THE ROLE OF GOVERNMENT IN THE DEVELOPMENT OF INNOVATIVE ACTIVITY IN THE REPUBLIC OF KAZAKHSTAN

The course of industrial and innovative development of Kazakhstan, laid in the beginning of 2000, strategically correctly identified the main risks and priority directions for the development of the economy of Kazakhstan: a non-alternative course was chosen to diversify, increase the competitiveness of the economy through innovation and avoid dependence on raw materials. As analysis of innovative development in the Republic of Kazakhstan shows, innovative activity in the country plays a large role, but so far it is not the main factor of increasing the country’s competitiveness in the world market.

In the conditions of building an innovation system, an economy based on knowledge, the only true development strategy is the intensification of innovation potential. The country’s innovation potential lies in the formation and formation of an educated nation, the compilation and integration of various types of sources, such as material, financial, intellectual and other. The most important factor in the growth of the innovation economy is the country’s intellectual potential.

This article examines the issues of state regulation of innovation activities, including the features of the formation of an effective mechanism for financing innovation and the development of intellectual capital. Constant and continuous creation and implementation of innovations is the main factor of prosperity in the competitive struggle of any enterprise, region and country as a whole.

The purpose of the research: to study the influence of the role of the state on the country’s innovative development; analysis of various applied complex and multilevel approaches on the part of the state to manage innovation activities; Identification of the most effective tools and mechanisms stimulating innovation activity.

Research methods: general scientific (synthesis, deduction, induction, generalization, testing, survey, observation, forecasting, scientific abstraction, statistical analysis, logical), as well as methods of grouping and classification, expert evaluation. Results: the increasing role of the state as the most important regulator and stimulator of positive activity and social responsibility of private innovation business is defined. Creation of a favorable innovation climate is becoming the most important direction of state regulation in the innovation sphere, and such instruments as regulatory legal acts and economic incentives that contribute to improving the quality of innovations, reducing the costs of their implementation and increasing the socio-economic returns from innovations create conditions for the mass distribution of various innovative forms in the country. Scientific novelty: it is revealed that in order to strengthen the competitive positions of innovative business, the state should promote the formation and development of public and private partnerships in innovation activities. Also, the creation of an entire system, where the spheres of application of intellectual, creative work of people: science, education, culture should be put at the forefront, can also be an increase in innovative activity.

Key words: Competitiveness, Innovation, Innovation activity, Investment, Innovational infrastructure, Innovational potential, Intellectual potential, National innovation system, Potential risk, State regulation of innovative activity, Venture business.
2000 г. был начат индустриальный-инновационный курс, задуманный в начале 2000, стратегически верно идентифицирован основные риски и приоритеты направления развития экономики Казахстана: был выбран безальтернативный курс на диверсификацию, повышение конкурентоспособности экономики с помощью инноваций и искать уход от сырьевой зависимости. Как показывает анализ инновационного развития в Республике Казахстан, инновационной деятельности в стране отводится большая роль, но пока она не является главным фактором повышения конкурентоспособности страны на мировом рынке.

В условиях построения инновационной системы экономики, основанной на знаниях, единственное верное стратегическое решение является интенсификация инновационного потенциала.
Introduction

Permanent and continuous creation and implementation of innovations is the main factor of succeeding in the competition of any enterprise, region and country as a whole. Implementation of novelty, innovation, and new scientific and technological achievements in the production of new products, technologies and services is crucial for the development of the national economy and raising the living standards of the population. In order for constantly improvement of welfare level, it is necessary to continuously improve and transform the products, services, improve production and management functions on the basis of innovation and innovative technologies. Competitive advantage on the market now have countries that provide long-term strategy of innovative development, aimed at various market needs.

Experience of foreign countries shows that in issues of innovative development of the national economy it is impossible to rely entirely on market automatism. State regulation in the economy during difficult times is an effective tool for accumulation, appropriate expenditure of funds for the construction of an innovative infrastructure, focused on the use of the competitive advantages of the country. The experience of developed and rapidly developing countries in the field of activation of innovative activity and organizing processes of accelerated commercialization of new developments highlights the need for systematic state approach in all processes relating to the accelerated economic modernization based on a comprehensive stimulation of innovative activity in all sectors of the economy. There is no country in the world which national innovation system has been formed by the market, the private sector alone. Therefore, in Kazakhstan the state should play a significant role in promotion on the market scientific-technical and innovation results, creation of a national innovation system. The future of Kazakhstan – is not simply the creation of ideas, but the direct application of innovative methods on practice.

