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IMPROVING MECHANISMS FOR INNOVATIVE DEVELOPMENT OF THE COMPANY ABSTRACT

The purpose of this study is to identify characteristics and practical recommendations for the development and further improvement of management mechanisms relating to the innovative activity of enterprises in Kazakhstan. The study used a systematic approach of comparison, scientific abstraction, data collection, analysis and synthesis, applied expertise, and statistical methods. The core value of the work was to support the feasibility of a system for Kazakh enterprises to promote innovative activity and the development of high technologies.

Keywords: innovation, innovation process, enterprise innovative activity, human resources, Kazakhstan

1. Introduction

The main research objectives are to elucidate the participation level and influence of the state on processes occurring in the economy, and to find ways to further develop the economy, including alternative bases. An analysis of foreign experience has found that the most important factors for ensuring economic progress through innovation, are high-quality education and health care, which contribute to human capital. Based on these factors, countries like Canada, France, Sweden, and Finland, for example, have achieved significant results. In the United States, Japan, Germany, and Switzerland, the most important factors have been the quality of scientific organizations, and their ability to work with businesses and focus on the commercialization of their results, as well as matters of corporate management and ethical business. Compared to the developed countries, Singapore, Malaysia, South Korea, and China have focused their attention on global industrial development, the prevalence of which is typical for other developing countries.

In Kazakhstan, as with other economically-developing countries, the need for innovative development has been mainly initiated by the state. In 1997, the conceptual underpinnings for an innovative orientation of the economy was proposed in the 2030 Development Strategy of Kazakhstan, in an address by the President of the Republic of Kazakhstan, N. Nazarbayev to the nation (Nazarbayev, 1997) [1]. Questions thereafter were addressed time and again, directly or indirectly, by the President in annual addresses to the nation of Kazakhstan and other speeches (Nazarbayev, 2005; Nazarbayev 2012, January 28; Nazarbayev, 2012, September 6, December 15) [2,3,4,5]. The focus on accelerating the development of primary industries was the only possibility to overcome costs of a transformational crisis in the late 90s. The approach in economic management, itself, was based on the principles of strategic planning, and innovative forecasting. The determination of a long-term development strategy of the state was based on emphasized priorities. This paid off because provided the national economy with a good basis for sustainable development and implementation of new strategies.

The first real attempt for a practical transition to an innovative economic model was the state's "Strategy of Industrial and Innovative Development for 2003-2015" (SIID). The implementation of the SIID gave some impetus to increased investment activity within the country. The country was faced with new directions of development, such as the large-scale development of a huge number of investment projects, the opening of new production facilities, and the creation of new job places in all regions and sectors of the economy. The first signs of success with the SIID implementation, was the stimulation of development in the so-called "disruptive projects", including an ambitious state program, "40 corporate leaders of Kazakhstan". The implementation of projects and a strong growth of Kazakhstan's economy continued during the global financial crisis, until the end of 2009, thanks to a successful world market condition, and a timely and accurately developed anti-crisis program of the Government.

However, over the eight years of the SIID, there was no significant qualitative changes in the economy of Kazakhstan, and no preservation of industry or foreign trade structure that can be confirmed by official statistics. Even so, exports of mineral resources in early 2009 amounted to 73-74% of the total exports, while the share of mining in regards to total industrial production was more than 60%. There was no strengthening of any real innovation, however, given the early termination of the SIID and defiance in regard to the 40 corporate leaders program.

2. Literature Review

Many economists and practitioners focus their attention on the scientific support of innovation management in the economic and social spheres. Individual theoretical and practical aspects are considered in the works of Bianchi et al. (2010) [6], Rothwell and Dodgson (1991) [7], Acs et al. (1997) [8], Edwards et al. (2005) [9], Jenkins (2009) [10], Çakar and Ertürk (2010) and others.

A great contribution to the theory of innovation within the changing paradigm of higher education is made in the works of Kurmanov et al. (2015) [12], Yeleussov et al. (2015) [13].

Kazakh scientists also try to determine factors that have a major influence on innovative activity of the SME, Koshanov (2012) [14], Radosevic and Myrzakhmet (2009) [15], Smirnova (2013) [16]. However, a significant number of scientific issues that are related to effective state management of innovative processes within the economy remain outstanding in the context of Kazakhstan.

In some regions (without the involvement of leaders), homogeneous productions have become redundant because of the desire to attract investment for projects at any cost. This has created unnecessary competition for products that already have low demand in the domestic market. The authors, as well as other researchers, have considered these and other costs of inefficient innovative developments reported in the above mentioned papers (Yvitsa, 2004; Yvitsa, 2005) [17,18].

3. Methods

The study used a systematic approach of comparison, scientific abstraction, data collection, analysis and synthesis, applied expertise, and statistical methods.

