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ORGANIZATIONAL AND METHODICAL ASPECTS FORMATIONS OF CLUSTERS IN UZBEKISTAN

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Abstract

In control of innovative activities branch approach which doesn't promote innovative up-dating of national economy is used. Therefore it is necessary to look for new approaches to the organization and control of innovative activities. In world practice as one of the most effective methods of control of innovations proved cluster approach. In this operation methodical approach to formation and identification of clusters, including such stages as the analysis and an assessment of conditions of creation of a cluster, structuring a cluster, methodical support of effective functioning of a cluster, an assessment of effectiveness of functioning of a cluster is offered.

Keywords: Innovative activities, cluster, innovation, efficiency, competitiveness, clustering potential, cluster analysis, competitiveness diamond

INTRODUCTION

In Uzbekistan in control of innovative activities branch approach which doesn't promote innovative up-dating of national economy is used. Therefore it is necessary to look for new approaches to the organization and control of innovative activities. In world practice as one of the most effective methods of control of innovations proved cluster approach. Process of a clustering – the objective process caused by globalization. It develops around the world and promotes an acceleration of development of innovative processes in national economies. In effectively functioning cluster designs innovative process accelerates, and at participants of a cluster such advantages as a susceptibility to innovations, business rationalization, the advancing labor productivity growth, etc. develop.

THEORETICAL FRAMEWORK

According to Michael Porter's theory, the cluster is a group of geographically adjoining interdependent companies and the related organizations operating in a certain sphere and complementary each other.

The principal characteristic of a cluster is innovation. It includes all innovative chain from generation of scientific knowledge and formation on their basis business of the ideas before implementation of products on traditional or new sales markets. The cluster design leads to creation of "a cumulative innovative product" – the special form of an innovation. Combining in a cluster on the basis of vertical integration creates not spontaneous concentration of various scientific and technological inventions, and a certain system of distribution of new knowledge and technologies. At the same time the most important condition of effective transformation of inventions in innovations, and innovations – in competitive advantages, is formation of a network of stable relations between all participants of a cluster.

For Uzbekistan cluster approach is rather new. Therefore there is a row of methodical and organizational problems on formation of clusters in economy. Organizational problems of formation of clusters in our country are caused by need of gain of cooperation and interaction of the organizations within a cluster. One of methodical problems of formation of clusters is the clustering potential assessment, identification and structuring clusters, separation of "kernel" of a cluster.

Analysis of references (Vinokurova, 2006; Larina, 2006; Markov, 2006; Bergman, 1999) showed that there is no uniform methodical approach for a research of clusters by which it is possible to define their boundaries and specific parameters (efficiency, competitiveness, innovation).

For the decision of the task of identification of clusters there is a set of tools: from simple measurements of specialization (for example, by means of localization coefficients) prior to the procedures based on the analysis of matrixes of interindustry balance (Markov, 2006). The majority of the countries combines different methods of the analysis of clusters (the analysis of judgments of experts; research of coefficients of localization; the analysis of matrixes of inter industry balance – grocery exchange and innovative exchange; the network analysis) to overcome restriction in use of the unique method as different methodologies answer different questions and different types of information provided (Roelandt, 1998).

