Increase of National Competitiveness on Basis of Innovation

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Abstract

The problems of innovative activity development in Kazakhstan and the main trends of its improvement were considered in this paper.

Key words: innovations, competitiveness, techno parks, state support.

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Recently innovation activity has become the integral part of economic development of the Republic of Kazakhstan, based on introducing new ideas, scientific knowledge, technologies and types of products to various spheres of production and society management. Apart from cluster initiative some aspects of diversification have been worked out as well. The program on organizing and developing the National Innovation Systems was affirmed for 2005-2015 years. The main objective of its program is to organize innovation systems of open type using both country and foreign scientific potential.

Objective of the paper is to determine the role and place of innovations in the achievement of competitiveness of the country.

In the process of research the following methodology was used: analysis and generalization of the state program development realization and innovative activity until 2015 year.

In the course of study and analysis of innovative processes the main problems, preventing these processes were revealed.

The industry – innovation development strategy of the Republic of Kazakhstan is affirmed by the President's Decree of the Republic of Kazakhstan of 17 May N 1096 and aimed on one hand at achieving stable development of the Republic of Kazakhstan by means of branch economy diversification and on the other hand ignoring raw oriented development where innovation is considered to be as a major factor in competitiveness of the national economy.

One of the main characteristics of today's technological revolution is creation and wide spread of territorial scientific – production systems. Scientific parks, innovation technological centers, innovation incubators and other similar structures, oriented to rapid realization of scientific research results into HOBYJO techniques, technology and materials, considered to be the main science efficiency factor and the integration of its parts with production.

Ranking the most and the least complexity the techno parks structure can be presented in the following way: incubators, technological parks, tachnopolicies, science and technology regions.

Technolological park is responsible for profitable experimental-production transfer and it operates from the trial-construction and experimental work to organization of serial production of new products (learning to handle new technology), having almost guarantee demand in the market. The techno park organization realizes know-how, produces new products (in small batches) or takes part in its serial production. On this stage the main role is business support. Today there are three pilot regional techno parks. They are: "Algoritm" Ltd in Uralsk (mechanical engineering and metal working for oil producing industry), UniScienTech Ltd in Karaganda (mining metal, chemistry and ecology) and "Almaty regional techno park"(construction, new materials, power engineering).

To improve economy diversification of the country apart from Alatay, four more techno parks are going to be opened. The first project is going to be launched in Ust-Kamenogorsk, administrative center of the Eastern part of Kazakhstan, then in Shimkent, Petropavlovsk and Astana.

Techno park in the Eastern part of Kazakhstan will deal with the innovation development in mining metal industry and the production of new metal, its "colleague" in the Northern part of Kazakhstan will be specialized in mechanical engineering and agriculture products re-making, the project in the Southern part of Kazakhstan of oil-processing and metallurgy industry are supposed to be developed, and in free economic zone, in Astana, the agrarian sector, construction and food industry are supposed to be developed.

All in all under the construction of the Information Technology Park (ITP) 340 hectares are given in Alatau settlement. This land partly belongs to the settlement and partially to Almaty region. The construction of the Park started two years ago and in August of this year the first part of this project has been put into operation. The total area of premises and structures is 18.000square metres. There are office-premises for 360 people, a dining room for 5000 seats; production modulus N1 and N2 with total area equals 9.000 square metres, engineering and telecommunication systems, car parks, basketball, volleyball and badminton pitch. Of course, not only beautiful offices and ready production premises must attract future participants of the project. As a free economic zone (ITP) has a number of advantages, for example, tax remissions. Corporate tax will be reduced by half as to land and assessed tax the participants are tax free and realization rotation services are free from VAT. Besides they are free from customs duties for import goods and they have privilege financing by institutes of development.

Generally as the world practice shows the matter is not only in that. Techno parks play a very important role in the IT development of the company situated on its territories. But companies get reduction in overhead expenses and especially in administrative expenses. In special economic zones it is possible to establish contacts with other companies unofficially and to build relationships with customers and suppliers, also with banks and venture capitalists getting access to financing.

