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PROBLEMS AND PROSPECTS OF INNOVATIVE DEVELOPMENT OF SMALL AND MEDIUM-SIZED ENTERPRISES IN KAZAKHSTAN

Abstract

Transition from raw materials export model of economic development to the innovation cannot be doubted. Today, the country is far behind the developed and some developing countries in the world on a variety of criteria for innovative development. The Republic of Kazakhstan will be able to become competitive only if the transition to a new model of economic development and the rapid reduction of the backlog. State requires an effective strategy of innovative development, which consists primarily in stimulating the development and commercialization of innovations. The formation of an innovative economy in Kazakhstan is a complexity of economic, social, and political issues. An effective use of research findings and developments in the real economy is most important in terms of Kazakhstan's successful competitiveness, assurance for high economic growth, improved quality of life, and to help realize other innovative priorities. In these circumstances, innovation management and development are becoming more relevant as the basis for developing Kazakh companies, by way of a defined set of relevant technical, operational, organizational, marketing, and financial operations. In this paper, statistical analysis of indicators of innovative growth in the Republic of Kazakhstan was conducted in comparison with leading developed countries. As the results of the academic research, key factors that have a major influence on innovative activity of the small and medium enterprises were determined.

Key words: innovations, small and medium-sized enterprises, efficiency, strategies, competitiveness, ecological growth, indicators.

In the XXI century the key to rapid progress of socio-economic development is an effective innovation policy aimed at introduction of high, "breakthrough" technologies, new forms of work organization and management, advanced inventions and achievements of scientific and technical progress.

Formation of innovative economy in Kazakhstan is a complex economic, social and political challenge. The most important condition for the successful competitiveness of Kazakhstan, for ensuring high economic growth, for improving quality of life and the implementation of other innovative priorities is the effective use of the results of researches and developments in the real economy sector. In these conditions, the development of innovative process management as a basis for the development of Kazakhstani enterprises is becoming increasingly important, defined by a set of relevant technical, operational, organizational, marketing and financial operations.

The innovative development of the country is largely determined by the degree of business involvement in innovation. Innovation is a factor that will ensure long-term competitiveness of enterprises, the development of high-tech industries, the expansion of the production of knowledge-consumptive products.

Today, the intensity of innovation is mainly reflected in the level of economic development: in global competition, the countries, which provide favorable conditions for innovation benefit the most. Thus, the development of innovative economy is one of the most effective ways to improve the country's competitiveness.

Comparative analysis of the scientific, technological and innovation activities in Kazakhstan and foreign countries have shown that the development of national support systems, and innovation in the country is at the stage of formation and thus explains some lag from the leading countries of the world, where the national innovation system is already functioning successfully. Many technologically

developed countries (The United States, European Union, South Korea and Japan) moved to world leadership more than a decade in the field of science and innovation and have a fairly consistent and long history [1, 2]. The start of building innovative economies in the world, usually refers to the period after the Second World War [3, 4, 5]. In this context, assessing strictly the results of innovative development of Kazakhstan for such a relatively short period of time is considered to be very inefficient.

Now Kazakhstan is only at the initial stage of transition from resource based economy to an innovative type of development. For the developments of innovative activities special financial support tools have been enhanced. New tax incentives and preferences for domestic enterprises were introduced for the development of innovation.

Currently, Kazakhstani innovative system has perfected and supplemented with new tools of industrial and innovation support. For example, in 2012, the Law of the Republic of Kazakhstan “On state support of industrial-innovative activity” was accepted, which includes 14 tools to support industrial-innovative development, including 5 new types of innovation grants. Also the technological system of the country planning mechanisms are laid and the analysis in the efficiency of realization of industrial-innovation policy are presented, a new incentive mechanisms and improvements to existing mechanisms for supporting innovation is provided.

Work on the creation of venture capital funds and industrial design offices are continuing, commercialization offices are opening and a business incubation program of regional industrial parks are operating too.

At the same time, according to the Bloomberg Innovation Index in terms of innovation Kazakhstan is now located at 50th place [6].

According to the Global Competitiveness Report of the World Economic Forum for 2015–2016, by factor of Capacity for innovation Kazakhstan is on the 78th place among 140 countries worldwide.

