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БАЯНДАМАЛАРЫ

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INNOVATION PROJECTS AS A BASE OF ECONOMIC DEVELOPMENT

Abstract. The relatively weak support of technological enterprises, especially new ones, limits the efficiency of support measures oriented on its further development. Therefore, the State should interfere at the early stage to ensure the research and development of new projects having opportunities for further growth under the simultaneous control for funds not to be allocated for projects having no commercial potential. The support of the innovative projects favors the development and distribution of innovations, stimulates the innovative activity of enterprises and enhances the competitiveness of economy. The paper presents the critical analysis of the innovative projects support system in Kazakhstan. The paper provides the brief characteristics of the results of innovative policy of the country, considers the main instruments of the innovative projects support. Special attention in the paper is paid to the detailed analysis of the innovative projects received grant financing from the State. With that the analysis was made for quantitative indicators of innovative projects in industrial and regional fields, and for social and economic effect from its implementation. Basing on the represented material the paper provides recommendations and suggestions on improving the instruments of innovative projects stimulation in Kazakhstan and development of innovative potential of all participants of innovative process.

Key words: innovative development, innovation project, innovation grant, technological business-incubation, governmental support of innovations.

Introduction. The world economy has formed a new paradigm of the society development basing on the application of knowledge and innovations as the most important economic resources. Innovations become the strategic factors of economic growth, determine the structure of public production, and stabilize the social situation in the country.

The countries leaders of the global scientific and technical development increase the private and governmental expenditures on fundamental science and other sectors favoring the generation and diffusion of innovations in economics and social sphere. By the OECD estimates, the annual volume of the corporate sector investments to “intellectual assets” by the present moment has reached 8-11% GDP in the developed countries, and about 12% in the USA, and is almost equal to the volume of companies’ investments to the fixed assets [1].

At the same time Kazakhstan falls behind the developed countries in the field of high technologies; its economy is characterized by obsolescence of productive facilities and infrastructure. The Program on decreasing the dependence of Kazakhstan economy on raw materials does not show the expected results, and until this problem remains unsolved it will effect negatively on the development of economy especially if external conditions worsen.

Methods. The justification and argumentation of the research conclusions are based on the systematic approach using the methods of scientific abstraction, economic, logical and comparative analysis: grouping, time series, tables, graphs, combination diagrams. The empirical base of the research is represented by data of the “National Management Holding Baiterek” JSC and “Kazakhstan Institute of Industry Development” JSC, by indicators of annual ratings of relevant international organizations and other materials published in periodicals and Internet.

Results and discussion. The experience of such foreign countries as the USA, European countries, and developed countries of Asia that have been moving toward the world leadership in the field of innovative and technological development for several decades and have quite consequent and long history shows that innovations cannot be developed in the short period of time. For example, Japan, throughout its history was the country of "catching-up development" including the technological development. Only starting from the mid of XIX century the Japanese government started to take measures on narrowing the gap with the western countries. And only half a century later, after several successful reforms in the field of technologies and education development, by 1915 Japan formed the national scientific and technical system which flourishing was only due the end of XX century [2]. The experience of Finland, to a large extent, is similar to Kazakhstan features on forming the innovative economy. Before the World War II, Finland, the same as Kazakhstan today, was only the exporter of raw materials. After the War the country was the agriculture society with mainly rural population. The industrialization process, comparing to other countries, started quite late and focused mainly on a raw material industry, forest sector, and heavy industry. And, only starting from 1960-s the work on fast structural economic restructuring began [3]. As known, today Finland is one of the main leaders on technological development among the European Union countries.

Thus, there is a long way ahead of Kazakhstan before it forms a new economy based on knowledge. The necessary groundwork for this was already laid. For example, the Strategy of industrial and innovative development of RK for 2003 – 2015 has laid the bases of the national innovative system including the creation and capitalization of the corresponding institutes of development, such as the National Innovation Fund, networks of technology parks and free economic innovation zones [4]. Despite that this document was terminated with adoption of the State Program of Accelerated Industrial and Innovative Development for 2010 – 2014 its principles and approaches have determined and still determine the innovation policy of the country.

