THE ROLE OF INDUSTRIAL CLUSTERING IN ECONOMIC DEVELOPMENT: THE CASE OF KAZAKHSTAN

By

SUINISHEVA, DIANA ERIKOVNA

THESIS

Submitted to
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Committee in charge:

Professor Yuri Mansury, Supervisor

Professor KANG,Young-Uck

Professor KIM, Dong-Young

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ABSTRACT

THE ROLE OF INDUSTRIAL CLUSTERING IN ECONOMIC DEVELOPMENT: THE CASE OF KAZAKHSTAN

By

Diana Suinisheva

At present stage of economic development, evolving in the country and its regions, associated with the search for new approaches, form and methods of socio-economic growth, introduction and development of innovation and competition in the economy. Among the most promising – cluster model is recognized by the world community as meeting the challenge of information age and globalizing of the economy. The formation of industrial clusters is often seen as prerequisite of global competitiveness of countries and regions. The cluster approach has become in recent years as a key instrument of municipal economic policies of the leading industrialized countries. The idea of the cluster approach in Kazakhstan gained popularity recently. Kazakhstan wants to enter of 50 developed countries. This cluster initiative is another step of Kazakhstan to achieve this ambitious task.

Dedicated to my family

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In particular, thanks a lot to my Thesis supervisor Yuri Mansury who got me interested in cluster approaches. Also, I want to say many thanks to all of the staff members for their support and assistance.

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I. INTRODUCTION

1.1. Objective and scope of the study

The leading role in the recognition of the economic viability of the state is given to the establishment and development of a competitive national economy. Such an approach to the problems raising the economic efficiency of the national economy poses new challenges. First of all, it comes to choose a competitive model of economics, the priority sectors that have an economic potential to improve competitiveness, the identification of factors and elements that affect the degree of development of competitive relations and mechanisms through the prism of foreign trade competitiveness.

The processes of globalization, intensifying international competition, which characterizes the world economy is a prerequisite for an objective paradigm shift competitiveness management, which consists of the rejection of the traditional industrial policy and the transition to a new innovation-based clusters.

Relevance of the chosen theme "The role of industrial clustering in economic development: the case of Kazakhstan" is also predetermined by the transition of Kazakhstan's economy to market economic conditions, borrowing the best that has developed in worldwide practice. Actuality of the theme is defined by the fact that the category of the cluster currently remains a subject of debate. Despite the fairly large number of research clusters, in management theory has not yet formed a concrete science-based management model with such an object. To explore a new object, we need to find the specific approaches of the description and classification system of criteria and indicators for evaluation. Clustering is an effective mechanism for implementation of industrial policy, which is confirmed by experience of individual countries.

Cluster phenomenon as the object of economic agglomerations of interrelated businesses on a certain territory, is known since the time of handicraft production. But only since the last quarter of XX century, industrial clusters have started to show themselves as an important factor in economic development. Among economists around the world it is increasingly recognized that the regions in which clusters are formed, become leaders of economic development. These regions - leaders define the competitiveness of national economies.

Clusters have tremendous influence on the health of sectors and regional economies around the world. With the aggravation of international competition in some areas without them no longer do. Clusters are created naturally, but they cannot be designed and built. Often cluster is sited in the area with a particular location. The basic premise here may be geographical, climatic conditions, but not only these. In different situations, the territory can distinguish proximity to markets and capital. The choice of specialization cluster usually has its own historical logic. In

domestic markets on which they occur they are often characterized by a pronounced specificity of demands.

The unusually wide membership is another feature that distinguishes the cluster. A company of the finished product is just one of the main parts of the cluster. Along with a cluster of suppliers includes everything you need, including: materials, equipment and services. Also included are research centers, centers of competence and, perhaps, the specialized banks. In this group of companies must be a market of staff with development potential. Accordingly, in the overall orbit includes high and technical secondary schools, refresher courses. Finally, a significant cluster member is the state.

In the global competition the ability of a lone company is limited. Therefore, they have tended to link with other firms, government and science in a united front. The strategy of cluster development brings benefits to companies, cities and whole countries. Today Kazakhstan can take the same path.

The main purpose of writing this master's thesis is study and development of general principles of cluster approach to economic development. Have studied theoretical aspects of threads, examined the real international experience and analysis for the possibility of formation a cluster structures in the Almaty region of our country. The objective of the study for master’s work was the main sectors of economy in Almaty region that contribute to the development of regional economy and system of interrelations of factors affecting the performance of the clusters.

This work is consists of an introduction, three chapters and a conclusion. The titles of chapters reflect their content. Informative basis for writing a master's thesis was: the sources listed in the bibliography, statistical indicators of economic development of regions and Kazakhstan, and Internet resources.

1.2. Brief outline of the study

The introduction provides an overview of work on the following criteria: the relevance of the object and subject of study, theoretical and methodological framework.

In the first chapter "Previous studies" established that the phenomenon of clusters is an accepted fact and is considered in many studies. A. Marshall's work served as the basis for most subsequent studies and is fundamental. The analysis showed that under current conditions the study of the cluster approach in industry must be based on concepts on problems of the relationship of competition and cluster models. Currently, the American, British and Scandinavian school formed in this area. The most important are the work of the American School of M. Porter and M. Enright. Porter's concept of clusters has become generally recognized and the cluster theory of the formation of competitive advantages is currently most in demand.

The analysis revealed that the economic characteristics of industrial cluster, but not expressed in this term, was first disclosed by A. Marshall. Currently there is no single, universally recognized and strict definition of industrial cluster. This is not only due to the type of the formation of cluster theory, but also the incompleteness of the cluster concept. The study showed that the cluster has two clearly expressed components - sectoral and geographical. It permits the classification of clusters by the presence in their territorial components: an outer spatial cluster includes the national industrial clusters, to spatial - regional. Summarizing the results of the analysis, the author determined that there are different types and formulations of clusters, they differ in size, orientation, but in general the clusters are united:

"A cluster is a geographically localized group of interconnected companies, suppliers of equipment, components and specialized services, infrastructure, research institutes, universities and other organizations, mutually supportive and reinforcing the competitive advantages of individual companies and clusters in general."

The basis of the functioning of a cluster is the system determinant of competitive advantage - Porter's diamond. The interaction within the cluster is carried out through the vertical (the chain of purchases and sales) and horizontal linkages (additional goods and services, the use of such specialized processes, etc). The main difference of a cluster from other forms of industrial organization is the presence of internal competitive environment and strong competitive position in the market.

The author determined that there are two basic models within the cluster strategy - a liberal and dirigist model. The liberal model is typical for those countries where a liberal economic policy dominates (U.S., UK, Australia, Canada, etc.). Dirigist model is implemented in countries where governments at various levels are actively involved in economic processes (France, South Korea , Japan, Sweden, Finland, etc.).

Analysts have examined the foreign experience in the formation of clusters, analyzed the model of formation of regional clusters in different countries and found their influence on the functioning of the regional economy. Namely, the cluster policy of European countries at the national level in seen in the example of countries such as: Germany, Austria, Styria, Finland, USA, Canada and Japan. Also there study clusters in transition economies - Russia, Ukraine and India.

In the second chapter, "The Cluster Initiative in Kazakhstan: a historical perspective" examined the basic economic situation in the country by industry. It also shows the basic directions of activity and achievements.

It studies key aspects of the clustering of national economy. The transfer of state policy from raw-material orientation and realization of the national project “Diversification of Kazakhstan's economy through development of clusters in non-extractive sectors of the economy” with the definition of the seven pilot clusters such as tourism, food production, transportation and logistics services, construction materials, textiles, oil and gas machinery .

In the third chapter, “Analysis of the link between clusters and economic development” we identify the nature and methodology of formation of cluster structures considered existing hikes: the clusters from the perspective of competitiveness, techno- economic methods for determining the clusters, as a result of economies of agglomeration. Based on the third approach were identified structures in the Almaty region, assessed the impact of these structures on the nature and direction of development economic ties.

In conclusion the written work presents the main findings of the study, formulates the relevant regulation and recommendations.

II. PREVIOUS STUDIES

2.1. Review of relevant theoretical contributions

Currently, clusters have become a significant phenomenon in economic policies around the world and in Kazakhstan the cluster as a mechanism for regional development, has generated considerable interest, both from the scientific community and the authorities. To date, there are many definitions the concept of "cluster". For example, Markov L.S from Novosibirsk Institute of Economics, Russian Academy of Sciences, found more than a dozen definitions of the term "cluster" in various editions.

The cluster approach finds its basis in the writings of Marshall and Schumpeter, we can say that the historical basis of the cluster approach appear, on the one hand in Marshall's "industrial area" and the economy agglomerations, and on the other hand in the innovation of Schumpeter for promoting economic growth within the regional agglomeration[1].

However, the contemporary interest in the cluster concept is largely connected with the works of Michael Porter, who is considered a respected expert in the sphere of strategic planning in the XX century. The cluster concept is closely connected with his work: on industrial clusters[2] and regional clusters [3] where he describes in detail the close relationship between clustered partnership and competitiveness of enterprises and industries.

According to the theory of Michael Porter's, a cluster is a group of geographically adjacent interconnected companies (suppliers, manufacturers, etc.) and related organizations (universities, government entities, standard-setting agencies and trade associations) operating in a certain area, and complementary to each other.

M. Porter [4] believes that the country's competitiveness should be viewed through the lens of international competitiveness, not its individual companies and clusters - associations of various industries, and of fundamental importance to the ability of these clusters to effectively use internal resources. He also developed a system of determinants of competitive advantage of countries, known as "competitive diamond" (or "diamond") on the number of major groups of such benefits. These include (Figure 2.1):

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[1] R.Hasanov, Realization of regional industrial policy using the cluster approach. Omsk,2007

[2] M.Porter, The Competitive Advantages of the Nations, 1990

[3] M.Porter, On competition,1998

[4],Porter, International competition. International relations, 1993

factor conditions: human and natural resources, scientific and information capacity, capital, infrastructure, including the factors of quality of life;

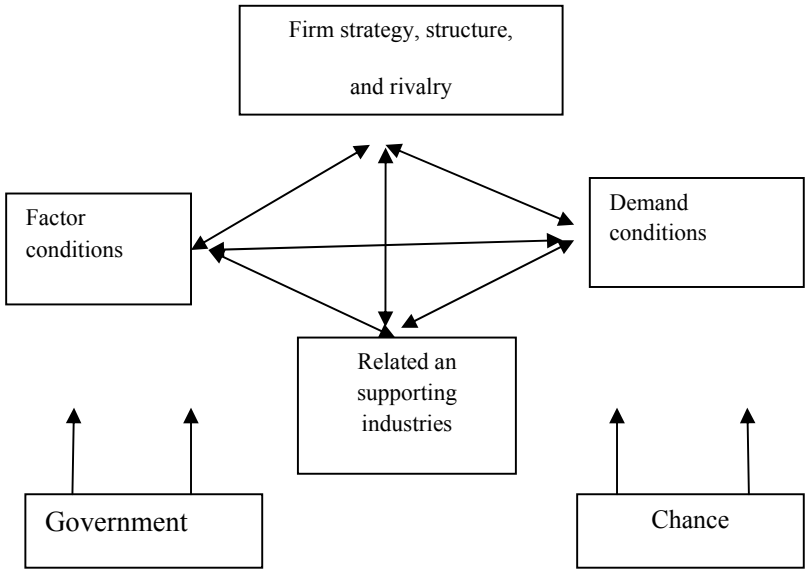
conditions in domestic demand: the quality of demand, trends of demand on the world market, the development of demand;

related and supporting industries: the scope of raw materials and semi-sphere of revenue equipment, the scope of use of raw materials, equipment and technology.

strategy and structure of firms, intersectoral competition: goals of the strategy, methods of organization, management firms, intra-industry competition.

In addition, there are two additional variables: the *chance and government*.

Figure 2.1. Diamond of competitive advantage (Porter, 1990, p.127)



As Michael Porter himself admits, the idea of specialized industrial localization is not entirely new. Even Alfred Marshall, included in his major work "Principles of Economics", that appeared in 1890, a chapter on "the concentration of specialized industries in particular localities".

But Porter is not the only one who turned to the ideas of Alfred Marshall in recent years. In the past two decades, other researchers interested in economic geography, have begun to study the local industries, spatial economic organization and regional development, as well as economic, social and institutional processes[5]. .

[5] Scott,1988,1998; Amin and Thrift,1992; Harrison,1992; Kelly and Grant,1996; Markusen,1998; Asheim,2000

Along with the term of "clusters" the following concepts are also used to describe the territorial clusters of firms, industries and related processes:

1. Industrial areas;
2. New industrial space;
3. Territorial- production complexes, etc.

These terms, partly with the different meanings, sometimes used interchangeably, create confusion. Nor is there a strictly unambiguous definition of "cluster" (Table 2.1)

Table 2.1 Different definitions of cluster [6]

Author	Year	Source	Definition
Porter		On Competition	A cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities
Swann and Prevezer	1996	A comparison of the dynamics of industrial clustering in computing and biotechnology	Clusters are here defined as groups of firms within one industry based in one geographical area."
Enright	1996	Regional clusters and economic development	"A regional cluster is an industrial cluster in which member firms are in close proximity to each other.".
Rosenfeld	1997	Bringing business clusters into the mainstream of economic development	A cluster is very simply used to represent concentrations of firms that are able to produce synergy because of their geographical proximity and interdependence, even though their scale of employment may not be pronounced or prominent.
Feser	1998	Old and new theories of industry clusters	Economic clusters are not just related and supporting industries and institutions, but rather related and supporting institutions that are more competitive by virtue of their relationships.
Swann and Prevezer	1998	The dynamics of industrial clustering	A cluster means a large group of firms in related industries at a particular location
Roelandt and den	1999	Cluster analysis and cluster-based policy	Clusters can be characterized as networks of producers of strongly interdependent firms

[6] L.Markov. Economic clusters: concepts and features//Actual problems of socio-economic development: a view of young scientists, Novosoborsk,2005

Hertag		making in OECD countries	(including specialized suppliers) linked each other in a value-adding production chain.
Simmie and Sennett	1999	Innovation in the London metropolitan region	We define an innovative cluster as a large number of interconnected industrial and/or service companies having a high degree of collaboration, typically through a supply chain, and operating under the same market conditions.
Crouch and Farrell	2001	Great Britain: falling through the holes in the network concept	The more general concept of 'cluster' suggests something looser: a tendency for firms in similar types of business to locate close together, though without having a particularly important presence in an area.
Van den Berg, Braun and van Winden	2001	Growth clusters in European cities	The popular term cluster is most closely related to this local or regional dimension of networks. Most definitions share the notion of clusters as localized networks of specialized organizations, whose production processes are closely linked through the exchange of goods, services and/or knowledge.

