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## МЕТОДОЛОГІЧНІ ЗАСАДИ ВИЗНАЧЕННЯ КОМПЕТЕНЦІЙ СУБ'ЄКТІВ ГОСПОДАРЮВАННЯ ДЛЯ ФОРМУВАННЯ ІННОВАЦІЙНО-ІНВЕСТИЦІЙНИХ ПРОМИСЛОВИХ КЛАСТЕРІВ

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**Розглянуто сутність компетенцій суб'єктів господарювання, важливість створення інноваційно-інвестиційних кластерів, методологія і послідовність визначення ключових компетенцій підприємств для формування інноваційно-інвестиційних кластерів.**

**Ключові слова:** компетенції, ланцюг цінностей, кластер, додана вартість, конкурентна перевага, інноваційний кластер.

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## METHODOLOGICAL PRINCIPLES OF DEFINITION OF ECONOMIC ENTITY'S COMPETENCE TO FORMING OF INNOVATIVE-INVESTMENT INDUSTRY CLUSTERS

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**In the article the essence of economic entity's competencies, the importance of creating innovation-investment clusters, methodology and sequence of determination of economic entity's key competencies to create innovative investment clusters are considered.**

**Key words:** competences, chain of values, cluster, added value, competitive advantage, innovation cluster.

**Statement of the problem.** Today the most effective form of innovative processes organization is clustering in the region that in the market operate not only single enterprises but entire complexes and associations, which because of this reduces its spending activity. These associations help to increase productivity, accelerate innovation in production; can also contribute to improving the competitiveness of the economy, without requiring significant funds. Association into the cluster enables to create a specific economic space, whereby the expansion of exports, expanding free trade cluster, the free movement of human resources and capital.

**Analysis of recent research and publications.** The study of the issues of clustering, identifying the key competencies for its forming is reflected in the writings of scientist such as M. Porter (2005), A. Brouwer et al (2006), A. Shastitko (2009), G. Hamell, K. Prahalad (2002). An important contribution to the theory and practice of formation of the cluster model was made by Ukrainian scientists S. Sokolenko (2004), N. Voinarenko (2011), V. Zakharchenko (2012). Innovative clusters can act as institutional mechanisms for the implementation of the relevant innovative solutions. Also the methodology for determining competencies for the formation of innovation clusters in domestic literature is not enough.

**Goals of the article.** The aim of the article is to determine the methodological basis for the definition of competences of business entities for the formation of innovative industrial clusters.

**The main material of research.** The official definition of the innovative cluster first appeared in 2000 in the framework of the International conference by innovation policy and technology.

The classical definition of a cluster is definition of M. Porter, who was considered a cluster as “geographically concentrated groups of interconnected companies, specialized service providers, firms in related industries and associated organizations (for example, universities, standards agencies, trade associations) in particular fields that compete but at the same time and work together” (Porter, 2005).

The creation of a cluster in the regional economy to ensure concentration of production and sales of finished products, cooperation efforts over the dissemination of innovative processes, providing for competition, communication processes within the cluster forming and joint coordination of activities.

In addition, territorial production clusters should support small and medium business. That is why traditional approaches to the development of small and medium business it is necessary to include regional, based on the creation of innovative-investment clusters.

The competence of the enterprises united into a cluster, giving the possibility to correctly solve tasks, to successfully operate on the basis of practical experience. These factors combine to increase the region’s competitiveness, creating new conditions and requirements for doing business.

State support has influent into the initial development of the cluster as it creates the preconditions for the combination of national vision, economic development strategy and regional capacity, which may affect the actual development.

The directions of the state regional cluster policy include:

- study of the development of economic clusters at the regional level, namely monitoring of the structure of the cluster, the territory of its separate parts, financing analytical studies of the prospects of cluster development on foreign markets, evaluation of the influence of the cluster on the region and the socio-economic sphere;
- creation of communication links for potential participants of innovative clusters due to its occurrence in the process of development and consideration of regional development strategies, promoting the exchange of experience between regions on the establishment of cluster policy;
- promoting the inclusion of members of the cluster programs promoting its access to foreign markets, implementation of joint marketing and advertising research, facilitate networking opportunities and bring together educational institutions and enterprises;
- development of communication-information infrastructure;
- formation of the institutional environment for the development of economic clusters.