To develop the innovation activity the special financial instruments of support were broadened, new tax benefits and preferences for the innovative entrepreneurships entities were introduced [5]. Despite the State revenue contraction due to the decreasing prices for raw materials, Kazakhstan continues ensuring the stable growth of economy owing to the industrial and innovative projects.

In addition to the described above, currently the main instruments of the innovation projects support include the technological business incubation and innovation grants for researches [6].

1. Technological business incubation implies the comprehensive support from 8 regional technology parks to entities engaged in industrial and innovative activity during the first stage. From 2018 the Program of business incubation of industrial and innovative projects under the "Business road map – 2020" has been implemented. The Program includes:

• rendering of financial and methodological support to private business-incubators (50% co-financing for operating expenses, but not more than 35 million tenge per year);

• issuance of the governmental grants to residents of business-incubators on industrial and innovation projects to create a new and significantly improved product, or business-process (up to 50 million tenge and not more than 80% of justified declared expenses).

It is expected that the Program implementation will allow providing the impetus for development of business incubation ecosystem so that in future the business-incubators become self-reliant financially and have high degree of competence, and consequently will influence on increase of qualitative start-ups growth able to become large technological companies.

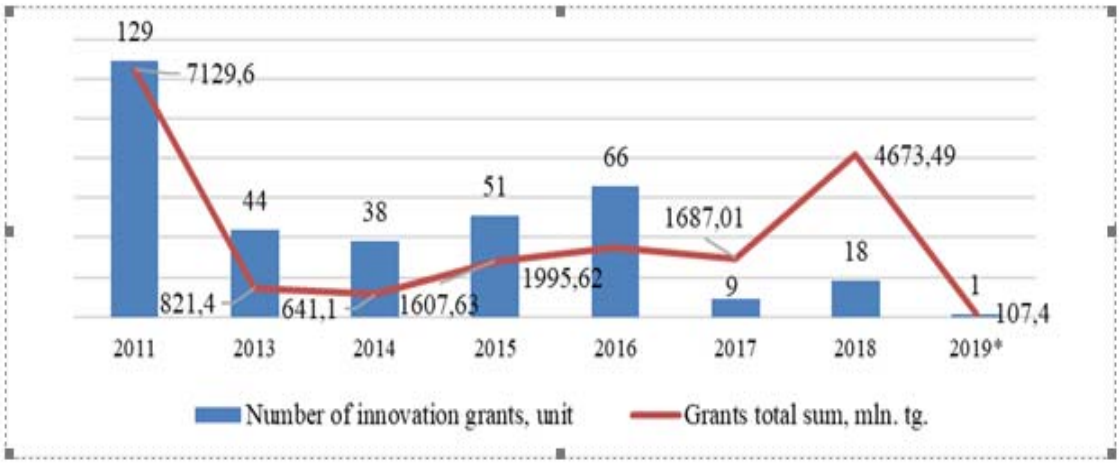
2. The allocation of innovation grants supposes the participation of the State in co-financing of innovation projects in 9 sectors (agro-industrial sector, engineering industry, mineral industry, consumer goods and wood industry, manufacture of construction materials and other non-metallic mineral products, transport and stock-keeping, information and communication, chemical and pharmaceutical industry, other sectors of industry). The grants allocated for implementation of innovation projects can be conditionally divided into three types [7]:

- Grant for commercialization of technologies that is allocated to introduce a new development that had no industrial application before and is focused on obtaining positive economic effect from own production. The sum of the grant is 200 million tenge at the most.

- Grant for technological development of operating enterprises is focused on transfer of contemporary advanced national and foreign technologies to increase the level of technological development of enterprises. The sum of the grant is no more than 400 million tenge.
- Grant for technological development of sectors is focused on technological development of operating enterprises owing to transfer of contemporary advanced national and foreign technologies to increase the level of technological development of enterprises. The sum of the grant is 500 million tenge at the most.