From the definitions given in the table, we can distinguish two fundamental characteristics of the clusters.

First, the firms included in the cluster could be linked in certain ways. Communication is vertical (the chain of purchases and sales), and horizontal (additional products and services, and others).

Secondly - the fact is that clusters are geographically close groups of interconnected companies. This promotes the formation and increase the benefits that create value are the result of network interactions between enterprises.

There are two main categories of clusters formed by the spatial and functional axes. These are respectively termed *industrial and regional clusters*.

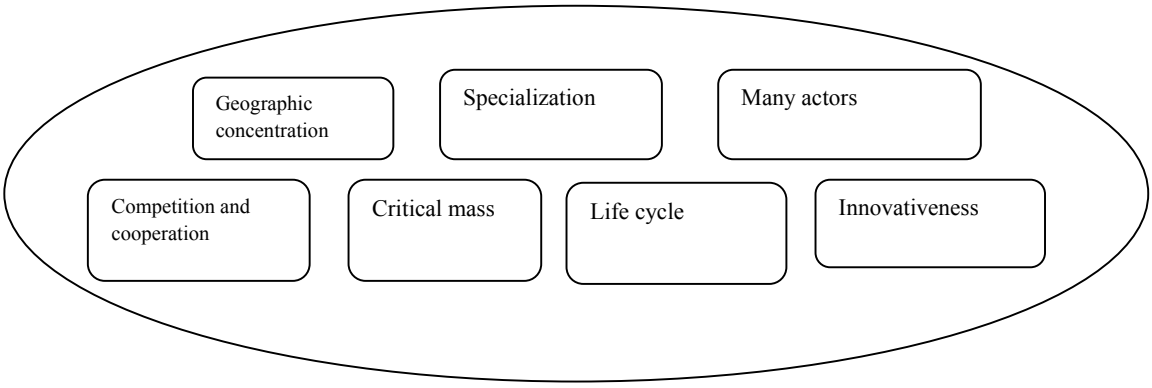
An industrial cluster focuses on competition within the sector. It consists of various actors, resources and activities that are combined together for the development, manufacture and sale of various types of goods and services. An industrial cluster, as a rule, is not tied to any urbanized area. In contrast to regional clusters, industrial clusters have a tendency to have wider boundaries, possibly covering the entire region or even country.

Regional Cluster - is the spatial agglomeration of similar and related economic activities, forming the backbone of the local environment conducive to spillovers of knowledge and

enabling various forms of learning and adaptation. Such clusters typically include small and medium-sized firms, and the central element of their success is concentrated in the power of social capital and geographic proximity. Another feature is that firms are less interdependent than in the industrial clusters.

Analyzing the works on clusters, Anderson and other researchers identify the following characteristic clusters and the key elements commonly found in the literature: *geographic concentration, specialization, many actors, competition and cooperation, critical mass, the life cycle of cluster, innovativeness.* (Figure 2.2)

Figure2.2. Key elements of the cluster



Let us examine these in detail.

Geographical concentration was the central idea of the cluster from the beginning. There are equally the main "hard" and "soft" approaches, which illustrate why the geographical concentration is the center of the cluster theory. "Hard" approaches, some of which have been defined by Alfred Marshall, are associated with the advantages derived by firms from the close concentration in a particular area, which are:

1. Relevant natural resources or other specific regional assets become more affordable;

2. Geographical concentration allows cuts in production costs;

3. Economies of scale and boundaries (economies of scale and scope) in a given area can be optimized for the limited number of enterprises in the effective size;

4. Specialization of suppliers to factor markets on labor, capital and technological resources can be easier within a single place;

5. Means for providing access and use of information about market place or technological changes may be more efficient within a given territory;

6. Interaction with local consumers generates learning and more sophisticated demand.

Obtaining these benefits, companies feel they belong to a series of interconnected companies, which in this region supports the growth of productivity and innovation by creating better access to knowledge, ideas and skills.

Specialization, or the common denominator of the clusters. Each cluster is traditionally regarded as special in the sense that the parties involved are linked together through the main activity that provides a focus on the same market or process. As shown in various studies, clusters mostly have a small number of operations among firms within the cluster, namely in the form of buyer-seller relationships, and attention gradually shifts towards the value of knowledge spillovers and related aspects. Individuals in the same or related areas tend to share experiences with others, formally - through professional contacts and informally - through various informal exchanges. Continuous multidimensional interaction in similar, but complementary activities, explains the process of mutual learning, experimentation and innovation.

But clusters may extend beyond the bonds within a single sector, covering various sectors and industries. In fact, clustering between the traditional sectors of the border may be the main resource of innovation and expected competitiveness.

Thus, the nature of activities is not limited to any sector. Clusters can grow in mixed directions when subjected to internal or external influences. Interrelated specialized suppliers and qualified consumers enhance the competitiveness of the cluster in the global market.

Actors of clusters. Firms shape the character and obvious parts of clusters. However, clustering implies diversity, rather than individual firms. In the absence of such diversity, each of the observed agglomeration, probably a combination of the enlarged company with other companies or units, can serve only as subcontractor or customer in relation to the main organization. Similarly, the group that is incorporated as a subsidiary company, controlled through a formal joint ownership, is not independent and is usually subject to its own costs and benefits.

The motivation to reduce the transaction costs and contradictions, for example, in the transfer of knowledge between individual firms and other actors, can serve as a good reason for the overall control of operations and, consequently, the formation of a single organization. Meanwhile, on the basis of the cultural unit, the differences between individual, independent units and those firms that are related, less formal or planned connections may be barely noticeable.

Mapping of the clusters showed that they mainly include a large number of firms that are small and medium in size. Not only firms are significant potential actors. Clusters can include intense

unions with various organizations such as universities, research institutes, non-governmental organizations, etc. [7]

The main categories of cluster members are:

-Companies that specialize in specialized activities;

- Non-profit and public organizations;

- Research and educational organization;

- Companies that supply products or provide services to specialized enterprises;

- Organization of market infrastructure;

- Organization of innovation infrastructure and infrastructure support to small and medium business[8].

Cluster initiatives pay attention to the so-called institutions of cooperation. They can help to create completely new structures and to involve many organizations, but may also represent a number of more established actors, such as business chambers of commerce, industry and professional associations, trade unions, technology transfer agencies and others. Different actors are involved in cluster initiatives in different ways and due to different stimulus. Their opportunities and functions can vary depending on national scope and the period of the life cycle of the cluster.

When the cluster approach was implemented for the first time, the attention of strategists, practitioners and researchers focused on clusters of firms. However, since the focus gradually shifted to issues that may arise in the separation of knowledge and skills, a systematic approach has developed which emphasizes the interaction and interdependence of the various parties involved. For example, more attention was paid to the role of universities. Universities are significant not only because of their particular mission in education and research, but also because of their ability to provide communications for business, scientific and industrial cooperation.

Cluster dynamics and interactions: competition and *cooperation*. Typically, because firms and individuals compete with each other, there is a tendency to improvement. Depending on market characteristics, actors may seek to obtain an advantage by reducing costs or prices, improving quality, acquiring new customers or penetrating new markets.

[7] L.Markov. Economic clusters: concepts and features//Actual problems of socio-economic development: a view of young scientists, Novosoborsk,2005

[8] The concept of cluster policy of the Russian Federation: RF Government order (draft),2007

At the same time, operating on one level, the cluster members can collaborate around the core business, using their core skills to complement each other. Together, the firms can also attract various resources and services that are unavailable to them in isolation. In sharing of resources and risks, developing mutually complementary features, the company reaches economies of scale. The clusters tend to have a common identity to the outside world and a specific way of functioning within it.

The central aspect is the willingness of individuals to participate in information exchange and the flow of knowledge (concerning, for example, technology, management and marketing). Trust and recognition are important in business collaboration, as companies interpret, evaluate and act on information. The data are encoded, but where there are no non-encoded elements, they may transmit only part of the information - this partly explains why information and communication technologies do not diminish the importance of geographically concentrated clusters. The separation of non-encoded knowledge about the behavior of partners, their values and strategic choices can be expanded set of possibilities, should be taken into account, but it can also bring costs and risks, especially when the information is used incorrectly.

Critical mass. In order for a cluster to reach appreciable internal dynamics, it needs to attract many participants and achieve a certain critical mass. The presence of a critical mass can perpetuate industrial restructuring in the cluster, possibly within the production structure, which supports communication and complementarities between flexible firms of small and large suppliers of resources. Critical mass gives to the cluster stability to withstand external influences or pressure of another kind, including loss of the company, even when these companies can be attributed to the core, yet exceeded the critical threshold of remaining participants. Lack of critical mass may, conversely, make a cluster more exposed to risks of missing specific resources and skills.

Less obviously, with changing circumstances the geographical concentration of firms really needs to create a critical mass. In itself, the notion of critical mass is unstable, liable to change. In the case of certain technologies and industries such as nuclear physics, pharmaceuticals, automotive and shift building, the achievement of critical mass is essential. In others, this situation is not so obvious[9].

The life cycle of the cluster. Any cluster passes through a number of stages. They may not be the same, and the tempo of development may vary. However, there is the inherent low of the way in which clusters are developed, that allows to distinguish some tipical models. Even given the fact that the exact shape and direction will depend on certain circumstances, a cluster passes through the following stages of the life cycle:

[9] L.Markov. Economic clusters: concepts and features//Actual problems of socio-economic development: a view of young scientists, Novosoborsk,2005 p.111-112

Agglomeration. The region has a number of companies and other actors.

The resulting cluster. Some members of agglomeration are beginning to collaborate around the core activities and to implement common capabilities through this connection.

Developing cluster. Because there are new participants or involved the same or related activities in the region, new connections arise between all these new actors. There could be formal and informal institutions to maintain cooperation. Titles, websites, general content related to the region and activity often begin to arise.

A mature cluster. Mature cluster includes the appropriate level of critical mass of actors. It also develops a connection outside its own limits, with other cluster areas, with other regions. There are internal dynamics of new firms, through their appearance, joint ventures, through the office .

Transformation. Over time, markets, technologies and processes change, as well as clusters. For the cluster to grow and be viable, to avoid collapse, it is necessary to make innovations and adapt to change. It may elect the form of transformation to a new or several other clusters, which are concentrated in other areas or simply change the ways in which products and services are supplied[10].

Depending on the stage of the life cycle, clusters can be divided into the following types: *latent, potential, steady, strong* (tab.2.1)

Table 2.2. Types of clusters depending on the life cycle

Type	Brief description of type
Latent	There are only isolated cluster structures, lack of communication links
Potential	The structure of the cluster is still very fragmented, but intensively developed
Steady	The structure of the cluster is developing steadily, but currently does not have accumulated a critical mass of productive capacity to obtain significant benefits from agglomeration, active intercluster interaction
Strong	The effective structure of the cluster, reflecting the major stages of the production cycle, high competition and interaction among participants create a sustainable competitive advantage
Source: Bolshakov, N.B Problems and prospects of economic and cultural development of the forest industry of the Komi Republic (electronic resource) www.congress.syktyvkar.ru/download/2congress/bolshakov.doc	

[10] L.Markov. Economic clusters: concepts and features//Actual problems of socio-economic development: a view of young scientists, Novosoborsk,2005 p.111-112

Innovation is a complex function requiring a wide range of conditions and interactions between different actors. Among the required conditions should be allocated science, entrepreneurship in young and small firms, openness to new ideas from the leadership of the organization, intellectual capital or intangible assets, venture capital. Innovation is exposed to the specific problems faced by each industry, and may suffer the effects of different combinations of competition and cooperation.

The emergence and spread of increasing the efficiency of production processes or new features, more flexible manufacturing activities or verified consumer demand - all these processes bloom in clusters. This is sometimes seen as the consequence of informal contacts, where the costs of participation in the exchange and joint activities decrease due to geographical proximity.

The fact that clusters may have properties that accelerate innovation, has led to the concept of innovation clusters. Any innovative cluster is innovative in the broadest sense, that is, innovation can come from improvements in the way that firms of the cluster organize their own activities, develop, produce and distribute products.

Innovative clusters contribute a number of advantages, which deserve attention. Among them:

1. Increase opportunities for innovation;
2. Enhance formation of business;
3. Increase productivity.

Although clustering may enhance competition and innovation, it is not immune from the pitfalls and risks which might actually reduce competitiveness, other things being equal, and / or lead to stagnation or decay. There are the following pitfalls of clustering:

Vulnerability. Specialization can lead to vulnerability of the region. Technological discontinuity may undermine the advantages of the cluster.

The effect of isolation. Overconfidence, sensitiveness with respect to local contacts and "tacit" knowledge, combined with disdain and lack of external relations foresight, can be explained as an effect of seclusion.

Inflexibility. "Hard" existing structures risk delays or prevent the radical reorientation or the necessary restructuring.

Reduced competitive pressures. Cooperation may cause a reduction of competitive pressures and, consequently, reduce the driving forces of innovation.

Syndrome of self-sufficiency. Accustomed to past successes, the cluster may not be able to recognize the changing trends.

Domestic recession. Just as social capital may be needed to form the basis of clusters, the latter may undermine and even destroy the social fabric that supported it.

These points underscore the importance of continuous innovation as the key to long-term successes of clusters[11].

All the definitions given by scholars are as wide as the definition proposed by M. Porter. Such vagueness and diversity is possibly due to the character of definition. Thus, there are two options. *First,* it is possible to develop a precise definition and then apply it with respect solely to the associations of enterprises corresponding to this association. *Secondly*, the focus not on the notion, but on cluster approach, which could become a philosophy of business. The first approach implies a commitment to the cluster concept, the second-commitment clustering. Summing up, we can say that the purpose of determining the clusters should be to identify associations, enterprises, relevant certain minimum criteria, which may have a greater influence upon the philosophy of clustering.

