
Clustering as an Integration Pattern of Business Activity

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Abstract:

The article deals with the analysis of business activity of companies and suggests the clustering as a key integration pattern of the central and peripheral region areas.

Prerequisites of clustering formation and development are considered in the article.

Moreover, the authors stressed that clustering increases the investment prospects of both the industry and the region.

Keywords: *Clustering, non-raw development scenario, mixed economy of the region, interregional blocks, resource flow, central and peripheral areas.*

JEL Classification Codes : *R19, R59, F19.*

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1. Introduction

The problem of raising the level of incomes of all economic entities in the national economy context could be considered as an objective of the structural policy and the solution is connected with the growing role (and share) of non-raw sector of the economy. At the same time for the economic system of the region, the problem could be resolved in the format of implementing the strategy from the technological modernization of the production and economic complex, updating the technical system of production, replacing the technological processes with exhausted lifespan, on the one hand, and via forming new integration forms of the spatial organization of production economic activities (clusters, divisional-network structures), on the other.

Indeed, in the context of the strategy of transition to a raw scenario, it is extremely important to ensure the system-completing effect of technological production framework's industrial modernization which forms the modern material and technical base of the treatment facilities including the real regional economies forming the basis of its non-raw sector, the capacity of intersectoral, and integration forms of production and economic activities, where production of raw materials becomes the first phase of a reproductive clusterwise cycle, creating a high-tech final product with a large added value (to the intermediate and final product).

2. Formation and Development of Clusters in Agribusiness Complex

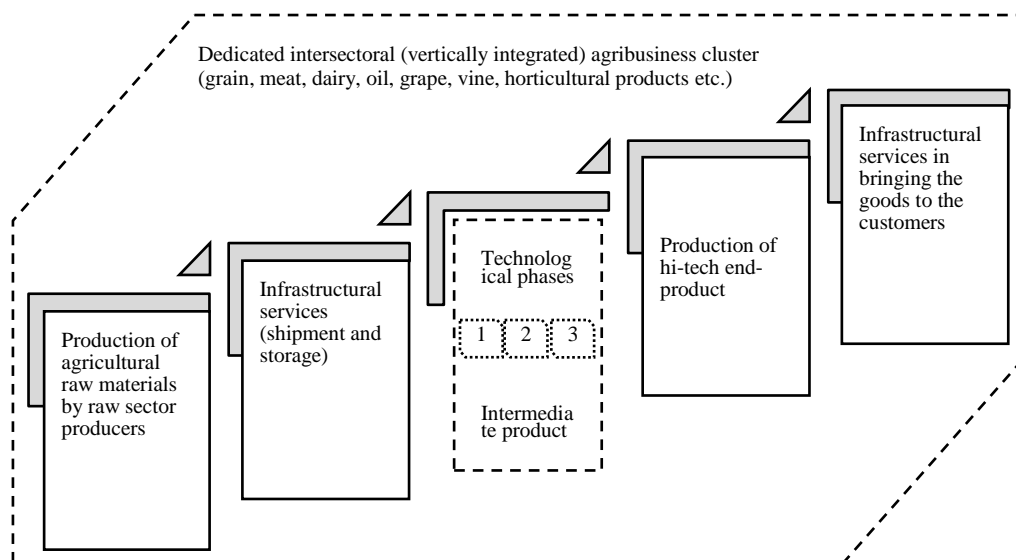
The strategy of transition to non-raw development is the optimal strategy for the transition of the South-Russian regions to the non-raw type of development in connection with their multistructure and domination of the agribusiness complex in the production and economic system (Zedgenizova and Ignatyeva, 2017; Tyaglov *et al.*, 2017; Liapis *et al.*, 2013).

Firstly, the existence of a variety of socio-economic structures makes possible realizing the capacity of the center-peripheral interaction of their subjects and the involvement of resources (labor, raw, financial) of both archaic and traditional paradigms of ethnoeconomics into the process of technological modernization of regional economy's production cycle, oriented to the formation of a model of non-raw, sustainable, and balanced development of the region's economy as a whole.