The innovation grants under the budget programs are allocated from 2011; the operator was "The National Agency on Technological Development". However, due to low efficiency of activity, the Agency was reconstructed to "QazTech Ventures" JSC, and the authority of innovation grants distribution, from December 13, 2018, was transferred to "Kazakhstan Institute of Industry Development" JSC (KIID) [8].

According to KIID data, from 2011 to the first half of 2019 under the budget program "Allocation of innovation grants" there were 356 Contracts concluded on allocating the innovation grants for a total amount of more than 18 663.3 million tenge (figure 1).



Note – compiled by reference [8]

Figure 1 – Number and sum of innovation projects
that received grant financing in 2014-2019 in Kazakhstan

The Figure shows negative dynamics on the number of innovation grants. In addition, 36% of the total innovation grants number was given in 2011, in further years its amount decreased significantly with minor deviations. However, the sum of grant financing of innovation projects shows another tendency. If in 2011, 7.1 billion tenge was allocated for 129 projects, in 2018 only 18 projects were financed with 4.7 billion tenge. This allows stating that in recent years the innovation projects are of broader scale.

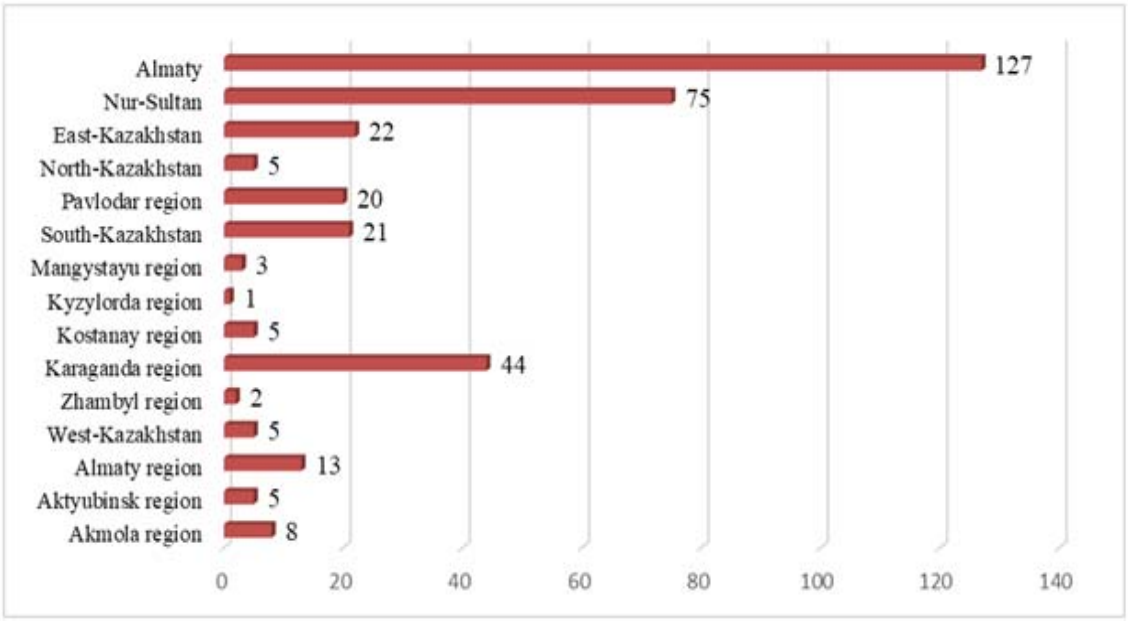
Indeed, since 2018 for more efficient selection and risks decrease there are new approaches to procedures of selection and expertise of applications. The projects are reviewed by three independent centers: technological, financial-economic, and legal expertise. The State finances actively the processes of patenting and commercialization of innovation projects, and start-up running. Among the new options is transfer of remained financial means to the next financial year, continuous call for applications, simplified procedure and shorter time of grant applications consideration. All these measures allow activating and simplifying the relations between the State and innovators as well as creating additional motivation reasons and stimulus for creation and development of new innovation proposals and projects.

As for the industrial sectors, most of applications fall on the information and communication technologies, chemistry and petro-chemistry, machine engineering industries. At that, the sum of innovation grants in the machine engineering sector is 3.1 billion tenge, that is 22.3% of the total sum of all innovation grants (table 1).