[11] L.Markov. Economic clusters: concepts and features//Actual problems of socio-economic development: a view of young scientists, Novosoborsk,2005 , p.123

2.2. Review of empirical research: Promoting a cluster of sustainable economic development in other countries?

Clusters are frequently be found in the economic structure of various countries and industries, both at large and in the narrower areas, and even some kinds of local businesses (catering, motor trade, a network of antique shops). They are present in large and small economies, at urban or country level, as well as at several levels of geographic division (at the federal, state, metropolitan regions and cities). The clusters are observed both in developed and developing economies. However, in the case of a developed economy, clusters are developed significantly better[12]. Compared with developed economies clusters in developing economies not only include fewer participants, but often differ from them in social composition, and between existing firms and institutions conditions for development are not very good. In contrast, successfully operating in a developed economy, clusters create a very dense network of evolving relationships and connections. The development of well-functioning clusters is a key indicator in the direction of a developed economy[13].

According to the Cluster Initiative Greenbook[14] the entire world in 2003 revealed more than 500 different cluster initiatives. The study authors noted that most cluster initiatives are initialized in the transition economy countries, with the initiative from the government (32%), business (27%), and business and government combined (35%); funding cluster initiatives comes from the State (54%) business (18%), or joint efforts of business and government (25 %). Most cluster initiatives serve as "accelerator" of cluster processes, i.e. most efforts to develop clusters imply support for the existing potential clusters.

Clusters provide a significant impetus to the development of the advanced economies, helping them to mobilize new network resource organization of territories, which has become the basis of competitiveness of territories.

The experience of different countries shows that there is no single unified mechanism for the creation, development and promotion of clusters.

The fundamental issue of creating a cluster is a model of cluster policies in a given state. In practice, different countries have developed two models of cluster policy. *The liberal model*, used in the USA., UK, Australia, treats the cluster as a market organism and the role of the federal government is to ensure that remove barriers to its natural development. This cluster strategy is typical for those countries that traditionally pursue liberal economic policies, and give much or complete control to the market.

[12] M.Porter, On competition, p.262

[13] M.Porter, On competition, p.298

[14] Cluster initiative Creenbook

A peculiarity of cluster policy in these countries is that the major players are regional governments and regional organizations; they together with the central cluster members develop and implement programs for their development. Federal authorities in some cases financed and supported pilot projects.

The second group includes countries that implement the *dirigist policies* of the development of clusters. It can be attributed to some Asian and European countries such as Japan, Korea, Singapore, Sweden, France and others. In these countries an important role is played by active State (federal) policy for the development of clusters. This policy includes a set of measures - from the choice of priority clusters and financing development projects on development strategies and programs to target a cluster of key success factors for the development of clusters (e.g., infrastructure, centers of excellence in research and development, etc.). The main differences between models of cluster policy are presented in the Table 2.3.

Cluster policies of European countries at the national level[15]

Despite the lack of accurate data, it is clear that in Europe there are a large number of clusters. Nevertheless, the European experience to create a cluster is a good example in the world practice. We should note that in the European Union in 1968 created the Directorate General for Regional Policy of European Union, in 1975 created the European Regional Development Fund, in 1988 - the European Parliament adopted the Charter of regionalism, began operating the Council of Regional and Local Communities[16]

Table 2.3. Differences between models of cluster policy

Dirigist model	Liberal model
Sectoral and regional priorities, as well as clusters that are going to develop, are selected at the state level	Develop clusters, which were originally developed markets
Infrastructure for the priority clusters: branches of universities, scientific research institutions, airports, roads, etc. -created specifically	Authorities rarely involved in establishing the infrastructure for clusters
Region to create a cluster, as well as the volume of its financing are determined by the State	The state creates incentives for authorities, who bear full responsibility for the generated cluster

[15] Cluster initiative Whitebook

[16] P.Rudneva, The Experience of clusters in developed countries, Economy of the region, 2007 http://journal.vlsu.ru

The EU regards cluster policy as a key tool for enhancing the competitiveness of industries and regions, improving the innovative capacity and economic development in the medium and long term. Industrial policy also needs to be innovative and provide new liberal regulatory instruments that could give industry greater freedom to seek their own technological solutions[17].

In the most explicit form, this is a strategy implemented by countries such as Belgium, Denmark, Germany, Italy, Japan, Netherlands, Finland, France, etc.

For example, in ***Germany*** three out of seven of the worlds best clusters of high technology operate, they received the honorary title of "Silicon Valley of the 21-st century": Munich, Hamburg, Drezden[18].

In general, in Germany in most of the federal lands there are located many automotive clusters. An Automotive Cluster in Eastern Germany was started in 2004. To date, the cluster consists of such car manufacturers as BMW, DaimlerChrysler, Opel, Porsche, VW, suppliers of components and equipment KUKA Schweissanlagen GmbH, MITEC Automotive AG, Schnellecke Group, Siemens VDO Automotive AG, TRIMET Aluminium AG, German Industrial Bank, Institute. Fraunhofer, Technical University of Dresden, Leipzig Graduate School of Trade and others.

Another specific example of the rational and efficient development of cluster-based models is the rise of automobile production in **Austria**. In 2000 about 30 thousand workers in the automotive industry, concentrated in two clusters in Styria and Upper Austria, made 8.1 billion dollars of products, or more than 10% of total production.

The **Styrian** automotive cluster includes 110 firms, covering the entire sequence of technology - from extraction and processing of raw materials, key production processes, logistics and software, to processing waste. Styria became the center of the international automotive industry; there was an extensive scope for subcontractors. In 1999, 307 firms of Upper Austria decided to join in the likeness of firms of Styria. A key element was the TMG Company that develops technology policy of the province. In 2000, this cluster includes companies producing diesel engines. By the end of 2001, the cluster has become a high-tech industrial group, comprising 350 sub-contractors, in which are working 80 thousand people, with sales of 1.5 billion dollars[19].

[17] Clusters of competitiveness (electronic source)//www.subcontract.ru

[18] P.Rudneva, The Experience of clusters in developed countries, Economy of the region, 2007 http://journal.vlsu.ru

[19] New form of organization of the innovation process, www.subcontract.ru

In Austria, 76 regional clusters identified were arbitrarily divided on the basis of their specialization, into 6 categories: industrial, technological, educational, export, mixed; clusters of services[20].

Finnish experience is a potential model of cluster formation. To date, an example of the efficient development of a cluster in Finland is Oulu city, where is located the Nokia company, the third largest in the world among companies of this type. Its dawn began in 1992, when corporate group had sold part of their companies and began to specialize in the production of mobile phones. Then the company produced 50 million sets per year, in 1999, sales increased five times, and in 2002 reached 1 billion sets. Oulu is located near the Arctic Circle and at all times was known as a city of fishermen and reindeer herders. In the town live 100 thousand people, with six thousand of them working at Nokia. The companies cooperate together with 120 companies, specializing in microelectronics and software.

In connection with the development of microelectronics is formed the second area - the sector of medical technology. The scientific basis of high technology has become the center of City University, established in 1950. One of the first science parks in Europe has emerged in Oulu in 1982. "Technopolis" surrounded by small and medium businesses, directed their work to the sphere of telecommunications. The University has become “a forge” for development, where already third-year course students take part in the firm’s work. In 1990 was created Mediapolis, which led the trend in medicine and biotechnology: it cooperated with 50 companies that are engaged in developing pharmaceutical products, medical equipment, equipment for diagnostics, software for health care. Centers of knowledge and entrepreneurship have attracted many large foreign firms[21].

Among the leading firms in the Finnish cluster consists of production and service divisions of some large multinational companies, such as «Eriksson», «Siemens», « Fujitsu», «IBM».

Also in Finland, there developed forest, information and telecommunications clusters, which provide the bulk of exports and form a significant part of the country's GDP. Pulp, paper and wood-processing companies of the forest cluster, hold 40% of the world market for equipment for the production of pulp and nearly 30% of the market for the production of paper.

The **USA** experience shows that economic development of regions depends on a complex system of interrelated factors: among them geographical location and highly qualified personnel play an important role.

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[20] Alexander Scotch. International experience in the formation of clusters,Cosmopolis (electronic source) www.intelros.ru

[21] New form of organization of the innovation process, www.subcontract.ru

Highly competitive and stable economic growth is determined by factors that promote the spread of new technologies. The task of establishing and strengthening of regional innovation clusters in the USA is placed in the number of critical national priorities[22].

In the USA, Porter was a pioneer - the developer of the cluster model. Arizona, California, Connecticut, Florida, Minnesota, North Carolina, Ohio, Oregon, Washington led the process of cluster formation and adopted the appropriate program: hundreds of towns and territories have developed their cluster strategies. A striking example of the cluster is Silicon Valley, where wages of professionals is 125 thousand per year and where are employed 2.5 min. people. Venture capital investments in 2001 amounted to 68, 8 billion dollars. (In 1991 - 2 billion dollars)[23].

Canada has experience in the implementation of the following cluster initiatives: the biotechnology cluster (Montreal, Toronto, Vancouver, Ottawa, Halifax); information and telecommunications cluster (Vancouver, Calgary, Quebec, etc.), a cluster of high technology (Montreal, Ontario), a multimedia cluster (Montreal, Toronto, Vancouver); wine cluster (Niagara); and a cluster of food industry (Toronto, etc.).

Another example of clustering may be the experience of the **Japanese** economy. For example, the automotive industry cluster of «Toyota» firm has a multistage network of 122 direct suppliers and subcontractors of almost 36 thousand small and medium enterprises. Subcontractors of all parts form a kind of club with high market barriers for newcomers and foreign competitors. This largely eliminates the potential competition inherent in a free market. However, the price factor in the procurement of components contributes to optimization of subcontracting production[24].

In Japan, for the implementations of cluster solutions we have the experience of Hokkaido, where the first half of 1990 created the Central Organization for sustainable development and promoting the development of industrial clusters[25].

The experience of developed countries confirms that at the present time the establishment of modern technology can only be based on the integration process, including through the development of clusters. Economy based on clusters is a model of competitiveness and investment attractiveness of the economy, providing high level and quality of life and are involved in the production process not only large enterprises in the region, but also small and

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[22] Emelianov. The development strategy of science and technology in the United States in the twenty-first century// Problems of theory and practice of management. N1. 2002, p.19-24. www.inti.kz

[23] .Rudneva, The Experience of clusters in developed countries, Economy of the region, 2007 http://journal.vlsu.ru

[24] P.Rudneva, The Experience of clusters in developed countries, Economy of the region, 2007 http://journal.vlsu.ru

[25] I.Bondarenko, Small enterprises in the cluster system (electronic resource) // Business for all №33, 2005.: www.businesspress.ru

medium businesses. The use of cluster technology is the most promising in those areas where business and government are going to create competitive industries.

Cluster Development in Transition Economies

States with transition economies now have the experience in the development of cluster technologies and mechanisms. Cluster principles of organization are widely discussed in Russia and used in the formulation and implementation of national industrial policy that improves the efficiency of interaction between the private sector, state, trade associations, research and educational institutions in the innovation process[26].

In the Programme of Socio-economic Development of Russia in the Medium Term (2005-2008) among the priorities identified "The promotion and development of regional and economic clusters"[27].

Among the most promising cluster is the Povolzhskiy automotive cluster in Togliatti. The number of workers in the cluster is estimated by specialists at about 20 thousand people[28].

As examples of potential Russian cluster we can identify the aerospace clusters in Moscow and Samara, and information and telecommunications clusters in Moscow, St. Petersburg, Belgorod region, shipbuilding instrument cluster in St. Petersburg, automotive clusters in the Volga region and St. Petersburg, a cluster of microelectronics in Zelenograd , biotechnology, and the cluster of information and computer technologies in the Tomsk oblast[29].

In the post-Soviet space there is some progress in formation of industrial systems based on clusters observed in **Ukraine.** The pioneer of clustering in Ukraine should be considered Khmelnitsky region, where since 1998 started the program "First Podolia", which set up and operate the first regional clusters: sewing, agricultural and processing enterprises, as well as construction companies and manufacturers of building materials[30].

Activity of Podolsky cluster is based on voluntary affiliation of its membership and financial support for small business. This has led to innovative products and effective implementation of existing regional intellectual capacity.

In general, the above-listed cluster is functioning and today, thanks to the support not only local enthusiasts but also because of occasional financial support from international economic

[26] The interaction of small and large business, (electronic source)// Information analysis of Enterprise Institute, 2003. www.mbrk.ru

[27] From row material to innovation ,www.csr-nw.ru

[28] The role of clusters in enhancing the competitiveness of the region (electronic source), www.prtime.ru

[29] V.Tsihan. The economic development “Theory and Practice of management”№5,2003

[30] V.Tsihan. The economic development “Theory and Practice of management”№5,2003

organizations. Experience in the region of Podolia became an important training ground to learn specifics and prospects of clustering for the remaining 26 regions of Ukraine[31].

There is a dynamic development of clustering processes in **Armenia**. Those that have reached maximum development are clusters for the production of jewelry and diamond, cognac and wine, agro-industry products, metal products, as well as clusters operating in the mining and tourist sectors. There have also been created new clusters of information technology, providing its services through outsourcing. In recent years there has been involvement in an Armenian pharmaceutical cluster, the uniqueness of which is to enhance the production of medicines from medicinal plants (production of natural medical means has reached 24 % of the total produced by a cluster of medicines).

With globalization and increasing of international competition, the process of clustering can be observed in various developing countries such as India, Indonesia, Malaysia, Mexico, Nigeria, Chile, etc.