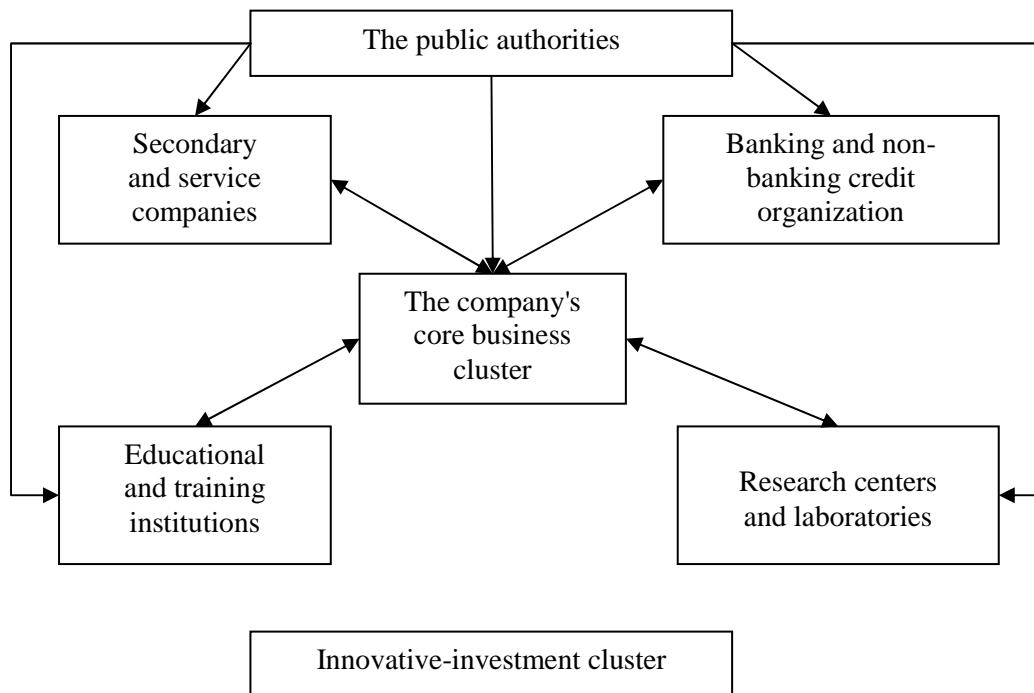
It should highlight the features of innovative cluster, which allow determining the system of its essential characteristics:

- 1) innovative-investment cluster acts as a super-system because it involves different types of clusters that are created through innovation that involve the formation and dissemination in the environment;
- 2) through innovation, the participants in this cluster present the results in the form of innovation not only in production but also in management, social work, organization and some like this;
- 3) the participants of the innovative cluster are different companies that are linked by a single development strategy and the innovation process, but each of them performs its functions;
- 4) to create an innovation cluster must have certain competencies, technical capabilities, logistic communication channels, relations with the aim of ongoing innovative development;
- 5) on the basis of a competition to build relationships between participants that leads to successful collaboration and provides the ability to use the key competencies to achieve high results.

Innovation cluster provides the opportunity to achieve a high level of competitiveness, also acts as an informal association of efforts of various enterprises. The purpose of formation of an innovation cluster is a complex task, due to the concentration and unification of the region’s strengths. An important role in the establishment and operation of such a cluster local institutions are played, exploring the area on relevant topics.

The association cluster provides to the dissemination of new knowledge, technologies and innovations. The most important is the creation of sustainable relationships between all members of the cluster that will ensure the effective transformation of innovation into competitive advantage (fig. 1).

The processes of clusters formation in the national economy are characterized by a low effectiveness of the established structures and the lack of such an environment that will encourage the formation of innovative-investment clusters.



