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Role of innovation in economy development of the world and kazakhstan

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Abstract: This article analyzes the modern development of innovative activity, characterized by an increase in the role of its results in the life of mankind, both in spiritual and material production. At a certain stage of innovation, the role of intellectual property depends on the content of work, and, therefore, it is closely related to the structure of the innovation process and the characteristics of its stages.

Keywords: innovation, process innovation, inventions, innovations, patent, intellectual property, research and development.

INTRODUCTION

In the modern economy, the role of innovation is increasing. This is due to the fact that in a market economy, innovations are a weapon of competition, since innovation leads to a decrease in costs, to a decrease in prices, to an increase in profits, to the creation of new needs, to an inflow of money, to an increase in the image (rating) of a manufacturer of new products, to the opening and capture of new markets, including external.

As you know, innovation is the result of creative and investment activities aimed at the development, manufacture and distribution of new types of goods, services and technologies, organizational forms at the firm level. The purpose of innovation is to increase the competitiveness of the company, goods and services and thereby increase the profit of the company. [2].

The practice of economically developed countries shows that sustainable economic growth in the context of global economic competition is due to a high level of implementation of new technologies and developments in production. According to various estimates, from 70 to 100% of production growth in these countries is today provided through the use of innovations [2].

Note that in economically developed countries, the development of innovative activities is stimulated by the government by creating the necessary economic, financial, organizational and regulatory conditions.

As the experience of using the resources of scientific and technical information, innovation policy shows. If, on average, the cost of basic research per unit, then the cost of applied research and development works 10 times higher.

It should be noted that the members of the European Community (EU) in the field of innovation uses financial resources in key areas, including:

- creation of a single database for all EU member states, accumulating and regulating a set of minimum necessary procedures and formalities for setting up enterprises;
- support for small and medium-sized enterprises in order to provide legal protection against illegal copying of developed technologies or manufactured products;
- creation of a mechanism for financial support of small and medium-sized enterprises, assisting them in the preparation, registration and maintenance of patents, taking into account the experience of national and European patent offices;
- improving the system of financing innovative activities of enterprises;
- the introduction of a more perfect tax mechanism, which gives certain benefits to enterprises that develop and produce various innovative products;

- creation of conditions at enterprises and companies that stimulate an increase in the educational level of employees.

According to analysts, the production and technological sector of the world economy and industry, especially in the field of high technologies, are becoming global in content. The development of high technologies, the production of high-tech products (goods, services) on their basis, access to world markets with it, the expansion of international integration in this area have become the most important strategic model for most of the industrially developed countries of Western Europe, the USA, Japan and the countries of Southeast Asia and the "locomotive" of economic growth.

It should be noted that Kazakhstan, having embarked on the path of market and democratic transformations in the early 90s of the twentieth century, achieved significant success in updating the national economy. Thus, the development of market institutions, the financial sector, the spread of modern communications and telecommunications, the arrival of foreign capital have led to the emergence of segments in the structure of the economy that are characteristic of developed countries. Kazakhstan became one of the world leaders in terms of GDP growth, which in 2014 amounted to 7,5%, and in 2015 – 6,0%, investments in the economy are growing, unemployment has significantly decreased due to the creation of new jobs. In 2015, according to the World Economic Forum, our country's economy strengthened, for the first time in the last 5 years it took 51st position in the global competitiveness index among 144 countries of the world. That is, the level of Kazakhstan's competitiveness has increased by 21 points in just one year. For comparison, we note that Russia took 67th place, Tajikistan - 100th and Kyrgyzstan 127th.

Kazakhstan is characterized by high rates of GDP and its per capita level in comparison with Central Asian countries (see tables 1,2).