Table 1 – The indicators on the allocated innovation grants for the whole period

#	Types of priority fields	Number	Amount, million tenge
1	Alternative energy and technologies of energy efficiency	24	1 388,0
2	Advanced technologies in pharmaceutical, medical industry, biotechnologies, bioengineering, gene engineering	26	858,5
3	Information and communication technologies	69	2 038,9
4	Nano and space technologies	1	4,6
5	Advanced technologies in consumer goods industry	3	65,9
6	Advanced technologies in agro-industrial sector, food industry, and agricultural chemistry	31	869,6
7	Advanced technologies in mining and metals sector	29	1 374,9
8	Advanced technologies in construction including utilization of construction materials	8	1 181,2
9	Advanced technologies in machine engineering including utilization of new materials	56	3 114,5
10	Advanced technologies in survey, extraction, transportation and processing of mineral and hydrocarbon raw materials	6	1 214,2
11	Advanced technologies in chemistry and petro-chemistry	60	1 854,8
Total:		313*	13 965,6
* without notice of dissolved agreements. Note – compiled by reference [9]			

The distribution of innovation projects that received grant financing by regions is shown in figure 2.



Note – compiled by reference [9]

Figure 2 – Number of projects for 2011-2019* by regions

According to data from Figure 2, for the considered period the largest relative share of all projects falls on three regions – two cities of republican status, Almaty and Nur-Sultan, and Karaganda area, namely 127, 75, and 44, respectively. Interesting is that no one project was implemented at Atyrayu region.

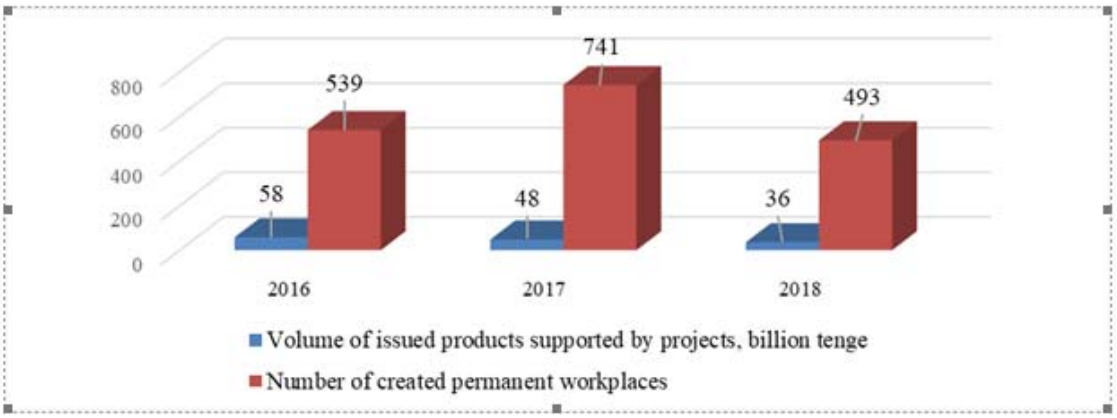
Table 2 shows the examples of projects that received innovation grants under the budget programs.

Table 2 – Characteristics of innovation projects under the budget program "Allocation of innovation grants"

Project name	PayBox.kz (wire transfer system, payment systems aggregator)	Development and creation of effective underground grow room	Purchase of technology on growing and processing of champignons
Region	Almaty	East-Kazakhstan region	North-Kazakhstan region
Sector	Information and communication technologies	Advanced technologies in agro-industrial industry	Advanced technologies in agro-industrial industry
Period	2015	2015	2016
Grant type	Commercialization of technologies	Commercialization of technologies	Transfer of technologies
Grant funds	1 982 880 tg	3 505 915 tg	399 956 720 tg
Own funds	447 120 tg	184 522 tg.	399 956 720 tg.
Project status	Under implementation	Finished	Under implementation
Result	Under implementation	In the grow room the test batch of 90 tomatoes roots and 50 early-maturing cucumber seeds were planted. The test batch gave 70 kg of tomatoes and 60 kg of cucumbers.	Under implementation
Brief description	The project represents a unique (for Kazakhstan market) information system providing the infrastructure for business and individuals on using and development of wire payments	Creation of the underground grow room using the energy-saving technologies. The grow room of this type will be an industrial facility with high added value, isolated from the environment effect, with closed operation system and microclimate regulation.	The project is based on the Netherlands technology of champignon production. The Netherlands approach is based on large investments, minimal manual labor, high agriculture and manufacture technologization allowing receiving bumper harvest – 30-33 kg per square meter.