4. Results and Discussion

In 2010 expenditure on technological innovation in Kazakhstan, overall amounted to 235.5 billion tenge, which is only 26.6% of the total innovative cost of enterprises for the purchase of machinery and equipment. This compares to research and development of new products, methods production (transfer), and new production processes, which received only 11.3%.

Such a structure of cost allocation for innovation is characteristic of countries with low scientific potential. In western European countries, 80% of expenditure is allocated for innovation, with more spent on research and development. Differences in approaches undertaken in Kazakhstan and other countries are given in Table 1.

Table 1. Measures undertaken by the state for innovative economic development

| Foreign countries | Kazakhstan |
|--|--|
| The predominance of some conceptual approaches in the general strategy of development for 2001-2010 | |
| Main models, implemented in foreign countries: development of human capital assets; innovative ventures; the introduction of corporate management; and industrial development. | State strategic planning and forecasting: Kazakhstan-2030; SIID; “disruptive projects”; 40 corporate leaders, and similar. |
| Crisis bailout plan for 2008-2011 | |
| Financial stability, and control of inflation. | The realization of the SP FIID; “Business Road Map-2020”, and similar; economic growth stimulation; micromanagement in the real sector, and similar. |
| Long-term strategy for the teens of the XX1 century | |
| Reindustrialization, the preparation for industrial revolution, and similar. | SSP Kazakhstan-2020; Social modernization; Concept of Universal Labor Society, Kazakhstan 2050: Development strategy, and similar. |
| Source: Authors | |

These show the predominance of the state strategic planning and forecasting in Kazakhstan, as compared to the more pragmatic foreign models.

It is seen from the comparison of approaches that the state, with its inherent functions, is an active subject of the modern market economy: economic, social, administrative, and other similar mechanisms.

1. State-owner: generates the sector of public enterprises and national companies, the management of which is part of its duties.
2. State-enterprise: participates in national and other high-risk projects, using its existing assets, including public and private partnerships, and manages its own or joint businesses;
3. State administrator: coordinates and controls the activities of all economic players, including its own business, and that of the public sector of the national economy; and
4. State corporation: creates conditions for acceptable activities for all economic players, directing them to form the Universal Lobar Society or a welfare group.

Subsequently, the Kazakhstan practice had confirmed the complexity of innovation development and identified inefficiencies in transitioning to an innovative economy as initially elected. Accordingly, during 2009 – 2010 the Government adopted swift action to change this situation in terms of the most critical areas and points of application. A more thorough analysis of the causes and effects impeding economic development was conducted. The failure in the industrial sector was considered to be the main deterrent in transitioning to an innovative economic model. The reason for adopting a new state program of innovative development was based on rapid industrialization, which was originally about implementing more effective ways for the state to regulate innovative processes.

To ensure further innovative development of enterprises, the following is recommended.

The development of an effective system for technology commercialization.

Commercialization of technologies should be linked directly to the practical application of scientific and technological activities, in order to introduce into the market either new or improved products, and processes and services, that have a positive economic effect.

A systematic approach to commercializing technology will give a significant impetus for a rapid introduction of scientific and technical activities in the economic cycle. This will eventually allow the state to create new jobs, to return to the budget through tax revenue, invest in research and development work, and improve the overall competitiveness of Kazakhstan in the global technology market.

To create a normative legal base for the development of a system for intellectual property and commercialization in the Republic of Kazakhstan, the interests of all stakeholders in intellectual property and commercialization should be taken into account, to ensure investments are stable and secure. This measure will allow research institutions to participate in all forms of intellectual property and commercialization, and likewise for researchers working in public research institutions. As well, it will allow them to manage and own a share of the stocks in an innovative company. This would reduce the risk of scientific entities creating their own intellectual-property based business.

In particular, according to the experience of European countries, state support for the use of the commercial potential of research institutes and universities, stimulates and motivates scientists and institutions to commercialize their knowledge and technology. The continuous transfer of knowledge from the public sector to the private should be developed. It is necessary to arrange measures to recognize domestic patents abroad, develop a system of intellectual property for implementation into the economic circulation, and develop a state system of intellectual property valuation.

It is also necessary to create a system of information exchange – ***a state created network of institutions for innovative development***, to support innovative projects at all stages. As a part of such a system of information exchange, the mechanism of forwarding on information, which promises innovative projects among institutions of innovative development, should be established. An information exchange system should also be an effective tool of “linking” the research and development with the business, resulting in the formation of new companies based on the results of applied research.

Development of national human resources and accumulation of competences in the field of technology commercialization. To build competencies in the field of technology, a development priority would be to provide commercialization training to staff supporting the commercialization process and their primary beneficiaries.

