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MANAGEMENT SYSTEM OF INNOVATIVE ACTIVITY DEVELOPMENT IN THE REPUBLIC OF KAZAKHSTAN

Abstract. The purpose of the work is to determine the most effective existing system of innovation management in the country. To conduct the work, comparison methods, analysis and synthesis were used, with the help of which the world experience of creating an innovation process management system is presented. In the modern economy, the development, implementation and use of innovations allows the country to be competitive, create jobs and increase the welfare of the population. The results of the work are a characteristic of an effective system of innovation management at the state level. The area of application of the results is in the practical activities of the state and is reflected in the results of the implementation of state programs and regulatory legal acts in the field of innovation. As a result of the analysis of the world and Kazakhstani experience in creating a management system for innovation, conclusions were drawn about the need for systematic and focused work at all levels. Consistency implies a concentration of activities and an emphasis on priorities in the development and application of innovations. Innovations should be developed in such areas as public services, information technology, medicine, tourism, finance and other important areas.

Keywords: state, innovation, innovative development, system, management.

Introduction - The relevance of the research topic is caused by the need to ensure continuous innovative development of the economy in order to improve the welfare of the country. The innovation development management system should contribute to increasing competitiveness, growth of employment, creating benefits for society and the state.

The purpose of the research is to consider the issues of innovative development of the country and determine the optimal system for managing this process. To achieve the goal the task was to determine the most optimal system for managing the development of the innovation process. This task is intended to show world experience in the use of control systems and the possibility of their application in the Republic of Kazakhstan.

During the study, comparison methods (benchmarking), analysis and synthesis were used, as the world experience gives an example for comparison.

To activate innovative activity in Kazakhstan, the Laws «On Informatization» and «Innovation Activities», the «State Program of Industrial and Innovative Development of the Republic of Kazakhstan for 2015-2019», the State Program «Digital Kazakhstan» for 2017-2020 and other documents were passed [1-4].

At present, innovation is the most important factor in enhancing national competitiveness, which is achieved with the right definition of goals and priorities.

In this regard, the state is called upon to form and maintain an environment conducive to the development and improvement of the competitive advantages of domestic companies.

Innovative development is the basis for the development and modernization of all sectors of the economy and fields of activity, as it involves the introduction of new technologies, techniques and organizational management methods.

The definition of innovations shows them as the development and implementation of new ideas, organizational methods and techniques, the use of which increases competitiveness and creates new values.

Consistency in the management of innovation activity involves the systematization of goal setting and coverage of the largest number of activity areas and development directions.

Thus, the concept of innovative development of the country's economy and the inclusion of innovative directions in the strategy of companies should become the main national ideas [5, p. 3].

Methods

When working on the article, statistical data were used, as well as economic literature and official publications in indexed journals.

Research methods include logical, systemic and statistical analysis of innovative processes, as well as an assessment of the industrial and innovative development of the country's regions.

The study was based on an analysis of information from official sources, including scientific publications, reviews and data from state statistics authorities, analytical data on innovative technologies of specialized research institutes.

In the analysis of statistical indicators, comparative and factor analyzes were used, the results of which were reflected in the conclusions and recommendations.

Results of a research

Kazakhstan, in its practice of innovative development, uses the existing experience and current trends in innovation activity used in foreign practice. Many countries use integrated innovation management systems, including at the state level.

The main essence of the integrated management system (IMS) is that the units involved in the implementation of innovation policy and innovation management are distributed at different levels of the managerial structure, but they interact with each other and coordinate their joint activities [6].

This contributes to the creation of a flexible structure for managing innovative activities, with horizontal connections between departments, through the development of a program based on a long-term development strategy.

Countries using innovative development can be divided into three main groups [7]:

- leading in science through the implementation of large-scale innovative projects, including in all areas of science and production (USA, UK, France);
- using innovations and creating a favorable innovative climate in the country (Germany, Sweden, Switzerland);
- supporting the innovation process by creating the appropriate infrastructure and developing various branches of science (Japan, South Korea, China).