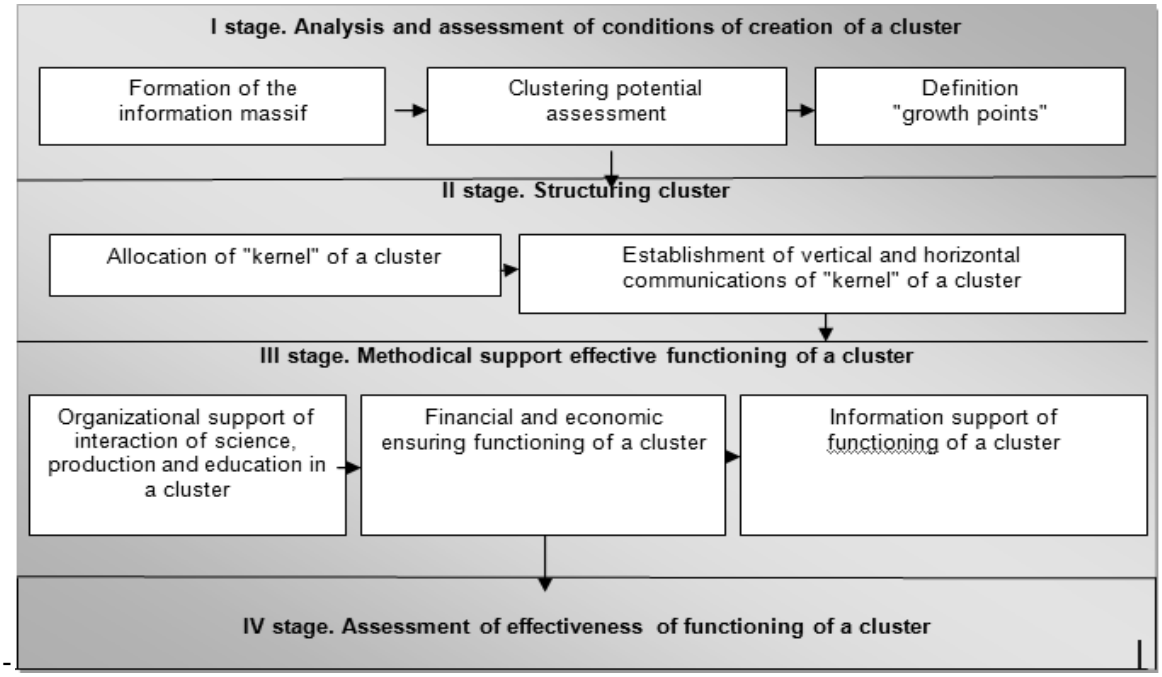
FINDINGS AND DISCUSSION

The methodical approach to identification and formation of a cluster offered by us, assumes implementation of four stages (Figure 1.).

First stage. Information array for carrying out a research is created (biographical particulars about suppliers and buyers, subjects of infrastructure, data on production and innovative activity of branches and the enterprises). Then on the basis of the analysis of collected data clustering potential is evaluated. Potential of a clustering is an existence of a possibility of cooperation of the enterprises of different branches and infrastructure organizations which are in the territory of the region in effective production (or innovative) a chain, and also possibilities of combining of their competitive advantages and use of it to increase in region's competitiveness.

For an assessment of potential of a clustering it is necessary to divide branches (types of economic activity) of economy of Uzbekistan into groups on extent of development of innovative activity and to allocate branches (types of economic activity) in which innovative activity is conducted most intensively. For these purposes it is preferable to use the methods of the multidimensional analysis which are the quantitative tool of a research of the social and economic processes described by a large number of characteristics (the cluster analysis, recognition of images, the factorial analysis). In our opinion, the method of the cluster analysis has a number of advantages in comparison with recognition of images, the factorial analysis as he allows making splitting objects not in one parameter, and on the whole feature set. Besides, the cluster analysis, unlike the majority of mathematic-statistical methods, doesn't impose any restrictions by sight of the considered objects and allows considering a set of basic data of almost any nature.

Figure 1. Methodical approach to identification and formation of a cluster



Source: compiled by author

Therefore the typology of branches (types of economic activity) is offered to be formed by means of a method of the cluster analysis (Larina, 2006) on the following indicators of innovative activity:

– Number of the innovation-active enterprises in branch;
– Current costs of technological innovations;
– Capital expenditure for technological innovations;
– Number of the used advanced production technologies;
– Number of patents for inventions;
– A share of innovative production of the goods shipped for export;
– Share of innovative production of shipped.