*Fig. 1. Basic structural elements of an innovation cluster, authors*

The main reasons for the poor distribution of such processes in Ukraine, we consider:

- ineffective government control of innovative-investment activity through a system of financial and economic policy;
- randomness in adoption of legal acts related to innovation and investment activity in the national economy;
- lack of state support of innovative and investment activity of economic entities in the national economy;
- lack of legal support processes of clustering;
- weak innovation and investment activity of industrial enterprises;
- ongoing transformation processes in the national economy;
- political upheavals during the 2013–2016 period;
- chaotic processes in the banking sphere;
- the global financial crisis in the national economy.

For Ukraine the clusters' associations are organizational and economic innovation, however, there are more than 20 clusters (some clusters of Ukraine are shown in tab. 1), but they are all created without the support at national and regional level.

As defined in the study, a significant competence of the entities are knowledge, skills, technologies, models, methodology and so on, which are the main instrument in the formation of innovative-investment activity of industrial clusters for the purpose of strategic development entities and long-term competitive advantage.

According to the Strategy of sustainable development “Ukraine – 2020” (Decree of President of Ukraine), the introduction in Ukraine of European living standards and Ukraine's withdrawal to the leading position in the world will be by vector of development, to ensure sustainable development of the state, structural reform, higher standards of living. Ukraine should become a state with a strong economy and innovations. Proposed strategic framework confirms the need of formation of innovative-investment activity of industrial clusters, both at the national level and the regional one.

Cluster association of Ukraine

Region	Period	Clusters
Podillya, Khmelnitsk, Vinnytsia, Ternopil	Since 2005	<ul style="list-style-type: none"> <li>– new building materials;</li> <li>– the protection and commercialization of cultural heritage;</li> <li>– information and educational spheres;</li> <li>– cluster of organic farming;</li> <li>– fruit cluster “Podolsky Apple”.</li> </ul>
Prikarpattya	Since 2000	<ul style="list-style-type: none"> <li>– tourism;</li> <li>– production of souvenir products;</li> <li>– manufacture of articles of fur;</li> <li>– woodworking;</li> <li>– construction and building materials;</li> <li>– processing of herbs;</li> <li>– conservation and protection of mountain rivers;</li> <li>– historical and cultural heritage;</li> <li>– sewing;</li> <li>– fur;</li> <li>– food;</li> <li>– medicine and therapeutic;</li> <li>– recreation and tourism.</li> </ul>
Rivno	Since 2000	– woodworking Rocketmusic district
Odessa	Since 2007	Production and processing of agricultural products Under development – cluster winemaking

Innovative-investment activity of industrial clusters is an association of business entities that create and innovate. It should be noted that statistics of innovation explores innovation activity of economic entities two aspects: innovation activity and innovation. The characteristics and components of innovative-investment activity of industrial cluster are shown in fig. 2.

Innovative-investment development of industrial clusters effective complex uses all its components. The basis of formation of innovative-investment activity of industrial clusters must be industrial businesses that are innovation-active and innovate. In tab. 2 the study of innovative activity and implementation of innovations at industrial enterprises in the period 2000-2015 is done. It should be noted that the decline in investment activity observed in recent years, is connected with the reduction of innovative activity of economic entities.