At the same time in recent years, Kazakhstan’s expenditures on R&D range from 0,15% to 0,28% form gross domestic product (Figure 1), while the figure is 3,49% in Finland, 3,64% in Korea, 2,6% in the USA, 1,44% in China of GDP, but on the average in the Organization of economic cooperation and development countries this figure is 2,24% [7].

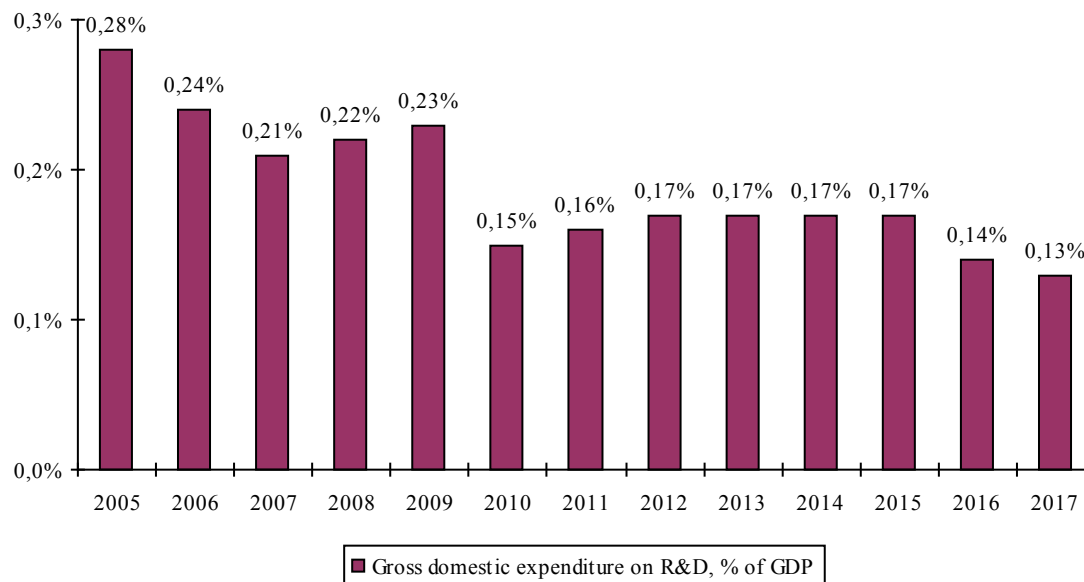


Figure 1 – Gross domestic expenditure on R&D in the Republic of Kazakhstan for the period 2005–2017, % of GDP

Source – Committee on Statistics of MNE RK: <http://stat.gov.kz>.

In general, most of the innovation activity in Kazakhstan is stimulated directly by the state, and most of the research works are carried out in government laboratories. According to the Committee on Statistics of MNE RK, in 2015 the share of the private sector in research and experience-constructive

activities is only 36,6%, whereas in Japan this figure is (78,5%), in China (73,3%) and in the United States (72,6%), most of the research and experience-constructive works are carried out by the private sector (Kurmanov et al., 2016) [8].

This state of Kazakhstan is caused by factors that form the fundamental basis of innovation development of the country.

Firstly, a substantial part of the results of scientific and technical activity is not implemented in the real sector of the economy, it does not bring income to developers and does not provide the income due to the lack of organizational and economic mechanisms of commercialization of technologies and developments. Also, the lack of examples on successful commercialization of technologies allows us to conclude that the national system of support and introduction of innovation has gaps that do not allow the country to create an effective system of converting knowledge into national wealth.

Examples of international best practices illustrate the need for such measures. At the same time both central and local public authorities should play an important role in promoting and maintaining the technology commercialization process for the creation of a flexible network, consisting of a variety of private and public partners, interacting and complementing with each other.

Despite the fact that in 2015 the innovative activity of enterprises has increased markedly to 8,1%, which is higher than in 2005 by 2,3 times (Figure 2), on the cost structure on technological innovation indicators Kazakhstan closer to the group of “modest innovators” which have dominated the expenditure on purchasing machinery and equipment. The share of innovation active enterprises in Germany the figure – 80%, in the United States, Sweden, France – 50%, in Russia – 9,1% (Kurmanov et al., 2016) [6] .

