

## **Analysis of the Feasibility and Advisability of Venture and Public Sources of Innovative Projects Financing in the Russian Federation**

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**Abstract:** Innovation as a basis for economic growth and development most often finds its expression in the form of innovative projects, most of which require substantial funding, that is why limited financial resources makes it necessary to analyze the feasibility and advisability of venture capital and public sources of investment. In our research we have examined the possibility of funding from the perspective of the investors and innovators in relation to the risks of the innovative projects and feasibility as a matching funding ratio of the line of innovation policy and enterprises.

**Key words:** Innovation activity • Innovation project • The state capital • Venture capital • Innovation funding

### **INTRODUCTION**

Nowadays the formation of economic knowledge and high technology-based innovations in the transformation of the main factor of economic growth is a basis of effective development. The rate of growth and development of the country's economy is largely determined by scientific and technological progress and the areas in which the conditions for effective innovations are made, win in the global competition [1]. Innovative activities most often find its expression in the form of a specific innovation projects. Among the main features of innovation activity in the economics we can choose: technological innovations costs, research and development, the revenue position from the production and sale of innovative products and services, the revenue position from the production and sale of high technology products and services, supported by the presence of patents or patents procurement, cooperation with external organizations to develop and implement innovations. Thus, we can say that the most innovative projects require considerable financial expenses: expenses to scientific and technological activities, investments to the capital, an acquisition of new resources and their development, attraction of highly qualified personnel,

marketing activities costs. Therefore, an innovative activity of industrial enterprises reducing has always caused mainly for financial reasons: mainly enterprises lack of own funds to finance innovations and face difficulties in obtaining credit [2]. In this connection, the economic and financial crises of recent decades have significantly reduced the interest in the real sector of the production of innovative projects.

The transition to an innovation-active and socially-oriented economy in line with the objectives of the national strategy to improve the quality of life, economic and social development in the Russian Federation requires the development of mechanisms for financing innovative projects in the long term. According to Khorujaya I.S. in addition to the volume and efficiency of investment, the source of their income has a great importance [3]. The need of a planned approach to the development of innovative determines whether a comprehensive analysis of the feasibility and advisability of using different sources of funding for innovative projects.

Analysis and classification of financing risks of innovative projects and their assessment of various stages of the project. The appealing of investment in innovation projects due to the prospect of profits.

However, decisions about funding innovation are always associated with high risks and many authors agree that “the relationship between the magnitude of risk and the financial capacity of the investors is enhanced in a market condition” [4]. In this regard, it is important to organize the risks of specific innovative projects in order to optimize and control the project. Risk classification of innovative projects carried out by a block principle, rather than cross-cutting one because of their diversity. In our opinion, in accordance with this principle, there are the following groups of risks of innovative projects:

- External (general economic, market, social, demographic, technological, regulatory and information);
- Mixed (associated with motives of subjects of the environment, directly related to the participants of the innovation project);
- internal (depending on the capabilities of results foresight, causes, location, time of occurrence, the possibility of insurance, duration of action, ways to minimize the effects, etc.).

The reality is that the basis of creation of preconditions for attracting the commercial investment to innovative projects is the availability of Research and Development results. Investor psychology is such that the projects related to promotion of the finished innovation product are always more attractive than the projects focused on the promotion of new technology. Incomplete Research and Development are the major obstacle to attracting of the project funding. Patsukov D.V. and Rudychev A.A. believe that “the risk of innovative projects considers the probabilistic nature of the expected result in uncertainty... the risk of innovative projects is the uncertainty that depends on the taken decisions, the implementation which occurs over time” [4].

If we turn to the issue of risk assessment of innovative projects, it may be noted that in addition to the method of expert estimates in scientific literature, which allows to take into account a number of specific factors and the transition of quantitative changes of the object in the quality ones, the great attention is paid to the simulation method [5]. Simulation methods used for evaluation are divided into.