The article focuses on state support of innovative activity of enterprises of the real sector of Kazakhstan’s economy, creation of conditions for their introduction of innovations,
and activation of public and private partnership in innovation activities. Specific results of growth of innovative activity of enterprises of the regions of the country are compared with foreign countries.

Material and Methods

In the work we used the method of analysis and synthesis of data, the system approach. The data obtained as a result of the research allow us to conclude that a more dense interaction between state authorities and innovative enterprises in the form of public and private partnership is necessary. Special attention should be given to the cooperation of enterprises with a view to creating integrated scientific and innovation production complexes. The results of this study can be useful in the process of formation and implementation of the socio-economic policy of the state, as well as for continuing scientific research on this topic.

The methodological basis of the study is the dialectical method of cognition. In the process of research, both general scientific methods (modeling, analysis, synthesis, deduction, classification, system approach) and special methods of cognition (statistical methods) were used.

Literature review

The development of the processes of globalization encourages countries to pursue an active policy of forming a new technological structure for the development of their economy. In this regard, the creation and development of a competitive innovative economy is one of Kazakhstan’s top priorities. The creation and implementation of technological innovations in the long term is the basis for increasing the efficiency of the economy and raising the standard of living. The creation of innovations requires the presence of favorable conditions for the development of innovative activities, which should support the public and private sectors. This implies sufficient investment in research, especially from the business sector, high-quality research institutions, cooperation in research between research institutes, universities and industry, as well as guarantees for the protection of intellectual property and potential investments. The problem of innovative development is devoted to many studies of scientists. As is well known, the concept of innovation was introduced into economic theory as early as the 1930s by L. Schumpeter. Unquestionable interest represent approaches to the definition of innovations of such founders of the theory of innovations as Paterson A., Adam R., Mullin, J. (Paterson A., Adam R., Mullin, J. 2003: 13p), Johnson A. (Johnson A. 2002: 1p), Yansen F. (Yansen F. 2002: 3p) Barnet H., Knight K., Mansfield E., Hicks J., Robinson J., Mead J. The theory of «state regulation of innovation» is presented in the works of such researchers as K. Freeman, B.Lundvall, (Lundvall. L. 1992. – 342 p) R. Nelson, Johnson B. (Lundvall B.-A., Johnson B. 1994: 23 p), etc., as well as in the information and analytical materials of The Global Innovation Index, the United Nations Development Program, the World Bank and the statistics of the Ministry of National Economy of the Republic of Kazakhstan.

Practical approaches to the formation and development of innovation infrastructure, the financing of innovation, the development of scientific and technological potential, commercialization of developments are considered in the works of L.M. Gohberg, MA Bunchuk, Itskovich G., (Itskovich G 2011: 3p), Satybaldin A., Dnisheva F.M, Alzhanova F.G., (Satybaldin A. 2016: 5p), Mukhtarova,K., (Mukhtarova, K. 2016: 33p) Kupeshova, S. (Kupeshova, S. 2016: 9p) and other researchers. However, there are still questions on the theoretical and methodological issues of the establishment and development of the institute of innovative entrepreneurship, the improvement of the innovative infrastructure of the national economy and the role of the state in stimulating the innovative activity of entrepreneurial structures in Kazakhstan. Presence of problems of innovative development of the Kazakh economy necessitates systematic study, generalization and critical rethinking of existing methods and mechanisms of state support for innovative entrepreneurship.