The implementation of the grant financing program, in general, shows positive social and economic dynamics. Since 2018 more attention is paid to support of small and medium enterprises on purchasing the equipment and direct accompanying of completed deal. In addition, now to commercialize a technology an applicant should introduce technologies in his own manufacture, i.e. one of the criteria is that a project should be at the end of technological process, ready for utilization. The share of grants has decreased from 80% of co-financing to 50/50. Thus, the system of grant financing of innovation projects gained market nature.

The implementation of the innovation projects supported by grants in 2016-2018 resulted in issuing of product to the amount of 142 billion tenge, and creation of 1773 permanent workplaces (Figure 3). In whole, 4 484 workplaces were created from 2014 to the first half of 2019 under the implementation of innovation projects supported by grant financing. Among them 1 807 workplaces were created temporarily, i.e. for the period of project implementation.



Note – compiled by reference [10]

Figure 3 – Social and economic effect from innovation projects implemented in 2016-2018

However, until the present moment the innovation component in Kazakhstan economy is not large. The Global Competitiveness Index of WEF 2018 still shows the significant weakness of the country in "Innovation potential" category (95-th place) in which almost all its components are lower the general position of Kazakhstan in the rating [11]. The special global rating of innovations compiled by INSEAD also shows the same problems. In this rating, in 2019 Kazakhstan was ranked 79 with 31.03 scores of 100. Kazakhstan was also ranked 64 by the Index of resources and conditions for innovations, and 92 among results achieved in innovations [12].

Conclusion. The support instruments provided today for different types of innovation projects are limited by allocation of innovation grants and business incubation. We suppose reasonable to divide the innovation projects on its risk level during the selection process (more risky and potentially successful projects; less risky innovation projects) and differ them from the projects of only investment or modernization type. The latter should have limited access to the means of the State financing funds. The more risky and potentially successful projects can be supported by venture funds, not by innovation grants. Here the task of the State is to strengthen and develop the institute of venture financing. Utilization of the corporate venture capital as a financing source of innovation companies could be supported by such measures as establishment of business connections, tax and other benefits, including the risk share with the governmental sources of funds.

Thus, we suppose that the less risky innovation projects should be considered for grant financing. At the same time, the instruments of innovation projects support should be monitored on system base. And it is reasonable as without reliable information based on the analysis of the taken measures efficiency it is difficult to develop effective regulation instruments. And it is important that mechanisms of estimation and control reflected correctly the characteristics of innovation processes. The existing estimation procedures imply that successful should be every investment project, not the portfolio of supported projects, and disregard the indirect positive effects of innovation activity that results in refusal of excessively risky projects.

To improve the innovation activity conditions in general, it is necessary to develop a mechanism of systematic response of corresponding governmental controlling bodies to obstacles appearing on the way of entrepreneurship activity. This work should cover the creation of business environment of innovative entrepreneurship, support of continuous dialog with businessmen to reveal the difficulties and factors impeding the successful innovation activity.

It is necessary to note a specific significance of regular estimation of programs supporting the innovation projects. For that purpose it is suggested to create a complete database of financing innovation projects and its indicators. This will allow estimating the effectiveness of criteria of innovation projects grant financing. At the same time, the estimation of general effectiveness of a program should be based on the portfolio base, not on the base of individual projects results that is stipulated by specific features of innovation projects.