The results received during calculations by method of cluster analysis allow to reveal "growth points", i.e. to define branches (types of economic activity) having the largest innovative potential and having a possibility of creation of clusters. Then it is necessary to select competitive types of production, the type of economic activity (branch) selected for the analysis.

To define them, those types of production which export for the last years made more than 10 000 thousand dollars of the USA are selected, the share of these goods in foreign market, and also coefficients of comparative advantages is set (for example, using Balass's index). For the selected types of production the accompanying and supporting branches as, according to "competitiveness diamond" of M. Porter, a key factor of origin in economy of clusters is existence of the developed and supporting branches are defined (Porter, 2005). Parallely it is necessary to carry out an assessment of security of branches (types of economic activity) with the frames having the largest innovative potential, to select the main scientific directions in which the greatest number of development is carried. Thus, at this stage the possibility of creation of clusters is evaluated.

Second stage. Cluster "kernel" is selected. It is formed by manufacturing companies of the main production of a cluster. These firms have narrow specialization, are geographically close to each other, in between there is an interaction; they have the established relations in foreign markets. "Around" "kernel" of a cluster remaining participants function. Car makers in automotive industry clusters, farms and vendors of wine in agro-industrial clusters, vendors of footwear in shoe clusters, vendors of machines in machine-tool constructing clusters, etc. are that, for example.

Cluster "kernel" is created, as a rule, by the enterprises having the strong competitive positions on world or, at least, in the national market. Otherwise also all clusters will be noncompetitive. For detection of the organizations initiators of creation of a cluster (cluster "kernel"), the main

vendors of production of branch are defined (or interdependent branches) and the choice of the most successful is carried out. Probable initiators (cluster "kernel") of creation of a cluster design will become the strong enterprises of the relevant branch of economy which have a high share in the volume of production of branch and growth rates of the outputs exceed branch. Detection of "kernel" of a cluster is a starting point in development of model of a cluster. For successful development of cluster suppliers of raw materials, components, accessories, the equipment, etc. have important value. The main suppliers are defined on the basis of information analysis, received by questioning. Narrowness of communication between suppliers and "kernel" of a cluster is clarified. The coefficient of narrowness of communication which is determined by a formula is for this purpose used:

Knc = OSc / PSt ,

Where: Knc – coefficient of narrowness of communication;

OSc – the output of the supplier for cluster "kernel", in natural or value terms;

PSt – the total production of the supplier, in natural or value terms.

The coefficient of narrowness of communication can accept values from 0 to 1. For switching on of the organization in a cluster value of coefficient of Knc between it and "kernel" of a cluster shall be at least 0,08 (Yasheva, 2007).

On the basis of information obtained by the Delphi method the subjects of infrastructure creating conditions for production and its customers come to light. Thus, structuring a cluster is carried out on the basis of determination of communications between "kernel" and other participants of a cluster (suppliers, infrastructure, scientific and educational institutions, and customers).

Third stage. The mechanism of support of implementation of cluster approach including organizational, financial and economic and information support of functioning of a cluster is developed. This mechanism will allow controlling effectively innovative activities in a cluster. Organizational support of a cluster consists in development of an organization structure of control of a cluster, determination of the directions of interaction of participants of a cluster, creation of the governing body which is providing support of clusters, conducting a research of clusters, coordinating activities of participants. Financial and economic support assumes determination of sources of financing of the project of clustering, innovative projects of a cluster and its infrastructure. Development of information support will allow adjusting information flows between subjects of a cluster, i.e. to define how the data interchange and information will be made. As the state is a full subject of the economic relations, it is necessary to define separately its role in the course of organizational, financial and economic and information support of functioning of a cluster.

Fourth stage. Effectiveness of functioning of a cluster is estimated, and also development of the main directions on its further development is carried out. Effectiveness of functioning of a cluster can be estimated from the participating enterprises, and also consequences for economy in general. It is necessary to mark that creation and functioning of a cluster design makes a sense, first of all when obtaining real effect of interaction, i.e. the effect of interaction of participants of a cluster shall exceed the amount of effects of activities of each participant separately. Therefore a special role in an assessment of functioning of a cluster design is played by so-called synergy effect which is understood as increase of efficiency of activities as a result of innovative integration of participants of a cluster into a single system.

