REPORTS OF THE NATIONAL ACADEMY OF SCIENCES
OF THE REPUBLIC OF KAZAKHSTAN
ISSN 2224-5227 https://doi.org/10.32014/2019.2518-1483.123
Volume 4, Number 326 (2019), 99 – 103

UDK 330.341

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DEVELOPMENT OF INFRASTRUCTURAL LINKS OF INNOVATIVE SYSTEM KAZAKHSTAN IN THE CONDITIONS OF FORMATION OF SCIENTIFIC ECONOMY

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Abstract. Formation of the organization of innovation in the Republic of Kazakhstan is one of the leading places in the development of the country itself. In Kazakhstan, the last few years, interest in innovation has grown very significantly - even at the level of the government, measures to stimulate innovation have been taken. Innovation activity in Kazakhstan has not yet received the theoretical and practical level that would help overcome the technological gap, change the nature and production volumes in all sectors of the economy. This article identifies the functional role of NIS RK, as well as each of its subsystems in the formation of an innovation-type economy. The data on the development of the scientific and technical system, innovation infrastructure and innovation activities of the country are presented.

Keywords: infrastructure, links, innovations, system, knowledge-intensiveness, business.

INTRODUCTION

In order for Kazakhstan to enter, on the terms of an equal partner, into the world community, it is necessary to determine the range of macro-technologies by which it can become competitive in the international market for high technology products. Thus, the laid theoretical and methodological foundations of innovation activity require further development and generalization. In this regard, this article reveals the features of the introduction of advanced technologies, also in the work examines the experience of foreign countries in the implementation of innovations in practice.

For example, in the American business, focused on the creation of innovations and the introduction of innovations, two types of entrepreneurship are combined: financial and actually innovative. In accordance with this specialized activity in the production of promotion of new products to the market, venture (risk) capital companies and innovative firms are engaged. Specialized venture capital firms play the main role in financing innovations. Organizationally, such companies are a combination of managers of small firms and financial pools managed by them, each of which integrates the funds of several investors. In addition, companies often practice the so-called "distributed risk", the essence of which is that a large company invests its capital in a project of not just one small innovative firm, but distributes it among several projects. On the one hand, it significantly reduces the riskiness of investments, and on the other hand, it provides sources of financing not for one, but for several firms. However, projects for funding are selected very carefully and, on average, only 1-2 out of every 10 investment requests are satisfied. In recent decades, “quasi-risky” forms of their organization at the level of a corporation: internal ventures and svoyak programs have been recognized as the most effective methods for accelerating innovation processes in the United States. US specific form; The Svoryak program provides for the approval of special monetary funds, the funds from which are allocated to Slavs, representatives of internal corporate risk capital. Any employee of the corporation, who proposed the idea of a new product, can apply directly to the “brother-in-law” for financial support. If the proposal turns out to be interesting, funds can be allocated (up to several hundred thousand dollars) for the development and implementation of an innovative project. "Svayaki" participate in the income of the corporation, receiving money, securities, or a percentage of the profits for each successful innovative project. Thus, the restructuring of the organizational structure of a large American company General Motor in order to increase the effectiveness

of innovation management is indicative. Another example of foreign experience in innovation is Japanese companies. Innovation as a product of intellectual activity cannot arise spontaneously. For the generation and introduction of innovations into practice, certain conditions are required - the presence of all institutions that contribute to the implementation of innovations, as well as the degree of their development and interaction among themselves. The combination of participants in the innovation process and the degree of institutional interaction of institutions form a certain system with specific features from country to country. In economics, this system, inherent in a particular country, is called the national innovation system (NIS).

MAIN PART

By the end of the twentieth century, it became obvious that the level of development of the science and technology sphere - science, education, knowledge-intensive industries, world technology markets - defines the boundaries between rich and poor countries, creates the basis for economic growth, is the most important factor in solving social problems.