India has more than 2000 clusters, of which 388 are industrial and 1657 combine handicraft enterprises. Clusters deliver over 60% of exports of the country, and some large clusters produce up to 90% of certain types of products manufactured in India (garments, jewelry and leather goods). Indian small enterprises tend to concentrate around large industrial companies. The number of small businesses operating in the several of clusters is ranging from 40-50 to 1700 (in a cluster for the production of technical equipment in Delhi). Especially effective approaches of the Indian Government stimulate the growth of export opportunities in the development of high-tech industries and service clusters (ICT, software, pharmaceuticals). This is facilitated by the state technical policy, combined with close cooperation of central government with regional and local governments interested in accelerating economic development through the interaction of large, medium and small enterprises[32]. Table 2.4 presents economic sectors, acting as a base when creating clusters in several foreign countries.

Table 2.4. Key industry trends clustering in some economies

Industries for the creation of industrial clusters	Countries with established industry clusters
Electronic technology and communications, informatics	Switzerland, Finland
Biotechnology and Bioresources	Netherlands, France, Germany, Great Britain, Norway
Pharmaceuticals and cosmetics	Denmark, Sweden, France, Italy, Germany
Agriculture and food production	Finland, Belgium, France, Italy,

[31] S.Sokolenko, Increase competitiveness and innovation based on clusters, The experience of Ucraine, Moskow, 2008
[32] V. Bondarenko, Small enterprises in the cluster system (electronic source)//Режим доступа: www.businesspress.ru

	Netherlands
Gas & Oil and Chemistry	Switzerland, Germany, Belgium
Machine-building and repair, electronics	Netherlands, Italy, Germany, Norway, Ireland, Switzerland
Health care	Sweden, Denmark, Switzerland, The Netherlands
Construction sector	Belgium, Netherlands
Energetics	Norway, Finland
Light industry	Switzerland, Austria, Italy, Sweden, Denmark, Finland
Timber and paper complex	Finland
Source: Clusters as a form of regional economic cooperation. (Electronic resource). http://bpi.consultinfo.ru/products/free.php?p=1004	

Thus, the experience of countries with a transition economy confirms the fact that the idea of cluster development should not be perceived as an instrument of state intervention in the economy as a kind of program to create clusters. Otherwise, the misconception may form that clusters can be created deliberately by policy instruments.

As international practice shows, the clusters often occur artificially and from scratch, they emerge and evolve in a natural way, where there are preconditions for this in the form of inter-industry production linkages. The role of policy in this case is to create conditions for business development, creation of new firms, encouraging innovation, improving the investment climate, etc.

CLUSTER INITIATIVE IN KAZAKHSTAN: A HISTORICAL PERSPECTIVE

3.1. History and the local system

The Republic of Kazakhstan is a country with a rich historical and cultural heritage. Kazakhstan is located in the heart of Eurasian continent, at the crossroads of transportation links, socio-economic, socio-intellectual and ideological relations between all the parties of the world, between Europe and Asia and developed large states on the Eurasian continent. History of Kazakhstan has more than 20 centuries (tab.3.1).

Today Kazakhstan has a relatively large area 2,724,900 square kilometers and a relatively small population (16.4 million people, 2009). And at the same time the country has reserves of natural resources: oil, natural gas, various mineral raw materials. Out of 105 elements from Periodic Table, Kazakhstan has 99, proven reserves of 70, and is involved in the production of more than 60 elements.

The Republic of Kazakhstan is a modern, legal state, in which the core values are people, their life, rights and freedoms. Kazakhstan is a state with presidential form of government.

Table 3.1. Chronology of the State formation

3-1 cc. BC	Arise the state form Kangju.
6-6 cc.	Formed Turkic Kanagat State Karluk
9-12 cc.	the State Oghuz Karanahidov
11-13 cc.	Invasion of the Seljuks, the Khitan, the Mongol-Tatar
Late of 15 th centuries.	Kazakh Khanate was formed, which was divided into Zhuzes.
In 18 cc.	Junior and middle Zhuzes voluntarily adopted Russian citizenship. Since joining the Senior Horde in the 60-ies. All Kazakh lands became part of Russia
1917-1918	Established the Soviet rule. Civil war ended in March 1920
08/16/1920	Within the RSFSR established Kirghiz Soviet Socialist Republic.
04/19/1925	Renamed the Kazakh ASSR.
1936-1990	Federal republic of the USSR
Since 1991	Proclaimed the Republic of Kazakhstan, established the post of President
Compiled by the author on the basis of data MGIMO, www.mgimo.ru	

Kazakhstan Economic Growth

At the beginning of the path to a market economy (1990-1992) the GDP in Kazakhstan has declined by 40 percent. In this case, a departure from existing relationships and the transition to a market economy led to economic recession. Namely, most businesses are not functioning, thereby creating unemployment, which has been the main factor in poverty.

Nevertheless, despite a sharp downturn, in recent years the economic development of the country improves (Figure 3.1). Between 2000 and 2005 the annual growth of GDP in annual terms was 10%, higher than the countries of the Soviet Union. The dynamic development of economy ensured the stability of national currency, reducing inflation.

In sectors such as agriculture, transport and trade was due to GDP growth. Also, economic growth had a positive impact on the production of services. Kazakhstan was the first CIS country to reinstate the level of production before the crisis period.[33]

Trades of Kazakhstan are mainly from three countries. In Russia and China are together the account of total exports - 28%, and 45% of imports. Switzerland is the largest recipient of Kazakhstan's exports. Proceeds from the Kazakh trade are low, as a country rich in mineral resources, they represent 86% of the total export (the share of minerals - 66%, metals - 20%, food - 6%). Kazakhstan is rich in mineral resources, however, it mostly imported machinery (41%), followed by chemical products (14%), metals (11%) and food (8%)[34].

Kazakhstan is still a major producer of raw materials. Below (tab.3.2), some economic indicators for Russia and Kazakhstan. Over the past five years, Kazakhstan's GDP grew an average of 10% per year, but for all positions Kazakhstan is behind Russia.

The past five years have seen rapid economic growth. During 1999-2003, the growth of gross domestic product of the republic amounted to more than 50%, allowing Kazakhstan to become one of the world leaders in economic development rates. During this period, Kazakhstan's economy grew at an average of 8.9% per year, much higher growth rates in several countries of the CIS and Eastern Europe, as Russia - 7,1%, Ukraine - 5,3%, Hungary - 4.4% Romania - 3%, Poland - 2,7%, etc.

We now need to look at how our country compares with other the CIS countries. Thus, the average economic growth over the past five years we are in third place, behind only Azerbaijan and Armenia. Kazakhstan among CIS countries is in the 2-nd place after Russia in terms of GDP

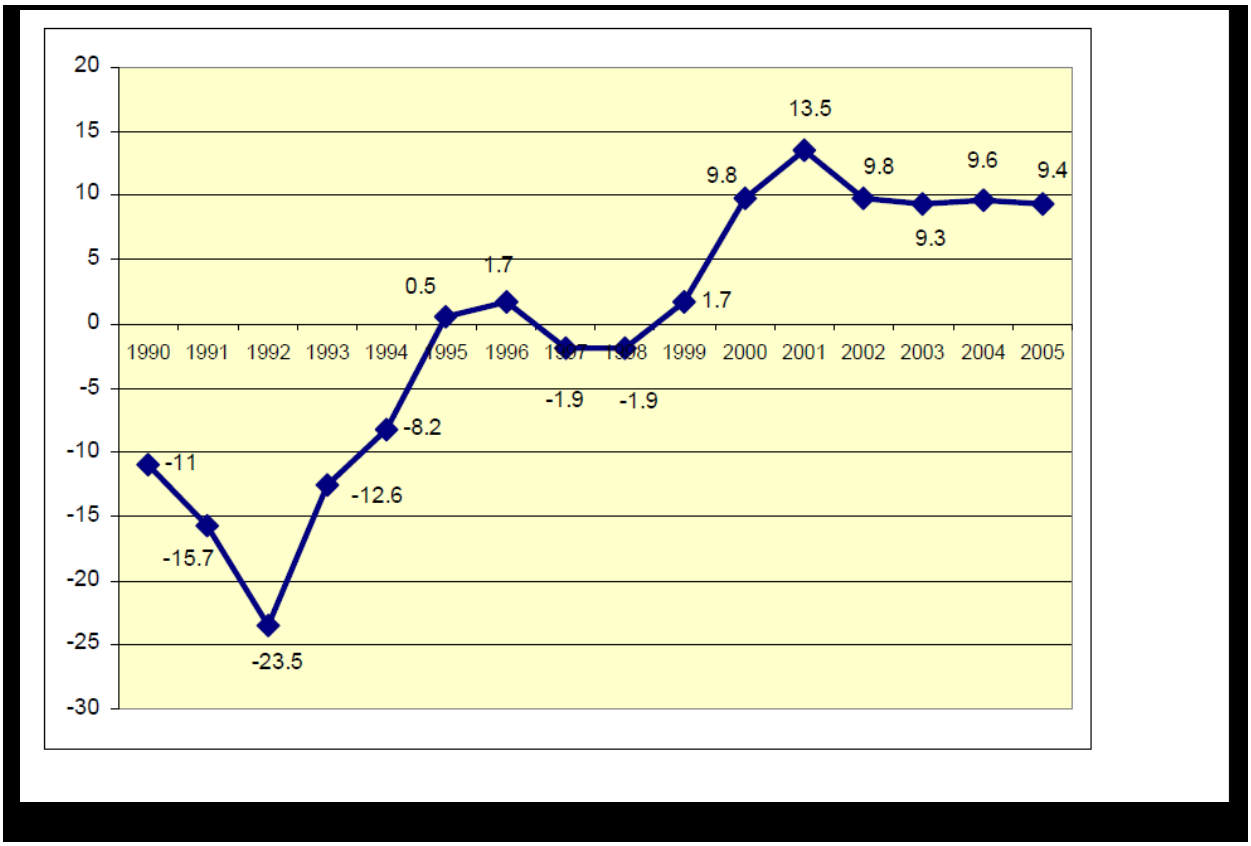
[33] ADB discussion paper "Poverty Reduction in Developing Countries via Infrastructure Development and Economic Growth:Mutual Impact in Kazakhstan,2007

[34] Agency on statistics,Social-economic development of Kazakhstan,2004

per capita and the 3-d - after Armenia and Belarus - in terms of the average rate of growth. **(Figure 3.2)**

Figure 3.1. Kazakhstan's GDP growth in the period from 1991-2001

(% of the previous year)[35]



[35] Agency for Statistics of the Republic of Kazakhstan

Table 3.2. Key economic indicators

	Kazakhstan	Russia
GDP	$ 100.0 billion	$1.0 trillion
Population	15400000	145000000
GDP per capita	$6,5 thousand	$7,5 thousand
Inflation	8,2%	8,0%
Exports	$ 32,9 billon	$ 314,4 billion
Imports	$ 25,6 billon	$ 155,5 billion
Centrlal Bank Reserves	$18,40 billion*	$ 416,8 billion*
National Fund (similar stabilization Fund of Russia)	$ 20 billion	$ 170 billion

* At the end of September 2007.

** Net reserves at the end of August 2007gg.

As seen on Economic Indicators, Kazakhstan is among the leaders. However, we are all aware that these figures probably reflect the availability of raw materials in countries such as Russia, Kazakhstan, and high commodity prices. Impressive economic growth rates achieved mainly due to raw material resources.

Financial System[36]

The development of the financial sector is a priority for any state. Thus, in Kazakhstan over the Inflation in 2007 was 7,3%, whereas in 1999 it amounted to 17,8%.

Fiscal policy[37]

Fiscal policy plays a special role in maintaining the stability of the financial system, affecting many of the macroeconomic variables such as inflation, interest rates, investment, and others. In the development of harmonization budget and strategic planning at the planning stage of the budget are encouraged to develop a medium-term fiscal policy of the Government. In the new edition of fiscal policy is proposed to go to deficit-free budget, and a significant reduction in the size of government debt. This will create a significant reserve of strength in the area of fiscal policy.

Tax policy [38]

[36] The results of Kazakhstan's development in recent years, (electronic source) www.panasia.ru/main/kazakhstan/economic

[37] The results of Kazakhstan's development in recent years, (electronic source) www.panasia.ru/main/kazakhstan/economic

Kazakhstan was the first CIS which developed and introduced a progressive tax code. Since 2002, the republic has a new Tax Code. Tax Code has been laid down principles of stability and unity of the tax legislation on tax benefits. In accordance with this legislation has been excluded from the rules for granting benefits to the individual nature of a particular taxpayer. In recent years, budget revenues are on average 22-23% of GDP, which is an indicator of a relatively small tax burden. Contributed to this reduction in VAT rates and improve the methodology for its collection, the decrease rate of social tax, putting special tax treatment, the release of social and nonprofit organizations from corporate income tax. To stimulate the production of goods and services, we have policies to reduce the tax burden.

Budget policy [39]

Kazakhstan has developed the Budget Code, whose aims are, first of all, the unification and systematization of legal norms of current legislation regulating budget relations, establishing the integrity of the fiscal relations with the uniform principles and rules that define the participants of the budget process and their powers, ordering Budget System and Budget Process. Currently, the state controls the budget deficit, which in 2002 amounted to 0,3% of GDP for 2004 is planned at the rate of 1,9% of GDP in 2005 - 1% for the year 2006 - 0,5%.There is expansion of current and capital investment in the social sphere, health, education. Given that the budget revenues are heavily dependent on revenues from the commodity sector, the country's debilitating non-renewable resources, conservation of earnings from the commodity sector in the National Fund will provide a uniform level of consumption for current and future generations. Provisions in the National Fund will in the long run, when the exhausted mineral resources of the country, the Government of Kazakhstan to receive adequate investment income from assets invested in stocks and other securities of the global financial market. National Reserve Fund to the end of 2007 amounted to $40billon.

[38] ibid

[39] The results of Kazakhstan's development in recent years, (electronic source) www.panasia.ru/main/kazakhstan/economic

3.2. The cluster as a key element of the competitiveness of the economy?

The competitiveness of the state is a matter of principle for the development of any country, because it is the only objective measure of quality of life and welfare.

The solution of this problem lies not in the formal occupation of a certain rank of Kazakhstan in the ratings, and in achieving world-class standards on a wide range of areas of life. The value of the results of ratings - in the identification, classification issues and challenges to their use for effective strategic management of the state and the economy, and improving the competitiveness of the country, will be a consequence of a calibrated control.

