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Clustering of Modern Economic Processes: “Pros” and “Cons”

Victoria V. Prokhorova¹, Aleksandr A. Adamenko², Vitaly A. Tupchienko³, Vasily V. Shalotov⁴, Sergei A. Vasnev⁵ and Viktor A. Blagin⁶

¹Kuban State Technological University, Krasnodar, Russia

²Kuban State Agrarian University named after I.T. Trubilin, Krasnodar, Russia. Email: ad-am83@mail.ru

³National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia

⁴Adyghe State University, Maykop, Russia

⁵Russian Presidential Academy of National Economy and Public Administration, Moscow, Russia

⁶Ural State University of Economics, Yekaterinburg, Russia

ABSTRACT

The purpose of this study is to assess the significance of clusters as an effective form of innovation and socio-economic development of the region (through the development set - and complexation, competition, employment, job creation, inclusion in the investment process, not only the state and big business, but small and medium, through the improvement of quality of life and quality of the population). The work is devoted to theoretical and methodological foundations of clustering. For this purpose, on the basis of experience of foreign researchers of this phenomenon, defines some basic characteristics and types of clusters. For the formation of a holistic view of the conceptual framework of cluster theory and the conduct of the boundaries between the clusters, and often confused with them concepts, a review and analysis of the main similar to the clusters of theoretical constructs. Examples of previous theories, similar and related concepts, discusses the issues of the historical formation of the cluster theory. Also, the first Chapter provides a typology of clusters according to different characteristics. Characterized the structure clustering. The object of the study are clusters as an organizational form of spatial integration of production. The subject of research is the system of relationships among internal and external factors that influence the performance of clusters.

JEL Classification: P25, R12, P28, R1.

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1. INTRODUCTION

Conditions of intense international competition and the development of globalization processes largely determine the stability of the Russian economy. This resistance is due to the ability of the regions to be competitive in the international market. Therefore, before Russia should be the main economic priority in increasing competitiveness. In connection with these realities, the cluster approach is of interest to the state. According to the cluster approach, the region can be competitive if there are interconnected industry.

In this regard, in 2012 the Ministry of Economy of the Russian Federation developed and approved the project of creation of innovative territorial clusters. In the system of criteria for the selection of clusters was used four blocks of criteria: scientific, technological and educational potential; industrial potential of the cluster; quality of life and level of development of transport, energy, engineering, housing and infrastructure territory-based cluster; the level of organizational development of the cluster.

In the process of selecting the most suitable for the development of clusters of regions were evaluated: the current level, prospects of development, the system measures direction.

Given the fact that all criteria were recognized as equal in the selection process were taken into account as the current state of the object, and its growth potential. In the future, win a cluster with a high potential, and at the same time characterized by the expected high dynamics of development, grounded in the development program.

The basis for the study were scientific works of the classics of the economic theory of domestic and foreign scientists in the field of economy and competitiveness clusters, exploring the issues of their market situations and competition. In the research process, as methodological tools were used for comparative, systematic and situational analysis, expert estimations, methods of synthesis of research.

2. DEFINITION OF ECONOMIC CLUSTER

The concept of a cluster – first appeared in the list of products of the company IBM in 1991. The concept has many interpretations and is used in various fields of science, economy and society.

In astronomy, the stellar cluster is a group of stars connected to each other by gravity.

In linguistics – a cluster is a group of close languages and dialects.

In the information technology cluster is a group of computers connected by high-speed links, representing the user's perspective, a single hardware resource.

In meteorology – a cluster is, for example, the combination of a cumulonimbus cloud.

Michael porter, an American scholar in economic science was first introduced the concept of “cluster” to characterize a specific form of organization of production (business) in the study of issues of international competition. By definition, porter a cluster is “geographical concentration of firms, suppliers, related industries that play a special role in individual Nations, countries and cities...” (Kibalov, Komarov, & Pakhomov, 2007).