Secondly, the development of integration-cluster forms of agribusiness production corresponding to the paradigm of innovation-resource development focused on the creation of high-tech food and non-food (textile, shoe, military production, down, wool, fur products etc.) agricultural goods, includes the economy of raw zones of processing industries in a single closed loop of the production and economic cycle, reducing the volume of materials sector of the regional market and trans-regional exchange. The structure of the production and technological cycle in the format of a specialized agro-industrial cluster of the region is presented in Figure 1.

The agricultural production of the raw zones of large clusterwise agribusiness groups (for example, Yug Rusi (Rostov Region), Agrocomplex (Krasnodar Krai)) turns into the first phase of the production and technological process of manufacturing the end product for food or household use, meeting the idea of transition from a conceptual regional economy to a raw development scenario and the process of import substitution. In the coming years, the key objectives of the agro-food policy will be relevant as follows : innovative attractiveness, technological modernization of production, improving the quality of raw materials and products (basic and secondary), reducing the cost of production and increasing its competitiveness (especially important under the conditions of import substitution), satisfaction of the population needs for quality food products , the growth of the professional level of agribusiness staff, fair competition on the market sales of products etc.

Figure 1. Agricultural clusterwise production and technological cycle framework of the Southern Regions of Russia (Developed by authors)



In this regard, it is notable that the formed agribusiness cluster solves many of the above tasks quite comfortably for participants on the basis of cluster approach. The ability of the cluster to concentrate resources (financial, labor, innovation, technological) affects the solution of these tasks thereby emphasizing its priority to other participants of the agribusiness market.

Economic entities that act within the boundaries of one or several regions and deal with the production and sales sector with functional or contractual relations with positive (or above average) rate of profit are united in so-called territorial clusters. To sum up, the cluster in our view appears as an informal association of economic entities concentrated in a certain territory (Kushnarenko *et al.*, 2017). In the context of increasing competition for investments and the market for products both within

and between regions, it becomes evident that the priority is given to enterprises with a high concentration of efforts of the state and business. The development of chainwise agribusiness cluster within the region will allow ensuring the maximum utilization and efficiency of using production capacities in order to obtain the final product through the introduction of intensive technologies to reduce costs and to obtain economic benefits via taxation optimization. The long-term prospective regional development of the agro-industrial complex at the present stage, in our opinion, is impossible without restoring food independence for products the consumption of which could be provided through own production.

Supporting domestic producers, restricting imports, strengthening the region's competitive advantages, and increasing the export potential, forming a single economic space, increasing commodity exchange, structural sectoral changes, developing production links based on the technological division of labor are positive indicators of government's strategy in the conditions of import substitution. Therefore, import substitution should be considered as one of the components of the state policy in the field of foreign trade and as a tool for regulating national food security aimed at supporting domestic producers and restricting imports.

Notable, when justifying the priorities of the agro-food regional policy in increasing physical production by developing the resource potential of the industry, the market for food products is regulated not only by purchasing power but also by the average level of consumption of various foods per capita. The average per capita consumption level is affected not so much by the increase in the incomes of the population (economic access to food products), but more by socio-cultural factors (Table 1). If in the future in Russia, as real incomes grow, the consumption of food products will be determined by the mechanisms realized retrospectively in countries with a higher standard of living, the structure and volumes of actual consumption will deviate significantly from the currently accepted "rational norms" (Ivanter and Ksenofontova, 2017).

Table 1. Rational consumption norms and range of actual average food consumption per capita in Russia and number of countries in 2000-2009 (kg per year) (authors' evaluation based on Rosstat, 2010)

Food product	Rational consumption norms	Russia	USA	Canada	Great Britain	Germany	Finland	Czech Republic	Slovakia
Bread products	95-105	117-121	90-94	-	-	81-98	73-80	96-105	136-155
Meat and meat products (meat equivalent)	70-75	40-64	120-127	94-101	77-86	82-88	67-76	77-87	54-65
Milk and dairy	320-340	201-228	305-317	270-286	309-336	396-424	438-495	255-340	157-202

products (milk equivalent)									
Greengrocery	120-140	88-124	117-134	113-126	88-97	85-93	70-83	70-79	68-97
Potato	95-100	114-136	53-56	63-83	105-123	64-76	67-73	63-82	58-72
Purchasing power parity GDP per capita, Thous. USD in 2005		11,9	41,7	35,1	31,6	30,5	30,5	20,3	15,9

To sum up, we note that the formation and development of clusters in the agro-industrial complex of the South-Russian regions allows increasing their investment attractiveness, overcoming the narrow-sectoral focus in their production and economic activities, and dominate the competition for markets, minimizing the lobbying for the interests of a particular industry and (or) company.