That is, the state policy in the field of innovation is formed on the basis of priority activities to increase competitiveness, ensure economic development and improve the standard of living of the population. The country determines the strategy of innovative development by identifying opportunities and priorities. Moreover, the system for managing the development of innovative activity in the Republic of Kazakhstan is based on principles, the main of which are [2]:

- orientation of the state strategy towards the innovative development path;
- support for programs and projects aimed at implementing innovative policies;
- personnel training for the implementation of innovative activities;
- freedom in receiving and spread of information on innovative needs and the results of scientific, technical and innovative activities.

Thus, the system for managing the development of innovative activity includes the following areas:

- 1) regulation of priority areas of innovative development and innovative programs;
- 2) establishment of organizational and economic conditions for attracting investments in the promotion of innovation policy;
- 3) creation of innovative infrastructure;
- 4) financing of innovative programs from the state budget;
- 5) state participation in the creation of innovative industries;
- 6) promotion of Kazakhstani innovations in foreign markets.

The subjects of innovation activity can be individuals and legal entities, technology parks, technology incubators and innovation centers, the main activity of which is aimed at creating innovation.

At the same time, attention should be paid to small and medium-sized businesses that, as startups, are engaged in the development of innovations and the promotion of new ideas [8].

Statistical performance indicators of the state program of industrial and innovative development of Kazakhstan are compiled by the Statistics Committee of the Ministry of National Economy of the Republic of Kazakhstan.

Table 1 - General indicators of industrial and innovative development of Kazakhstan. GVA of the manufacturing industry*, in nominal terms, in million tenge

Regions \ years	2014	2015	2016	2017	2018	January-June 2019
Total in the Republic of Kazakhstan	4093 849,1	4 201 012,1	5 321 896,9	5 944 890,9	7 057 977,6	1 631 421,7
Akmola	147 488,1	166 194,6	258 480,1	287 083,7	334 371,8	86 480,4
Aktobe	155 711,0	161 897,8	223 689,7	261 995,4	335 687,8	94 267,1
Almaty	363 266,3	360 889,3	400 809,7	506 916,7	599 284,5	135 213,4
Atyrau	189 426,3	184 664,2	256 473,5	257 640,4	597 037,0	67 472,0
West Kazakhstan	83 283,3	63 024,7	74 199,2	90 900,9	117 045,7	23 685,3
Zhambyl	133 910,9	122 981,3	146 887,1	148 807,5	175 511,1	50 702,4
Karaganda	789 859,7	922 700,3	1176 434,4	1 310 359,6	1 414 850,4	319 220,5
Kostanay	159 302,6	158 465,5	181 630,9	237 972,1	269 170,5	61 814,5
Kyzylorda	46 841,6	60 417,0	87 738,0	67 460,3	72 933,3	17 430,2
Mangystau	67 930,1	77 097,2	96 648,4	92 780,7	148 369,0	21 630,9
South Kazakhstan	474 296,9	484 481,2	499 050,5	587 213,9		
Turkistan	-	-	-	-	173 528,0	44 701,2
Pavlodar	391 470,7	389 903,4	536 615,6	661 929,1	750 813,4	177 857,4
Northern Kazakhstan	74 383,4	73 262,7	94 805,0	112 469,5	122 103,5	25 485,6
Eastern Kazakhstan	503 389,5	453 709,7	686 056,2	633 887,3	716 910,5	178 571,8
Nursultan City	119 721,4	177 736,9	185 946,3	238 590,7	292 918,2	64 572,0
Almaty city	393 567,3	343 586,3	416 432,3	448 883,1	437 700,3	123 468,8
Shymkent city **	-	-	-	-	499 742,6	138 848,2
* In connection with the transfer of the regional center from Shymkent to Turkestan in 2018, the data are presented for 2018-2019 for the Turkestan region;						
** In connection with the attribution of the city of Shymkent to the largest cities of the Republic of Kazakhstan, data for 2018-2019 are presented for the city of Shymkent separately from the Turkestan region						
Note: compiled by source [9]						