Results and discussion

In all developed countries of the World the state plays a very important and central role in the development of innovative activity of the country’s national economy because through the state mechanism of regulation innovative potential of the country is created. In all economically and innovatively developed countries of world currently concentration of intellectual and innovative capabilities increases including the reason of brain drain from developing countries. The reason for an outflow of talented young people is in providing learning opportunities in higher education, internships, and grants. The most capable and hopefulness professionals get high-paying job. Thus,
with the help of the state in economically developed countries occurs the process of intellectualization of society and the formation of an economy based on knowledge, as well as creation of profitable socio-economic conditions and incentives for intellectual creativity and self-realization. Therefore, due to the influx of highly skilled experts in the world economy is actively carried out innovative activities (Mukhtarova, K. 2019: 66p)

In today’s world around human potential concentrates material, information, financial and other resources. The World Bank on an example of a survey of 192 countries came to the conclusion that only 16% of growth in countries with transit economy are specified by physical capital, 20% – natural capital, the remaining 64% are related to the human and social capital (Figure 1). Developed countries up to 40% of the gross national product of most receive as a result of an effective education and training systems. (Anual report of the World Bank, 2016, The World Bank. R&D expenditure (% in GDP))

Therefore, it is obvious that as a national priority today should be proclaimed not the GDP growth and low inflation, but the improvement of quality and duration of human active life. It is necessary to proceed from the fact that the purpose and result of transformation should be expressed in the capitalization of human intellectual potential – the most important factor for sustainable development of economy. It becomes noticeable that at low levels of development of human capital investment in high-tech and innovative industries do not provide an effective return. The successes of the European countries and the states of South-East Asia justify that the orientation on investment in development of human capital and innovation potential is the most effective strategy for economic growth. (Celikel-Esser F., 2007. – 3 p.)

Unfortunately, the level of innovation activity of enterprises in Kazakhstan for several years remained consistently low. According to the report «The Global Innovation Index 2016, published by Cornell University, the business school INSEAD and the World Intellectual Property Organization (WIPO), China entered the list of 25 leading countries-innovators in the world and it is headed by Switzerland, Sweden, United Kingdom, United States of America, Finland and Singapore. Based on the results of research of The Global Innovation Index according to the level of innovative activity Switzerland takes 1st place with 66.3 coefficient of global innovation index, the United States – 61.4, South Korea – 57.1, Japan – 54.5 Kazakhstan this index is 31.5 (Dutta, S. 2016: 88 p)

Innovative development index evaluates the totality of all factors of countries innovative development and highlights the importance of productive interaction between the subjects of innovation – the public sector, businesses, the scientific community in the modern innovation ecosystems. The study is based on the hypothesis that success of economy is linked to the same extent with the presence of the innovation potential so and with conditions for its implementation. A significant backlog in terms of innovative development of Kazakhstan illustrates a number of indicators. Thus, the aggregate level of innovative activity of organizations in 2015 in Kazakhstan was 8.1%, while in developed countries this figure exceeds 50% (Figure 2). This level of innovation activity will not help to overcome the technological gap, a change in the characteristics and volume of production in all sectors of the economy (Statistical data on the Statistics Committee of the Ministry of National Economy for 2015)

Also, low level of funds allocated for the development of science and innovation, which is (as...
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according 2015) 0.17% of GDP, making government funding inadequate and ineffective. The share of domestic expenditure on research and development of the gross domestic product in the US is 2.73%, in Sweden – 3.31%, South Korea – 4.15%, Japan – 3.47%, in the Republic of Kazakhstan-0.17 % and if research costs within 5-7 years continue to be stable and do not exceed 0.20% of GDP, it can lead to irreversible destruction of scientific and technological potential of the country (Research and development expenditure (% of GDP) 2016, Raising EU R&D Intensity. 2003. – 62p.).

Expenditure on research and development per capita in the Republic of Kazakhstan are ten times less than in developed countries. This attitude towards science has led to a decline of scientific research activity, reduce of population of innovative activity and, as a consequence, the coefficient of inventive activity in one of the lowest – only 1, whereas, for example, it is 28 times higher than in Japan. (Report on joint EUA- REGIO/JRC Smart Specialisation, 2015)

As we see, the ongoing processes of intellectualization of modern society, bearing itself a significant positive start at the same time involve certain costs and do not always lead to the expected economic effect. Of course, at this stage it is very premature to make any final conclusions on the analyzed changes characterized in the scientific literature as the “new economy”, “economy of knowledge”, “informatizational economy”, etc. Much remains to comprehend, but now it is possible to speak about the presence of serious reforms in different spheres of public life of industrial powers: in science and technology, economics, processes of production management, labor relations, social structure and social policy.

It is thought what we are witnessing now in countries of so-called “golden billion” is associated with informatization and intellectualization of society. This is one of the first stages of development of the “new economy”, which combine only prerequisites for the formation of its highest stage – innovative economy.