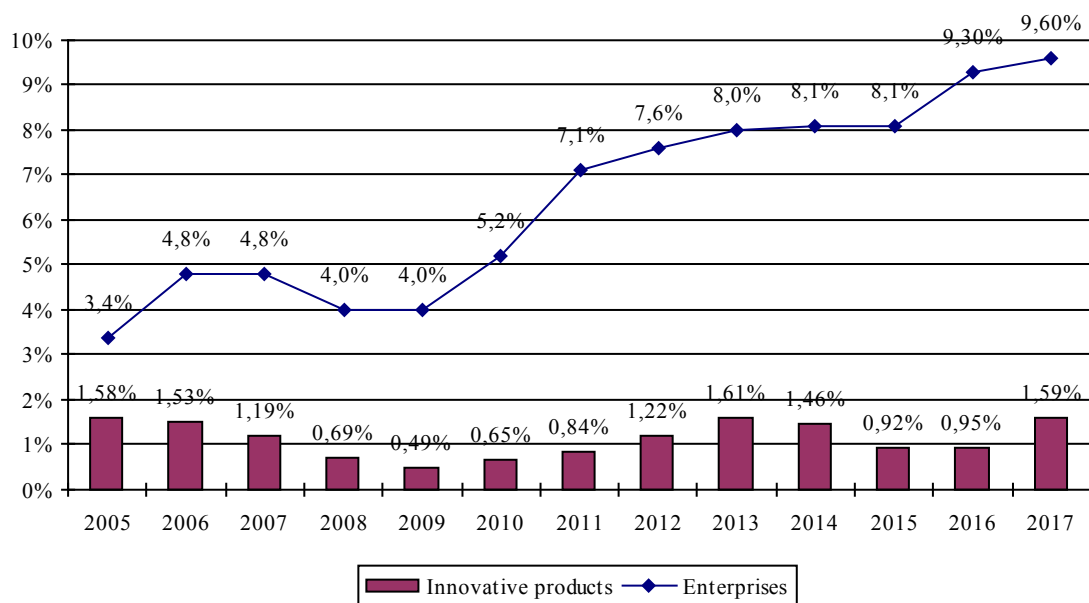


Figure 2 – Innovation activity of Kazakhstan enterprises (share of innovative products in GDP, and share of innovation led enterprises among all enterprises) for the period 2005–2017

Source – Committee on Statistics of MNE RK: <http://stat.gov.kz>.

However, it should be understood that business in Kazakhstan is in the process of modernization of production facilities, and the predominance of investment way to upgrade technology is quite natural.

Today in Kazakhstan there are no special state regulatory measures to promote the demand for innovation, including through technical regulations, public procurement system and giving special status of an innovative company. Weak demand is a key factor retaining the promotion of innovation in the country (Kurmanov et al., 2016) [8].

In its turn, government business support programs sometimes include very complex processes affecting the participation of a wide range of entrepreneurs in these programs.

Secondly, the current status of the development of regional innovation systems do not provide the formation of innovative companies. Creating full-length regional innovation systems in the Republic of Kazakhstan will allow to focus on the development of a particular region in view of its specific features, to approach comprehensively to solving the problems of local businesses, to work more closely with entrepreneurs, scientists and inventors. This generally gives a significant effect in increasing innovation across the country.

Thirdly, there is no easy access for scientists and innovators to the elements of the innovation infrastructure, as well as the instruments of state support of innovation activity

One of the main directions of development and innovation policy is the creation of innovative infrastructure. Today in Kazakhstan 9 commercialization offices operate, 8 regional technology parks and 4 industrial design offices, 2 centers of technology transfer have been set up, the special economic zone “Park of innovative technologies “Alatau” was opened in 2007.

Fourthly, it is necessary to strengthen the integration into the global innovation system. Kazakhstani scientists and innovators are limited in participation at international scientific and business projects, as well as in access to foreign services and capital, provided by international development institutions and investors.

Based on the analysis of institutional changes in Kazakhstan we identified the main reasons reducing the effectiveness of innovation processes in Kazakhstan, which are schematically shown in Table 1.

