

International Conference on Applied Economics, ICOAE 2015, 2-4 July 2015, Kazan, Russia

Public-private partnership as a tool for development of innovative economy

Akhmetshina E.R.^{a1}, Mustafin A.N.^b

^{ab} Kazan Federal University, Kazan, 420008, Russia

Abstract

The article focuses on the role of public-private partnership in the implementation of projects and programs in the area of innovation. In particular the factors restraining the development of this cooperation are given and recommendations for the use of its mechanisms in the development of processes of innovation investment in the domestic economy are formulated.

© 2015 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Selection and/or peer-review under responsibility of the Organizing Committee of ICOAE 2015.

Keywords: public-private partnership (PPP), innovative economy, venture capital financing, clusters, technology transfer, research and development (R&D).

1. Introduction

At the present stage of development of the Russian economy one of its main tasks is to transition to an innovative model of development.

In the modern understanding the innovative economy - is a social reproduction based on knowledge, innovation, on a scientific generation and perception of new ideas, on the availability of preconditions and readiness to create the system technologies, the ability of their implementation in corporate production systems and in various spheres of human activity (Gamidov G.S., 2003).

The transition from a resource-based economy to an innovative way of development requires substantial investment to modernize our economy. However, due to budgetary constraints there is a problem of financial support and development of the innovative kind of projects, as well as mechanisms of investment in innovation.

Consequently, there is an objective need for cooperation of forces and means of the state and the private sector. The need for PPP in innovation is due to the fact that innovative activity is not entrepreneurial activity in its pure form. The state should perform a dominant role in the financing of innovative projects at an early stage, when required "money for sowing" («speed money») and reliable guarantees for the start.

To date, the phenomenon of innovative public-private partnership is not sufficiently developed and studied. Development of innovative potential of the regions, the study of innovation as a factor for sustainable growth and competitiveness of the national economy in a globalized world economic relations are the main subjects to which the works of foreign scientists and economists as Chen J. (2012), Cooke P. (2013), Hagland M. (2012), Nijkamp P. (2014), Orman C. (2015) are devoted to.

Significant contribution to the development of concepts of PPP and Development Studies of the theory and methodology of interaction between government and business structures made by such foreign scientists as Biermann F. (2010), Chan A. P. C. (2014), Klijn E.H. (2013), Linder S. H. (1999), Marques R.C. (2014), Pattberg P. (2012).

1

* Corresponding author. Tel.: +7 -917- 396-8891

E-mail address: kiyamova-ksfei09@yandex.ru

Questions of public-private partnership in innovation sector of transformation economy was investigated by Cheung E. (2014), Ke, Y. (2010), Lam P.T.I. (2014), Tang, L. (2010), Wang S. (2012).

Despite the wide range of research in the field of formation of an innovative economy, many issues of formation of the national innovation system in the framework of public-private partnership have not yet received their studies and remain controversial.

For the successful development of an innovative economy in Russia it is necessary to investigate the integration efforts of the authorities, education, science and business, which are the main components of the partnership in innovation sector.

2. Theory

The concept of public-private partnership in innovation sector was identified in 2002 by the OECD Committee for Science and Technology Policy as follows: under the public-private partnership is defined as "any formal relationship or agreement for a fixed or infinite period of time, between public and private actors, in which both sides cooperate in the decision making process and co-invest limited resources, such as money, personnel, equipment and information, to achieve specific goals in a specific area of science, technology and innovation".

The purpose of the public-private partnership (PPP) in innovation sector is aimed to the development of scientific and technological potential and the formation of a competitive industry for the functioning of the domestic and global markets. As a part of this partnership roles of the participants are distributed as follows. The State shall establish the "rules of the game", enabling institutional environment for the activities of all the participants, promotes the production of fundamental knowledge (public research centers, academies, universities), provides the necessary database on the developed technology, and business, in turn, creates a technology based on its own research and development and materialize scientific ideas.

In domestic conditions the main innovation indicators include, among others: the share of the manufacturing sector, as well as the share of innovative products in the industrial production, the share of total R & D expenditures in the GDP, data on the structure of exports and imports, the amount of per capita income and employment, on the share of private and public spending on health and education in GDP.