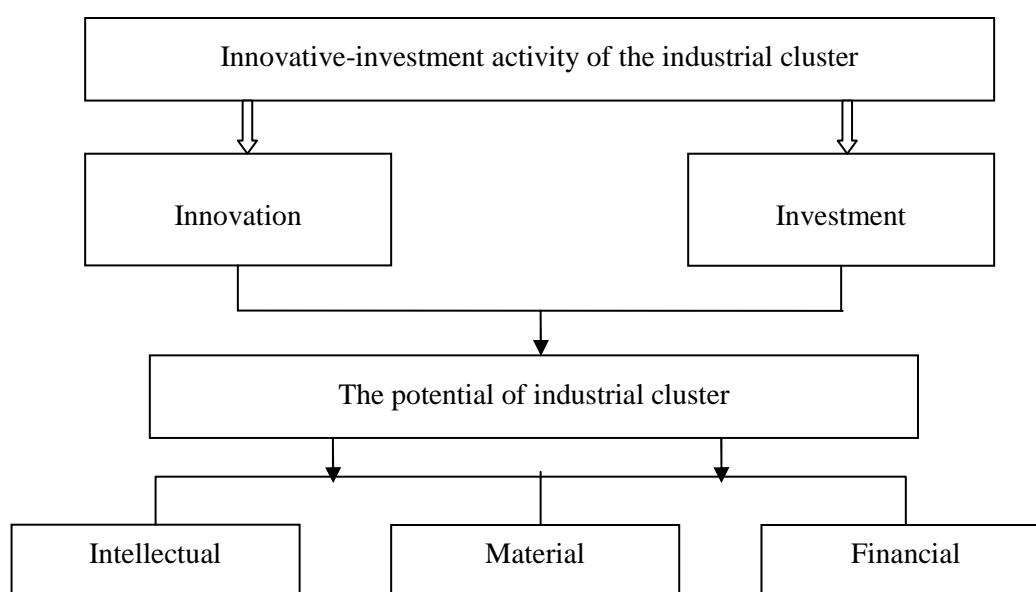


Fig. 2. Characteristics and components of innovative-investment activity of industrial cluster

Analytical parameters in the tab. 2 suggest that the number of enterprises that creates innovations and implementing them differ. This suggests that not all innovations come to life. However, the availability of long-term strategic formation of innovative-investment activity of industrial clusters shows the analytical dynamics of creation and introduction of innovations in industry of the national economy (fig. 3).

So, in 2015, created an innovation for 16,3 % of enterprises introduced innovations only about three quarters of industrial enterprises or 11,9 %, which are innovation-active.

*Table 2*

**Dynamics of innovative activity and implementation of innovations at industrial enterprises of Ukraine for 2000-2015, authors based on information of the State Statistics Service of Ukraine**

Years	The share of companies, creating innovation, %	The share of companies that introduced innovations, %	Dynamics of indicators of companies created innovation, %	Dynamics of indicators of the companies that introduced innovations, %
1	2	3	4	5
2000	18,0	14,8	100,0	100,0
2001	16,5	14,3	91,7	96,6
2002	18,0	14,6	109,1	102,1
2003	15,1	11,5	83,9	78,8
2004	13,7	10,0	90,7	87,0
2005	11,9	8,2	86,9	82,0
2006	11,2	10,0	94,1	122,0
2007	14,2	11,5	126,8	115,0
2008	13,0	10,8	91,6	93,9
2009	12,8	10,7	98,5	99,1
2010	13,8	11,5	107,8	107,5
2011	16,2	12,8	117,4	111,3
2012	17,4	13,6	107,4	106,3
2013	16,8	13,6	96,6	100,0
2014	16,1	12,1	95,8	89,0
2015	16,3	11,9	101,2	98,3

Key categories for statistical studies of innovation – active innovative enterprise, innovative enterprise, innovation activity, introduction of innovations, for use in a cluster approach would require methodological support, which is an element for further research.

The establishment of the business relationships that are based on a desire to satisfy the needs of consumer products is the task of the innovation cluster. That is why different entities based on commercial interests, competition and the possible options of reducing expenditure, unite business relationships in the chain of added value creation.

Thus, an effective policy of modernization of the region must have as a basis the circuit of value creation that already exist or emerging in the region.