Table 1 - Ranking of countries in the world according to the 2018 innovation index [4]

RATING	A COUNTRY	INDEX
1	Switzerland	68.40
2	Netherlands	63.32
3	Sweden	63.08
4	Great Britain	60.13
5	Singapore	59.83
43	Ukraine	38.52
46	Russia	37.90
59	Georgia	35.05
68	Armenia	32.81
74	Kazakhstan	31.42
80	Azerbaijan	30.20
86	Belarus	29.35
94	Kyrgyzstan	27.56

Table 2 - Costs of technological innovations in industry, mln. Tenge

	2016	2017	2018
The Republic of Kazakhstan	170174,3	168477,1	219263,3
Akmola	3626,8	6567,9	8891,4
Aktobe	29374,1	52788,3	43305,3
Almaty	1542,1	1780,3	5625,5
Atyrau	14265,6	14288,1	20488,1
West Kazakhstan	46888,2	1364,3	8203,1
Zhambylskaya	8244,9	16530,8	15041,7
Karaganda	6900,9	4989,7	25168,0
Kostanay	526,4	1884,0	13676,1
Kyzylorda	2673,5	3738,5	4325,5
Mangystau	414,9	9041,5	5962,0
South Kazakhstan	13912,6	3732,9	18388,5
Pavlodar	6995,0	4136,8	12064,9
North Kazakhstan	63,7	7675,6	5986,7
East Kazakhstan	30366,8	23211,2	24930,2
Astana	1218,4	12636,6	5807,6
Almaty city	3160,4	4110,6	1398,3

The state of the country's scientific and technical system depends on the characteristics and level of development of the country's economy, on the effectiveness of the scientific and technical policy pursued.

The main indicators used to analyze the state of the scientific and technical system of Kazakhstan are the standard parameters used in similar studies in the international community: the amount of expenditure on research and development, the number of scientific and technical organizations of the country, their material and technical support, number and qualification scientific personnel of the country, the effectiveness of research and development [2].

The most important indicators characterizing the state of innovative processes in industry are the volumes of innovative products sold and innovative services rendered during the year.

So it is known to distinguish between fundamental and applied research. There is no doubt that basic research is one that has no commercial value at the initial stage. Applied research is deliberately conducted with a focus on a useful (commercial) result. As a consequence, basic science is funded primarily by the state. Without fundamental science there can be no progress.

The most effective in innovation are enterprises with private ownership. At the same time, “pouring” into a private form of state or foreign ownership increases the entrepreneurial activity of organizations in the field of innovation. Entrepreneurial and innovative passivity in Kazakhstan of foreign-owned enterprises is evidence of the absence of an active market environment in the country;

The increase in the volume of sold innovative products and the volume of rendered innovative services indicates the demand for domestic innovative products on the market. It should be noted that domestic innovative products are in demand not only in the domestic market, but also in the foreign market, which is a positive circumstance from the point of view of further increasing the output of innovative products and the development of foreign markets.

The implementation of the Strategy also gave impetus to the formation and development of technology parks of national and regional scale.

One of the first and most significant objects of the innovation infrastructure is the free economic zone “Park of Information Technologies” in the Alatau settlement, Almaty oblast. The purpose of creating a national park is:

- development of the information technology industry;
- activation of the entry of the economy of the Republic of Kazakhstan into the system of world economic relations;
- creation of high-performance, including high-tech and export-oriented industries, mastering the release of new types of information technology products, attracting investment [8].
- It is important to ensure the economic freedom of economic entities in the Republic of Kazakhstan is the implementation in practice of the provisions of the legislative documents, in particular that guarantees the unity of the economic space, the free movement of goods, services, funds, support for competition, freedom of economic activity.
- Modern state legislation guarantees the freedom of economic activity of small businesses, with the exception of conducting illegal business, pseudo-business or illegal banking activities.
- It is independence and economic freedom, as obligatory characteristic features of small business and indispensable conditions for its development, that mean the following: autonomy of individuals in organizing their own business in any economic field other than prohibited by law, free choice of the subject matter and type of business rights and guarantees that allow them to organize and develop their business, use its results at their discretion in accordance with the constituent documents and regulations [6].
- At the same time, the independence and economic freedom of small businesses should not mean their willfulness, therefore, the legislation establishes measures of state regulation of entrepreneurial activity and the responsibility of entrepreneurs for violating relevant regulatory acts, which is economically and legally justified. Limits of restriction of economic freedom are established by the action of regulatory acts. As a fundamental principle, we note
- that entrepreneurship should develop on the basis of its decision-making by its subjects within the law, and the state should not interfere in the specific business life of entrepreneurs.
- We point out that even the classics of economic theory wrote about economic freedom as the main condition for the development of entrepreneurship, and mostly opposed state intervention in the economic activities of entrepreneurs.