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ИННОВАЦИЯЛЫҚ ЖОБАЛАР ЭКОНОМИКАЛЫҚ ДАМУ НЕГІЗІ РЕТІНДЕ

Зерттеу тақырыбының өзектілігі жоғары технологиялар облысында Қазақстанның дамыған мемлекеттерден артта қалушылығымен, өндірістік аппарат пен инфрақұрылымының ескіруімен, инновацияларға сұраныс деңгейінің төмендігімен, инновациялық даму институттарының дамымағандығымен, олардың арасындағы инновациялық даму бойынша іс-әрекеттердің үйлесімсіздігімен түсінідіріледі. Оған қоса, ҚР экономикасының шикізаттық бағыныштылығын төмендету бойынша бағдарлдамалар күтілетін нәтижелерді ақтай алмады. Осы түйінді мәселе шешілмесе, әсіресе сыртқы шарттардың күрт нашарлауы жағдайында экономиканың дамуына теріс ықпалын тигізуі мүмкін. Технологиялық жаңа кәсіпорындарды қолдаудың әлсіздігі олардың ары қарайғы дамуына бағытталған қолдау шараларының тиімділігін шектейді. Сондықтан мемлекет алғашқы кезеңдерде бұл үдеріске араласуы қажет, бұл болашақта өсу әлеуеті жоғары жаңа жобаларды әзірлеу және зерттеулер жүргізу үшін қажет. Солай бола тұра, мемлекет коммерциялық әлеуеті жеткіліксіз жобаларға ресурстардың жұмсалуына жол бермеуі

тиіс. Инновациялық жобаларды қолдау инновациялардың дамуы мен таралуына ықпал етеді, кәсіпорындардың инновациялық белсенділігін жоғарылатып, экономиканың бәсекеге қабілеттілігін жоғарылатады.

Мақалада Қазақстандағы инновациялық жобаларды қолдау жүйесіне сындық талдау жүргізілген. Зерттеу нәтижелерін негіздеу және аргументтеу жүйелік тәсілді қолдану арқылы іске асырылған. Топтау, серпіндік қатарлар, кестелер, графиктер, комбинациялық диаграммалар сияқты ғылыми абстракциялау, экономикалық, логикалық және салыстырмалы талдау әдістері қолданылған. Зерттеудің эмпирикалық негізін «Бәйтерек» Ұлттық басқару холдингі» АҚ және «Қазақстандық индустрия дамыту институты» АҚ мәліметтері, беделді халықаралық ұйымдардың жыл сайынғы рейтингтерінің көрсеткіштері, сондай ақ кезеңдік басылымдар мен интернет желісінде жарияланған материалдар құрады.

Мақалада елдің инновациялық саясатының нәтижелеріне қысқаша сипаттама беріліп, инновациялық жобаларды қолдаудың негізгі құралдары, оның ішінде технологиялық бизнес-инкубациялау және инновациялық гранттар қарастырылған. Мақалада мемлекеттен гранттық қаржыландыру алған инновациялық жобаларды толық талдауға ерекше көңіл бөлінген. Бюджеттік бағдарламалар аясында инновациялық жобаларды гранттық қаржыландыру тетігі қарастырылып, реттеу институттарының ролі анықталған. Грантпен қаржыландырылған инновациялық жобалардың сандық көрсеткіштерін талдау олардың теріс өсу серпінін көрсетті. Солай бола тұра, талдау нәтижелері инновациялық жобалардың орташа құнының едәуір өскендігін көрсетті. Орын алған үрдістің себептерін анықтауға талпыныс жасалған.

Инновациялық жобалардың салалық құрылымын талдау жобалардың жетекші салаларын анықтауға мүмкіндік берді, олар – ақпараттық-байланыс технологиялары, химия және мұнай химиясы, машина жасау салалары. Аймақтар арасында инновациялық жобалардың ең көп үлестері Алматы және Нұр-Сұлтан қалаларында және Қарағанды облысында шоғырланған. Атырау облысында ешбір инновациялық жоба іске асырылмаған. Инновациялық жобаларды іске асырудың әлеуметтік-экономикалық әсері тұрақты және уақытша жұмыс орындарын құру, жобаларды іске асыру аясында шығарылған өнім көлемі сияқты көрсеткіштермен өлшенген. Сондай ақ бюджеттік бағдарламалар аясында инновациялық гранттарға ие болған кейбір жобалардың сипаттамалары көрсетілген.

