

FEATURES OF VENTURE CAPITAL FINANCING OF INNOVATIVE PROJECTS AND THE ROLE OF CLUSTERS IN FOSTERING INNOVATION

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In a globalized market economy, is increasing the role of scientific and technical progress (STP) to ensure the competitiveness of national economies, so the accelerated development and support of innovative takes on the scope of strategic importance. By innovation we mean a process of emergence and development of original ideas to create new products, services and technologies or to improve them to ensure the legal protection of copyright, and then create a prototype or model, confirming its practical usefulness. The subsequent transition to the industrial production of products, market demand and obtain the expected profit from the sale of this product is called a process of commercialization of innovations.

The international community is now steadily moves to the stage of development, “Economy based on knowledge» (Knowledge based economy), so special is not only the financing of the actual knowledge, but also their transformation into efficient production. One of the most active initiators of the promotion of advanced technologies and new industries is a Venture Capital, which invests private funds and management expertise in innovative companies with significant growth potential for further transformation into a thriving industry. The volume of venture capital is not so great, but having high mobility and exceptional ability to find and implement effective development, it has an accelerating effect on the development of STP in countries with market economies.

Private funding in innovation associated with a high degree of risk, is to provide the necessary investment to individual authors, media, or ideas for small businesses, developing and producing high technology products and services for their further commercialization. Such activities in the world is

a venture (risk) financing. Venture capital (or venture capital), as an alternative source of financing for private business innovation, was born in the U.S. in the mid-50s of the twentieth century and then spread to Europe. Due to the high-risk business venture could bring a huge profit - or end up in failure. American and European economies to a large extent are due to growth in the late twentieth century was the flourishing business venture. Venture financing is reduced to facilitation specific growth innovative businesses through the provision of certain funds in exchange for a stake in, or a stake. The most important function is to search for venture capital funds and the selection of promising innovations, funding the initial stages of risk-related projects with a maximum uncertainty of the recoil buck. The probability of failure is very high, only 10-15% of invested development reaches the final stage - a venture of JSC. In the U.S. and Europe, free capital to see the benefits of venture capital, has been actively investing in this business. Currently the main sources of investment for small innovative companies are venture capital venture capital funds that accumulate deposits of individuals, private firms, pension funds and insurance companies. Moreover, the investments of pension funds reached 40% in the total amount of risky investment. Every venture capital fund, attracting financial resources, clearly defines the basic principles of their work, direction and strategic objectives of investment activities to ensure that the interests of depositors.

In the U.S. there are, according to various estimates, from 400 to 600 of these funds. They accounted for, according to published estimates, more than 75% of venture capital. Predictive assessment of the U.S. venture capital investments suggests that in the next 5 years they will be distributed as follows: 19-21% - to improve the technology trade 29-32% - in the sphere of biology, genetic engineering and pharmaceuticals; 48-51% - in the development of high technologies, including 21% on energy development and environmental protection¹. After implementing the program of risk capital to produce new, innovative product or service in demand in the market, by sales of new entrepreneurial firms received venture capital fund revenue is divided between the parties in accordance with the initial payment. Abroad, mainly in the United States and some Western European countries,

¹ U.S. SBA. The Millenium: Small Business and Entrepreneurship in the 21-st Cent. Washington, 2011.

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the mechanisms of venture capital financing of innovative business projects are widely used in practice for decades and in recent years are becoming more widespread. However, despite many years of positive experience with venture capital, new venture capital funds continues to be quite a challenge due to imperfections in the national legislations of both new and developed capital markets. In some European countries (UK, Netherlands, France, etc.), national legislation sufficiently adapted for the creation and operation of venture capital organizations. In other countries, investors have to use foreign legal structures, practicing registered funds and operating companies in offshore areas. This allows us to simplify the procedure of registration and helps to avoid the complex issues related to the double taxation of income and profits.

In many countries, where the balanced state policy to support business aims to achieve socio-economic growth, gradually the process of active interaction between small, medium and large enterprises¹. Moreover, the general pattern was revealed, manifested in the most successful community development of SMEs, grouped around the leading large firms, based on industrial and technological, scientific, technical and commercial links within geographically limited areas. Such territorial communities economically closely related set of closely spaced and adjacent businesses profile, called clusters. Mostly it's informal networks of large lead firms with a lot of SMEs, creating new technologies that interact with each other within a single chain, and carrying out joint activities in the production and delivery of a specific type of products and services. The role of big business in the process of cluster formation is to attract SMEs to establish production on the basis of close cooperation and ties with the active subkontraktatsionnyh business and information interaction. This contributes to the development of all members of the cluster and provides them a competitive advantage over other distinct businesses that do not have such a strong relationship. New relationships within the cluster stimulate innovation, promote the development of advanced technologies and improvement of all phases of joint economic activity. There is a free exchange of information and rapid spread of innovations through the suppliers, or customers who have contacts with

¹ Зангеева С.. Проблемы и перспективы бизнеса в России //Эспрессо - итальянская газета в Москве. Рубрика "Интервью" N 8 (42) 1 - 15 июля 2008.

many competitors. Interactions within the cluster leads to develop new ways of gaining competitive advantage and generate an entirely new possibilities. Many companies in the cluster in the development process of interaction and convergence of interests is gradually overcome isolation, inactivity and isolation on domestic issues, which is conducive to the growth of their technical level and competitiveness.