- The history of the development of modern Western economies confirms the effective practice of free enterprise development, when freedom of production, independence of choice of activities, freedom of choice of the sales market and freedom of consumption become fundamental conditions for the development of free entrepreneurship.

CONCLUSION

Undoubtedly, in a market economy there can be no absolute freedom, and the state, through organizational, legal and economic institutions, should establish, taking into account the interests of the whole society, the optimal limits of economic freedom for business entities, thereby forming a certain economic order.

• This procedure should be characterized by the division in a certain form between the state and individuals, between various state institutions and individuals, the rights to make economic decisions - especially the rights to manage production factors, the rights to make decisions regarding production (i.e., what, in what quantity and quality, where and how it should be implemented) and decision-making rights to meet needs. Revenues, and thus the actually existing degree of freedom of economic activities, should also be distributed in a certain way in society.

• Currently, in the Republic of Kazakhstan, the formation of a new economic order necessitates the granting of large economic freedoms to economic entities. This, in particular, is explained by the fact that in the process of the economic reforms carried out, the share of enterprises and organizations in state ownership was only 16.3%, and in private ownership already 79.4%. The share of other enterprises that are in other forms of ownership (including foreign), accounts for a small percentage. Thus, statistical analysis confirmed that in the economy of Kazakhstan

• The specific weight of enterprises and organizations is dominated by private property, the owners of which have the right to freely manage, in accordance with independent decisions, manage the results of their activities and enjoy broad economic rights.

УДК 330.341

Б. Б. Қорған

ҒЫЛЫМИ ЭКОНОМИКАНЫ ЫНТАЛАУЫ ЖАҒДАЙЫНДА ҚАЗАҚСТАННЫҢ ИННОВАЦИЯЛЫҚ ЖҮЙЕСІН ИНФРАҚҰРЫЛЫМДЫҚ СІЛТЕМЕЛЕРІН ДАМЫТУ

Аннотация. Қазақстан Республикасындағы инновацияларды ұйымдастыруды қалыптастыру ел дамуының басты бағыттарының бірі болып табылады. Қазақстанда соңғы бірнеше жылда инновацияға деген қызығушылық айтарлықтай өсті - тіпті үкімет деңгейінде де инновацияларды ынталандыру шаралары қабылданды. Қазақстандағы инновациялық қызмет әлі де теориялық және тәжірибелік деңгейге ие емес, ол технологиялық тапшылығын еңсеруге, экономиканың барлық салаларында табиғат пен өндіріс көлемін өзгертуге мүмкіндік береді. Осы мақалада ҚР ҰҒА-ның функционалды рөлі, сондай-ақ оның кіші жүйелерінің инновациялық экономиканы қалыптастырудағы рөлі көрсетілген. Елдің ғылыми-техникалық жүйесін, инновациялық инфрақұрылымын және инновациялық қызметін дамыту туралы мәліметтер келтірілген.

Түйін сөздер: инфрақұрылым, сілтемелер, инновациялар, жүйе, білімнің қарқындылығы, бизнес.

УДК 330.341

Б. Б. Корган

РАЗВИТИЕ ИНФРАСТРУКТУРНЫХ ЗВЕНЬЕВ ИННОВАЦИОННОЙ СИСТЕМЫ КАЗАХСТАН В УСЛОВИЯХ СТАНОВЛЕНИЯ НАУКОЕМКОЙ ЭКОНОМИКИ

Аннотация. Становление организации инновационной деятельности в Республике Казахстан занимает одно из ведущих мест в развитии самой страны. В Казахстане, последние несколько лет интерес к инновациям вырос очень существенно – даже на уровне правительства стали приниматься меры по стимулированию инновационной деятельности. Инновационная деятельность в Казахстане пока не получила того теоретического и практического уровня, который способствовал бы преодолению технологического отставания, изменению характера и объемов производства во всех сферах экономики. В данной статье выявлена функциональная роль НИС РК, а также каждой из ее подсистем в формировании экономики инновационного типа. Представлены данные о развитии научно-технической системы, инновационной инфраструктуры и инновационной деятельности страны

Ключевые слова: инфраструктура, звенья, инновации, система, наукоемкость, бизнес.

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