In recent years, Kazakhstan’s economy growth allowed to raise the standard of living of the population. This greatly affected the human development. In order to achieve a high level if index of human capital development in Kazakhstan, which has rich natural resources, it is necessary to conduct qualitative changes in the structure of the economy. (Mukhtarova K. 2015: 311p) This is the guarantee of economic growth and welfare. Over 25 years of independence Kazakhstan has created all necessary base for investments in human education since birth and throughout life. The results speak for themselves. According to the UN index of human development for 2015 Kazakhstan takes 56 position among the countries with the highest potential of the human development. (See. Tab.1)

In the developed countries all over the world investment in intellectual capacity make up a significant share of GDP, passing ahead investment in physical factors of production, in this regard an increased role and importance of social sectors (education, health, culture, etc.) can be observed. For example, in the US the proportion of investment in people is more than 15% of GDP, and now they are 4 times exceeded gross private and public investment in the means of production. Five countries – the US,
Japan, France, Germany and the United Kingdom account for about 80% of government spending on R & D, and therein is concentrated about 50% of the world’s scientific staff (Global Competitiveness Report 2009-2010. 2009. -516p., Global R&D Funding Forecast, 2014).

Table 1 – United Nations Development Programme: Human Development Index 2015.

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<td>50</td>
<td>Belarus</td>
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<td>50</td>
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<td>56</td>
<td>Kazakhstan</td>
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Historical facts show the importance of education in the world community. The decision of F. Roosevelt about the unprecedented support of the universities during the Great Depression helped America to overcome the crisis and achieve a global leadership position in the field of modern manufacturing and high technology. We can remember the catch phrase, “America is rich because she has a lot of universities.”

The state, taking care of the future should create intellectual reserve. In order to do this is essential to create a complete education system, producing manpower, qualified to make a serious competition in the market.

World experience shows that the transition to an innovative economy can be implemented as through use of predominantly market-based mechanisms, and through the basis of the state regulation system. The first way is realized in a conditions of stable running economy, developed market relations, a high level of knowledge-based industries and intellectual potential, the existing legislation, stimulating innovative activities that occurred during the formation of the modern US economy. (Glazyev S. 2009: 5p)

Another variant is related to the state regulation of processes, ensuring the formation of market relations and the construction of innovative economy. Germany and Japan were developed according to this type in the second half of the last century, and China had the same way in the last forty years. (Center of Humanitarian Technologies: Ranking of countries in terms of expenditures on research and development, 2015)

The last option, we believe, is more suitable for our country, playing within the context of innovation economy an important role in the dissemination of knowledge in the state. Focused structural policy realized by state regulatory instruments and market mechanisms allow to ensure high conjugation and interrelation of all elements of the sectorial structure of the economy. Regardless of the specific weight of sectors and industries, and the pace of their development, subjects to a deep renewal were raw materials, manufacturing processes, consumer properties of the final product.

The role of the private sector is to develop and promote innovation in the market based on their own research, as well as with domestic and foreign technologies. The role of government is to promote the production of basic knowledge, the creation of the complex nature of strategic technologies, as well as the formation of innovation infrastructure and favorable institutional environment for innovative activity.

In developed countries, the financing of innovation activities is carried out mainly by non-governmental sources, applied science, the introduction of innovative products into production is financed by the private sector. In world practice, about three-quarters of all the innovative projects carried out by private firms, the United States – the undisputed leader of the global innovation process. Every year, this country spends on R&D $ 343 billion that is 40% of R&D expenditures in the world. From total expenditure on innovation in the United States more than 71% funded by private corporations, 14% – universities and only 11% by government. For example, in 2012 the company “Ford Motor” spent on R&D $ 7.4 billion, “Microsoft” $ 6.2 billion, thus becoming the most innovation-active companies. (The World Bank. R&D expenditure, 2015) In countries with low motivation of participation of private capital in the financing of research and innovation and with little demand for new technologies, specific to Kazakhstan, the state has to bear the brunt of the costs of the development of science and to a large extent on the development and promotion of innovation. According to statistics of the RK Agency for Statistics, investment in the sphere of science and education today is still low. (Figure 3) (Statistical data on the Statistics Committee of the Ministry of National Economy for 2015, Satybaldin A. 2016: 35 p, Mukhtarova, K 2016: 62p)
A successful solution of the problem of financial support of innovative development presupposes the existence of specific forms of funding as well as the correct selection of the key stages of the implementation of innovative projects to the greatest extent in need of financial support.