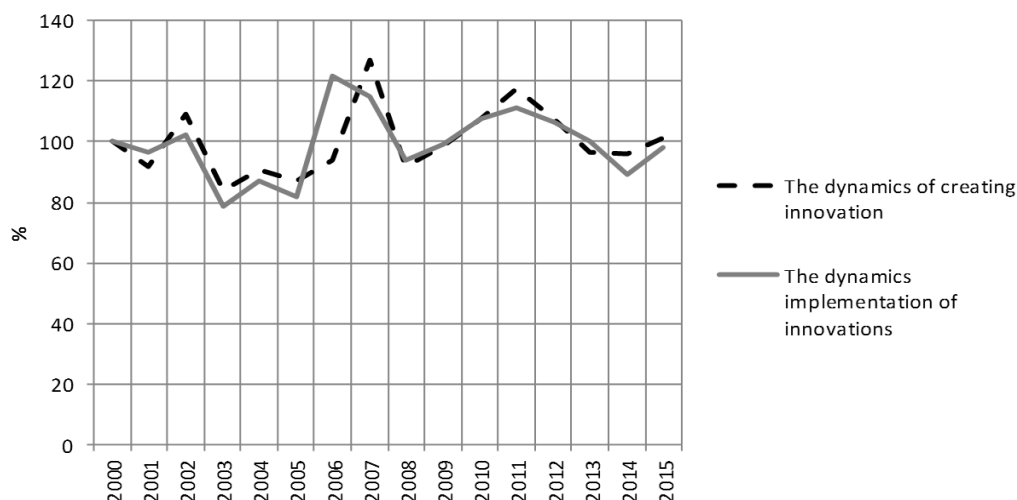
In today's world practice there is the concept of creating a value added product, which was introduced by M. Porter (2005). It is widely used for the formation of the development strategy. The essence of this concept is that each sector in the national economy is considered as a chain of industries that consistently add value to end product consumption.

Classic chain of added value formation consists of seven major economic activities conducted by enterprises in various areas of functioning. They include: research, development, supply, production, marketing, sale and service. Each individual function can create value has a unique set of factors that determine the differences in costs for these activities. Thus, each organization has its own individual sources of competitive advantage (Uvarova, 2011).

The key success factors that form the profitability of entities and increase of its capitalization, determine the requirements for circuit values. Such factors include: quality, time, cost reduction, customer service and performance of the product.

For the company better focus its resources in one particular chain link, in which you can achieve some significant advantages and provide the greatest financial return, through the use of its core competencies. When a business entity is a basic unit with high added value, it has the ability to influence partners and to submit own price terms.

The development of the concept of value chain products has provided an opportunity for many business entities to determine own core competencies, focus on them all own resources and to refuse to perform those functions that require large expenditures of time, labour and money than is spent on specialized only on these processes, subjects.



*Fig. 3. Dynamics of the creation and implementation of innovations in industry of the national economy, authors*

The key competence of the company (KCC) is a unique and difficult reproducible knowledge, skills, technology, know-how and the like, which are formed on the basis of experience of the operation of the company and provide the company a sustainable and long term competitive advantages through the creation of additional consumer value of the product (Suhanyuk and Yakovenko).

Core competencies provide access to a wide range of markets; create additional consumer value of the product (it is CCP creates the most value, which takes the consumer); provide a synergistic effect. They also have features such as uniqueness, complexity, durability and abrasion resistance, originality, indispensability, possibility of improvement and a focus on the consumer.

In modern economic literature there are two main approaches to the definition and analysis of the core competencies of the company.

In accordance with the first approach, media competence is individuals, individuals that carry out a particular work activity; it analyzes the intangible assets of the enterprise (Verba and Hrebeshkova, 2004). Competence mapping is done through interviews, psychological tests, interviews and the like. The disadvantage of this approach is the excessive concentration on business and personal qualities of employees and subjectivism, however, the core competencies of a business entity is a broader concept.

According to the second approach, competence assessment is based on an analysis of all assets that can be the source of competence. Methods of assessing key competences by V. S. Efremov and I. A. Janikova are widespread (Efremov and Janikova, 2002), according to which assessment and analysis of market and internal business environment, core competence is defined and developed a strategic plan. The advantages of this method are the logical structures of analysis, clarity and accessibility of explanations of individual stages of assessment of key competencies based on the proportion of use-value. The disadvantages are the complexity and subjectivity in the formation of the matrix and weak (not two way) relationship between core competence and strategy of the enterprise (Poberezhets, 2007:165).

First, the company has a number of internal and external competencies and decides about the implementation of the diversification program for the formation of innovation cluster.