Clusters lead to a new perspective on the economy and its development, new roles of business, government and institutions and new ways to structure the relationship between the type of business, the government or business institutions. This definition of porter cites in the section “Competitiveness

of regions" in the introduction to his famous book "Competition", which, first, indicates the Central role of regional factors in the processes of clustering and, secondly, focuses on the role of country-specific institutional environment in these processes. Definition of porter can be formulated differently: a cluster is a group of geographically localized interconnected companies, suppliers of equipment, components, specialized services, research institutes, universities and other organizations complementing each other and reinforcing the competitive advantages of individual companies and the cluster as a whole, but at the same time and competing with each other (Kryukov, 2007). In addition to Porter, on the subject of clustering, theorized, and other scientists.

E. Leamer considered clusters with a high level of correlation in the analysis of the export trade at the national level (Leamer, 1984).

J. Tolenado and D. Soulie, French scientists who used the term "dies" to describe a group of technology sectors (Tolenado, 1978; Soulie, 1989). The formation of file row was explained by the dependence of one sector from another on the technological level. Thus, the die is a narrower interpretation of the cluster being based on one of the criteria of emergence of a cluster on the need to create technological linkages between industries and economic sectors to realize their potential benefits.

E. Dahmen also uses the cluster approach in their designs. His cluster theory is mainly formed on the structure of the national economy, but rather on the linkages of major Swedish multinational corporations. Here the clusters are based on the thesis of E. Dahmen "blocks of development" (Dahmen, 1950). The basis for the development of competitive success Dahmen is the link between the ability of one sector to develop and ability to make progress in the other. Development should occur in stages, or "vertical action" within one sector with other sectors that will provide the opportunity for gaining a competitive edge (Mattsson, 1987).

V. Feldman developed the most modern theory of competitiveness based on clusters. The advantages of this theory lie in the fact that they are based on extensive empirical studies of diversification forms in different countries (Feldman & Audretsch, 1999). The essence of the theory is the following. Diversification is often followed by the matrix of the "input – output" or contacts between industries linked by relations of supply and acquisition. This is consistent with the mechanisms that lead to the formation of clusters. Moreover, the most viable clusters of innovative activity are formed on the basis of diversification.

Successful international competitiveness of firms' number of developed countries of the world porter explained by the presence in their economies of clusters. He identified four major determinants of competitive advantages of countries, depicting them as vertices of a rhombus (the picture of the diamond in some translations called "diamond" or "diamond" by Porter): environment for factors; demand; presence of related and supporting industries; the conditions for sustainable strategy, structure and rivalry. In addition, the porter pointed to the existence of two independent determinants on the firms are the government and the case (for example, war or natural disasters). "...The system of the determinants, - he said, - leads to a competitive national industry is not distributed evenly throughout the economy but are connected in what can be called clusters (bundles), consisting of industries that rely on each other" (Porter, 1993).

However, despite the diversity of theories of economic clusters, science often use the approach of porter.

It should be emphasized that clusters porter called related and supporting industries. In addition, he drew attention to the fact that the high competitiveness of firms in global markets is largely due to the specificity of their location, i.e. the competitive environment that surrounds them. Since the greatest geographical concentration of production is observed in the locations of industries, porter used in his works the concept of “industrial cluster, regional cluster, industrial cluster”, etc. He did not give an unambiguous definition of these concepts, and constantly refined, keeping the basis – the presence of certain types of relationships between firms that form the cluster.

The idea of porter was one of the most significant manifestations of the approach, due to the localization of the economy, and in fact, may be the most significant. Moreover, he proposes the idea of the cluster not only as an analytical concept, but also as a tool of economic policy. In modern conditions, the cluster concept is becoming increasingly linked with the so-called “knowledge economy”, “information economy”, or what is sometimes referred to as the “new economy”.

3. LOOK AT THE SPELLING SCIENTISTS M. PORTER'S THEORY

However, in the opinion of some scientists, in the theory of M. porter has some drawbacks. In particular, the cluster definition is based on the principle of spatial proximity. The problem in this case is that geographical terminology is used very loosely, probably as himself admits porter, depending on what the purpose of a diagnosis or who is the customer or the contractor of this study. The main drawback of this theory is that it does not contain any indication of limitations in space, that there are various processes of formation of clusters. If the same network structure on the basis of which the typical clusters have a variety of spatial scales, it weakens the theoretical and analytical significance of the concept of clusters.