Conclusion

Now, in many developed countries public and private partnerships (PPP) in the field of innovation are being actively developed. In high-tech industries PPP arises, as a rule, from the initiative of the State, because projects in this area are characterized by high degree of risk and resource consumption. The state’s efforts are aimed at support of science and education, the creation of innovation infrastructure, while business takes on the commercial risk and receives most of the profits from the project. During the project the state receives dividends in the form of increased tax revenue, increase employment, improve the overall level of production while increasing the competitiveness of products and services in the global market.

The PPP mechanism increases the return of scientific research that can effectively solve issues of subsequent commercialization results. This mutually beneficial cooperation between the state and the business sector contributes to the growth of innovation activity of enterprises and meets the interests of civil society as a whole.

In developed countries are common such forms of PPP as government contracts, concessions, joint ventures, leases. They belong to the traditional forms of partnership. In recent years intensive develops and new forms of cooperation between the state and business, which include: the creation and functioning of special economic zones, research and production and technical innovation zones, venture capital funds and others.

The use of any form of PPP depends on the tasks assigned to the partnership, as well as the specific applications of this mechanism. For example, infrastructure facilities are generally built and operated by a concession forms for the development of information technologies and research projects is preferable to use venture capital funds, technology parks, business incubators, special economic zones.

Now for Kazakhstan PPP development in the field of innovation and research activities is very important. Therefore, a system of measures stimulating private investment is required, in particular, the creation of tax privileges for investors, funding of R & D, and for companies, introducing domestic technology. It is necessary to legislate a system of tax privileges for customer-investors. Kazakhstan has established certain tax privileges for research organizations, but today it is important to stimulate not the offer of research services but the demand for them from the private sector. There is practically no tax incentives for increasing a demand for science, those benefits that is declared in the Tax Code does not work because of the absence of tax administration mechanism. (Dnishev F. 2013: 5p, Ibrayev A. 2015)

Thus, in our view, formation of foundations of a sustainable and competitive innovation economy in Kazakhstan should be carried out in the following areas: development environment for innovative development;
improving the quality of innovation and intellectual potential
increasing companies’ expenditures on the development and research activities;
expansion of cooperation of universities and industry in research activities;
acquisition of advanced technology products by the government;
PPP development in the field of innovation and scientific research.

Today for Kazakhstan the most important prerequisites for increasing innovation activity of enterprises is to improve the scientific, educational and industrial components of the innovation potential. If a large proportion of the industries will invest in innovation – it will promote the rise of innovative industry as a whole and stimulates the remaining companies to upgrade technologies. If innovation activity in industry is small, the optimal strategy for enterprises is to refrain from investments, which with time can lead the country to so-called “Trap of underdevelopment”.

At the forefront should be nominated the spheres where can be applied intellectual and creative labor of people: science, education, culture. If we look at creativity as the main factor of development, than in the structure of social reproduction science, education and culture can be seen as a kind of the first unit, where creative abilities are created and developed. This is not an accident, because sustainable economic growth in the environment of global competition is defined by the high level of implementation of new technologies and developments in production.

Creation of innovations and preparation for this process, of highly qualified personnel are inextricably linked to the intellectual capital. Therefore, in industrialized countries, special emphasis is placed on the intellectual growth of the scientific potential. The fact that investment in intellectual capital increases the overall efficiency of the economy, making it more competitive, has not been a secret for anybody: this is proved by the experience of several countries.

It is proved that a qualitatively new level of development of a modern market economy is its highest stage – an innovative economy, one of the main characteristics of which is the existence of a civilized institute of intellectual property, allowing the development of intellectual capital and the efficient transformation of knowledge into innovation. Kazakhstan, despite some potential for innovative development, is only at the initial stage of transition to an innovative economy, the formation of which the author is associated with an active role of the state on creation of a favorable institutional regime and infrastructure.

It is clear that in the environment of innovative economy can be traced the transformation of the role and importance of human capital: in the foreground comes the intellectual component and the ability to implement innovations. Modern modifications in the content of human capital turn it to a key factor in industrial and innovative development of the society.

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