Table 1: GDP of the countries of Central Asia and Russia per capita (in nominal terms)

Country	2000г.		2010г.		2015г.	
	rank	doll.	rank	doll.	rank	doll.
Russia	1	1760	1	9760	1	12993
Kazakhstan	2	1290	2	6140	2	10694
Uzbekistan	3	650	3	890	3	1572
Kyrgyzstan	4	300	4	780	4	1070
Tajikistan	5	180	5	620	5	831

Note - compiled and calculated from source data

Table 2: Dynamics of GDP in the countries of Central Asia and Russia in 1990-2015. (at constant prices)

	Rates of growth, %					Volume indices, %				
	Average annual		To the previous year							
	1990-2000	2001-2010	2013	2014	2015	1995 to 1991	2000 to 1991	2005 to 1991	2015 to 1991	2015 To 2000
Kazakhstan	- 4,1	9,5	1,2	7,3	7,5	69,0	78,0	127,7	186,2	237,6
Tajikistan	-10,4	8,6	3,9	6,5	7,4	41,0	41,0	65,0	95,6	234,1
Uzbekistan	-0,2	6,6	8,1	8,5	8,3	81,6	98,6	127,9	208,5	211,2
Russia	-4,7	6,7	-7,8	4,0	4,3	65,4	70,8	95,4	117,8	165,8
Kyrgyzstan	-4,1	4,4	2,9	-1,4	5,7	5,0	2,2	6,9	13,0	156,4

Note - compiled on the basis of the studied materials

Foreign experience shows that in the system of generating new knowledge, all types of scientific research have the same meaning and it is inappropriate to give special priority to applied scientific research only.

In addition, an increase in labor and capital productivity, and hence the competitiveness of the economy, is impossible without the creation and strengthening of its own scientific and technical potential. Therefore, it is advisable to finance fundamental scientific research from the state budget.

Practice shows that the priorities of industrial innovation policy are the development and creation of potentially competitive, including export-oriented, industries operating in non-resource sectors of the economy.

Analysts argue that in order to solve long-term strategic tasks, special attention should be paid to creating conditions for the development of science-intensive and high-tech industries. This approach does not close the way for entrepreneurs in various sectors of the economy to technical and organizational improvement of existing industries and the creation of new types of export-oriented products. Specific proposals should arise in the private sector in the regions, and second-tier banks and newly created investment state development institutions, based on special methods, will analyze proposals with a view to their potential implementation in partnership with the private sector.

The legislation of countries with market economies, including the Republic of Kazakhstan, prohibits the allocation of budgetary funds to provide financial and investment support to private enterprises. In accordance with this, financial support of specific private companies is regarded as a manifestation of state corruption. Practice has shown the correctness of this approach.

According to analysts, the state cannot and should not engage in direct financial support of specific companies, but it can and should act as a catalyst and initiator in increasing the competitiveness of the regional economy and promote the modernization of private enterprises, involving them in innovation processes and thereby creating and improving production and competitive potential, contributing to the development of the socio-economic situation of the regions.

With the high activity of the state in the field of transferring the economy into an innovation channel, the proper level of legal, organizational and economic mechanisms for the interaction of science, production and the market is still lacking. So far, there are no unified mechanisms capable of evaluating and also selecting projects and programs with high potential for production and the market, which would allow attracting additional capital from both Kazakhstani and foreign investors to the domestic economy.

It is well known that the main task of innovation is to increase the profitability of a business by attracting any new, non-traditional solutions and technologies in this area. In turn, intellectual property equips innovative processes with ideas, and their implementation contributes to the creation of the most cost-effective and competitive means of production. Since the process of implementing intellectual property relations is continuously associated with innovation, we consider it necessary to study the relationship between the characteristics of the innovation process and forms of intellectual property.

Almost every stage of the innovation process can be completed by obtaining its own, specific type of intellectual property, which, in the future, at the next steps and stages, is supplemented and transformed. Moreover, the closer the stage of the innovation process is to the consumer of the innovative product, the more definite and utilitarian the type of intellectual property is.

The problem of economically effective and socially useful application of the results of innovative activities in modern conditions, in addition to materialization of intellectual property through the embodiment in a product or service, is closely linked with the issues of legal protection of the interests of developers of innovations. In many countries of the world, including ours, a patent form of protection of inventions and a number of other objects of intellectual property has developed.