3. Results

In contrast to more developed an innovative systems in Russia it is not enough developed system of public-private partnership in the implementation of innovative projects - the proportion of organizations receiving funding from the budget for these purposes, is 0.8 percent (in Germany - 8.8 percent, in Belgium - 12.7 percent). Also, the lack of support is to the creation of small innovative businesses. The volume of research programs in small business innovation and technology transfer of small businesses in the United States is 2 billion US dollars, Russian innovative component of the program to support small and medium-sized businesses, implemented by the Ministry of Economic Development of the Russian Federation in accordance with the decision of the Government of the Russian Federation on February 27, 2009, the number 178 "On the distribution and provision of subsidies from the federal budget of the Russian Federation for the state support of small and medium-sized businesses, including peasant (farmer's) economy", equivalent to about 67 million US dollars, the amount of financing of the Fund for Assistance to Small Innovative Enterprises in the sphere of science and technology - about 113 million US dollars. Current public purchasing system prevents access of innovative products to the state order.

The main areas of PPP in innovation sector are the participation of the state in the development of venture capital financing; public-private funding of various programs of innovation orientation, state order for research and development; state support to the establishment of institutions of a modern market innovation, technology transfer centers, patenting and intellectual property rights protection product.

Today in the international standing there are positive developments in terms of development of the PPP in innovation sector suggested by the successful projects. These include: The program of cooperative research centers in Australia; programs of competence centers in Austria; Dutch program "Leading institutes of technology"; Spanish program of technological support centers; "National Centers for Technology Research and Innovation" in France, and others.

It should also be noted successful example of PPP in the field of innovation and high-tech industries of national practice - cooperation between business and government in the framework of the aircraft leasing company "Ilyushin Finance Co.". In the course of business, according to the partnership was established portfolio to several billion dollars, which is a powerful engine in the development of national aircraft industry. However, innovative

economy is now characterized not by numerous leading companies, leaders, but thousands of small and medium-sized enterprises working in the sphere of innovation, which is formed for the development of a system of venture financing. If this system operates with the support of the state, it can be confidently attributed to a number of forms of PPP.

Considering venture financing, it is rather interesting to see the experience of Finland. There the state promotes innovation through the Foundation for the Support of invention, which is actively involved in shaping the innovation system, namely, providing business advisory and financial assistance in the development of innovation, evaluation of new products, patenting and commercialization of patents. If the project is realized, the fund derives its share of the profits, otherwise - subsidies written off as a loss. Currently there are successfully functioning venture capital funds such as SBIC - in the US and YOZMA - in Israel.

In addition, under the PPP model for R & D Finland mobilizes about 6 billion Euros annually (almost 1% of the total global R & D expenditures). And 70% of this amount falls on private business, and 30% - of the budget. Due to budget support there are 23 technology centers and technology parks - one for every 225 thousand of population. With such intensive support Finnish parks attract technology leaders, including concern Nokia, and innovation policy of the country has become a role model on an international scale (Mikheev O.L., 2009).

In Russia, the situation is reversed. To date, the bulk of funding for research and development undertaken by the State, more than 60% of the costs for these purposes fall on the federal and regional budgets. Gross domestic expenditure on research and development funding sources are listed in Table 1.

Table 1. Gross domestic expenditure on research and development by source of funding
(Russian Strategic Yearbook, 2014)

mln rubles.

	2010	2011	2012	2013
All expenditures including sources of funding:	523377.2	610426.7	699869.8	749797.6
budget funds	360334.2	400235.7	462203.2	493470.4
own funds of research organizations	47407.6	73293.5	78520.6	90480.3
non-budget funds	10140.0	8808.5	11675.6	11777.0
business sector organizations funds	85863.3	99408.1	118219.6	129147.7
higher educational institutions funds	508.2	1568.8	891.8	1510.2
funds from private non-profit organizations	556.5	966.5	608.4	665.0
funds from foreign sources	18567.5	26145.5	27750.7	22747.0
Which includes funds:				
international organizations	3682.1	4545.3	2455.7	1424.1
governmental organizations of foreign countries	5747.9	8437.8	8494.4	4582.9
organizations of the business sector of foreign countries	7893.3	8107.4	11674.9	15525.5
other international organizations (educational organizations, foundations, non-profit organizations)	1244.1	5055.1	5125.7	1214.4

The table shows that in our country a dominant position in the implementation of research and innovation projects is taken by the state and private business remains in the "shadow". Therefore, to reduce imbalances in the sources of investment innovation sphere, to overcome the asymmetry between the needs of an innovative economy and the possibilities for their financing, it is necessary pooling of funds and skills of government and business.