Table 1 – Causes reducing the effectiveness of innovation processes in Kazakhstan

Economic	Organizational	Legal	Infrastructural
<ul style="list-style-type: none"> - Low scientific – technical and innovation potential; - Lack of own resources; - Unacceptable loan conditions; - The high cost of innovation; - Low payable demand for new products; - High economic risk of innovation; - A long payback period. 	<ul style="list-style-type: none"> - The absence of the relationship between science and industry, the public and private sectors; - The lack of new forms of cooperation development and production of complex products; - The low level of regional and global integration 	<ul style="list-style-type: none"> - Imperfection of legislative and regulatory framework to promote and regulate innovation, protection of intellectual property rights and patent laws 	<ul style="list-style-type: none"> - Underdevelopment of the technology market; - Underdevelopment of the market information and communications; - Lack of development of innovative infrastructure
Note – Compiled by the authors.			

Funding for innovative entrepreneurship. Economic diversification is a well-established area of Kazakhstani government, which is reflected in the large-scale tasks set by the State Program of Industrial Innovative Development of Kazakhstan for 2015–2019 years. This program provides the sustainable development of innovation. The main objective of the program is to stimulate diversification and enhance the competitiveness of the manufacturing industry.

The objectives of the Program include:

- ◆ anticipatory development of the manufacturing industry;
- ◆ improving the efficiency and increase in the added value of the priority sectors;
- ◆ expansion of markets for non-primary goods;
- ◆ an increase in productive employment;
- ◆ giving a new level of workability to the priority sectors of the manufacturing industry and providing a basis for future development of sectors through the formation of innovation clusters;
- ◆ encouraging entrepreneurship and the development of small and medium businesses in the manufacturing industry

State financial institutions. At this stage SPIID provides managing principles and legal framework for the development of financial support of innovation activity in the country. This is a part of the Strategic Development Plan of the Republic of Kazakhstan until 2020.

In Kazakhstan there are a number of institutions involved in the financing and management of the modernization process that includes funding for investment, attracting in infrastructure projects and resources for innovation. The most important institutions in this area are: Development Bank of Kazakhstan, Damu Entrepreneurship Development Fund, Investment Fund of Kazakhstan, JSC “Science Fund”, JSC “NATD”.

To ensure the further development of innovative activity of the enterprises the following measures are recommended.

1. The development of effective system of technology commercialization. Commercialization of the technology should be directly linked to the practical application of the results of scientific and technological activities in order to market new or improved products, processes, services, and to get positive economic effect.

A systematic approach to the development of technology commercialization will provide significant impetus to rapid establishment of results of scientific and technological activities in the economic cycle that will eventually allow the state to create new jobs, to return to the budget through the tax system invested in scientific research and development works, and overall to improve the competitiveness of Kazakhstan in the global technology market.

To create a normative-legal framework for the development of commercialization system of intellectual property objects in the Republic of Kazakhstan the interests of all stakeholders in the commercialization of intellectual property should be taken into account to ensure the stability and security of investment. This measure would allow scientific research institutions to participate in all forms of commercialization of intellectual property, and allow researchers to work in public research institutions, as well as to manage and own part of shares in innovative companies, thereby reducing the risk for the scientific community creating its own intellectual property-based business.

2. Promoting the innovation activity of enterprises. The change-over of innovative system of Kazakhstan from the model driven by state to the stable system driven by the private sector should be provided through the reduction of administrative barriers and tax incentives, the expansion of access to finance, the creation of innovation clusters, the business environment development and formation of the demand for innovation.

Reduction of the administrative and technical barriers with improvement of access to finance will contribute to the emergence of a large number of innovative companies.

The openness of the internal markets will lead to increase of access to global knowledge and technology. This transfer of advanced knowledge and technology will be implemented through the creation of positive environment and incentive tools, including the following important trends:

- ♦ Involvement of small and medium-sized innovative companies overseas and the creation of common production with them;
- ♦ Maximum use and attracting of scientific potential of scientists-compatriots successfully working in foreign scientific research institutions;
- ♦ The disclosure of foreign patents and licenses at the transfer of advanced technologies to improve the competence of local specialists.

Creating innovation clusters will help to increase innovation activity of business subjects, as well as lead to the emergence of synergy: participating companies clusters are motivated to create new products much more than single enterprises. At the same time the activity of enterprises can intersect and complement each other. Formation of innovation clusters at the same time contributes to the interchange between related industries and intense competition within each sector.

3. Formation of demand for innovation. Building an effective national innovation system should be focused on the implementation of measures to increase demand for innovation. Most of the countries that rapidly develop their innovative systems, did not succeed due to lack of demand for innovation.