Modern economic conditions, one of which is the transformation of scientific and technical developments into a commodity, objectively require that developers of new equipment and finished products be guaranteed the opportunity to actually dispose of the achieved results of intellectual activity.

The basis for international trade in licenses and know-how is the patenting activity of the exporting countries of technologies. According to the latest data, the leading role in the patenting of inventions belongs to developed countries: Japan is in the first place in the number of patent applications and issued patents, the USA is in the second place (tal.3). Industrialized countries are an attractive technology market.

Table 3: Ranking of countries by number of patent applications filed

№	Country	Number of national applications	Number of international applications	Total
1	Japan	187 237	97 807	285 044
2	USA	107 792	78 397	186 189
3	China (including Hong Kong)	79 860 (93)	5 341 (554)	85 201 (647)
4	South Korea	51 404	24 129	75 533
5	Germany	9 630	45 416	55 046
6	France	8 779	18 955	27 734
7	Russia	21 627	743	22 370
8	Great Britain	2 323	11 463	13 786
9	Switzerland	461	12 337	12 798
10	Netherlands	-	9 916	9 916

Note: compiled according to the data of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan.

The number and distribution of patent applications filed in foreign countries indicates promising markets for technology exporters. The presence of a significant difference between the number of foreign applications of national firms and applications filed within the country indicates a lag in the level of scientific and technical solutions in this country, and this excludes foreign patenting of some of the national inventions.

Note that the Japanese model of commercialization of the results of innovation activity is one of the most optimal, that is, it is a synthesis of the processes of decentralization and coordination, based on purely Japanese respect for national historical traditions and the concept of dispersal of administrative functions.
The main goal of such a policy is to stimulate development that involves creativity, as well as purely fundamental research that is aimed at the emergence of new generations of products. In Japan, since 1957, there has been the Japan Science and Technology Agency (JST), which implements various programs, the main goals of which are:
- Creation of advanced technologies: carrying out fundamental research to achieve strategic goals set by the government.
- Facilitating technology transfer and innovation: linking universities and corporations to stimulate research results with society.
- Facilitating the dissemination of scientific and technical information: providing useful information for researchers and supporting research activities.
- Scientific exchange and research support: support for international activities, exchange of research.
- Promoting scientific cooperation between Japan and other countries.
Research data show that Japan has created a very complex mechanism for reaching agreement and mutual exchange of information between the main public participants in this process: politicians, government, industry, science. The only omission of the Japanese in the development of innovation is the focus on "hot spheres", rather than on fundamental research.
A clear focus on immediate economic needs, on innovations that quickly generate profits or satisfy current needs, overshadowed the development of fundamental long-term technologies. Therefore, in recent years, the Japanese have been actively regulating the development of fundamental research as the basis for a national technological future.
At the same time, the situation in the United States is a little different. Due to the fact that there are a large number of companies with significant annual revenues (it is enough to compare the Fortune 500 and Global 500 lists, in which the first place belongs not to oil companies in the world, but to the American network of Wal-Mart Stores), most of the SRDW (Scientific research and development work) costs are private sector (67,3%).
The state created a system through which the US economy became innovative. In 1980, laws on the commercialization of intellectual property appeared in the United States: the Bye-Dole and Stevenson-Weidler laws. It was they who solved the main problem of that period: they significantly stimulated the authors of patents and SRDW developers, after which innovative activity slowly but surely began to expand and capture a variety of niches in the market. Before these laws, all intellectual property created with federal funds belonged only to the state.
Apart from officials, no one was interested in the commercialization of this state property. But officials cannot commercialize it, since they have no right to order business. The meaning of the Bai-Dole law was as follows: if the developer created SRDW with budget money, then the rights to such SRDW remained with the state. The developer was given patents created on the basis of this SRDW. Thus, a situation turned out in which the developer was directly interested in creating the most profitable SRDW, which, of course, pushed innovation forward.
According to the Stevenson-Weidler law, the developer, to whom the rights to patents and know-how created from the budget are transferred from the state, is obliged to prescribe and execute procedures for the transfer of technology to industrial enterprises, universities and local authorities.
Thus, the state divided the responsibilities for innovation among all entities corresponding to their tasks: entrepreneurs introduced technologies into practice and received income from them, universities were engaged in the further development of inventions, and the state financed SRDW and received additional jobs. As a result of such a stimulating state policy, the United States today is not a raw material, but a high-tech power. High technology exports in 2009 amounted to $ 141,5 billion, second only to China and Germany.
It should also be noted that in Western countries, the protection of intellectual property has become the competence of the state and is actively developing along with the rapid development of industry and new technologies, many of which are based on scientific discoveries of the twentieth century. This allowed some countries to become world leaders in the production of certain products and to receive colossal profits.
The Republic of Kazakhstan faces the same problems as other states have, such as insufficient funding for SRDW, problems of protection, preservation, support, building, competent use and skillful commercialization of intellectual potential.
President N. Nazarbayev in his Address to the people of Kazakhstan noted: “We have begun to create a fundamentally new system for managing economic development - the National Innovation System - our guide to the world of new technologies and new economy. Now the infrastructure of industrial and innovative development has already been formed. The capitalization of state development institutions at the beginning of the year amounted to 730 million US dollars, the portfolio of investment projects exceeds 1 billion 200 million US dollars "[1].