The presence of clusters allows domestic industries to develop and maintain their competitive advantage, not giving them even more technically developed countries. All firms are investing in a cluster specialized research in the development of related technologies, information, infrastructure and human resources, resulting in a synergetic effect and allows small businesses to survive the acute competition in globalized markets. As part of the state clusters serve as points of growth of the domestic market and ensure the promotion of their goods and services to international markets. This enhances the international competitiveness of the country as a whole due to a number of advantages inherent in a cluster form of the interaction of large, medium and small businesses in all areas of business connections. As a point of economic growth, the clusters are subject to large investments, which focused attention of the Government and local administrations. The production structure of the cluster is always more efficient industry. This is due to the presence in the cluster core of innovation, stimulating the growth of new types of products and services. Grouping of firms into clusters becomes possible to optimize production processes and minimize non-productive costs in various enterprises. Thus, all members of the cluster get a competitive advantage under the influence of cumulative impact and expertise, providing increased productivity and lower production costs. Firms cluster because of close interaction become carriers of the same business ideas, providing a privileged position in the domestic and foreign markets. This, for example, increased use of knowledge or creating new networks of cooperation within the cluster in order to increase competitiveness and develop new market niches.

U.S. ahead of other countries have begun to address the development of regional economies by using the cluster approach. And at the state level, the main initiative for the creation and development of clusters assume the administration of the state. Such states as Arizona, California, Connecticut,

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Florida, Minnesota, North Carolina, Ohio, Oregon and Washington have adopted a number of relevant programs for the development of regions and have become leaders in the creation of clusters. In the administrations of the states created special commissions to initiate the creation of clusters based on the analytical findings and recommendations carried out by research centers and universities. These committee members determine the future of clusters, and help them to overcome the emerging organizational and financial difficulties, as well as contribute to the strengthening and development of already existing clusters. For this purpose, usually the initial capital is allocated States, and then attracted funds from private companies. A characteristic feature of the U.S. clusters is that their activities are based on the principles of partnership and focused on the commercialization of R & D and innovation to achieve global competitiveness. A striking example of a rapidly growing cluster, which has global competitiveness, is the “Silicon Valley”, which employs 2.5 million people.

An important factor in the development of clusters is a public policy aimed at increasing the links between research institutes and industry by simplifying the administrative regulation in the national innovation programs. For example in Austria work on the consolidation of small, medium and large enterprises conducted under the auspices of the Austrian Institute for Economic Research and State consulting firm with offices in all regions of the country. With the assistance of these organizations create business infrastructure, develop industry networks and clusters are formed. Thus was created a cluster, “the Vienna Business Center” brings together a number of research institutes and industrial concerns around the university with a strong scientific base for biotechnology. Now, in the cluster runs 51 thousand people work together 700 scientists, students learn and improve their skills experts from 40 countries, in addition, has established business relations with many Biocentre in various countries around the world. Most often, clusters are formed around the centers of business activity, has already proven its strength and competitiveness in the global market. In its most explicit form is evident in countries such as Belgium, Britain, Germany, Denmark, Italy, Canada, Netherlands, Finland, France, etc. For example, in Germany and the UK are creating software biotech clusters on the basis of regional distribution companies. In Norway, the government encourages

the creation of clusters, strengthening the cooperation between firms, specializing in marine fisheries¹. In Finland developed forest industry cluster, which includes the manufacture of wood and wood products, paper, furniture, printing and related equipment. The close interaction between firms of the Finnish forest industry cluster in the dissemination of knowledge gives them a competitive advantage over its main trade competitors, so that Finland, with 0.5% of the world's timber provides 10% of world exports of forest products, including 25% of high-quality paper. In the context of globalization and increasing international competition, an effective way for small and medium-sized enterprises is to unite them into clusters. This process can be observed in many developing countries such as India, Indonesia, Malaysia, Mexico, etc.