That is why before Kazakhstan set an ambitious strategic goal - joining and staying among the 50 most competitive countries in the world. Its practical point of reference started in 2005. In 2006, the President in his message to the people of Kazakhstan presented a substantive vision of the objectives[40]

Figure3.2 Components of competitiveness

Index	Kazakhstan	Russia
Global Competitiveness Index		62
Basic requirements	51	66
Institutes	75	114
Infrastructure	60	61
Macroeconomics	10	33
Health and primary education	86	77
Improved efficiency	56	60
Higher Education and Training	51	43
Market Efficiency	44	60
Technological readiness	66	74
Innovation factors	74	71
he level of adaptability to business	72	77
Innovation	70	59

Source: WEF, Global Competitiveness Report 2006-2007.

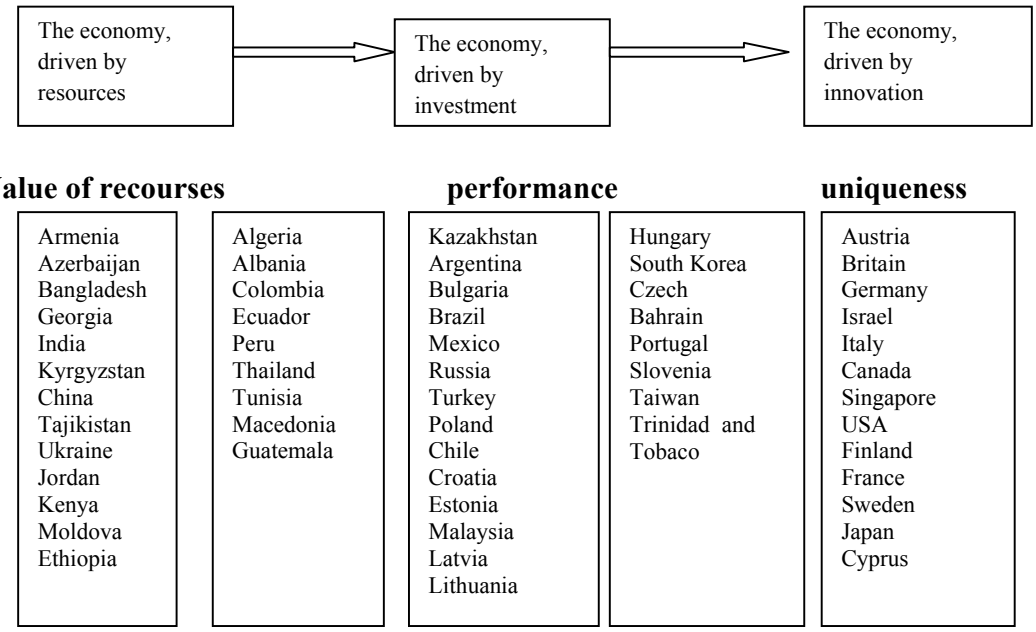
Comprehensive assessment of the situation, which is calculated by World Economic Forum as a global index of competitiveness, again confirms the leadership of Kazakhstan (56 th)[41], but rates

[40] Report of the Concept of achieving a qualitatively new level of competitiveness анв export capacity of economy of Kazakhstan for 2008-2015, 2008

[41] Report of the World Economic Forum

of infrastructure, health, primary education, technological readiness and innovation speak about the need for further progress. For the country as an integral state to be able in the foreseeable future to claim a worthy place in the world economy, the regions have to play the role of locomotive in the task of improving the competitiveness of national economy (Fig.3.2). In general, using the methodology of Professor Porter, Kazakhstan is the second stage of development, which is characterized by large investment needs. However, Kazakhstan will move to the creation of unique and innovative products[42]. Kazakhstan is at the stage of economic development based on performance. The basis of this phase is the transition to the creation of unique and innovative products.

Figure 3.3. Stages for development of competitiveness.



However, despite advances in macroeconomics, which have already been shown in the previous chapter, the development of such factors as infrastructure, health, primary education, innovation, of course, raise serious issues. How does Kazakhstan approach the solution of economic development? The first and big step in this direction was adoption in 1997 "Development Strategy to 2030"[43], which outlined the following priorities for development: national security, internal political stability and consolidation of society, economic growth, based on an open market economy with high level of foreign investment and domestic savings, health, education

[42] [42]K.Kelimbetov, Development institutions as factors of competitiveness (electronic sourse)// www.iet.ru/files/text/other/18_kelim.pdf

[43] Kazakhstan Development Strategy up to 2030, Decree of the President of the Republic of Kazakhstan, 2003

and welfare of Kazakhstan citizens, energy resources, infrastructure, particularly transport and communications, professional state.

Then one of the elements of economic component in 2003 was "Industrial Strategy and Innovation Development in 2015"[44], which is centred on the following areas:

- *Creation and development of competitive non-oil intensive high-tech industries, diversification;*

- *The principles of partnership between the government and the private sector;*

- *Liberal trade policy*.

Thus, the main impact has been on countering the so-called "Dutch disease". It is no secret that today, fiscal economic and financial situation in Kazakhstan is dependent on developments in world commodity markets. The ideology of diversifying the economy of our country reflected in the fact that the diversification as such - it is the right of market. This is the primary concern of the state. The state's role in diversifying the economy is mixed. It is believed that the market itself should decide these issues. However, experience show that is just does not always happen automatically.

Diversification Strategy identifies three stages of development [45]:

(Stage 1) 2003-2005.: Creating innovative and financial infrastructure (the reform, the establishment of seven development institutions, financing of projects).

(Stage 2) 2006-2010.: Consolidation of all resources. Large-scale investment and innovation in all sectors of the economy.

(Stage 3) 2011-2015.: Creation of new competitive industries. Achieving a balanced diversification.

In general, diversification is possible on the basis of public-private partnerships, a clear dialogue between government and business. And the creation of such a dialogue in Kazakhstan was made possible on the basis of cluster initiatives. The essence of the cluster is to obtain synergies from the sharing of production and other resource companies, united under the auspices of the cluster[46].

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[44] Strategy of Industrial and Innovation Development of Kazakhstan for 2003-2015, Decree of the President of the Republic of Kazakhstan, 2003

[45] ibid

[46] A.Belgibaeva, Cluster as a tool to improve the competitiveness of agricultural products, Transitional economy, 2006 Режим доступа: www.libr.e-taraz.kz

According to the theory of Michael Porter, clusters influence to competition in three ways[47]:

- *First*, by raising the efficiency of their member companies and industries;

- *Secondly,* by improving its ability to innovate, and thus to increase productivity;

- *Third*, by encouraging new business structures, which for innovation and expand the boundaries of the cluster.

International experience provides examples of improving the competitiveness of territories and production facilities by implementing a cluster-oriented regional policy[48].

Cluster contributes to concrete economic effect and enhances the competitive advantages of individual companies, and, consequently, the cluster as a whole[49].

To date, Kazakhstan has developed a vertically integrated (centralized) model of economic organization of the territories for which the typical predominance of one or a several large industrial mass production, combined with corporate structures, which are the main employers, is the main source of replenishment of local budgets and the key factor in shaping the infrastructure sector in regions. Such a model is formed in countries with diversified economies. For Kazakhstan in the present conditions amore promising network model of territorial and economic organization is characterized by flexible specialization and the ability to innovate, and based on the mobilization of resources, all the networks through cluster development[50].

So, the idea of cluster development in Kazakhstan is included in the message of President to the people of the country as the main method of diversifying the economy of the republic. “We chose a model of a competitive economy to the priority sectors that have economic potential to improve competitiveness, thereby ushering in the development of clusters of Kazakhstan", - stressed the President in his Address to the people of Kazakhstan. ”I think that the middle of this year we should have a plan for the creation and development, at least five to seven clusters in these market segments, such as tourism, oil and gas engineering, food and textile industries, transportation and logistics services, metallurgy and building materials. They will determine the long-term specialization of the economy in non-extractive industries “[51].

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[47] M.Porter, On competition

[48] S. Pyatinkin, TA Bykova, Cluster Development: essence, current approaches to foreign experience, Minsk: Tesei, 2008

[49] S. Pyatinkin, TA Bykova, Cluster Development: essence, current approaches to foreign experience, Minsk: Tesei, 2008

[50] The role of clusters in enhancing the competitiveness of the region (electronic source), www.prtime.ru

[51] Kazakhstan on the road to accelerated economy, social and political modernization” Message from the President of the Republic of Kazakhstan to the people of Kazakhstan. – Almaty, 2005. – p.97

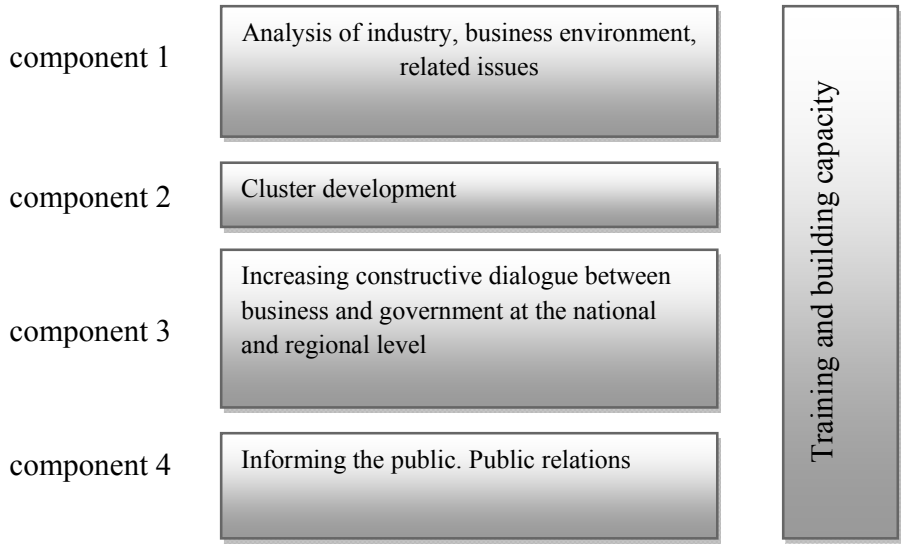
Thus, in 2004 with the successful international experience, Kazakhstan has launched the project "Kazakhstan Cluster Initiative". The main objective of the project in Kazakhstan cluster initiative is the establishment of an industrial base to diversify the economy through cluster development - as examples of setting up effective dialogue between private and public sectors, identify and remove barriers to business initiatives, empowerment, leadership development, creating a favorable business environment, improving the competitiveness of non-extractive industries and as a consequence – throughout the country as a whole. The project focuses on non-extractive industries. However, we study the possibility of industries that can enhance value-added products of oil and mineral extractive industries.

Until the end of 2004 JSC "CMAR" together with the American company J.E. Austin Associates, general contractor on the project, conducted an analysis of state branches of Kazakhstan's economy. The results of this analysis became the basis for determining the Government of pilot clusters; to develop plans for their development and subsequent approval by resolution of the Government of Kazakhstan № 633 of 25 June 2005.

Based on the analysis and recommendations the government identified the following sectors for development of pilot clusters: tourism, food production, transportation and logistics services, construction materials, textiles, oil and gas engineering, which provided for the practical realization of the third phase of the project. These are the sectors that may lead Kazakhstan to world markets. In some of these industries already there is some sort of progress, others have to rise, as they say, "from the knees." They were selected by experts from 23 proposals for consideration by the industries. One of the criteria for selection was to analyze the composition of the cluster, namely the geographical concentration of enterprises, which is especially important to create a cluster, as well as a critical mass of companies in any industry. Thus the concentration of enterprises of one branch of some of the regions of Kazakhstan enables us to identify opportunities for innovative development in this industry. For successful implementation of the project on a cluster initiative should be five basic components[52].

[52] JC" CMAR" Guidelines for the development of clusters",2006

Figure 3.4. Components of the project "Kazakhstan cluster initiative"



All these components act together to help improve the competitiveness of Kazakhstan in three key areas: economic activity, the composition of the economy and competitive environment for business and investment.

It should be noted that the seven pilot sectors of the economy are not the priorities of economic development, and are pilots. This primarily means that these areas have been identified not because they need government support in the form of subsidies and incentives, but because they are most ready for development using the cluster methodology.

However, for all seven pilot branches it is necessary to note the different levels of business interest in participating in the project, while in some cases there has been a lack of understanding of the ideas and objectives of the project. Thus, in many clusters, representatives of businesses expect from government and public bodies certain actions, often without thinking of what business has to do itself, united. And it is not so much about the interaction of business with government agencies, as well as the possibility of implementing joint projects / investments Kazakhstani companies.

Successful realization of the cluster project in Kazakhstan is expected to increase productivity and sustainable economic growth in the country, as the cluster approach is a proven and effective modern tool to enhance competitiveness and stimulate economic development of regions and countries.

Innovative activities involve not only the introduction of super-novel and overly-complicated technology, but also improve and update existing ones[53]. Thus, according to the Kazakhstan Agency on Statistics on 01.01.2007 out of 10951 enterprises of the republic were innovative in terms of their activity. Of all the innovative products: 25,4% - are newly introduced, or have undergone significant technological change; 70.6% - have been subject to improvement[54].

This is expected to be achieved in the seven pilot clusters in the near term. Thus the concentration of enterprises in processing of fruit and vegetables, meat and dairy products in the south of Kazakhstan, indicate the presence or the possibility of creating a competitive advantage in the food industry in southern Kazakhstan. In addition, in the southern region of Kazakhstan will see the development of such clusters as a cluster of tourism, construction materials, oil and gas engineering and textiles. In the eastern region of Kazakhstan are developing clusters of metallurgy and a food processing cluster in the western region - a cluster of oil and gas engineering, in the northern region - a cluster of food production and oil and gas engineering.

International experience has shown that the cluster approach not only serves as a means of achieving economic policies (structural changes, increasing competitiveness, strengthening the innovative orientation, etc.), but also a powerful tool for promoting regional development, which, ultimately, may lead to an increase in employment, wages, payments/contributions to budgets of different levels, improving the sustainability and competitiveness of regional industries.