And this is investment not only in production or infrastructure, which is very important in itself, but it is also a contribution to the creation of new technologies. In connection with these processes, it is quite natural that the Head of State has made a decision to send three thousand students annually to study in the best universities in the world under the Bolashak Program.

In connection with the "Strategy Kazakhstan - 2050" in the future we can not only successfully join the world community of civilized peoples, but also play our significant role in it as a strong state not with weapons, but with intellectuals. This is confirmed by the experience of Japan, which began its heyday from one of the poorest countries in the world to the richest, precisely as a result of special attention to the elite education of young talents.

Therefore, now all developed countries are investing heavily in research and development work, on the one hand, and, on the other hand, are making great efforts to protect intellectual property and, at the same time, while promoting their products, they are rigidly raising the issue of copyright protection.

America, Europe and Japan are the main champions of intellectual property rights, analysts say, accounting for two-thirds of all patents issued worldwide. In the United States, there are up to 500 inventions per year per 1 million of the population of this country, in Japan - at least 1000.

Note that Kazakhstan, in terms of the number of registered patents for inventions, is one of the three leaders among the CIS countries, along with Russia and Ukraine. In these states, an average of 1 million population accounts for up to 100 inventions per year.

In Uzbekistan, Kyrgyzstan and other Central Asian republics, much less patents are issued for inventions. It can be seen here that Kazakhstan can, at least, become a regional leader in scientific achievements and the creation of fundamentally new technologies, and as a maximum - one of the centers of world innovative thought.

At the same time, Kazakhstan is still lagging behind in terms of the availability of new technologies, in particular, there is no progress in technology transfer. According to the WEF indicator "Availability of the latest technologies" Kazakhstan is in 97th place. Thus, Kazakhstan is inferior to Azerbaijan (81 place), Ukraine (92 place).

However, Kazakhstan's positions are strong in relation to Russia (122nd place), Tajikistan (120th place), Kyrgyzstan (135th place). In general, it should be noted that the fact that the individual assessments of the respondents cannot always correctly reflect the real situation and the level of competitiveness of the country has a significant impact on the formation of low ratings in the WEF GIK rating. This is due to the wide and comprehensive nature of the questionnaire questions, and in order to provide adequate information about Kazakhstan, each respondent must have a high level of awareness and understanding of the socio-economic reforms being carried out in the country.