The development of human resources is required for successful commercialization. Training, exchange of experience, and targeted outsourcing of professional advice will play a central role in creating a sustainable system of technology commercialization in Kazakhstan. In this regard, it is necessary to encourage local experts to participate in various programs that improve competence in the field of commercializing innovation and to visit foreign structures of technologies for best practice in commercialization.

The stimulation of enterprise innovation activity. The transition of Kazakhstan’s innovation system from a model driven by the state to a sustainable system driven by the private sector is necessary to reduce administrative barriers and tax incentives, provide access to finance, create innovation clusters, develop the business environment, and to create demand for innovation.

The reduction of administrative and technical barriers, together with improved access to finance will contribute to the emergence of a large number of innovative companies.

The openness of the domestic markets will lead to an increased access to global knowledge and technologies. In this case, the transfer of advanced knowledge and technologies could be implemented through the creation of an enabling environment and incentive tools, including the following important directions:

- the involvement of foreign innovative companies of small- and medium-sized, and the creation of joint ventures among these;
- the maximum use and attraction of scientific potential from fellow scientists who are successfully working in foreign research institutions; and
- disclosure of foreign patents and licenses with the transfer of advanced technologies to improve the competence of local specialists.

In order to better promote Kazakhstan’s high-technology products in international markets, it is necessary to strengthen regular interaction among stakeholders (e.g. the export-oriented high-technology and innovative enterprises and companies; joint-stock company “National Agency for Technological Development”; JSC with their “Damu Entrepreneurship Development Fund”; and JSC with their “National Agency for Export and Investment”).

The reduction of administrative barriers and tax incentives. Today, Kazakhstan functions under the principle of tax legislation unity, which provides a single regime for all businesses, regardless of the innovative component of their products.

At the same time, innovative companies are in need of an unprecedented legal regime that will minimize administrative barriers.

In order to develop possible administrative and tax incentives for innovation, the following actions are needed:

- explore the possibility of developing and implementing mechanisms for the promotion of enterprises that work in the legal field; and
- consider the desirability of introducing a special tax regime to facilitate the conditions for innovative enterprises during the first five years of development.

Financial inclusion. Financial inclusion remains a key limiting factor for the development of entrepreneurship in Kazakhstan. This is due to the reluctance of the banking sector to finance risky and innovative projects. In particular, these are projects, belonging to small- and medium-sized businesses, which, in most cases, can provide only limited resources to secure a loan.

In our opinion, for these purposes, it is necessary to work through the following measures:

- increase the issuance of microcredits and small grants to promote pilot implementation of capacities and entrepreneurial initiatives;
- develop financing of equity instruments and tools, aimed at financing the early stages of development of the company; and
- develop corporate venture capital, by encouraging large companies, including foreign companies, to acquire shares in the new innovative companies.

The creation of innovative clusters will increase the innovative activity of business entities, as well as lead to the emergence of synergies. For example, form clusters of participating companies, which are more likely to create new products than single enterprises. In this case, the activity of enterprises within the cluster can overlap and complement each other. The formation of innovation clusters, simultaneously, promotes interchange between related industries and fierce competition within industries.

The formation of the demand for innovation. When building an effective national innovation system, the attention should be focused on implementing measures that increase the demand for innovation. Most countries that are rapidly developing their innovative systems do not succeed, due to poor demand for innovation.

As shown from international practice, central to the system of national innovation are businesses with their own capacity for carrying out research and development that enables them to innovate successfully.

Today, a weak demand is the key constraint to the promotion of innovation within the country. The formation of demand for innovation should be provided by the state through regulatory measures and incentives.

The development of innovative infrastructure. The activity of innovative infrastructure should focus on providing the necessary financial, methodological, and information support at all stages of the innovation process. It should also create and promote new developments that provide advanced scientific development, and introduce high-technology industries. The main elements of the innovative infrastructure are: a special economic zone, "Park of innovative technologies"; regional technical parks; venture capital funds; industrial design offices; and international technology transfer centers.

By interacting with each other, these elements of innovative infrastructure will provide an integrated system of support for innovation at all stages of implementation, and this will allow companies to:

- maximize capture of innovative subjects with tools supported by the state;
- establish an effective system of commercialization and promotion of innovation, based on national scientific research; and

establish a system of transfer, localization and distribution of the necessary foreign technologies.

5. Conclusion

Integrative processes provide an opportunity for Kazakhstan to expand its markets and increase its capacity for innovation. Competitive pressure creates a huge incentive for Kazakhstan enterprises to innovate. To take full advantage of these opportunities, it is necessary to make effective policy measures to support further modernization and diversification of the economy.

The questions regarding innovative processes, management improvement, and innovative achievements are now becoming more relevant. They require the participation of the various layers of Kazakh society. At the same time, as evidenced by the latest Kazakhstan experience, the coordinating and controlling (combining) role of the state in this area is becoming increasingly important and serves an inherent function.

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