The lack of geographical precision in existing definitions of cluster and coherence between them is further compounded by the uncertainty of typologies of clusters and schemes of their evolution (Kobersy, Barmuta, Muradova, Dubrova, & Shkurkin, 2015). Porter argued that clusters “vary in size, capacity and stage of development”. Some clusters are, in his opinion, consist mainly of small and medium-sized firms (he cites as an example the cluster of footwear production in Italy cluster for the production of home furniture in North Carolina). Other clusters are composed of both small and large firms (an example is the cluster of the chemical industry in Germany). There are clusters organized on the basis of universities, and clusters that are not associated with universities, clusters, traditional industries and clusters in high-tech industries. There are also emerging clusters, new clusters, Mature clusters and clusters decaying.

But the main drawback of the theory of clusters is its incompleteness, at least, in the presentation of the porter. The question arises: what gives the economy of the region of the boundaries of the cluster? In the recent works of porter tries to answer this question from the perspective of a specific industrial policy. In particular, the identification of so-called exemplary or successful clusters and disseminate their experience to the clusters of other regions.

4. MODELS OF CLUSTERING

In accordance with the key parameters there are two clustering models:

Built the type “hub spokes” (in the classification of E. Markusen) with one or a few dominant enterprises, concentrating around itself, the company is vertically connected with the backbone enterprise (Figure 1).

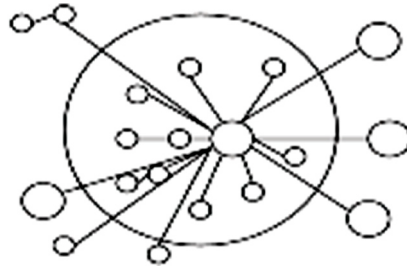


Figure 1: Cluster model "Hub spokes" (Markusen, 1996)

Flexible network of firms with a predominantly horizontal relationship, which is not expressed clearly the role of any leader, Association of the companies is based on strong historical or cognitive relationships, supported by favorable institutional conditions, such as the Italian industrial districts and industrial districts, Marshall classification E. Markusen (Figure 2).

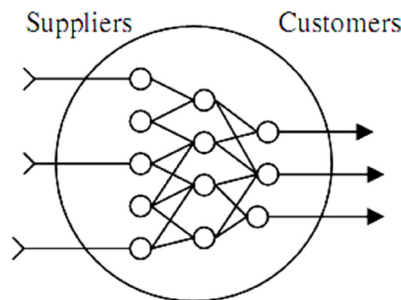


Figure 2: Cluster model "Flexible network" (Markusen, 1996)

The choice of the above two models of clustering, despite the existence of many alternative approaches to the classification of clusters, it seems quite justified for the following reasons.

First, the considered types of clusters are probably the most universal and comprehensible.

Secondly, in one form or another, a similar typology is presented in the works of many researchers of the cluster phenomenon and reflects the diametrically opposed ways of clustering.

M. Enright, therefore, uses the term "management structure of the cluster", referring to the relationship between firms from the perspective of the way of organizing transactions and distribution of power (Enright, 2000). According to the Enright approach, management structure does not mean a form of management associated with the initiatives for cluster development, or management of specific forms of organizations in the cluster. Transactions can be attributed to commodity markets, various types of coalitions, other forms of relationships or hierarchies within firms (Lomova, Shiryayev, Kobersy, Borisova, & Shkurkin, 2016). Clusters can be detected by a variety of forms of organization of industry: the prevalence of small companies to the domination of one large Corporation, and many forms in between these extreme.

We can assume that the considered clustering models differ not only in organizational, but also at the institutional level.

There are many tools that can be used for the practical solution of problems of identification and evaluation of clusters from simple measures of specialization (for example, by coefficients of localization) to procedures based on the analysis of matrix of interbranch balance.

E. Bergman and E. Feather, for example, indicate two main groups of research methods clusters: micro-oriented (micro-level) methods, and intersectoral cluster analysis (Bergmen & Feser, 1999).

The first group of methods they consider suitable for situations where the regions highlighted in the leading industry, but unknown mechanisms that allow individual firms to strengthen their competitive advantages in cooperation with other companies within these industries.