In many European countries, until recently, there were restrictions on state institutions on the creation of subsidiaries, but today the general trend in European legislation is the creation of such a legal framework that encourages state institutions to participate in the creation of start-up companies. This trend is based on an objective assessment of the effectiveness of various approaches, trial and error over several decades of evolution of European legislation. In doing so, the Europeans also relied on the well-developed American experience. In the United States, already in 1958, the law on space research and the creation of NASA laid down a rule on the transfer of technology from the public sector to business.

Today, developed countries use various instruments to stimulate the commercialization of intellectual property, which can be classified as follows: in terms of the nature of funds - tax and in-kind preferences, financial incentives; from the point of view of objects - stimulation of contract research, the activities of small and medium-sized enterprises, stimulation of researchers who create scientific results.

At present, the approach to the issue of commercializing the results of state investments in the field of SRDW is changing significantly. The state and scientific and technological organizations are increasingly becoming partners, and the former ensures the observance of national interests, creating a favorable entrepreneurial, including investment, climate, and the latter, constantly feeling state support and guarantees, ensures confident economic growth and commercialization of public investments in the market.

Research institutions create services for the commercialization of intellectual property, train personnel on issues such as the basics of entrepreneurship, patenting, licensing and licensing calculations, work in the stock market, assessment of scientific results and technologies, marketing. Thus, there is a need for further close coordination of the relevant government agencies with world rating organizations in order to provide reliable information on the ongoing reforms in the field of innovation in the country.

Expenditures on research and development (hereinafter - R&D) are one of the main indicators of innovation activity at the "input". Table 2 shows the indicators of internal costs (hereinafter - IC) for R&D in Kazakhstan in comparison with the world's leading scientific powers, as well as the EU and OECD as a whole. In terms of the scale of domestic costs and their share in GDP, Kazakhstan still lags behind the technologically developed countries.

Table 4: Internal costs of R&D in 1999-2009.

Countries	IC million USD by PPP	IC share of R&D in GDP in 1999, %	IC share of R&D in GDP in 2009, %	The growth rate of the IC on R&D in GDP for 1999-2009, in %
Israel	8794,4	3,52	4,28	21,6
Germany	83974,8	2,40	2,78	15,8
France	47953,5	2,16	2,21	2,31
Italy	24752,6	1,02	1,27	24,5
Finland	7555,0	3,96	3,96	24,9
Japan	148719,2	3,02	3,33	10,3
USA	398194,0	2,64	2,79	5,7
China	120613,5	0,76	1,70	123,7
Russian Federation	33368,1	1,00	1,24	24
Turkey	8681,2	0,47	0,85	80,9
Mexico	5719,6	0,39	0,37	-5,1
Kazakhstan	259,9	0,08	0,24	200
EU	299 635	1,72	1,90	10,5
OECD	964	414,1	2,16	2,33

Sources: OECD, Main Science and Technology Indicators database, February 2011.

According to the research conducted, Israel (4,28% of GDP), Finland (3,96%), and Japan (3,33%) have the highest internal expenditures on R&D (Fig. 1). However, if we consider Kazakhstan in comparison with other countries, it is obvious that the share of R&D expenditures in the country's GDP is very small and amounts to 0,24%, but referring to the country's internal statistics, one cannot fail to note a colossal rate of growth in 200% for this indicator, which Kazakhstan demonstrated in the period 1999-2009. China shows high growth rates of domestic R&D expenditures - 124%.

At the same time, one cannot fail to note a positive trend of growth in SRDW expenditures in Kazakhstan over the indicated period: in 2007 -0,21%, in 2008 -0,22%, in 2009 – 0,24% of GDP. The exception is 2010, in which the volume of SRDW expenditures fell sharply and began to equal 0,16% of GDP, while falling to the level of the early 2000s (Fig.1).