IT has an access to the scientific organization and scientists here and they have a good opportunity to have a consultation on different issues. And finally may get area for placing firms in case of its growth or vice versa its reduction.

It is supposed that 20% of its area stands out for business-incubator placement. Business-incubators support newly established firms and firms, being on the initial stage of development. In one case they are the techno parks' core and in another one they operate as independent organizations. For entrepreneur beginners, who suffer from lack of financing, incubators give privilege conditions lower than market prices. Business-incubators are so popular for entrepreneurs that its number has already increased from several tens to 575 joined into the National business incubator association. In the world all in all there are 200 independent operating business incubators. After the USA they have become the most popular in the Western Europe.

In accordance with legislation PIT has many ancestors: The Government, institutes of development, private companies and also higher establishments and scientific research institutes. All above mentioned organizations will choose and establish a new management company, which will be responsible for the whole PIT activity, when the complex is put into operation. Its duties will be: continuation of construction and accomplishment of its establishments and territory, supplying them with telecommunication, office, laboratory and metrology equipment.

Firms aspiring to take part in PIT must meet several requirements. Three of them are a must. There is the registration in tax agencies in free economic zone; the absence of structure divisions; and also 90% of total revenue got from different activities that meet the requirements of establishing free economic zone. These activities are: projections, elaboration, implementation, trial and software production, hardware database; creation of new information technologies on the basis of artificial immune and neuron system, doing scientific and research work and trial-construction work in the sphere of information technology.

We can easily notice that most of our computer firms don't meet these requirements. Unfortunately nowadays these firms only buy, sell and re-sell hardware and software equipment, produced in China and Taiwan and as to domestic production it is only on initial stage. But the idea of free economic zone supposes that PIT will become a kind of generator in new technological policy in industry effective tools in new project realization:

World leading companies in the sphere of IT (information technology) and communication companies are drawn in techno park work; memorandum about cooperation has been signed with Microsoft, Hewlett Packard, Siemens, Cisco Systems, Tales, LG, Sun Microsystems, Samsung and other world leaders in this field.

Kazakh versions issue of Windows Office and participation in IT park are being planned within the frame work of this memorandum. Taking part in the state project, software giant, together with Hewlett Packard, is planning to create the expertise centre directly in the techno park.

It is planned to install very powerful HP server. Microsoft is going to install its more up to date software; in particular it is 64 bit server operation version of Window Server 2003 system, and 64 bit SQL version of Server 2005. There are only a few of such

servers in the Republic of Kazakhstan and only large corporate customers have such servers. The expertise centre will be very helpful because our Kazakhstani companies-software programmers will have free access to this server.

In the techno park, besides the expertise centre, Microsoft is planning to open the study centre, working in two directions. The first is the courses for clients how to use the program products; today the consumers show interest in the complex server products.

The second direction of the study centre will be the courses especially for Kazakhstani software designers.

In the IT park, laboratories and joint venture premises producing the first in RK LCD monitors and PDP and LCD TV sets will be allocated. The starting capital is $ 10 million, out of which 40% are paid by the National innovation fund, 35% by Glotinvest and 20% by Singaporean DS Multimedia LTD PTE.

But, alongside with all these positive aspects, Kazakhstani techno parks face a range of problems.

They can be divided according to the degree of its influence into:

- general, indirectly affecting techno park performance in the frame work of the state innovation policy realization.
- specific, directly and negatively influencing techno parks' work.

General problems can include:

Firstly, lack of investments in the main capital of processing enterprises. Intensification of the problems is caused by such reasons as:

-considerate share of investments is put into raw material sector

-the main part of economic activity income in the Republic falls on natural resources mining, which is export oriented. A large part of income is concentrated in the hands of foreign investors.