In addition, the cluster approach can improve the efficiency of interaction of the private sector, states, trade associations, research and educational institutions in the innovation process to improve the competitiveness of national economies. For the business environment a cluster is a real opportunity in the future to secure competitiveness. However, it is important to understand that the clusters, like any other attractive technique, can produce results only if they fit into the broader context of the national development strategies.

However, in Kazakhstan, the creation of clusters is at an early stage. The Government of Kazakhstan initiated the creation of socio-entrepreneurial corporations (SEC) to accelerate their formation, as international experience shows that economic development depends on the competitiveness of its constituent regions. The SEC created to improve the competitiveness of regional business, ensure that institutional and economic environment to attract investment, and development of innovation infrastructure in the region.

The idea of SEC was the result of finding new tools for development of non-commodity sectors, more adapted to the prevailing conditions in Kazakhstan, with an emphasis on regional

[53] A.Turginbaeva, Cluster analysis of activity in the Republic of Kazakhstan. Scientific journal "The successes of modern science» № 7, 2008

[54] Agency on statistics of Kazakhstan,2007

development. Creating SEC will enhance the competitiveness of regions by introducing mechanisms for cluster development [55].

SEC will be a regional development institution; the manager transferred state assets and serve as a generator of projects, attracting investments for their implementation and carrying out promotion of the image and economic development of the region to markets. They will focus financial, technical and managerial resources to implement projects in the region.

The following social-entrepreneurial corporations are created and operational, covering all regions of Kazakhstan[56]:

JSC"NC" SEC "Sary-Arka" (Karaganda, Akmola region, Astana);

JSC "NC" SEC "Batys (Aktobe and West Kazakhstan region);

JSC "NC" SEC "Epmic" (East-Kazakhstan and Pavlodar oblasts);

JSC "NC" SEC "Caspian" (Mangystau and Atyrau region);

JSC "NC" SEC "Ontustik (Zhambyl, Kyzyl-Orda and South Kazakhstan region);

JSC "NC" SEC "Tobol" (Kostanai and North Kazakhstan region).

The development of socio-entrepreneurial corporations will support the creation of large regional centers, concentrating economic activity not only in that region, but also in adjacent regions and acting as catalysts for building competitive regional clusters.

Currently in the regions, work continues on the development of seven pilot clusters (tourism, food industry, textile industry, metallurgy, oil and gas engineering, construction materials, transport logistics). All these clusters are at different stages of development and are implemented according to the plan, approved by the LEAD № 633 of 25 June 2005.

Cluster ” **Metallurgy**” developed in the Karaganda region, since a significant proportion of production of ferrous and nonferrous metallurgy accounts for businesses located in this area. The main economic actors in this sector are the largest company of JSC "ArcelorMittal Temirtau" and JSC "Kazakhmys". Around these enterprises are concentrated more than 300 suppliers of equipment and materials needed for their activities, including more than 30 enterprises of machine building, metallurgy, specializing in metal-rolled steel, iron, tin, copper cathode, copper rod and wire. Currently, participants in this cluster are 52 companies that engaged in

[55] The concept of regional socio-entrepreneurial corporations, Government regulation, 2006

[56] he socio-entrepreneurial corporation . www.kazinvest.kz

manufacturing metal products and machinery. In 2005, the Coordinating Council was set cluster "Metallurgy-Metal", one of whose tasks is to promote the growth of business activity of enterprises metalworking, metallurgy, and mechanical engineering field. Today in the Karaganda region continues to build the infrastructure of the Industrial Park, established in the framework of the cluster. First in July 2008 launched a section rolling mill of JSC "ArcelorMittal Temirtau" with the participation of Heads of State. At Limited partnership «Ast Etalon Crown» running production line lithography and lacquered tinplate[57].

In addition, in the continuing implementation of "breakthrough" projects LLP «Silicium Kazakhstan» of building a modern plant producing silicon metal, which cost 110 million dollars. Successful implementation of the project will create new high-tech production.

Cluster "**Transport Logistics"** is part of the Transport Strategy of the Republic of Kazakhstan till 2015, approved by Presidential Decree of April 11, 2006. Since the beginning of this cluster project to address development and modernization of transport infrastructure (roads, railways, roadside service facilities) and improving container transport, expanding the geography of road traffic, to bring domestic standards in line with international requirements and to improve the regulatory framework.

The project envisages the development of Container Terminal JSC "Astana-Contract" in the vicinity of the railway station Almaty-1, the construction of a warehouse complex of 50 thousand square meters. As of early June 2008, at roadside and in the right road of national importance are located 121 stations, 1,192 stations, 1,273 catering and trade, 83 hotels, 71 car parking, 196 advertising sites and 139 other items of service.

At the stage of development project on a transcontinental road corridor Western Europe - Western China. Ministry of Industry and Trade is working within the framework of further development of international border cooperation center Khargos 2007-2011.The program works on the establishment of a section of the Kazakh-Chinese border in the Panfilof district of Almaty region a special economic zone (SEZ) Khargos- The Eastern Gate.

And on the border of West Kazakhstan and Saratov regions of Kazakhstan and Russia - SEZ "Western Gate of Kazakhstan" and an international center for cross-border cooperation "Taskala - Ouzinkie" with the dry port of international importance. The proposed creation of these dry ports are part of a unified transport and logistics system of the Central Asian transportation and industrial corridor, combining ports and special economic zone "Seaport Aktau". In addition, work on the creation of transport and logistics centers in other regions of the republic is continued58.

[57] Information from Ministry for Industry and Trade,www.mit.kz
[58] Information from Ministry for Industry and Trade,www.mit.kz

There is further development of the infrastructure SEZ "Ontustyk" created by Presidential Decree on the sixth of July 2005 in South Kazakhstan region within the cluster "**Textile Industry"**. The purpose of its creation - the development of the textile industry, in particular the production of finished products, increased occurrences of our economy into world economic relations, attraction of Kazakhstan manufacturers worldwide brands for production of finished textile products, the creation of high-tech industries, as well as improving the quality and variety of textile products. To date, the Council for Development of SEZ approved five investment projects for implementation in the territory of FEZ: "Utex-KZ», LLP Esenzhol-Nazar to produce finished cotton fabrics with the reconstruction of weaving and dyeing and finishing industries. These companies are vertically integrated production connection with the cotton plants which produce cotton fiber. At the same time, they do not compete with each other, so as produce different numbers of yarn. The volume of production at these enterprises is increasing every year.

"**Construction Materials**" also received a rapid development in various regions of the country. Thus, in Astana established an industrial zone with total area of 600 square meters. On the territory of the industrial zone implemented a project on the production of joinery. Also, projects for the production of concrete, ferroconcrete products and structures are implemented. Also planned to build factories for the production of dry building mixes, furniture, frame housing.

In Almaty Region is currently ready for implementation a project for the production of expanded clay bricks, Ceram-granite and tile, mineral board (fiberglass) for sandwich panels. In general, in the volume of production of building materials throughout Kazakhstan is increased. According to experts, this is achieved by increasing the volume of construction in the framework of the government's housing program.

In the cluster of "Construction Materials" produced products have a wide range, between producers which in most cases set the horizontal connections. Therefore, the cluster approach to the whole range of building materials is impossible. In this case, we can select only the areas where possible to use the cluster approach. For example, clusters of "Manufacture of furniture and wood products" or "Manufacture of paint products.

The dynamic development in the country has a cluster “**Food Industry**”. In all its branches on the rise in production, increase the range and quantity of output. For example, in the East Kazakhstan region cluster “Food industry” consists of four priority areas and competitive: fat, dairy, meat and cereals. In some areas of the region is planned to establish ten more clusters of specialized production in the food industry. In particular, it will be formed by clusters of grain, meat, dairy, fruits and fish orientation.

Direct and indirect government support for agricultural producers, the promotion of regional grain, dairy clusters in the Northern Region, fruit, dairy clusters in the southern region can consistently and systematically develop these areas. In the North-Kazakhstan region cluster

development is associated with the processing of grain. The Almaty region is formed and developing fruit and dairy clusters. There are 19 enterprises on processing of fruits and vegetables. The main participants of the dairy cluster, which includes the large dairy plants in: TOO Raiymbek Agro "and JSC" Food Master Company. The company produces dairy products are long-term storage, concentrated milk, cream, yogurt and other dairy products.

Participants in the dairy cluster in Kostanai region today are the 14 dairy plants, 42 Dairy Farms, academic institutions and organizations, laboratories, distribution Center, Inc. “Animal products corporation”, development institutions, credit institutions and organizations, public information and counseling centers and associations, companies for the production of packaging and containers.

Thus, the realizations of the cluster “Food Industry” allow to potential participants encourage the creation of new and upgrading existing plants. The cluster approaches in the food industry is justified, and have confidence that he should receive significant government support in this direction.

In the West Kazakhstan region implemented a pilot cluster "**Oil and Gaz Engineering**". As a part of the cluster initiative were amended to the Law of the Republic of Kazakhstan "On Subsoil and Subsoil Use" and the Tax Code. A single register of domestic producers and foreign investors was created.

For the diagnosis of materials and products of enterprises of machine-building complex on the basis LLP “Technopark Algorithm” worked to establish a laboratory of nondestructive testing. Equipment installed leading firms in Germany, America and Russia. Currently, work is under way for certification and accreditation of laboratories.

At the regional budget allocated 263 million tenge LLP “Technopark" Algorithm” with ZKATU behalf Zhangir- Khan established training centers. This is class of systems of automatic design, prototyping systems, and technologies of work with CNC machines. Equipment installed by Japanese companies. All that will teach students engineering faculty ZKATU behalf Zhangir-Khan on modern equipment, training of specialists according to international standards, conduct training and professional development of engineers and technologists, industrial enterprises, to conduct research and development in the field of engineering.

To ensure that domestic enterprises and advanced technologies and to create conditions for the development of innovative projects based on the RSU “SRI” micrography and LLP “Technopark Algorithm” was created Design Bureau to develop design and technological documentation for production of oil and gas engineering. On the basis of the repair shop RSU “SRI” micrography” planned to set up pilot production for the manufacture of prototypes of the documentation developed in the engineering and technology center, and the subsequent tests. Work has begun

on laying fiber optic cable between the LLP" Technopark Algorithm" and the RMT "SRI" micrography".

Cluster "Tourism" is becoming the most developing and promising sectors of the economy. Tourism has great potential to become a competitive industry. Tourist cluster covers virtually the entire spectrum of consumer and public services. The number of organizations, which provide various services for the tourism industry are growing every year (hotels, museums, theaters, historical and cultural monuments, parks, recreation and leisure spa facilities). The number of tourist through travel agencies, including those on domestic routes is increased. Discernible trends of increase the health services.

Currently, Kazakhstan has the potential to create a regional tourist center. In his arsenal - the world-famous alpine skating rink, "Medeo" and camping site "Shymbulak", a sports complex "Tabagan", mountain resort "Ak Bulak".

Among the participants of the cluster "**Tourism"** develop both horizontal and vertical linkages. Tourism industry remains one of the liveliest and promising branches of the economy, and therefore, should pay greater attention to the problems of the industry. It should be noted that the development of tourism cluster will entail large-scale construction of hotels, campgrounds, tourist attractions, restaurants, other infrastructure, which in turn will give impetus to the development of domestic branches of light industry, food industry and construction materials.

In general all the expected measures of Kazakhstan cluster initiative are implemented according to plan. And the chances of viability of those clusters, which are improving horizontal and vertical linkages, can be seen through the chain of added value. But at the same time, as international practice shows, the creation of fully functioning clusters requires considerable time[59].

Later, namely in 2006, as a result of additional activities to identify potentially competitive clusters, regional and national levels and for sustained growth and diversification of the Republic of Kazakhstan, plans were approved to build and develop a pilot of the national pharmaceutical cluster in the city of Karaganda, and a cluster of medical services on the basis of new centers in the city of Astana.

The main lesson learned from the activities of each cluster in Kazakhstan is that it is necessary that different stakeholders have been involved in the process, and that the business has been innovative and proactive. Members of the cluster must be prepared to spend their time, resources and efforts to ensure that the activities of the cluster are successful. They must find common interests and develop common installations. Kazakhstan cluster initiatives show that to achieve successful outcomes require constant communication between key players in the cluster.

[59] Information from Ministry for Industry and Trade, www.mit.kz

IV.ANALYSIS OF LINK BETWEEN THE CLUSTER AND ECONOMIC DEVELOPMENT

4.1. Methods and tools cluster-based economic analysis

Cluster-Based Economic Development (CBED) is the new model of economic development. Nowadays, a huge number of regions, states have adopted CBED concepts. CBED includes the next base concept: the economies of agglomeration. An agglomeration is characterized as the economies of scale that are created when more than one or more companies from the similar industry take place next to each other at a given point in area[60].

Alfred Marshall determined three specific sources of agglomeration economies which increasing returns to scale in the long run:

knowledge spillovers among firms,

labor market pooling, and

cost advantages produced by the sharing of industry-specific non-traded inputs.

A feature in Marshall's localization economies is that all participating companies, firms belong to the similar industry sector and that concentration of firms in the same industry increase the innovative capabilities of the whole industry.

In 1948 Hoover determined the next three types of economic agglomeration: economies of localization, economies of urbanization, and internal returns to scale.

As defined by Carlino (1978), the external economy is the most important to economic growth. There are two types of external economies: localization and urbanization.[61]

According to McCann (2001) differences between economies of localization, economies of urbanization, a second external factor and internal returns to scale forces can, depending on the definitions of organization and industry sectors, be very unclear and overlapping. These theories of agglomeration economies have played an important role in shaping the definitions of industrial clusters.

To identify clusters in the region, there are three fundamentally different approaches (Figure 4.1):

clusters from the perspective of competitiveness;

Techno- economic methods of identifying clusters[62];

[60] Krishna M/ Akundi, CBED, part 2: an overview of growth theories and concepts p.26

[61] Carlino, Economies of scale in manufacturing location. Boston: Martinus-Nijgoff, 1978

clusters as a result of economies of agglomeration.