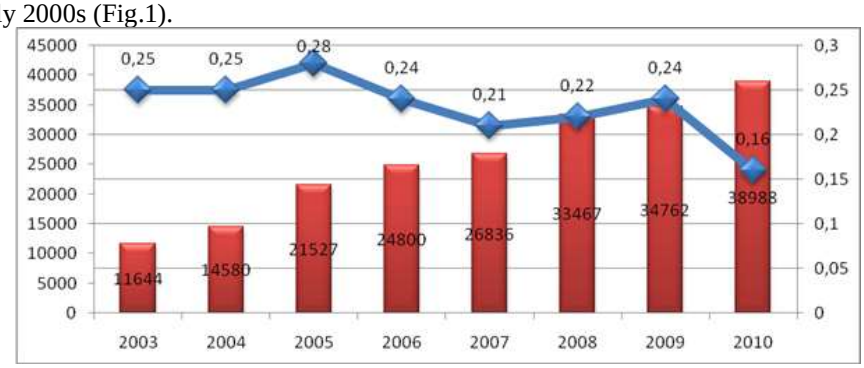

Fig.1: Internal costs of research and development in the Republic of Kazakhstan in the period 2003-2010.

Source: Agency of the Republic of Kazakhstan on Statistics, 2011.

In the structural analysis of R&D by source of funding in all countries, business and government account for the majority. These sectors account for about 80-90% of all financial investments. The most characteristic structural difference between Kazakhstan and developed countries is the predominance of the share of government funding.

Analysis of the structure of internal expenditures for R&D by sector of activity for 2006-2010 showed that the share of the public sector in SRDW in 2010, which was previously dominant, equaled the share of the entrepreneurial sector (37% and 36,6%, respectively). The share of the higher education sector has not changed significantly in recent years and averaged 15%, but in 2010 it began to equal 17,2%, the growth rate in 2006-2010 was 42,1%.

In technologically advanced countries, the expenditures of the business sector on scientific research (60-70%) are much higher than the state expenditures on SRDW. In addition, it should be noted that in most countries, including Kazakhstan, fundamental research is traditionally conducted mainly in the public sector, while the business sector is engaged in applied research.

One of the most important indicators of research and development performance is patenting activity. Large-scale work has been carried out in Kazakhstan to bring the national patent legislation in line with modern world requirements. In 2010, for the first time, a national search base for industrial designs and industrial designs registered in Kazakhstan was formed with an extended search parameter.

Every year, work is carried out to update the database "Inventions of the World", which includes patent information from leading countries of the world, such as: Japan, USA, Russia, France, Germany, Switzerland and others. This contributes to the fact that Kazakhstan is becoming attractive both for domestic applicants of innovations, and for applicants from near and far abroad.

However, despite the intensified demand for licensing agreements and patents, the proposals on the patent market remain at an insufficiently high level due to insufficient motivation of scientists to create inventions, underdeveloped innovative infrastructure, and weak links between production and scientific organizations.

It should be noted that in foreign countries, a system of state measures aimed at targeted funding of research, the provision of a preferential tax regime for research organizations and inventors, and various kinds of loan subsidies is of great importance for stimulating invention.

Practice shows that the specific role of intellectual property depends on the content of work at a certain stage of the innovation process, and, therefore, it is closely related to the structure of the innovation process and the characteristics of its stages.

One of the important indicators of the quality of scientific and technical developments is their export competitiveness, which is determined as follows:

$Эк=Nпз/Nзв,$ (1)

where Эк – export competitiveness;

Nпз – number of patent applications filed abroad;

Nзв – number of patent applications filed domestically.

Table 5: Calculation of the export competitiveness of scientific and technical developments.

№	Country	Nпз	Nзв	Эк
1	Japan	97 807	187 237	0.522
2	USA	78 397	107 792	0.727
3	China (including Hong Kong)	5 341 (554)	79 860 (93)	0.067
4	South Korea	24 129	51 404	0.469
5	Germany	45 416	9 630	4.716
6	France	18 955	8 779	2.159
7	Russia	743	21 627	0.034
8	Great Britain	11 463	2 323	4.935
9	Switzerland	12 337	461	26.761
10	Netherlands	9 916	-	-

Note: compiled according to the data of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan

Thus, from the above table it becomes clear that Switzerland, Great Britain, Germany and France have the greatest export competitiveness. This is due to the strategic orientation of these countries. For example, Japan for the most part seeks to locate knowledge-intensive industries, and, accordingly, patent technologies at home. Not having a large raw material and resource base, Japan chooses a strategy that best suits its conditions to achieve a high level of economic development.