In the scheme of public-private partnership big role is given to the private sector. That is it should be interested in the development and implementation of innovation in its company. To determine the extent of the application of innovation in the enterprise the indicator intellectual capacity (Andreeva E.S., 2013) is used, which is calculated as follows:

$$(1)$$

where S_{via} - the value of intangible assets;
 Q - volume of output.

However, to date, innovative activity of domestic enterprises still remains at a low level. Therefore, the state should adopt a system of measures to increase the motivation of private business, its involvement in the innovation process.

4. Conclusions

Public-private partnership in innovation sector allows to solve a number of problems and has the following advantages:

- Provides a greater return on research funding and let successfully address the issues of further commercialization of their results;
- Helps to attract private sector expertise and create a competitive environment for open and transparent tenders in the implementation of innovative projects;
- Allocates responsibility between partners: the state sets goals of the project from the standpoint of the public interest and determines the cost and quality parameters, monitors the implementation of projects, and the private partner assumes the operational activities at different stages of the project - development, financing, construction and operation, administration, practical implementation of services to consumers.

Undoubtedly, the PPP mechanism opens up new opportunities for innovation sector and stimulates demand for innovation in the business sector.

However, negative features of PPP development in innovation sector should be noted: the state, actively interfering in the stages of the innovation process, which have traditionally been considered exclusively private, and trying to initiate an active business involvement in innovation, supersedes and replaces the private sector money.

The essential problems of development tools of PPP in innovation sector, in particular in relation to Russia, can also be attributed to unequal power relations of partnership members. This trend is contrary to the basic principle of PPP, on which it is formed. The essence of the principle of equal rights and economic responsibility is that all participants of the PPP have equal rights in certain embodiments in the effective achievement of goals and objectives. Each participant must take full responsibility before the Russian society for its commitments.

From our point of view, a partnership of government and business should be formalized. The most effective implementation of this partnership in innovation will be according to some scientific and technical program. Active work on the development of policy documents in the field of science and innovation is already underway by the authorities. One of the last of these documents, which is aimed to unite the efforts of government, business and civil society institutions in order to implement an effective innovation system is the Russian Federation Government Decree from December 8, 2011 № 2227-r "On the strategy of innovative development of the Russian Federation for the period up to 2020".

In the process of implementation of the Strategy it is provided for extension of public-private partnership in the sector of research and development and technological modernization of industries.

On this basis, we can conclude that the introduction of innovations and new technologies in the domestic economy is a very time consuming process, so that only the integration of the efforts of authorities, education, science and business is able to increase the competitiveness of the economy. However, due to lack of sufficient experience in Russia in the organization of an effective partnership between the public and private sectors in innovation, it requires the creation of the necessary conditions for intensive development of "smart" products. Conditions are as follows:

- To establish laws and regulations governing not only innovation sector in general, but also questions directly attributable to the activities of public-private partnership;

- To develop mechanisms for the use of the Investment Fund of the Russian Federation on the development of innovative activity, including the most important innovation projects of national importance;

- To create conditions for the development of clusters as “innovation cluster is the basis of the intellectual potential of research organizations, universities, design and construction department, which is a set of assets that can be used for the development of innovative activity (Kotov A.I., 2011)”.

Based on this we can conclude that, despite the difficulties of implementation of PPP tool in the innovation economy, it allows to achieve optimum results of high quality. The success of its implementation depends on the developed legal framework, streamlined institutional environment, economic and organizational solutions to all aspects of the problems. PPP promotes innovative activity, diversification of the economy in accordance with the strategic goals of authority, resulting is a high quality of life of consumers, that is, society as a whole.