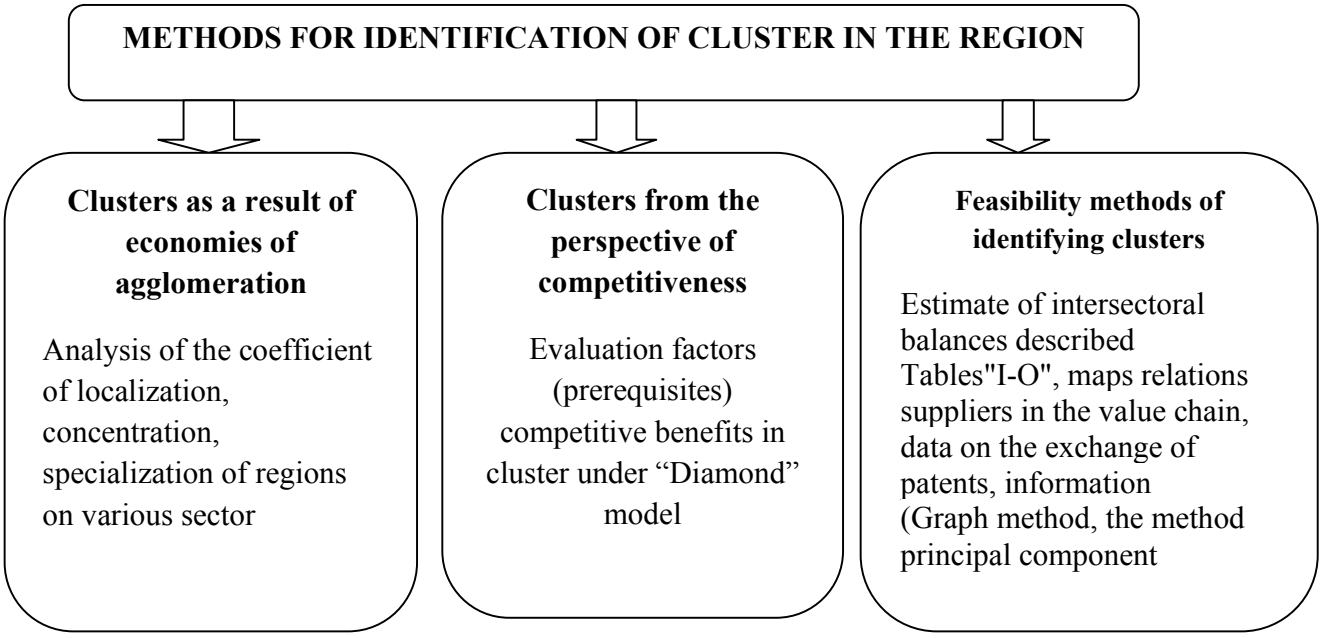
1. *Cluster in terms of competitiveness* - is the most widely known approach to the allocation of clusters developed by Porter and consists of the following three stages:

1) set the cluster: first defined by its core - a large firm or a group of related firms from which to construct a vertical chain of technological interrelated above and downstream businesses, and then horizontally in relation to the nucleus determined by production; additional horizontal chain set on the basis of common factors of production, technology and general supplies;

2) distinguished group of education within the cluster, especially organizations that provide for a specialized skills, technology, information, capital and infrastructure;

3) determined by governmental and other legal structures that affect the behavior of the cluster.

Figure 4.1 Methods of identification of clusters in the region



The criteria for identification of potential clusters are:

availability of competitive enterprises;

[62] J.Lavrikova, Clusters: a strategy for formation and development in the economic spase in the region. Ekaterinburg: Institute of Economics, 2008. – p. 132.

presence in the region / territory of competitive advantage for the development of the cluster;

geographical concentration and proximity;

a wide range of participants and the availability of "critical mass";

*availability of communic*ation and interaction between the cluster members. Thus, the recommendations of Porter's for identifying of clusters is carried out only a qualitative analysis of the prerequisites for their formation[63].

2.Techno-economical methods for identification of clusters. This group of theories of industrial clusters based its determination primarily on inter-industry relations, describes a table “input – output”, maps relationships with suppliers in the value chains, social networking, data on patents and licenses (dissemination of knowledge, skills, innovation between sectors) and other public information. For example, a situation in which many industries are linked by the common material flows or where they are each other's main suppliers (consumers) is defined as a cluster. For researchers, it is adherence to these methods and the definition, characterized by the fact that they reserved the term "cluster" for groups of related industries, regardless of their geographical location that is the essential factor, because in one cluster may be associated companies located in far-flung regions .

To describe the “localized clusters” the term “industrial complex”, “territorial-production complex”, industrial area” or “regional cluster” has been used. In this group of theories are the most developed two methods for the analysis of mapping clusters: a direct analysis of the linkages in the value chain and analysis of the structure of these relationships, in which the object of attention are the cost structure and production, as well as industries that complement each other. All the theories of industrial clusters, refer to this group, using inter-industry transactions to illustrate the linkages, the source of information about which are tables of "input - output".

Therefore, methods of mapping clusters, based on any of these theories are generally referred to by the "input - output" system. However, for the analysis tables can be used other methods of mathematical analysis. Analysis of direct links in the chain of value creation is carried out by calculating the correlations or analysis of graphs. Analysis of cost structure and production, in turn, can be carried out by discriminates, cluster analysis or principal component analysis. The advantage of the method of “input – output” is that formal measurable relations between different industries allows you to determine which firms are likely to be directly or indirectly interact with a myriad of formal and informal channels. This is method compares favorably with the use of concentration factors and other less formal methods in order to map clusters. The use

[63] V.Pechatkin, S.Gaymalova, Methodical approaches to the identification of potential clusters in the regions of Russia (electronic source). http://isei.communityhost.ru

of such methods is usually based on the premise of the inaccessibility of formal operational data about the interactions of firms, which is partly true, because usually the table "input - output" went into print with a time lag of several years.

Using existing sources of data for cluster analysis is restricted to official systems of classification of economic activities and industries. Most of these sources are not intended to cover all relationships between the different industries or for measuring the relationship between industries and companies.

The most important methodological flaw is that the table “input – output” takes into account only the contractual relation to the supply chain and material flow (and counter financial flows). Ignored (and no corresponding accounting methods) is the movement of financial and human resources, which would also be possible to identify clusters. Only occasionally there is data about information flows - Company's registration of patents and trade licenses, and serves as a necessary complement to the table “input – output”. The use of such innovative interaction matrices describing the flow of innovation from suppliers to users is quite a promising method. The main advantage of using these tables is to provide detailed pictures of the actual interdependence of innovation and the actual interaction between the groups of innovative industries. These tables are subject to relatively high level of aggregation. The first consequence of the focus “input-output” method on the flows of material – that is a good method only for the mapping of industrial clusters. However, such clusters, as tourist or transport and logistics clusters, consulting, finance or education, innovation clusters (biopharmaceutical, information technology) usually remain outside the scope of the study and data tables are not identified.

The second consequence, outside the study, are important for a cluster of non-productive organizations: educational and research institutions, suppliers of specialized services, associations, etc. And if the association is unlikely to occur in the absence of industrial enterprises, specialized institution, it can be a source of the cluster.

Thus, it is necessary to complement the method of “input – output” methods of qualitative analysis: the study of specific cases (as in the methodology of Porter), or survey of experts. In addition, a further identification of clusters in the service sector and emerging clusters (which by the "input - output" not found), tracking, for example, the dynamics of the coefficients of concentration[64], is also needed.

3. Clusters as a result of economies of agglomeration. In this method, the cause of cluster formation is due to savings from agglomeration in the treatment of A. Marshall. Externally, the cluster is a group of related industries, concentrated in one place and form a common local labor market and technology, and therefore generate benefits for members of clusters. Under this

[64] [64] A.Ermishina, The competitiveness of the region. (electronic source)// режим доступа: http://www.citystrategy.leontief.ru

approach, A.V Ermishina[65] developed method of estimating the capacity of clustering, which includes three stages.

1. At the first stage of a quantitative analysis of the competitive sustainability, that is determined by the market position of industries in the region. The analysis is based on reflecting the competitive industry sustainability indicators - the coefficients of localization, per capita production and specialization.

In accordance with this method of market sectors of specialization (or sectors where there are clusters) are the industries for which estimates greater than unity (one) or equal to it, the ranking of industries according to these indicators to prioritize the analysis of industries in the next step.

2. The second stage - a qualitative analysis of the availability and composition of the resource base needed to ensure the competitiveness of regional enterprises in certain areas - aims to determine the conditions for sustainability of competitive industries. The results formed the basis for assessing the complex environment (the factors of production, market demand and the availability of competitive industries suppliers or other related industries in the region), which form the basis of competitive industries in the region of stability.

3. Cluster Analysis - the third stage, the result of which is to identify the nature of control actions on the competitiveness of the region. This stage is carried out in the area mentioned bellows: institutional organization of clusters, the internal motivation to initiate and maintain the clusters, the definition of the competitiveness of cluster members, the evaluation of the strategic potential of clusters.

[65] A.Ermishina, The competitiveness of the region. (electronic source)// режим доступа: http://www.citystrategy.leontief.ru

4.2. Identifying concentrations of similar or related firms that are driving economic development

The area included in this study is Almaty oblast. Geographically, Almaty oblast is one of fourteen oblasts in Kazakhstan. However, it should be noted that the lack of statistical data needed to conduct the study will affect the final result. But, nevertheless, in this paper we used all the available statistical data and made calculations on a rough definition of a developing industry in the region, based on which one can identify the existing cluster.

An example of Almaty region seeks to identify opportunities for clusters in the region.

To identifying potential clusters of the Almaty region, the author use the method developed by A. E. Ermishina[66]. With the help of calculations of coefficients of specialization, localization and per capita production estimates, the potential clustering in the region is identified.

The coefficient of specialization is defined as the ratio of the share region in the country for this type of economic activity to the specific gravity of the region in the country's GDP:

Coefficient of specialization = EA r/ EA c ∗ 100 / GRP/ GDP ∗ 100

Where, EAr - Economic activity in the region;

EAc - Economic activity of the country;

GRP - Gross Regional Product;

GDP - Gross Domestic Product.

The calculation is applicable to industries as food, textile, chemical, metallurgy and machinery. The coefficient of specialization indicates that the sector of industrial specialization is food, where the value of the coefficient in this industry exceeds unity. (Table 4.1).

The degree of concentration (or localization) industry in the region is determined by the *Location quotient (LQ).*

Location quotient of production in the region is the ratio of the share of this sector in the production structure of the region to the relative weight of the same sector in the production structure of the country. Its calculation can be performed on the gross marketable products, the industrial fixed assets or the number of industry staff. The basic formula for calculation is:

[66] A.Ermishina, The competitiveness of the region. (electronic source)// режим доступа: http://www.citystrategy.leontief.ru

LQ = EA r /Pr ∗ 100 / EA c / Pc ∗ 100

Where, EAr - Economic activity in the region;
EAs - Economic activity of the country;
Pr - Industrial production in the region;
Pc - industrial production of the country.

Thus, according to the calculations, the most developed industrial sector in the region is the food industry, which provides export of goods and services outside the region (Table 4.2).

The coefficient of per capita production is calculated as the ratio of the share of economic activity in the region corresponding to the structure of the economic activity in the country to the relative weight of the population of the region in the country's population by the formula:

Coefficient of per capita production = EA r/ EA c ∗ 100 / Hr/ Hs ∗ 100

Where, EAr - Economic activity in the region;
EAs - Economic activity of the country;
Hr - the population of the region;
Hs – population of state.

Table 4.1. The coefficients of specialization for economic activity of Almaty region

Economic activity	2004	2005	2005	Growth / decline
Manufacture of food products, beverages and tobacco	5.89	6.16	6.40	↑
Textile and clothing industry	0.50	0.74	0.9	↑
Chemical industry	1.69	1.01	0.77	↓
Metallurgy and production of finished metalware	0.09	0.11	0.12	↓
Manufacture of machinery and equipment	0.12	0.17	0.17	↑

Table 4.2. The location quotient for economic activity of Almaty region

Economic activity	2004	2005	2005	Increase / decrease
Manufacture of food products, beverages and tobacco	2.88	2.64	2.79	↓
Textile and clothing industry	0.25	0.36	0.35	↓
Chemical industry	0.82	0.48	0.56	↓
Metallurgy and production of finished metalware	0.04	0.03	0.08	↑
Manufacture of machinery and equipment	0.04	0.06	0.09	↑

The coefficient of per capita production of Almaty region showed that only one - the food-processing industry- in the region is above its value of unity. This suggests that industrial production of this sector of the economy can meet its production as domestic demand and the needs of other regions (Table 4.3) .

Thus, after completing the first stage of the analysis we can distinguish this branch of specialization of the Almaty region, which has been estimated coefficients, the greatest potential for clustering, and it is expedient to analyze in the next step: it is the food industry.

Table 4.3. The coefficients of per capita production of Almaty region

Economic activity	2004	2005	2005	Growth / decline
Manufacture of food products, beverages and tobacco	2.24	2.26	2.46	↑
Textile and clothing industry	0.19	0.27	0.25	↓
Chemical industry	0.64	0.37	0.40	↓
Metallurgy and production of finished metalware	0.04	0.04	0.06	↑
Manufacture of machinery and equipment	0.05	0.06	0.07	↑

2. Analysis of production factors reveals the existence and availability of material, financial and labor inputs. Assessment of material factors of production can be carried out by analyzing the rational use of productive capacity and capital stock in the food industry. According to Akimat of Almaty region in the period from 2003 to 2005 level of capacity utilization in the food industry remains virtually at the same level - 73%.

Capital investments were one of the most important conditions for economic development, representing an aggregate cost of the creation, reproduction and purchase of fixed assets. In 2007, the volume of investment in the production of food industry increased significantly (Table 4.4)

Table 4.4. Investment in the food industry

FEA		*2005*	*2006*	*2007*	*Growth*
Food industry	*Almaty region*	*20.1*	*36.5*	*43.6*	↑
	Kazakhstan	*98.6*	*120.3*	*142.3*	↑

Another important factor of production is the quantity and quality of labor. The study showed that largest share of workers employed in the food industry increased in 2004 to 31.3% in 2005 – 32.6% and 34.1% respectively in 2007.