Secondly, the absence of modern mechanisms of introducing technological innovations to the market.

Today the scientists of Kazakhstan have a lot of projects, based on the ideas and results of many years' researches. But the problem is how to introduce them into production and there are only few selling of them.

Foreign projects remain more preferable according to their quality features and under corresponding financial opportunities are often used by our enterprises.

Thirdly, the absence of effective demand for advanced technologies and industrial innovations in the domestic market.

According to the world experience, science and science-technical activities refer to the sphere of service and their products are in the market demand. However at present the Kazakhstani market of scientific services and scientific products is not developed well enough. Today the Kazakhstani market is not ready to the full extent to pay for services of home scientists and designers.

Fourthly, lack of production potential.

To the specific problems refer:

Firstly, lack of highly qualified workers.

At present, the vital problem for Kazakhstan is the lack of specialists able to react quickly and professionally to the state innovation policy. In connection with it, the innovation development in Kazakhstan needs to establish the whole system of innovation control, directed to management level increase, the process of transforming of science-technical projects into ready made innovation product, attractive for an investor, producer and consumer; it can be done only by specially prepared and trained specialists-innovation managers. It's impossible to provide effective and dynamic work of techno parks without neither modern educational system nor modern managers. There is no doubt that the first priority is development of technical specialties, that is great deficiency, and staff is drawn from abroad.

Secondly, lack of expenses in the private sector on techno park development.

Low level of attracting private investment system into applied researches and science is a large drawback in Kazakhstan innovation system, according to the world experience; precisely they are one of the main factors of techno parks development. Further more, lack of private investments in innovations results in fact that the part of innovation technologies and products, developed by state scientific centres, is left unclaimed as it doesn't meet the specific needs of industrial enterprises.

Thirdly, lack of innovation university autonomy.

Today Kazakhstani institutions of higher education can't solve the problems of establishing small and joint companies together with productive sector, which consequently would become the main element in the technological system of parks being created in our republic. It takes a long time of coordination and permission from Ministry of Education and Science and from state property and privatization Committee of RK.

Fourthly, absence of information about market condition of new technological innovations. Lack of such information makes difficulties for Kazakhstani researchers and producers who are planning producing new products, i.e. techno parks' scientists and designers don't have the opportunity to exactly evaluate the situation and to compare the planned showings with techno-economic showings of a similar production. So, not having enough information about the level of market competition, home producers have to work under the condition of so called "dark" competition.

Fifthly, absence of techno parks, oriented to raw material processing. Speaking about the development of mining branches in Kazakhstan, in particular, about oil chemical branch, it is necessary to emphasize that the potential, our republic has (it is rich in oil, gas), is not fully realized. Well, hydrocarbon raw material processing volume at oil-refining plants in Pavlodar, Atyrau, Shimkent is only 55 %; it means that 40-50% of their production power is used. Meanwhile, in the developed countries this index is equal to 98%. Under the support of the Government of the Republic of Kazakhstan some definite measures are being taken to improve oil-chemical complex, large domestic and foreign companies are taking part in this process.

Under the modern conditions of scientific –technical development, entrepreneurs, who are initiators of new projects, large production companies and government clearly realize that rejection of the investment to the innovation mastering would be large financial losses in practice. That's why they have taken the way of creating such economic mechanisms which would on the one hand help to introduce the latest STP achieve-

ments into production and on the other hands would make it possible to bring to minimum the financial risk of some separate investors.

One of such mechanisms is risky (venture) innovation financing. Venture mechanism has played an important role in realization of many large innovations in different spheres of activity. Some companies, starting their growth with the help of risky financing, in a comparatively short time have become dealers of the main STP directions.

At the same time, many founded long ago large industrial companies widely use venture mechanism at financing to strengthen their own scientific-technical potential, diversification of production , revealing and mastering the most perspective scientific-technical projects, developed both in the home country and abroad.