- Logical (based on the principles of logic, illustrates the necessity and impossibility of an event),
- Math (based on the tools of economic and mathematical modeling).

Among the advantages of the method of mathematical modeling usually note an opportunity of clear view options, an opportunity to carry out calculations and the disadvantages are generally no real consideration of qualitative changes, the complexity of the description of the parameters, the inability of individual factors account. Patsukov D.V. and Rudychev A.A. suggests that in order to assess the risks of specific innovation project it is should be considered [4]:

- The extent of project conformity to the market and innovation strategy of a company;
- The level of Research and Development;
- The level of production;
- innovative marketing.

Kochetkova S.V. has to take into account the following factors in order to predict the results of the innovation potential [6]: changes in demand for innovative products, price changes for innovative products, changing the profit of the producer of innovative products, the amount of an enterprise costs for the production of innovative products, competitors actions, the development prospects of this innovation. Some authors identify the following stages of forecasting of innovative potential using results within a specific innovation project:

- Situation analysis,
- Innovation planning,
- Identification of needs in innovations,
- Definition of criteria for the selection of alternatives innovations,
- The development of alternatives,
- Choice of the best alternatives
- Development and coordination of management decisions,
- Implementation management,
- Monitoring and evaluation of results.

Summarizing this part of our research, based on the above data, we can say that the ability to innovative projects funding are caused by the results of peer review, as well as projected on the basis of one of the types of innovative models of development of the project results. Such as analysis can be divided into stages with the appropriate use of various, the most representative risk assessment tools.

Features of the public funding for innovative projects using. The problem of public funding of innovation and

government stimulation innovative projects is an important aspect of the national innovation policy. Innovation policy is a set of the state influence methods to enterprises for the production of new products and technologies, as well as expanding markets for domestic goods. We can also consider innovation policy as a combination of measures to create a favorable climate for innovation, stimulate industry demand for the results of Research and Development and high technology, the creation of a more effective regime for the protection of intellectual property rights; using of incentives for the development of small innovative enterprises, support of innovation infrastructure and the promotion of cooperative networks. On the other hand, enterprise innovation policy is a set of directions and methods of the economic mechanism on the production of new products and technologies [7].

Among the top priorities of innovation policy Doroshenko Y.A. and Yarmolenko I.V. suggest: accumulation of funds for research and innovations, coordination of innovation activity, the federal and regional regulation and incentives for innovation, the creation of the legal framework of innovation processes, the formation of research and innovation infrastructure, development of small innovative enterprises, the creation of venture capital funds, institutional support of innovative processes, the implementation of the investment policy in industries and science, the regulation of international aspects of innovation processes [8]. Innovation Policy of the Russian Federation includes a set of directions and measures of direct and indirect regulation of the activity of national innovation system (enterprises and investors, scientific, design and other organizations, institutions of innovation infrastructure, including appropriate types of financial institutions).

“Innovation stimulation is an area of economic policy, in which the government intervention is most often”, - as Khoghaev I.S. believes, in relation to the Russian reality, - “the reason is that the process of innovation is intrinsically decentralized and multi-faceted so much to describe it and pass into the framework of public policy... however, the government can do much to speed up the process of innovations and provide the basis for long-term growth... an area in which the government intervention can be effective is a the creation of financial conditions and infrastructure for innovations” [3]. Vavilov A.P. suggests that the problem of inefficiency of public funding of Research and Development also exists in developed countries - “for this reason, the share of government spending for these purposes in the USA, for

example, has been steadily declining - from more than half of the country's total expenditure on Research and Development in the mid-1990s to less than a third in the middle of the decade; almost two-thirds of these costs in the United States are carried out by the corporate sector“ [9].

In the Russian Federation, financing article of scientific support of major national innovative projects was introduced in the federal budget in 2003. It is noted in scientific researches that in terms of public management innovation “among the of economic methods the advantage is not given to direct methods of influence (grants, subsidies, etc.), but methods of indirect regulation (tax, insurance, credit, etc.), which are advisory and offer the right to everyone enterprise to determine their own development strategy, not necessarily coincide with a regional or state-wide system of preferences” [8].