As the total of an assessment of synergy effect the appropriate difference of values of the selected index (profit on product sales, proceeds from sales of production, the income from the operating room and in not implementational activities, etc.) appears. Advantage from synergy effect is estimated taking into account the purposes of creation of a cluster. In case of an assessment of effectiveness of functioning of a cluster the assessment of competitiveness of its production in comparison with competitors is preferable. The cluster production share in the market is for this purpose measured, and its advantages to a customer before production offered by the competing vendors are estimated.

For successful implementation of cluster development it is necessary to create the organs coordinating activities of participants of clusters. Their creation will promote cooperation of manufacturing enterprises on the basis of cluster technologies and gain of their interaction with authorities, the scientific organizations and innovative infrastructure in implementation of productive innovative activities.

CONCLUSION

Main objective of the specialized organization of development of a cluster – creation of a platform for all its participants. This organ defines participants of a cluster and develops conceptual frames of their interaction (the strategy of development for a cluster) which are designed to form the partnership basis due to orientation to achievement of common goals. Further this coordinating body shall promote an intensification of interaction between subjects of a cluster (firms, scientific community, authorities), realizing the purposes set by strategy and to present a cluster at foreign markets.

Thus, basic functions of this organ can be:

– development of actions for support of cluster initiatives;

– monitoring of activities of a cluster;

– analysis of the factors complicating development of the companies in the direction of their clustering;

– assessment of personnel needs of a cluster;

– formation of the strategic budget of a cluster;

– involvement of research and development and venture funds for joint financing of programs and innovative projects of a cluster;

– solution of problems of the current and perspective personnel needs of a cluster;

– financing of actions for implementation of a cluster policy and cluster strategy;

– attraction of financial resources of corporate sector;

– provision of grants for implementation of cluster strategy;

– coordination of financing of cluster strategy between the state scientific and technical programs and projects realized by corporate sector.

It is expedient to create the specialized organization of development of a cluster (or to give to several people appropriate authority) forces of the governments. Authorities organizationally and legally make out the coordinating organ (at the same time it is necessary to be guided by the principle of minimization of officialdom and a staff). The most suitable legal forms of the specialized organization of development of a cluster are the association (union), non-profit organization. Originally creation of several "pilot" organizations of development of a cluster is offered. However further, if the cluster form of the organization is effective, each of the existing (originating) clusters will be able to create the cluster organization.

REFERENCES

Bergman, E.M. (1999). Industrial and regional clusters: concepts and comparative applications. Regional Research Institute [An electronic resource].

Larina, N. I.(2006). Clustering as way of increase in the international competitiveness of the country and regions. ECO Journal, №10, p.2-27.

Markov, L.S. (2006). Measurement of efficiency of functioning of a cluster of information technologies. Region: Economy and sociology,№1, p.155-171.

Markov, L.S. (2006). Clusters: formalization of correlations in unformalized production structures. In (p.194). Siberian Branch of the Russian Academy of Sciences. – Novosibirsk.

Porter, M. (2005). Competition: the translation with English. In (p.608). Publishing house «Williams».

Roelandt, Theo J.A. (1998). Cluster Analysis & Cluster-Based Policy in OECD-countries various approaches, early results & policy implications. Report by the Focus Group on: Industrial clusters. The Hague Utrecht, May [Electronic resource].

Vinokurova, M.V. (2006). Competitiveness and potential of a clustering of branches of economy of the Irkutsk region. ECO Journal, №12, p.73-92.

Yasheva, G. A. (2007). Cluster approach in increase in competitiveness of the enterprises. In (p.301). Vitebsk: Vitebsk state technical university.