As world practice shows the central subjects of the national innovation system are commercial enterprises that have their own potential for the research and development, enabling them to inculcate innovation successfully.

Today the weak demand is a key factor retaining the promotion of innovation in the country. Formation of demand for innovation should be provided by the state regulating and encouraging measures.

4. Development of innovative infrastructure. The activity of the innovative infrastructure should be aimed at providing the necessary financial, methodological and information support at all stages of the innovation process, at the creation and promotion of new plans, at providing advanced development of knowledge-consumptive industries and the introduction of high-tech industries. The main elements of the innovative infrastructure are special economic zone “Park of innovative technologies”; regional parks; venture capital funds; industrial design offices; international centers of technology transfer.

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Аңдатпа

Қазақстан экономикасының экспорттық-шикізаттық даму үлгісінен инновациялық үлгісіне өту қажеттігі күмән туғызбайды. Қазіргі таңда ел инновациялық даму жағынан әлемнің дамыған және бірқатар дамушы елдерінен айтарлықтай қалып отыр. Қазақстан Республикасы тек экономикалық дамудың жаңа үлгісіне көшу және тезірек алға жылжу шартында ғана бәсекеге қабілетті бола алады. Мемлекет инновацияларды әзірлеуді және коммерцияландыруды ынталандыруға негізделген инновациялық дамудың тиімді стратегиясын қажет етеді. Қазақстанда инновациялық экономика кешенін қалыптастыру экономикалық, әлеуметтік және саяси міндет болып табылады. Экономиканың нақты секторында ғылыми зерттеулерді және зерттемелердің нәтижелерін тиімді қолдану арқылы Қазақстанның бәсекеге қабілеттілігін жақсарту, экономикалық өсудің жоғары деңгейін қамтамасыз ету, өмір сүру деңгейін жоғарлату, басқа да инновациялық басымдылықтарды жүзеге асыруға болады. Осы ретте қазақстандық кәсіпорындарында техникалық, өндірістік, ұйымдастырушылық, маркетингтік, қаржылық операциялар сәйкестігінің жиынтығы инновациялық үрдістерді басқаруды дамытуда үлкен мәнге ие. Мақалада Қазақстан Республикасында әлемнің алдыңғы қатарлы технологиялық дамыған елдермен салыстырғанда инновация дамуының статистикалық индикаторларына талдау жасалған. Жұмыстың нәтижелері ретінде инновациялық қызметті іске асыру бойынша кәсіпорындардың мүмкіндіктеріне ықпал ететін басты факторлар анықталған.

Тірек сөздер: инновация, инновациялық қызмет, шағын және орта кәсіпорындар, тиімділік, стратегиялар, бәсекеге қабілеттілік, экологиялық өсу, индикаторлар.

Аннотация

Необходимость перехода Казахстана с экспортно-сырьевой модели развития экономики на инновационную не подлежит сомнению. На сегодняшний день страна значительно отстает от развитых и ряда развивающихся стран мира по целому ряду критериев инновационного развития. Республика Казахстан сможет стать конкурентоспособной только при условии перехода на новую модель развития экономики и быстрого

сокращения отставания. Государству требуется эффективная стратегия инновационного развития, заключающаяся прежде всего в стимулировании разработки и коммерциализации инноваций. Формирование инновационной экономики в Казахстане является комплексной экономической, социальной и политической задачей. Важнейшим условием успешной конкурентоспособности Казахстана, обеспечения высокого экономического роста, повышения качества жизни, реализации других инновационных приоритетов является эффективное использование результатов научных исследований и разработок в реальном секторе экономики. В этих условиях все большее значение приобретает развитие управления инновационным процессом как основы развития казахстанских предприятий, определяемого совокупностью соответствующих технических, производственных, организационных, маркетинговых, финансовых операций. В статье проведен анализ статистических индикаторов развития инноваций в Республике Казахстан в сравнении с ведущими технологически развитыми странами мира. В качестве итогов работы определены ключевые факторы, оказывающие влияние на возможности малых и средних предприятий по осуществлению инновационной деятельности.

Ключевые слова: инновации, малые и средние предприятия, эффективность, стратегии, конкурентоспособность, экологический рост, индикаторы.