Accordingly, according to the results of the tables, it is possible to give a rough estimate of which type of technology is a priority for a particular country.

Thus, Switzerland mostly invests in technologies with SRDW expenditures ranging from 2% to 5% of turnover, and 40% of their spending on high technologies (more than 5% of turnover) in private investments falls on pharmaceuticals. This is due to the fact that most of the research in Switzerland is conducted by private companies.

In the Netherlands, according to Eurostat, expenditures on SRDW in the private and public sectors are approximately equal (45.1% to 40.9%, the source of the remaining SRDW costs are foreign entities [11]). The fact is that the Netherlands does not need such high costs as in the USA and Japan: the share of spending on high technologies is small compared to other countries. This is due to their focus on other areas in which the Netherlands are specialists.

The Netherlands holds a leading position in all European markets, accounting for 66% of the import of decorative flowers and plants in Europe. More than 90% of the imported flora in Germany, France, Denmark, Finland, Hungary, Slovenia and the Baltic countries and other countries comes from Holland. Dutch exporters

also serve the United States, Japan and the Middle East. But this does not mean that Holland deals only with flowers.

Among the Dutch companies in terms of SRDW expenditures, the leading firms are Philips (technology, 707 million euros directed to SRDW in 2009), ASML (production of equipment for integrated circuits, 426 million euros), NXP (production of semiconductor parts for technology, 237 million euros), DSM (manufacture of medical equipment, materials, food additives, 233 million euros) and Océ (printers, copiers, scanners and software, and they own the Canon brand, 153 million euros).

In the United States, the situation is slightly different. Due to the fact that there are a large number of companies with significant annual revenues (it is enough to compare the Fortune 500 and Global 500 lists, in which the first place belongs not to oil companies in the world, but to the American network of Wal-Mart Stores), most of the **S**RDW costs are private sector (67,3%).

From the experience of foreign countries, it can be concluded that the national innovation system will be effective and bring high income only if the country has a developed business sector.

The Republic of Kazakhstan faces such problems as insufficient funding for **S**RDW, problems of protecting, preserving, supporting, building up, competently using and skillfully commercializing intellectual potential. The national system for the protection of intellectual property objects must have a sufficiently extensive legal framework capable of meeting the requirements of agreements to which Kazakhstan is a participant.

At the same time, in Kazakhstan, there is a positive trend towards a decrease in the public sector in **S**RDW.

Currently, Kazakhstan in terms of the level of innovative development in comparison with the most technologically advanced countries, in particular the USA, Germany, Japan, China, Finland, is in many ways inferior to them. Despite this, thanks to the ongoing reforms in the scientific and technological sector of the country, Kazakhstan is gradually moving towards the formation of an innovative economy.

For example, according to the index of the level of application of knowledge in the economy (KEI) in 2009 calculated according to the methodology of the World Bank (WB) (Table 5), Kazakhstan lags behind such countries with a comparable level of GDP per capita as Chile, Malaysia and Turkey and occupies 72nd place in the ranking, ahead of China.

However, it should be noted that in the period 1995-2009, Kazakhstan rose by 8 points, while the named countries show negative and small shifts in this indicator (for example, Chile, Turkey - a fall by 4 points, Malaysia - no changes, Russian Federation - growth by 4 points), this indicates a positive growth trend in the level of constituent parameters of the "knowledge economy" in our country.

Table 6: Main indices and parameters of the "knowledge economy" in 2009.