Leading world market larger companies and companies in need of a large number of technologies adapted to their related facilities, equipment, materials, etc., creating a huge market for small firms, including the innovative orientation, which in the future and become competitive generators benefits. The cluster employs a variety of small firms - suppliers of simple parts, combining only the best companies that have international competitiveness². At the core of the cluster formation process is the exchange of information on needs in engineering, technologies and services between producers, suppliers, customers and related industries. Considering the processes of formation and development of clusters, it was found that their formation contributes to the development of products with high added value, as well as the intensification of innovative processes in a shortage of natural and other resources. This has stimulated the deepening of processes of complex processing and use of resource-saving technologies in conjunction with a high level of specialization and cooperation in various industries, which contributed to the unification of efforts of neighboring and related businesses to interact more effectively, providing highly competitive coproduced products and services at national and international markets. Clusters speeds up the process in individual industries, leading to a surge of innovation and strengthens the ability to compete in the global market. Another

1 "Ingenieure: Deutsche Mangelerscheinung", in: Informationsdienst des Instituts der deutschen Wirtschaft Köln, Jahrgang 32, Ausgabe 20/2007, pp. 6-7.

2 "Offene Stellen bleiben länger unbesetzt", in: Financial Times Deutschland, Hamburg, 20.03.2007, p. 11.

example of clustering is the experience of Japanese economy was originally based on the creation of sub-contracting and subcontracting linkages between large and close network of small and medium enterprises in the automotive industry. A typical large Japanese cluster consists of a relatively large parent company, which enjoys the services of two or three levels of subcontracting firms, usually located in close proximity to it. For example, the Automotive cluster of companies “Toyota” is a multi-stage network of 122 direct suppliers and subcontractors of almost 36,000 small and medium enterprises. The innovative cluster is the most effective form of achieving a high level of competitiveness. Such clusters can take advantage of the most effective ways of coordinating the economic system (intra-hierarchy, market mechanisms, partnerships, outsourcing, etc.) that allows you to quickly and effectively implement the transfer of new knowledge, scientific discovery and invention, transforming them into innovative, marketable. Combining the innovation cluster, based on vertical integration generates no spontaneous concentration of various technological inventions, but strictly oriented system for the dissemination of new knowledge, technology and innovation. At the same time creating a network of strong links between all the participants of the cluster is essential for the efficient transformation of inventions into innovations, and innovations in a competitive advantage. Clusters of innovation creates a new product or service to the efforts of several companies or research institutions, accelerating their spread through the network of business relationships.

Trends in the formation of innovative clusters often have joint scientific and industrial base, and more successful development of such clusters promotes a broad, differentiated without a clear scientific basis of specialization. The innovative structure of the cluster reduces the total cost of research and development of innovations and their subsequent commercialization due to the high efficiency of industrial and technological structure of the cluster. This allows participants to cluster consistently to innovate for a long time. The most successful innovation clusters are formed where there is or is expected breakthrough in technology and production technology, followed by expansion into new market niches. In this regard, many countries are increasingly using the cluster approach in the development and regulation of their national innovation programs. For example, the task of establishing and strengthen-

ing regional innovation clusters in the United States was placed in a number of important national priorities. Special attention is paid to the identification and support of those innovations that provide long-term development. Much attention is paid to the United States create a national network of centers, the introduction of industrial technology-based university, which is especially valuable for small businesses that access to modern technology. The cluster approach is an excellent basis for the creation of new forms of association knowledge, stimulating the emergence of new scientific and technological trends and their commercial applications as well as indirectly by supporting education, university science and business venture. Following the U.S. and Japan, the EU came to the idea of pooling resources of their countries through the development of general scientific policy, in which an important role for the development of innovative clusters.

Innovation clusters are typical of industrialized countries are beginning to appear in many rapidly developing countries, it gives them an opportunity to enhance innovation, resulting in global markets promoted new competitive products and services. In this regard, a bright example is India, where over the past decade there has been considerable progress in the development of knowledge-intensive activities such as programming, information and communication technology, pharmaceutical and electronic industries. The above experience has shown that modern high-tech production can be based only on the processes of integration of research, innovation and industrial enterprises of various types. Scientific and technical progress moves the now disparate companies and their associations, groups, clusters and networks with horizontal, vertical and regional ties. Because of this, in developed countries, the share of employment in the intensive sectors of the total workforce is constantly growing and now is in Germany - 27.7%, in Japan - 23.5%, Italy - 20.4% in the U.S. - 15.5%. At the same time, the share of the surplus of the gross value of these industries in the manufacturing sector is respectively: in Germany - 25.9%, Japan - 25%, in Italy - 20.7% in the U.S. - 18%. This experience is especially important for Armenia, have recently chosen the path of market economy and seeking to strengthen its scientific and technical, innovative and industrial capacity to achieve sustainable socio-economic development and transformation in the state possessing a high level of global competitiveness.