Көрсетілген материалдардың негізінде мақалада Қазақстандағы инновациялық жобаларды ынталандыру құралдарын жетілдіру және инновациялық үдерістің барлық қатысушыларының инновациялық әлеуетін дамыту бойынша ұсыныстар әзірленген. Жекелей алғанда, гранттық қаржыландыру үшін инновациялық жобаларды іріктеу қағидаларын өзгерту, сонымен қатар инновациялық жобаларды қолдау бағдарламаларын бағалау тиімділігін жақсарту бойынша ұсыныстар жасалған. Қаржыландырылған инновациялық жобалар туралы мәліметтер базасын қалыптастыру ұсынылған, бұл инновациялық жобалардың гранттық қаржыландыру критерийлерінің нәтижелілігін дұрыс бағалауға мүмкіндік береді. Осы тұрғыда автор бағдарламаның нәтижелілігін жеке жобалардың нәтижелері негізінде емес, керісінше портфельдік негізде бағалауды ұсынады, бұл инновациялық жобалардың сипатымен түсіндіріледі.

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ИННОВАЦИОННЫЕ ПРОЕКТЫ КАК ОСНОВА ЭКОНОМИЧЕСКОГО РАЗВИТИЯ

Аннотация. Актуальность темы исследования обусловлена отставанием Казахстана от развитых стран в области высоких технологий, связанным с износом производственного аппарата и инфраструктуры, недостаточным уровнем спроса на инновации, неразвитостью институтов инновационного развития и отсутствием четко скоординированных их действий в области инновационного развития. Кроме того, программы по снижению сырьевой зависимости экономики РК не приносят ожидаемых результатов. Пока эта ключевая проблема остается нерешенной, она будет оказывать негативное влияние на развитие экономики, особенно в случае резкого ухудшения внешних условий. Относительно слабая поддержка технологических предприятий, особенно новых, ограничивает эффективность мер поддержки, нацеленных на их последующее развитие. Поэтому государство должно вмешиваться на ранних стадиях, чтобы обеспечить исследование и разработку новых проектов, имеющих возможности для дальнейшего роста, при этом контролируя, чтобы ресурсы не шли на проекты без достаточного коммерческого потенциала. Поддержка инновационных проектов способствует развитию и распространению инноваций, стимулирует инновационную активность предприятий и повышает конкурентоспособность экономики.

Данная статья содержит критический анализ системы поддержки инновационных проектов в Казахстане. Обоснование и аргументация выводов исследования осуществлялись автором на основе системного подхода с использованием методов научной абстракции, экономического, логического и сравнительного анализа: группировки, динамические ряды, таблицы, графики, комбинационные диаграммы. Эмпирическая база исследования представлена данными АО «Национальный управляющий холдиг Байтерек» и АО «Казахстанский институт развития индустрии», показателями ежегодных рейтингов авторитетных международных организаций, также другими материалами, опубликованными в периодической печати и сети интернет.

В статье дана краткая характеристика результатов инновационной политики страны, рассмотрены основные

инструменты поддержки инновационных проектов, охватывающих в том числе технологическое бизнес-инкубирование и предоставление инновационных грантов. Особое внимание в статье уделено подробному анализу инновационных проектов, получивших грантовое финансирование от государства. Рассмотрен механизм грантового финансирования инновационных проектов в рамках бюджетной программы, определена роль регулятивных институтов. Анализ количественных показателей инновационных проектов по грантовому финансированию за всё время существования бюджетной программы показал отрицательную динамику роста. Вместе с тем, результаты анализа продемонстрировали существенный рост средней стоимости инновационных проектов.