Table 2 - Results of the implementation of the state program «Information Kazakhstan – 2020» by 10.10.2018 (state bodies)

Indicator	Measurement	2013	2014	2015	2016	2017	2018
Innovation Activity Level	%	8,0	8,1	8,1	9,3	9,6	9,8
Number of own data centers, server rooms, server equipment of government bodies	units		The number of own data centers - 33; server rooms - 2302; server equipment (server, video server, uninterruptible power supply, data storage system and server cabinet and rack) - 23868	The number of own data centers - 34; server rooms - 2618; server equipment (server, video server, uninterruptible power supply, data storage system and server cabinet and rack) - 20261	The number of own data centers - 12; server rooms - 2327; server equipment (server, data storage system) - 6227	The number of own data centers - 18; server rooms - 2442; server equipment (server - 5806, data storage system - 1210) - 7016	The number of own data centers - 21; server rooms - 2537; server equipment (server - 5933, data storage system - 1330) - 7612
Note: compiled by source [9]							

An analysis of the general indicators of industrial and innovative development is presented for the manufacturing industry, the development of which is aimed at the country's efforts (table 1). According to statistics it follows that in the republic as a whole there is an increase in gross income, in all regions and large cities. In some regions, there was a decrease in indicators in 2015-2016.

In the same way, work on informatization and digitalization is carried out systematically at the state level.

The state program «Digital Kazakhstan» is aimed at the development, implementation and use of digital technologies in the work of government bodies, companies and the public [4]. To implement this program, digitalization of all sectors of the economy, science, education, healthcare, the creation of smart cities and others is supposed. The target indicators of the program are labor productivity indicators, the share of electronic commerce, the level of digital literacy, and the improvement in the WEF GCI rating by the «Ability to Innovation» indicator.

In recent years, there have been significant changes in the field of digitalization, which is reflected in the daily life of the country.

Government agencies use the e-government program to provide services to the public, disseminate the necessary information and issue reference materials and documents on the basis of the «Single Window» principle [10]. Although it should be noted that there are the cases of information leakage occurred as a result of the «human factor» or cyberattacks. To prevent such cases, cybersecurity should be strengthened and the risk of negligence or criminal schemes in working with personal and state information should be reduced.

In healthcare and medicine, DamuMed program has been introduced, with the help of which city residents can make an appointment with doctors and receive the necessary information on medical services.

There has been developed a program for using Kazakh language on the iPhone and iPad, which makes it possible to further develop Kazakh language.

In the field of education, almost from the moment of gaining independence, the process of computer equipping for schools, colleges and universities began in order to teach computer literacy students.

Various innovations are encouraged in science, for which scientists are given grants for research activities.

In science and education, grants are provided for studying at leading foreign universities under the undergraduate, graduate and doctoral programs.

In the business sector, startup innovations are encouraged if they are real business projects aimed at developing and implementing inventions or developments.

It must not be forgotten that the territory of Kazakhstan houses the Baikonur cosmodrome, as a result of which there is a significant opportunity for the development of space technologies.

Thus, it should be recognized that the implementation of work on the creation of a management system for innovative activities in the republic is mainly being successfully implemented. Shortcomings in the Internetization, informatization and digitalization of remote and small settlements remain a significant problem. It would also be necessary to raise the living standards of certain categories of the population who cannot afford to use the benefits of civilization, especially in rural areas.

Conclusion

In accordance with the results of the work carried out, it can be concluded that in Kazakhstan, the work on managing innovative activities is carried out systematically and stably. The plans are being implemented, although a decrease in some indicators due to the crisis and devaluations has affected the successful development of the country.