The second group are applicable in less certain situations, for example when the regions want to reveal as yet not clearly established mechanisms of interaction and potential alliances between the well-known basic industries, are still underdeveloped.

Innovative cluster is the most effective form of achieving high level of competitiveness. It is an Association of various organizations (industrial companies, research centers, public administration bodies, public organizations, etc.), which allows to use the advantages of the two methods of coordination of the economic system - internal hierarchy and the market mechanism. This gives you the opportunity to more quickly and efficiently distribute new knowledge, scientific discoveries and inventions.

5. CLUSTERING OF MODERN ECONOMIC PROCESSES

Occurrence and distribution of clusters and innovation activity are natural process. Trends in the formation of clusters often have joint research and production base, more successful development of the cluster can be guaranteed only provided that the scientific base allows you to build a cluster of not specialized and differentiated by type.

The production structure of the cluster is always more favorable than the industry, as their intercompany communication closer. The cluster generates economies of scale of production, which is based on the presence in the face of a company innovation cluster nuclei for the production of a certain type of product or service.

The advantage is also the cluster coverage effect that arises when there are factors of production, which can be used both for the production of several types of products. This factor is characterized by multi-functional nature. When grouping firms into clusters coverage effect is greatly enhanced, as there is a possibility to use multi-factor at various enterprises while minimizing transaction costs associated with its transmission.

Cluster production structure synthesizes synergies arising on the basis of universal standardization of products. Therefore, all cluster members receive additional competitive advantages under the influence cumulative effect of economies of scale, scope and synergies. The mechanism of their effect is as follows: non-profit enterprise cluster can overcome the lower limit of profitability with the help of expertise, ensuring an increase in productivity and reduction of production costs.

The innovative structure of the cluster helps to reduce the total cost of the research and development of innovations by enhancing the effect of the production structure that allows the participants to cluster consistently to innovate in the long term.

Benefits of the existing competitiveness of the theories have been tested in practice. Achievements most prosperous economies suggest the usefulness of the considered theories and for the development of the competitiveness of the economies in transition.

6. CONCLUSIONS

In recent years in our country has increased interest in the issue of competitiveness, which is due to the globalization of the world economy. In this regard, the main objective of the national economy of Russia is to increase the country's GDP, the achievement of which is carried out by means of specific tasks. One of the priorities of the state economic policy is to increase the competitiveness of the various actors. Therefore, there is a need to identify the competitive advantages of the region under study needed to determine the priorities of the socio-economic development in the economic space of the country compared with other regions.

Implementation of comparative advantage, turning them into a competitive advantage of regional economy is carried out primarily through the structural and territorial policies. The idea is that the economic benefits of resource allocation structure corresponded to the structure of production. The basis for the solution of practical problems of institutionalization of territorial-production integration of the theory of clusters.

Russia - a vast country with enormous potential. Unfortunately, our technology behind the technology in developed countries 3-5 years, and the economic crisis and foreign policy issues even more aggravate the situation (Novikov, Klochko, Yarushkina, Zhukov, & Dianova, 2015). Today, the state is a fundamental task of renewal of fixed assets, the creation of high-tech means of production, the characteristics of which should exceed a margin settings analogues in the world. Successful innovation is not always associated with mining operations and development of a knowledge. "Asian Tigers" never before has a powerful science that did not stop them to express themselves in high-tech areas.

In connection with the need to improve competitiveness, the Ministry of Economic Development of the Russian Federation created 26 clusters in the territory of the Russian Federation.

Create a cluster form is due to a decrease costs for various activities, it promotes the creation of innovative products, increases investment demand. To date, there is a copious funding of clusters created in different regions of the country, but the problem is that there is no effective impact of this. Billions of rubles are going to finance the 26 clusters, of which only 4 are functioning effectively.

The problem with this ineffectiveness is the lack of a competent analysis of the industry, based on the account specifics and peculiarities of each region.

Unfortunately, the state conducts a dual policy towards clusters. Liberally funding each cluster, but without creating the conditions for the cluster. It is a favorable financial environment in the regions can contribute to the adoption and diffusion of innovative products. Without this favorable atmosphere, will continue rapid stagnation and decay regions of clusters themselves due to their inefficiency.

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