References

- Ablaev I.M., Khovanskaya E.S., 2014. Essence and Economical Substance of Innovative Cluster in Territorially Localized Business System// *Mediterranean Journal of Social Sciences* 5(12), 159 – 162.
- Andreeva E.S., 2013. Evaluating the Effectiveness of Public-Private Partnerships: a Methodological Approach // *Herald of Kazan Technological University* 16(12), 300-303.
- Bagautdinova N.G., Levitsky B.E, Vorobyeva L.E., Pratchenko O.V., 2014. Formation of Synergetic Effect of Human Resource Management of Business Organization // *Mediterranean Journal of Social Sciences* 5(12), 15-20.
- Biermann F., 2010. Beyond the intergovernmental regime: Recent trends in global carbon governance // *Current Opinion in Environmental Sustainability* 2(4), 284-288.
- Cheung E., Chan A.P.C., 2014. Revitalizing historic buildings through a partnership scheme: Innovative form of social public-private partnership // *Journal of Urban Planning and Development* 140 (1).
- Cooke P., 2013. Global Production Networks and Global Innovation Networks: Stability Versus Growth // *European Planning Studies* 21(7), 1081-1094.
- Cruz, C.O., Marques, R.C., 2014. Theoretical considerations on quantitative PPP viability analysis // *Journal of Management in Engineering* 30(1), 122-126.
- Gamidov G.S., Ismailov T.A., 2003. Innovative Economy - Strategic direction of Russia in XXI century // *Innovations* 1. URL: <http://stra.teg.ru/lenta/innovation/515>.
- Hagland M., 2012. Secrets of private-sector ACO innovation. What Blue Shield of California's Juan Davila knows // *Healthcare informatics : the business magazine for information and communication systems* 29(7), 40-42.
- Javed, A.A., Lam, P.T.I., Chan, A.P.C., 2014. Change negotiation in public-private partnership projects through output specifications: an experimental approach based on game theory // *Construction Management and Economics* 32(4), 323-348.
- Ke, Y., et al., 2010. Preferred risk allocation in China's public-private partnership (PPP) projects // *International Journal of Project Management* 28(5), 482-492.
- Kort, M., Klijn E.-H., 2013. Public-Private Partnerships in Urban Regeneration: Democratic Legitimacy and its Relation with Performance and Trust // *Local Government Studies* 39(1), 89-106.
- Kotov A.I., Lobachev O.V., 2011. The cluster approach as a tool for the development of national innovation system // *Economics and Management* 3, 11-14.
- Kundakchyan R., Grigoryeva N., 2014. Econometric modelling of indicators of innovation activity level // *American Journal of Applied Sciences* 11 (9), 1579-1583.
- Linder, S. H., 1999. Coming to terms with the public-private partnership a grammar of multiple meanings // *American Behavioral Scientist* 43(1), 5-51.
- Mikheev O.L., 2009. Financial and legal problems of public-private partnership. M.: “Ankil”, pp.56.
- Orman C., 2015. Organization of innovation and capital markets // *North American Journal of Economics and Finance* 33, 94-114.

- Pattberg, P., Biermann, F., Chan, S., Mert, A., 2012. Public-private partnerships for sustainable development: Emergence, influence and legitimacy. *Public-Private Partnerships for Sustainable Development: Emergence, Influence and Legitimacy*.
- Russian Strategic Yearbook. 2014: art. URL: <http://www.gks.ru>
- Tang, L., et al., 2010. A review of studies on Public–Private Partnership projects in the construction industry // *International Journal of Project Management* 28(7), 683-694.
- Vaz, E., de Noronha Vaz, T., Galindo, P.V., Nijkamp, P., 2014. Modelling innovation support systems for regional development - analysis of cluster structures in innovation in Portugal // *Entrepreneurship and Regional Development* 26 (1-2), 23-46.
- Wang, Y., Roijackers, N., Vanhaverbeke, W., Chen, J., 2012. How Chinese firms employ open innovation to strengthen their innovative performance // *International Journal of Technology Management* 59 (3-4), 235-254.
- Zubakov V.M., Mustafin A.N., 2015. The Controlling Process of the Human Capital through the Effective Redistribution of the General Welfare // *Mediterranean Journal of Social Sciences* 6(1), 270-273.