Place	Changes	Countries	KEI	KI	Economic system	Education	Innovative activity	ICT
1	+2	Denmark	9,52	9,49	9,61	9,49	9,78	9,21
3	-1	Finland	9,37	9,39	9,31	9,67	9,77	8,73
9	-3	USA	9,02	9,02	9,04	9,47	8,74	8,83
12	+3	Germany	8,96	8,92	9,06	8,94	8,36	9,47
20	-4	Japan	8,42	8,63	7,81	9,22	8,67	8,00
42	-4	Chile	7,09	6,53	8,76	6,85	6,48	6,27
48	-4	Malaysia	6,07	6,06	6,11	6,82	4,21	7,14
60	+4	Russian	5,55	6,82	1,76	6,88	7,19	6,38
61	-4	Federation	5,55	5,07	6,98	5,83	4,46	4,92
72	+8	Turkey	5,05	5,17	4,70	3,68	7,07	4,76
81	+13	Kazakhstan	4,47	4,66	3,90	5,44	4,20	4,33

Source: World Bank, Knowledge for Development Database, 2009

Table 6 shows that, having low indicators in terms of innovation activity, Kazakhstan has a significant advantage in the development of education, this indicator is comparable to the level of education in the Russian Federation and is close to the level of technologically developed countries. This indicates that the present education system in the post-Soviet space, as in the past, has a good scientific basis.

It should be noted that the first places in this list in terms of the degree of development of the "knowledge economy" belong to the Scandinavian countries, Finland is in the 3rd place, the USA is in the 9th place, Germany is in the 12th place, Japan is in the 20th place, it lags behind in such parameters as the economic system (low inflow of foreign capital, hard-to-reach venture capital, etc.) and the quality of education. The USA is in the top ten due to the high index of innovative activity (a large number of patents, scientific publications, etc.), and the rest of the indicators are below average than the top ten.

China is in 81st place, but between 1995-2009, China jumped 13 points up. The indicators confirm that the main engine of progress in China is the development of ICT, as well as the improvement of the terms of trade and the protection of intellectual property rights (Fig..4).

According to the following methodology - the assessment of the global competitiveness rating calculated by the World Economic Forum (hereinafter - WEF GIC), the level of technological and innovative development of the country is below average. Thus, in 2010, according to the “Innovation” factor of the above-mentioned rating, Kazakhstan worsened its position by 37 points to 101 positions. At the same time, according to the indicator "Conditions for innovative development" Kazakhstan in 2010 took 75th place (against 50th place in 2009). According to the factor "The level of technological development" there was also a deterioration by 13 points to 82 places (Fig..5).

At the same time, Kazakhstan is still lagging behind in terms of the availability of new technologies, in particular, there is no progress in technology transfer. According to the WEF indicator "Availability of the latest technologies" Kazakhstan is in 97th place. Thus, Kazakhstan is inferior to Azerbaijan (81 place), Ukraine (92 place).

However, Kazakhstan's positions are strong in relation to Russia (122nd place), Tajikistan (120th place), Kyrgyzstan (135th place). Today in Kazakhstan there are only registered objects of intellectual property (inventions, industrial designs, utility models and trademarks), there are about 43.0 thousand. From 1993 to 2012, about 25 thousand certificates were issued for trademarks.

Almost every stage of the innovation process can be completed by obtaining its own, specific type of intellectual property, which, in the future, at the next stages and stages, is supplemented and transformed. Moreover, the closer the stage of the innovation process is to the consumer of the innovative product, the more definite and utilitarian the type of intellectual property is.

Modern economic conditions, one of which is the transformation of scientific and technical developments into a commodity, objectively require that developers of new equipment and finished products be guaranteed the opportunity to actually dispose of the achieved results of intellectual activity.

World experience shows that successful activities in the field of knowledge-intensive business, including in the market of science-intensive products, are effectively carried out by those companies whose rights to use and dispose of property, primarily intellectual property, are legally protected by exclusive rights. Only if the company has a portfolio of rights in the form of patents, know-how, etc., allowing it to control the sector of the commodity market, it is able to effectively compete in this market.

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