Already in 2006, Russia was spending of many on research and development when compared with those countries with which Russia has traditionally compared: the amount of expenditure on Research and Development in our country has made 1.17% of GDP, while in Brazil was spent 0.98%, while in India - 0.85%. Of course, this figure is lower than in the EU, Russia was not inferior to Germany and Korea, although the number of researchers per 1000 population, while in the BRICS countries this figure was less than five times. That is interesting, the share of non-state costs of GDP in Russia amounted to 0.5% of GDP, while in Germany and Korea - almost 2%, while, for example, in Japan - 2.5%. In eastern countries, whose economy is based on central planning, traditionally, over 60% of research spending are financed by the government. In Western Europe the share of the private sector is about 70% of the total funding amount in the sector, while in Japan the volume of private sector investment is 80%. Government intervention is a popular tool to accelerate the reduction of the technological gap [10].

There were more than 30% of technological innovations funded by enterprises at their own expense in Russia in 2008, while in Germany the figure stood at 90%, while in the USA - 73%. From our point of view, it is important to consider the expenditure increasing of technological innovations, expressed in current prices is often a consequence of inflation, which can be determined by analyzing the change in the share of expenditures in the total volume of production. Traditionally mechanical engineering and chemical industry are leaders in the sector of innovation funds which are the areas of production can not exist without the permanent

innovations. However, it should be kept in mind that technological innovations are simply replacing of worn-out equipment to newer one in most cases [11].

We can say that in recent years there has been a steady downward trend in the intensity of the use of public funding of innovation in the industry for the benefit of the use of enterprises own funds. "The use of this source is certainly more acceptable to the stable working large companies with significant capital and having regular cash receipts from sales of products", - Somina I.V. believes, "but the possibility of using their own funds to finance of innovation activity for newly created and small enterprises are very limited" [2]. The share of public funding of innovation has decreased significantly in recent years, allocation of funds for technological innovation for the industrial enterprises of the regional and local budgets has become less significant. Public-private partnership of investors began to play a greater role, but the contribution of extra-budgetary funds in innovations is still inadequate. As we have said, crisis has a direct impact to the value of innovative investments.

Modern methods of state investment incentives to the innovation sector, venture business development and public-private partnerships. Analyzing the above, we can say that any policy, including innovation, needs a strong financial basis. Measures for state support of innovation may be direct (government funding of science, advanced technology development and commercialization of innovative products institutes) and indirect (tax and other incentives for the various subjects of investment and innovation). Ineffective and inefficient resources using in the implementation of programs to stimulate innovations is often prioritized due to wrong choice of incentives tools and the underestimation of the urgency of the task controls the development of small innovative enterprises [12]. The policy of priorities for innovation activity should be based on the justification of social and economic feasibility.

In this regard, the experience of United States, Japan, Britain, Canada, France and Israel is especially valuable, which certainly shows that the government should actively participate in the innovation policy [13]. The main aim of innovation policy is to bring together the efforts to improve an efficiency of innovation activity in the various "points of growth" in an organized and managed regional process, i.e. the system foundation, which requires the restructuring of the regional economy with a focus on competitive advantages (explicit innovative potential) and innovative provisions

(latent innovative potential) [14]. It should be applied a clear single-balanced methodology in accordance with the innovation policy in the region in the field of modeling innovation system. Regional integration processes will determine the innovative development of the country, the national innovative capacity which will be increased at the expense of the economically developed regions [15].

Economically developed countries are widely used various mechanisms of indirect promotion of venture businesses, as world experience has shown that most of the high technological innovations created by venture capital. Kuzyk B.N. believes that "a number of ways technology gap can be compensated by borrowing technologies, serious public funding and using of public-private partnership" [16]. R. Romanovich M.A. and Rudychev A.A. say that "venture capital is one of the most effective sources of innovation financing, so the creation of venture capital networks through effective partnership of small, large enterprises, financial institutions and government is an important aim of country's economic development" [17].