In the future, the structure and volumes of actual consumption will deviate significantly from the currently accepted "rational norms" if in Russia, as real incomes grow, the consumption of food products will be determined by the mechanisms that have emerged in retrospect in countries with a higher standard of living (Ivanter and Ksenofontova, 2017).

3. Cluster as an Integration Pattern of Business Activity

At the level of global cluster policy, special attention is given to organizations like the Organization for Economic Cooperation and Development (OECD), the World Trade Organization (WTO), the European Union as the main tool of innovation attractiveness. At the moment, the possibility of forming a pan-European model that will stimulate and complement national and regional initiatives and strengthen the competitiveness of its member countries is being considered.

Numbers of studies were devoted to the issues of networkization and clusterization in the 19th century. Alfred Marshall in his book "Principles of Economic Science", based on a study of industrial regions in the UK, described the synergistic effect achieved by combining and enhancing the specialization of small enterprises. In modern terms, we can say that the author considered the creation of a cluster and with a fairly extensive inter-firm division of labor (Marshall, 1993).

Porter (2015) analyzed the conditions of development and activity of the hundred most competitive groups of large, medium, and small enterprises located in different countries of the world and came to a certain conclusion: having reached a high level of competitiveness in the world market, one of the groups begins spreading the

influence on the nearest environment, and forming thereby a stable and reliable network of suppliers and consumers. Thus, all participants in this group experience increased competitiveness, productivity, lower costs, and a number of other positive effects while proving the cluster phenomenon.

To justify the cluster approach as an integration form of company's production and economic activities, it should be noted that the approach is based on the policy of non-raw development of the national economy in the context of its regional systems' multistructure. We could agree with Matveyeva (2013) and note that these opportunities are determined, first of all, due to the synergetic effect of existing economic structures which could have both static and dynamic nature. In this regard, the correct classification of features will make possible the better understanding of determinants that set the differences in various types of economic activity for the subsequent development of effective levers for stimulating regional development (Kushnarenko, 2015).

Analyzing the significance of the positive effect of the synergetic effect of multistructural behavior on the dynamic development of the agro-industrial complex, Ketova and Ovchinnikov (2014) note that for the modern studies of the economic structures of regional economies, the following are most often used as classification features: the scale of production and financial activity, the form of ownership, the breadth of sales markets, the presence and nature of integration interactions of economic entities, basic industries in the region's economy, the prevailing technologies used in production. Accordingly, the ethno-economic, small-scale, private-corporate, and state structures are distinguished as the main ones.

In accordance with the author's concept, the strategy of advanced development of the real sector for manufacturing enterprises is based on conceptual and specific principles as well as the joint use of theories and approaches on the basis of which adaptive mechanisms and tools are developed to support decision-making on the creation and formation of clusters (Kushnarenko, 2016).

Forming a conceptual framework for the transition to a non-raw scenario of the regional development with a multistructure economy required a special study of the multistructure concept, an analysis of factors and conditions leading to the ongoing economic disintegration of the regional space within the agro-industrial complex (Kushnarenko, 2016). In the conditions of creating clusters, the regional system generates economic, social, technological, and political aspects to form a non-raw scenario for the development of the region's economy oriented to the balanced development of all components. When forming an agro-industrial cluster in a region with a mixed economy, it is necessary not to ignore the multi-structure and involve the potential of each existing pattern in the processes of qualitative changes leading to economic growth. (Kushnarenko, 2016). At the same time, the combination of different ways provides a synergetic effect of integrating their reproductive-functional and economic potentials. Within the framework of this approach, it is

possible to integrate the optionally unrelated potentials of the territories (resource, organizational, managerial, innovative, etc.) specific to particular types of structures, which allows uniting separate components of the socio-economic development of regions into a coherent system oriented to non-raw development scenario implementation.