Innovations are introduced not only in the field of technology or new technologies. Various novelties in organizational, social and other areas also relate to innovations and require careful consideration, since their influence may appear in the future and affect the further development of society and the state.

The innovation management system can be successfully implemented only by joint efforts, starting with government bodies and ending with each member of the society.

For this, an appropriate infrastructure must be created, whereas thinking and mentality should be directed towards creating a future for the whole society.

The state in the development of economic policy should take into account the interests of the entire community, which creates tangible and intangible values. The functions of the state are to increase the competitiveness and real well-being of society. To this end, efforts should be directed to the development of national companies and start-ups, support of innovative strategies of companies, at the same time, avoiding undue interference in the activities of companies and violation of the competitive environment.

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ҚАЗАҚСТАН РЕСПУБЛИКАСЫНДАҒЫ ИННОВАЦИЯЛЫҚ ҚЫЗМЕТ ДАМУЫН БАСҚАРУ ЖҮЙЕСІ

Аннотация. Жұмыстың мақсаты - елдегі инновациялық менеджменттің ең тиімді жүйесін анықтау. Жұмысты жүргізу үшін салыстыру, талдау және синтез әдістері қолданылды, олардың көмегімен инновациялық процестерді басқару жүйесін құрудың әлемдік тәжірибесі ұсынылды. Қазіргі экономикада инновацияны дамыту, енгізу және қолдану елдің бәсекеге қабілетті болуына, жұмыс орындарын құруға және халықтың әл-ауқатын арттыруға мүмкіндік береді. Жұмыс нәтижелері мемлекеттік деңгейде инновациялық менеджменттің тиімді жүйесінің сипаттамасы болып табылады. Нәтижелерді қолдану аймағы мемлекеттің практикалық қызметінде болады және инновация саласындағы мемлекеттік бағдарламалар мен нормативтік құқықтық актілерді іске асыру нәтижелерінен көрінеді. Инновацияны басқару жүйесін құрудағы әлемдік және қазақстандық тәжірибені талдау нәтижесінде барлық деңгейде жүйелі және мақсатты жұмыстың қажеттілігі туралы тұжырымдар жасалды. Жүйелілік дегеніміз іс-әрекеттің шоғырлануын және инновацияларды дамыту мен қолданудағы басымдықтарға баса назар аударуды білдіреді. Инновациялар мемлекеттік қызметтер, аппараттық технологиялар, медицина, туризм, қаржы және басқа да маңызды салаларда дамуы керек.

Түйін сөздер: мемлекет, инновация, инновациялық даму, жүйе, басқару.

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СИСТЕМА УПРАВЛЕНИЯ РАЗВИТИЕМ ИННОВАЦИОННОЙ ДЕЯТЕЛЬНОСТИ В РЕСПУБЛИКЕ КАЗАХСТАН

Аннотация. Цель работы состоит в определении наиболее эффективной действующей системы управления инновационной деятельностью в стране. Для проведения работы использовались методы сравнения, анализ и синтез, при помощи которых представлен мировой опыт создания системы управления инновационным процессом. В современной экономике разработка, внедрение и использование инноваций позволяет стране быть конкурентоспособной, создавать рабочие места и повышать благосостояние населения. Результаты работы представляют собой характеристику эффективной системы управления инновационной деятельностью на уровне государства. Область применения результатов находится в практической деятельности государства и отражается в результатах выполнения государственных программ и нормативно-законодательных актов в области инновационной деятельности. В результате анализа мирового и казахстанского опыта создания системы управления инновационной деятельностью были сделаны выводы о необходимости системности и целенаправленной работе на всех уровнях. Системность предполагает концентрацию деятельности и акцент на приоритеты в разработке и применении инноваций. Следует развивать инновации в таких сферах, как государственные услуги, информационные технологии, медицина, туризм, финансы и другие важные направления.

Ключевые слова: государство, инновация, инновационное развитие, система, управление.

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