The direct methods of government incentives of venture business is the state's participation in the venture funds, providing financial incentives for investors to venture capital funds, expanding the circle of potential investors. To the indirect methods we can include the creation of a favorable tax regime, improving the regulatory framework, improving the efficiency of the system of intellectual property protection, the development of the capital market, the organization of educational activities aimed at disseminating information on future projects and potential investors. "It is important to create a structure are precisely venture capital funds, not equity funds – Khazhiev I.S. said - the difference is in the fact that venture capital funds typically invest in the newly created innovative companies and private equity funds" [3].

Financial support is needed to the innovation enterprise at all stages of its life cycle. In the world it is common practice for investment at the initial stage of the innovation project in the form of a contribution to the charter capital of a small or medium-sized company that does not have enough funds for the realization of their innovative ideas, which is the subject of a long-term investment return, risk and high commercial potential higher incomes. In some researches the authors identified the following advantages of venture capital investment relative to traditional bank or investment strategic partnership [17]:

- Investors are aware of the risk of non-repayment of funds and knowingly take him because of the high rate of profit in case of success;
- Long-term capital investment (from 6 to 10 years);
- This method of funds raising does not exclude the possibility of financing, equity investors become venture partners usually;
- High personal interest of investors due to the riskiness of a project and the mutual funds in the form of capital contributions, which manifests itself in providing consulting partners, organizational and other services usually;
- Venture capital provides to science-intensive unconventional innovative businesses.

Venture capital investment can be viewed as a long-term loan without guarantees. Many authors agree that the “common interest of the company founders and investors in a successful and dynamic development of the new business is not only connected with the probability of obtaining high returns from venture capital firms, but also with the ability to become a participant in the creation of a new progressive technologies” [17]. There are private investors which is called “business angels” and corporate or institutional investors represented by independent venture capital funds (companies, firms) usually is a partnership of juridical or individual persons or subsidiaries of banks, insurance companies or pension funds can be identified on the venture capital market.

The government has expressed interest to the development of a business venture with the first half of the 90th in Russia, while the process can be traced from the early 80th in Western Europe and since the early 70th in the USA. The first venture capital funds were formed on the initiative of the EBRD in Russia, which also provided the resources for creating venture capital as part of the development of innovations in Eastern Europe. But the results of the fund activity were such that only 1% of total invested assets accounted directly to the innovation sector, whereas the figure was 20% in the developed countries. That is why, we can speak of a preference for risk-free projects by foreign investors in the initial stages of the venture capital market in the Russian Federation, which is essentially contrary to the principle of venture investing. Modern scholars have considered the importance of foreign investment [15], but they also agree that formation of the venture capital industry based on domestic investment is preferred for the strategic development of the country.

Romanovich L.G. believes that “the investors intention to invest in innovative entrepreneurship should be encouraged by development of legal rules and regulations, which would compensate of inconvenience in the proper degree, such as long-term investments, the uncertainty in income generation, the high risk of capital loss” [18]. There are the following barriers to the development of venture capital market in the contemporary scholars researches [18]:

- Disadvantages of the state policy in the regulation field of business venture;
- Imperfection of the legal framework regulating the activity;
- Small number of institutional investors willing to make long-term investments;
- Lack of innovators awareness of the venture capital funds;
- Lack of transparency of scientific and educational institutions, lack of interest in risk investments;
- Shortage of professionals in the field of innovation management.

## CONCLUSION

In conclusion we can say that the obvious need to analyze the feasibility and advisability of attracting a public or venture capital to finance each specific innovation project. The feasibility of access to public or private sources of funding is determined by matching a specific innovation project with the priorities of innovation policy and the level of development of the venture capital business. In modern terms, we can say that the preferred form of innovation financing is a public-private partnership, but the ratio of funds raising must be determined by innovators individually in each case.

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