywell International Inc. (various equipment); ● Space Manufacturing Inc. (navigation tools).	
Telecommunications	● Silicon Valley, California; ● Austin, Dallas (Texas); ● Denver (Colorado); ● Atlanta, Georgia.	
	● "The Research Triagle Park (North Carolina) is a wireless telecommunications equipment industry cluster.	Companies: ● "Smart Phone"; ● Black Berry; ● Cisco (telecomm.); ● IBM (computers, storage media, Internet); ● NetApp (data storage system); ● Ericsson (telecommunications facilities and services); ● Garmin (navigation aids); ● HTC (mobile devices); ● Research In Motion

Nuclear technologies	• Nuclear Energy Modeling & Simulation Energy Innovation Hub at Oakridge National Laboratory (Tennessee)	Scientific research institutes: ●Electric Power Research Institute (California); ●Los Alamos National Laboratory (New Mexico); ●Westinghouse Electric Company (Pennsylvania).

Table 1 provides information on major clusters in the United States in various sectors. According to the table, the role of innovation clusters in the US economy is very high, with the cluster The Research Triagle Park in North Carolina and Silicon Valley in California in terms of size and efficiency.

Conclusions

Thus, an analysis of foreign experience on cluster policy has shown that while this policy has been successfully implemented in some countries, it has also had negative consequences in others. In Canada, the focus is not only on supporting innovation, but also on monitoring its implementation. It is known that Uzbekistan is taking the first steps to implement a cluster policy. Therefore, analyzing the experience of foreign countries, we recommend to pay attention to the following aspects:

1) Strengthening ties between various sectors of the economy;
2)Organization and development of technological networks;
3) Development of knowledge transfer system;
4) Proper organization of the system of commercialization of scientific developments;
5) Increase of scientific grants organized by the state for the purpose of stimulation of scientific research activity;
6) Do not blindly use foreign experience in the formation and development of clusters, take into account the specifics of the region and population.

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