Проведенный анализ инновационных проектов в отраслевом разрезе позволил выделить лидирующие отрасли проектов – это сферы инфокоммуникационных технологий, химии и нефтехимии, машиностроения. Среди регионов наибольший удельный вес по инновационным проектам приходится на три региона – города Алматы и Нур-Султан, Карагандинская область. В Атырауской области не было реализовано ни одного проекта. Социально-экономический эффект от их реализации инновационных проектов был измерен такими показателями, как создание постоянных и временных рабочих мест, объем выпущенной продукции в рамках реализации проектов. Также приведены характеристики некоторых проектов, получивших инновационные гранты в рамках бюджетных программ.

На основании представленного материала в статье предлагаются рекомендации и предложения по совершенствованию инструментов стимулирования инновационных проектов в Казахстане и развитию инновационного потенциала всех участников инновационного процесса. В частности, разработаны предложения по изменению принципов отбора инновационных проектов для грантового финансирования, а также по улучшению эффективности оценки программ поддержки инновационных проектов. Предложено создать полную базу данных финансируемых инновационных проектов с их показателями, что позволит проводить адекватную оценку результативности критериев грантового финансирования инновационных проектов. При этом автор рекомендует проводить оценку общей результативности программы на портфельной основе, а не на основе результатов отдельных проектов, что обусловлено характерными особенностями инновационных проектов.

Ключевые слова: инновационное развитие, инновационный проект, инновационный грант, технологическая бизнес-инкубация, государственная поддержка инноваций.

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REFERENCES

[1] Doklad direktora Instituta SShA i Kanady RAN, chlena-korrespondenta RAN Rogova S.M. na zasedanii Prezidiuma Rossijskoj akademii nauk 16.03.2010. URL: http://www.iskran.ru/print.php?type=news&id=91]0000000 (available at: 10.01.2019).

[2] Petrosjanc D.V. **(2016).** Opyt gosudarstvennoj innovacionnoj politiki Japonii: paradigma progressa dlja XXI veka. Regional'nye problemy preobrazovanija jekonomiki, №2 (64). P. 68-75.

[3] Finljandija. Otchet po rezul'tatam izuchenija mirovogo opyta v oblasti razvitija innovacionnoj dejatel'nosti. AO «Nacional'noe agentstvo po tehnologicheskomu razvitiju», 2013. 38 p.

[4] Strategii industrial'no-innovacionnogo razvitija Respubliki Kazahstan na 2003-2015. Ukaz Prezidenta Respubliki Kazahstan ot 17 maja 2003 goda N 1096, 2003 g., N 23-24, st. 217.

[5] Obzor innovacionnogo razvitija Kazahstana. Evropejskaja jekonomicheskaja komissija Organizacii Ob#edinennyh Nacij. N'ju-Jork i Zheneva, 2012. 180 p.

[6] Khamidullina Zh.B., Ermekbaeva A.K., Zhubanova S.B. **(2019).** Innovative approach in the development of the Kazakhstan economy. Reports of the National academy of sciences of the Republic of Kazakhstan. ISSN 2224-5227 Volume 1, Number 323, 165 – 169. https://doi.org/10.32014/2019.2518-1483.27;

[7] Stimulirovanie industrial'no-innovacionnogo razvitija v Kazahstane. AO «Nacional'noe agentstvo po tehnologicheskomu razvitiju», 2011. 96 r.

[8] Nekotoryh merah po optimizacii sistemy upravlenija institutami razvitija. Postanovlenie Pravitel'stva Respubliki Kazahstan ot 13 dekabrja 2018 goda № 830. URL: http://adilet.zan.kz/rus/docs/P1800000830/info (available at: 10.01.2019).

[9] Spravka po analizu innovacionnyh grantov. AO “Kazahstanskij centr industrii i jeksporta”. URL: www.kidi.gov.kz (available at: 10.01.2019).

[10]Godovoj otchet 2018. AO «Nacional'nyj upravljajushhij holding «Bajterek» Nur-Sultan, 2019. 163 p.

[11]Global Competitiveness Report 2019. World Economic Forum. Geneva Switzerland, 2019. 250 p.

[12]Global Innovation Index 2019. Cornell University, INSEAD, WIPO | Publication year: 2019. 400 p.

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