Regional strategies should be focused on the formation of a "multi-scale" structure of the regional economy based on network and cluster forms of business interaction that ensure the integration of the potentials of certain types of structures (Kushnarenko, 2016). As a result, we could conclude that today new qualitative characteristics of multistructure could be supported by the expediency of developing a multistructure as a factor stimulating modernization processes in a certain territories (Kushnarenko, 2016). Directions and activity fields with a raw and non-primary integration-based modernization provide a significant multiplier effect of production growth in related industries and as a result, in the regional economy of the South of Russia, namely in the agro-industrial complex. The theoretical and conceptual basis for the formation of a strategy for the non-raw sector development in the context of multistructural systems is presented in Table 2.

Table 2. Indicators of evaluation of regional mixed (multistructural) economy's potential (Developed by authors)

Components of the multistructurality	Indicators
Technological potential	<ul style="list-style-type: none"> – Share of the advanced technologies used at the enterprises of the specific pattern (branch and industry-wise); – Share of the equipment under the age of 5 years in the total value of the equipment at the enterprises of the pattern (branch and industry-wise); – Share of technological innovations' expenses in the total value of costs at the enterprises of the pattern (branch and industry-wise).
Labor potential	<ul style="list-style-type: none"> – Share of employees with a specific higher education involved in the enterprises of the pattern; – Level of labor automation and informatization at enterprises of the pattern (branch and industry-wise); – Share of the population employed at enterprises of the pattern (branch and industry-wise).
Investment potential	<ul style="list-style-type: none"> – Share of investments in the development of innovations, the modernization of production at enterprises of the pattern (branch and industry-wise); – Share of profitable enterprises of the pattern (branch and industry-wise); – Level of innovative activity of enterprises of the pattern (branch and industry-wise).
Potential of	– Share of enterprises of the pattern (branch and industry-wise), having

organizational and managerial interactions	agreements on integration cooperation with other economic entities; <ul style="list-style-type: none"> – Share of patents and created advanced technologies obtained as a result of joint activities with other enterprises and organizations in the total number of patents at enterprises of the pattern (branch and industry-wise); – Specific weight of contractual obligations in the total number of concluded contracts at enterprises of the pattern (branch and industry-wise).
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While on the subject of forming clusters as an integration form of production and economic activity, we refer to the positive factors of efficiency and production volumes growth that are not "frontal". The noted growth is peculiar only to a certain part of agro-industrial enterprises. In the future development of the agribusiness sector of the economy, the state should actively prevent the emergence of crises of overproduction, stimulate activities aimed at supporting the development of manufacturing enterprises. The correctly planned regional policy for the agribusiness complex should be aimed at increasing the efficiency and competitiveness of regional producers and, on the other hand, be aimed at food self-sufficiency.

The policy should be of a long-term nature and the vector of its development should be formed in accordance with the Strategies for Social and Economic Development of Regions (Subjects of the Russian Federation) (Kushnarenko, 2016). At the same time, the program projects, although generally focused on the development of the periphery, do not represent how the problems of the territories with backward ways will be solved what mechanisms and technologies will contribute to the implementation of the innovative scenario for their development. Thus, the developed strategies do not take into account the full potential of the regions, since they do not imply the realization of the potential of the multistructure of its economies and the obtaining of possible synergetic and multiplicative effects" (Kushnarenko *et al.*, 2016).

4. Results

The results of the study show that clusters act as the point of economic growth of not only a single industry, but also the region as a whole. This confirms the need to consolidate the goals, mechanisms, tools, and technologies for the formation and creation of clusters, taking into account the new cluster form of relations promoting the stimulation of innovative interests, the development of progressive technologies, the strengthening of the synergetic effect of "center and periphery" integration based on the complementarity of potentials in the territories.