Internal competencies include:

- innovative technologies;
- innovative processes in business;
- innovation management;
- internal competitiveness;
- innovative labor potential.

External competencies include:

- the relationship with contractors;
- financial and investment support;
- political support;
- innovative security on the macro level.

We can offer the following methods of determining core competencies of business entities.

The first step is defining and identifying: a study of the status and structure of resource provision of the entity, determine the sources of competitive advantages. The result of this step is possible competence of a business entity. A study of the competencies of a business entity, necessary for the formation of the cluster study projects that the entity is already implementing.

The next step is to determine which tangible and intangible resources, i.e. competence, used business entity for the implementation of implemented business projects.

The following structure of the value of finished products, goods, works and services the entity provides an opportunity to understand what the internal components and in what proportions the property consists of the final product, what abilities, resources and competences were involved in the production of these components. This will help to more accurately focus the activities of the strategic plan the activities of the entity. Properties of finished products, goods, works and services are distributed according to the degree of importance using the method of pairwise comparisons.

Next, it is determined if the kinds of assets owned by the units of the entity. This is necessary in order to identify key competences of the individual parts of the enterprise, uncover additional skills and capabilities that exist in the structural segments of the enterprise. That is why the ability defines all resources that belong to the business entity.

So, on this stage of the study it can be concluded about the essential competencies of the entity, given that each property of the finished products, which is part of the structure of consumer value, has a different weight for consumers on the market.

After the stage of definition and identification of core competencies and assessment of what resources the business entity achieves success in the implementation of projects and their dynamics, we investigate the potential of this enterprise. It appears that, as you can use your own capital to innovative cluster formation, taking into account the selected key competences.

You need to search for strategic matches between activities (operating, financial, investment) enterprises that are already underway, and new, limited and guided by the activity of the cluster. The definition of such mappings is possible in the following areas:

- market (type of customer, distribution channels, service, brand, advertising companies);
- production (total production capacity, technology, competitors);
- management (structure and management system, the knowledge and experience of management personnel).

The next step is to create a model of the internal structure of relationships and dependencies between existing resources and potential capabilities and competencies possessed by the economic entity. Naturally, this takes into account not only the current level of resources, but the resources necessary for the further activity of the enterprise considering entering into an innovative cluster.

As a result of this system of research competencies, the entity has an idea of what projects it can realize in the modern market conditions and the development of what competences needed to implement the strategy of diversifying an active entity on a segment component.

At this stage you need to select the business projects under the program of diversification of resources that meet the requirements to key competences of a business entity.

Based on the analytical information research, the formation of the strategic plan is based on the rule of reverse logic is defined by the carriers of core competencies, identified by capabilities (business-processes) and the resources they control, and further development of the business is built to support and development of these and directly related elements of the segmental system of the entity.

Given the above, we can conclude: the basis of competition of economic entities not acting as end-finished products, which is the result of production and are a key competence that is the core of enterprise activity.

Thus, the entities that are positioning to market only its finished products, often do not take into account the possibility of obtaining additional financial result from the existing key competences and

opportunities for developing a network of relations between economic entities on the production of finished products, goods, works and services. Many domestic enterprises form a self-contained business process, creating a vertically integrated company, resulting in erosion of financial resources and long period of formation of key competencies.

**Conclusions and recommendations for further research.** Identification and assessment by the entity of its core competence in the formation of innovative-investment cluster allows you to accurately choose activities in this cluster that will yield the greatest financial results and impact. Competencies help to maintain the planned behavior of the entity when entering the innovation cluster.

Each participant of the innovation cluster may be a specific competence, despite the fact that they use it as a competitive advantage or not, but the lack of key competencies leads to a rapid displacement of the holder from the cluster. Core competence enables long-term operations of a business entity and effective activity in the cluster using the uniqueness and diversity of its activities. Also competence is a source of creating competitive advantages of the subject in the formation of innovative-investment clusters.

To help identify the most important key competence, it is necessary to take into account their most important characteristics, namely universality, the complexity of copying by competitors and providing a competitive advantage.

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