These home venture funds also began financing such projects as Silan technology elaboration and organization of experimental industrial production of high-quality silicon. The cost of the project is 65, 1 million KZT; development of centres which can provide wide range of services in IT. The cost of the project is 54 million KZT - elaboration and creation of experimental industrial specimens of a new heat vortex generator. The project cost is 112, 2 million KZT; building of a new ferrosilicoalluminium factory. The project cost is 522 million KZT; production of heat-insulated materials from basalt fiber. The project cost is 186, 2 million KZT.

At the same time, the national innovation fund nowadays realizes several innovative projects such as: organizing of pharmaceutical complex for production of home antitumor drug "Arglabin". The total cost of the project is about $ 1 billion, including the share of the fund – 338, 4 million KZT. Industrial capacity – 2 million ampoules a year entering forecasted capacity to 2008; organizing of the production of cast-iron through method of non-coke creation on the basis of innovation process Romelt. Annual output is 34 560 tons, environmental safety production; production of modern universal log recorders "Geoscan" in complex with bore-hole gadget. The total project cost is 1, 9 billion KZT, share of the fund – 658 million KZT.

The situation with venture funds is not as good as it seems. New and potential techno parks always need financing, especially in early stages of its development. But without stable financial basis they cannot rely on means from such traditional resources as bank credits or investment of securities in public financial markets. That is why the only solution of financial problems for new techno parks is to find venture investor.

However, there are some legislative norms and states, which prevent the development of investment share and venture funds in Kazakhstan. For example, prohibition for buying enterprise shares not having proper rating even if it is paying enterprise. Nowadays, it is a problem of going out from the project for Innovative fund: according to the inner regulations, the fund has 49% share, but the joint-stock company law allows buying the society only 29% of shares at the expense of its capital.

The absence of venture funds leads to such serious problems as:

- lack of experience of innovative projects commercial development;
- absence of financing of innovative projects by commercial banks;
- shortage of means to protect the intellectual property.

As a whole there are all necessary prerequisites for transition to innovative way of development in Kazakhstan. They are- rich natural resources which supply almost all

home requires in raw materials and energy resources; presence of great considerable industrial capacities to start science production; cheap workforce with its high level of education; well developed science potential; presence of several technological structures.

Moreover, some elements of innovative infrastructure have already been applied, such as technological parks, with the object of creation of necessary conditions and favorable environment for the development of country's economy on a basis of achievements in science and technology, to form balanced industrial infrastructure and phased substitution of raw component's part in GDP to high-technological export.

However, in spite of intensive application of techno parks and presence of powerful industrial and scientific potential, there is no intensive implementation of foreign experience in Kazakhstan, when techno parks are created attached to the large scientific center and stimulate the development of new companies, involved into scientific technological business. Nowadays, techno parks are places of concentrated standard infrastructural support where companies rent premises but not places of enterprises support, based on new technologies.

Their main function is to raise competitiveness of business in spite of its branch direction and, as a result, the absence of the main factor - creation and introduction of innovations.

Consequently, all above-mentioned problems need urgent and efficient decision. In this connection it is necessary to realize the complex state support, based on the formation of necessary conditions for the development of techno parks' net, oriented on creation and application of IT and high-tech production. Financing of risky entrepreneur business projects is hardly to call a new economic phenomenon. Almost every investment of private funds into different organizations on order to get profit inevitablyThese home venture funds also began financing such projects as Silan technology elaboration and organization of experimental industrial production of high-quality silicon. The cost of the project is 65, 1 million KZT; development of centres which can provide wide range of services in IT. The cost of the project is 54 million KZT - elaboration and creation of experimental industrial specimens of a new heat vortex generator. The project cost is 112, 2 million KZT; building of a new ferrosilicoalluminium factory. The project cost is 522 million KZT; production of heat-insulated materials from

As a conclusion we can say that effectiveness of innovations introduction depends on removal of the revealed problems and development of a complex program.

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