The producers included in the cluster become more competitive and investment attractive and have the opportunity to exchange with information through intra-cluster channels and to introduce various types of progressive technologies faster. Being the points of economic growth, clusters promote intensive integration between

the center and the periphery. Not only promoted companies become members of the cluster. Some small participants including farmers, private partnerships, individual entrepreneurs, and other small businesses could be involved in the cluster. The most important issues of market survival are solving as follows: the availability of a raw material base, the modernization of production, the market for the sale of products, the attraction of investments etc.

Otherwise stated, the cluster participants gradually overcome disunity, inertness, and isolation on internal problems. It has a beneficial effect on the growth of their technical level and competitiveness and as a result, on the attractiveness of the region as a whole. The consensus of economic interests according to the multi-structure of the region should be the basis for interaction between the participants of the agro-industrial cluster of region. It is necessary to improve the regional institutional base to increase the effectiveness of the cluster approach for enterprises. At the same time, it is necessary to highlight a number of large-scale strategic tasks, the solution of which implies changes of a systemic nature within the framework of the program-targeted approach to the formation of regional economic policy directions within the framework of the formation and creation of an agribusiness cluster:

- flexible institutional connection of the modernization resources of regions with different types of structures for the purpose of innovative development of the real sector;
- development of modern infrastructure of interaction of different technological structures' economic agents;
- formation of regional innovation-production clusters involving the capacity of territories with different patterns;
- overcoming institutional deficiencies, creating a competitive environment for the development of partner relations among participants of integration structures (Kushnarenko, 2016).

Target development programs (federal, regional, sectoral) should become the tools for implementing these directions. In this connection, it is necessary to develop the work on regional strategy, where the key priority is the formation of frameworks for fulfilment of multi-territorial economies' potential and their integration into the process of creating clusters.

References:

- Ivanov, A.V., Matveeva, L.G., Chernova, O.A. 2013. Capitalization of resources of the industrial enterprise as a part of a cluster in strategy of innovative development. The Engineering bulletin of Don, 4.
- Ivanter, V.V., Ksenofontova, M.Yu. 2017. Prospects for the development of the Russian economy: the 2030 forecast. M., ANKIL publ.
- Ketova, N.P., Ovchinnikov, V.N. 2014. Institutes of development in multistructure economies of peripheral regions. Problems of forecasting, 2, 68-76.

- Kushnarenko, T.V., Tyaglov, S.G., Khokhlov, A.A., Kerapyan, M.A. 2017. The Development of Cluster Relations within the State and Business Structures in Terms of Strategy of Non-Primary Sector Import-Substitution. *European Research Studies*, 20(1).
- Kushnarenko, T.V. 2015. Paradigm of effective use of the potential of local structures in the strategic development of regions. *Modern problems of science and education*, 3.
- Kushnarenko, T.V. 2016. Strategy of transition to non-raw development of the mixed economy of the region. D.Sc. thesis.
- Kushnarenko, T.V., Matveeva, L.G., Chernova, O.A. 2016. The phenomenon of multiculturalism in the regional strategizing. *Ekonomika regiona*, 12(3).
- Liapis, K., Rovolis, A., Galanos, C. and Thalassinos, I.E. 2013. The Clusters of Economic Similarities between EU Countries: A View Under Recent Financial and Debt Crisis. *European Research Studies Journal*, 16(1), 41-66.
- Marshall, A. 1993. *Principles of economic science*. Moscow, Progress.
- Porter, M. 2015. *Competitive strategy: the Technique of the analysis of branches and competitors*. The Free Press, 422 p.
- Rosstat 2010. Statistical data and evaluation reports, <http://gks.ru>
- Tyaglov, G.S., Kushnarenko, V.T., Khokhlov, A.A. and Qeropyan, A.M. 2017. The Development of Cluster Relations within the State and Business Structures in Terms of Strategy of Non-Primary Sector Import-Substitution. *European Research Studies Journal*, 20(1), 198-207.
- Zedgenizova, I. and Ignatyeva, I. 2017. The Problems of Creation and the Prospects for Development of Regional Clusters. *European Research Studies Journal*, 20(4A), 578-595.