According to statistics, the food industry in the region is attractive to employees. The level of wages in the form of production in 2004 was 54% higher than average wages than in the textile industry in 2005 by 56% in 2006 to 58 %, respectively.

Table 4.5. The average wage in the food and textile industries

(Tenge)

	2004	2005	2005	Growth / decline
Food industry	24854	29738	36106	↑
Textile	13654	16855	21230	↑

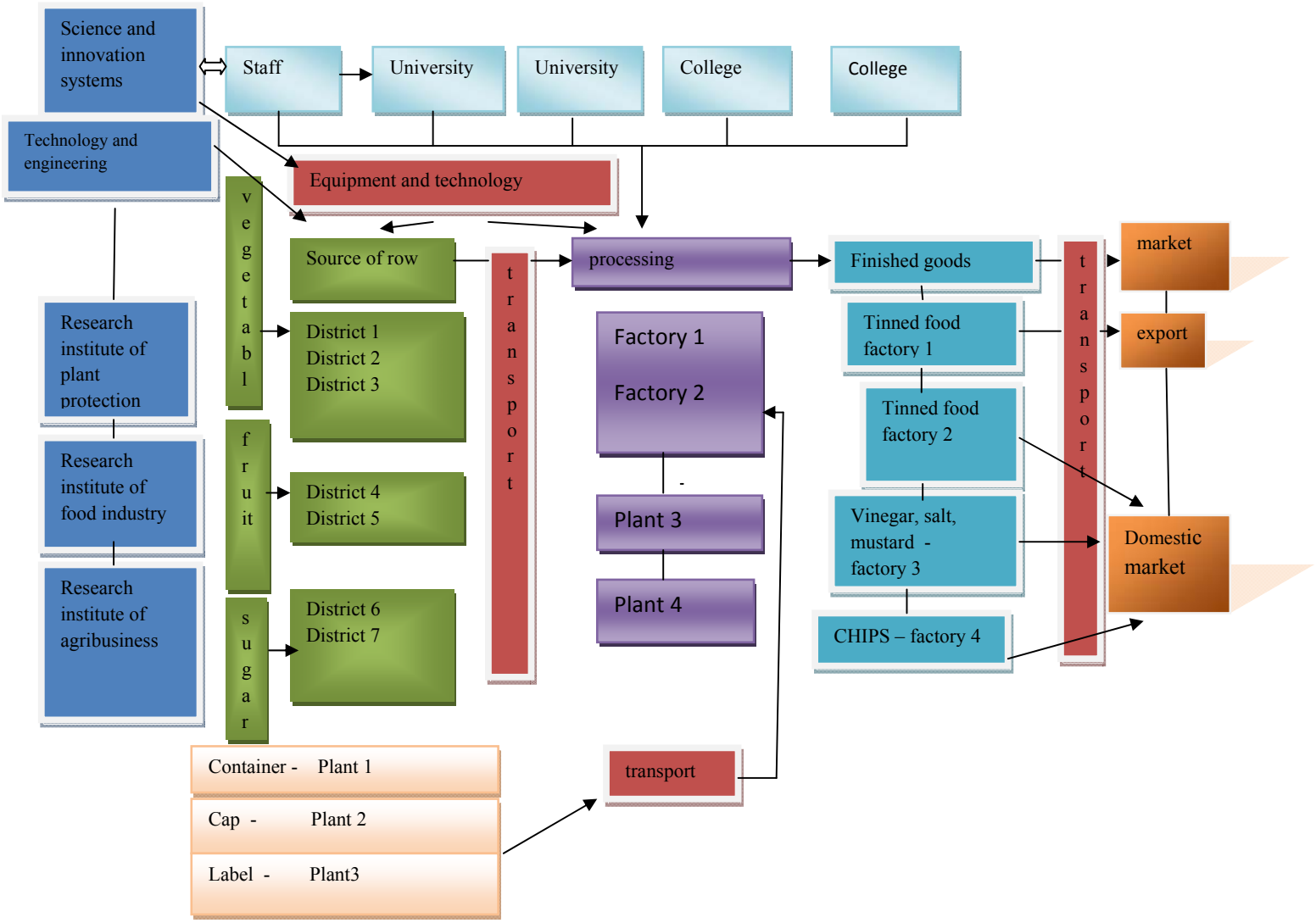
However, it should be noted that the excess rates for wages in all industries studied in the region means that there is an ability to attract qualified personnel not only from their own region, but also because of its limits, which positively affects the competitiveness of these industries.

Analysis of markets for food production purposes showed that the production of meat and edible offal, flour, juices and other food industry realized by Almaty was both within the region and the country as a whole.

The presence of competitive suppliers and related industries and organizations is one of the main conditions for creating a cluster in a particular industry. The suppliers in the food industry are farmers, farms in areas comprising the Almaty region. Related industries are transport logistics, services, recreation and entertainment services to insurance companies, etc.

Thus, the Almaty region has all the prerequisites for the development of a cluster of food processing industry for fruits and vegetables. In the region of the total number of large and medium-sized enterprises 50 were producers of agricultural raw materials processing.

Figure 4.2 Structure of the cluster "Processing of vegetables and fruits



Of these, there was tobacco processing - 2 mills, sugar - 3 factories, milk - 15 diary factories, 26 wineries grapes, wheat- 5 Bakery. Formation of the processing cluster in the Almaty region is carried out on the basis of JSC "PlodEks", which has an advantageous geographical location. JSC Fruit Ex "has a specialized machine-tractor park, as well as warehouses for storing goods. To ensure the activity of JSC PlodEks" deployed 83 companies in the sale of finished products, created harvesting and marketing cooperatives, which are about 360 farms and 140 households on a contractual basis rent fruits and vegetables[67].

[67] Information on implementation of plans for the creation and development of pilot clusters in the priority sectors of the economy of Almaty region.

4.3. Is there evidence of a correlation between clusters and economic development in Kazakhstan?

The analysis of the implementation of cluster initiatives seem premature when looking at the creation of new clusters in Kazakhstan, as efforts should be made to support and further develop the functioning of seven clusters.

Pilot projects are already launched and successfully implemented in the regions: metallurgy develops in the Karaganda region, transport logistics - it is a green road transport corridors of Kazakhstan - China - Europe. The textile industry was embodied in the South Kazakhstan area, and building materials - in the industrial zone of Astana. The food industry as a cluster of fruit and vegetable growing in the southern regions of the country's milk - in Kostanai region, grain cluster - in the northern and central regions.

The project in Kazakhstan's competitive initiative showed that, despite the fact that many industries in Kazakhstan (with the exception of the mining sector), are still not competitive enough, some of them have good potential for rapid and successful occupation of some important niches in the global economy. Currently, the cluster initiative is one of the areas of economic policy and its role is to identify and combine the economic policies that will facilitate the fullest possible development of entrepreneurship, competitiveness clusters, taking into account the specific conditions of its activities.

The cluster initiative is already perceived in the business environment as an important tool to increase competitiveness, as a way of improving cooperation between businesses and between business and government.

The world experience of development of cluster initiatives shows that the initiative to bring together companies, research institutes and other stakeholders in the cluster must come from the participants in the cluster, and the efforts of public authorities should not seek to support individual enterprises and industries and the development of the relationship between the parties.

As noted in his interview with “The Business of Kazakhstan”, Chairman of the Board of the Centre for Marketing and Analytical Research (CMAR) Bakhitzhan Sarkeev: "at this stage there is an active implementation of cluster initiatives in the regions of the country. And already there are concrete results. Today, throughout the region are different kinds of clusters are: a textile, fish, fruits, dairy, engineering, tourism clusters. In areas where cluster initiatives are implemented, there is a significant increase in business activity. Results of cluster analysis served as a kind of signal to the private sector, i.e. the private sector has received information regarding to where to invest. Today an increasing number of companies in the production of

building materials, food, textile products, manufacture of industrial equipment. That's all - the results of the cluster initiative"[68].

In this case, according to forecasts, significant results for the development of clusters are expected by 2014. In particular, there is the planned change in the GDP structure in favor of the manufacturing industry. For example, the share of textile industry in Kazakhstan's GDP will increase by 5 times (from 0.36% in 2004 to 1.76% in 2014 and reach 2.5 billion U.S. dollars, the percentage of garment industry in Kazakhstan's GDP will increase from 0.063% in 2004 to 0.76% in 2014[69].

However, improvement in "cluster development" is linked to Kazakhstan's position vis-a-vis indicators of the Global Competitiveness Index in 2008 (80) on the 14-point compared with 2007 (94 seat), which indicates that the implementation of the concept of cluster development has started to bear fruit[70].

Most of the work to continue the development of pilot clusters continues under the Government Resolution of 25 June 2005 № 633 "On approval of plans for the creation and development of the seven pilot clusters in the priority sectors of the economy".

[68] [68] Interview of B.Sarsekeev to journal "Kazakhstan Business"»09.28.2007

[69] Sectoral information-analytical agency of monitoring. www.Metalpress.ru

[70] Report of Ministry for Industry and Trade, www.mit.kz

V.CONCLUDING REMARKS

5.1. Conclusions

Currently, the main direct and indirect factor in the development of Kazakhstan's economy is oil. By the end of the decade it is expected to double the volume of extracted oil, Kazakhstan has good prospects, but they will depend on how effectively the government will continue to manage the growing tax revenues from oil sales. The shift away from commodity orientation of national economies is clear and so the choice was made in favor of introducing the cluster model as a mechanism to facilitate economic diversification, the most effective tool to improve competitiveness and implementation of industrial policy.

Application of cluster models in the industry of Kazakhstan is a key indicator in the competitiveness of individual companies and overall economy.

Business organizations, working in the potential for the cluster approach industries can dramatically improve their competitiveness by learning to cooperate effectively in the cluster. On the one hand, it is important that these companies continue to compete with each other, whilst on the other hand; they must act as a single group to increase the cluster’s local competitive advantages in the fight against foreign competitors.

Today in the Republic of Kazakhstan are established promising areas for creation of clusters. Highly skilled and affordable labor force, a key strategic position in Central Asia, access to energy and considerable resources to develop key - all these factors can promote the formation of clusters in the regions, strengthen the competitive advantages of the state, industry, cluster or the company.

As the experience of other countries shows, business organizations, working in the sectors which have the potential for using a cluster approach, can improve their competitiveness by learning to cooperate effectively within the cluster.

On the one hand, it is important that these companies continue to compete with each other; on the other hand, they must act as a single group to increase their local competitive advantages in the fight against foreign competitors.

A significant increase in the country's economy will help the implementation of cluster initiatives. Today the Republic of Kazakhstan has established promising areas for the creation of clusters.

For example, taking into account the specific features and capabilities of the Almaty region at the national level, it will continue implementation of the national cluster initiative of Kazakhstan a food cluster.

The region of Almaty oblast has all the necessary conditions for the development of a regional cluster in the food industry. In Almaty region there are about 50 enterprises producing food products.

The oblast occupies a leading position in domestic commodity markets for wines, tobacco, malt.

The Almaty region has potential for the processing of vegetables and fruits. It's share is 27% of the total fruit and vegetables produced in the country, on average per year it produced 664.4 thousand tons of fruit and vegetable crops.

At the same time, there is further improvement of the quality of food products (fruits and vegetables), improving breeding institutes to create new varieties and zoning of foreign cultures, improved crop management technologies and technical base of agricultural enterprises.

To create and develop a food cluster in the Almaty region is one of the main trends in the economy, which will increase the company's income in the domestic market, but also creates the possibility of dedicating part of production to the export market. This is not an over-ambitious target, given current demand levels in the market and particularly Kazakhstan's accession to the WTO.

5.2. Kazakhstan's development based on cluster in the future

Industrial-Innovation Development of Kazakhstan in the near term will be directed to the development of clusters, the realization of “breakthrough” projects of international importance and integration into the global economy.

In accordance with the Strategy of Industrial Innovation Development of Kazakhstan till 2015, work will continue to implement plans for the creation and development of seven pilot clusters as well as broadening the cluster initiative. Work will be undertaken on the detailed master plans for each cluster in the regions.

Also, based on existing competitive advantages in Almaty, promising clusters will be identified and will be the developed, including in transportation and logistics services. Following the implementation of the planned package of measures, further development of Almaty is expected as one of the poles of the country's economic growth. The “Territorial Development Strategy of The Republic of Kazakhstan till 2015” developed in 2006, will determine the infrastructure support for development of the territories in conjunction with the formation of clusters.

Its main objective will be territorial development, based on the formation of competitive majors in the regional and global economy, rational and effective use of economic capacity and human resources.

Cluster development will be continued with the help of the regional socio-entrepreneurial corporations whose activities are aimed at attracting investment and implementation of new industries and technologies in the regions, formed in the regions corresponding to the favorable economic environment, as well as the implementation and realization of programs aimed at achieving social goods.

5.3.Policy recommendations

Currently being implemented in Kazakhstan, the project “Diversification of Kazakhstan's economy through the development of clusters in non-extractive sectors of the economy” based on the cluster approach, the primary aim of which is to increase the competitiveness of sectors of the economy of Kazakhstan, is not associated with the extraction of natural resources.

As mentioned above, Kazakhstan has already been selected pilot projects; determined by existing and emerging clusters, assessed and selected for the development of clusters and given a detailed analysis of the business climate in the country.

At the same time, as international practice shows, the creation of competitive clusters requires a rather long time. In this connection we would continue to draw attention to the following, namely the need to undertaker:

intensify work on the details on the quantitative and qualitative improvement of factor conditions in the economy;

deal with organization and awareness factors such as skills, basic scientific knowledge, economic information.

consider the various forms of support for the development of clusters, with the help of budget programs and the use of the capacity of public financial institutions of development.

5.4.Suggested directions for the future research

Current approaches of the analysis of cluster formations and discussed methods can serve as basis for the further analysis of the functioning of clusters. This result, though quite reasonable, nevertheless requires additional inspections and development. Further research on this topic can cover the following directions:

-conducting a thorough analysis of the necessity of cluster existence and their influence on the development of both as individual firms and regional development;

- at the same time, research should concentrate on the analysis of the factors and mechanisms of cluster that are not available for quantitative analysis because of the limited data required and methods.

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