

ANNOTATION

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State programs of innovative development of national economy: theoretical bases, applied efficiency and strategic priorities

Relevance of the research topic. Modern effective economic development is based on three components. This is a general assessment of the country's resource potential for highlighting targets for global competition. Secondly, it is an assessment of the quality of state regulation of the economic environment for macroeconomic progress and institutional modifications. Thirdly the systematization of the elements of innovative development of the country to solve the problems of post-industrial sustainability. For the economy of our country, the last two components acquire the greatest theoretical and applied significance. They will determine both the qualitative resource transformation and the opportunities to achieve progress in an effective regulatory mechanism of innovative development. Not by chance, one of the key tasks set by the Leader of the Nation N.A. Nazarbayev in the 2018 Message "New Development Opportunities in the Fourth Industrial Revolution," is the effect of public administration.

The problem of new public management (New Public Management) is relevant throughout the world economy. The analytical evolution of public administration has the following trajectory - competition support, managerial order, market positioning of the public sector. However, in the conditions of our country, its differences from the implementation of state programs in developed countries should be noted. Diversification forms of business, extensive development of research and development works, long-term practice of using the program-target method and sustainable social guarantees allow developed countries to detail government programs for current projects, systematize innovative effects in the internal and external environment. In our conditions, innovative development follows the new industrialization of the economy and therefore is of an "auxiliary" character. Additional problems include the unresolved issue of the real structure of the national innovation system in our country, the institutional incompleteness of the question of the adaptive capabilities of domestic innovations in the external environment, and the small capacity of domestic innovative businesses. Based on this, in the analytical aspect, it is necessary to substantiate an effective model of the state program of innovative development.

State programs in our country are developed in the framework of strategic planning initiatives in the time aspects from 2020 to 2050, etc.

Any government program includes: goals and objectives, services; activities, program performance indicators; resources, risks. Moreover, for us, both the

methodological support of the program and its innovative goal-setting are equally relevant.

Government programs are the primary regulator of the parameters of the innovative development of the domestic economy. The aggregated assessment of the effectiveness of state innovation development programs reveals both the positive resultant innovation segment of the economy, as well as reproducible anomie and compression factors of innovation. In this connection, a qualitative revision of existing approaches to program-oriented planning, as well as a general increase in the effectiveness of government programs in the development of the national innovation system, acquires particular relevance.

After all, the modernization transformation of the economy of Kazakhstan is aimed at innovative multiplication, primarily in the factor structure of production. This implies the development of post-industrial dominants, in particular, the transformation of the institutional basis of domestic business, bringing it into global algorithms of “knowledge” reproduction, justifying the absolute priority of innovative forms and gradual compression of traditional industrial production. It is these initial basic parameters that should be laid down in the innovation development programs. At the same time, in modern conditions, programming is increasingly complemented, and sometimes is replaced by a design approach. This is due to the need for rapid response to changes in the external environment, the constant complexity and multidimensionality of programs. In this connection, the task of differentiation of the national innovation system for various state projects is also actualized. This, in turn, actualizes the adequate directions of innovative development in the country.

Thus, despite the great attention paid to the study of modern state programming and innovation development separately, their systematization and genesis actualization are still lacking. The area of accumulation of the effects of program and project management in the innovation sphere has practically not been identified. This is due to the institutional and applied problems of the formation of state program and project management in Kazakhstan. These include:

- low quality of time and resource planning of projects by the executors;
- the lack of clear requirements for potential executors of government contracts in terms of the content, detail and quality of the provided schedules and estimates of the project;
- weak activity and motivation of state and local executive authorities in the use of project management principles;
- insufficient level of technological support for project activities.

In addition, there are a number of problems in the formation of an effective institutional and economic environment to stimulate optimal state programming, requiring serious theoretical and applied research.

The degree of scientific development of the research topic. Previous research on the subject area of work can be divided into several blocks. The first block includes fundamental research devoted to the general theoretical, methodological and applied foundations of public administration in the works of

foreign researchers J. Schumpeter, P. Drucker, N. D. Kondratiyev, B. Santo, G. Becker and others.

The second block of research in this subject area is directly related to issues of program-targeted management and state programming. These aspects are disclosed in the works of such scholars as N. Manning, N. Parison, G.P. Khatri, B.A. Raizberg, A.G. Lobko, I.M. Vereshchagin, E.P. Golubkov, A.G. Aganbegyan, V.S. Rapoport, V.D. Rechin, V.I. Borisevich, G.A. Kandaurova, L.V. Rodionova, B.Z. Milner and etc. Research the state of the affected design in the works of S. Anderson, L. V. Tambovtseva, R. A. Kochkarova, V. V. Lobanov, and others.

The problems of innovation as a factor dominant of global competitiveness, the selection of parameters of the innovation strategy were investigated in the works of a number of foreign scientists, such as: J. Schumpeter, B. Santo, S.Yu.Glazyev, I.V.Novikova, S.B.Rudich, A.A.Trifilova. The formation of methodology and applied specification of national innovation systems, analysis of optimization models of the innovation environment were updated in the studies of B. Lundvall, R. Nelson, K. Freeman, V.V. Ivanova, N.I. Ivanova, K.I. Pletneva, O.G. Golichenko, V.P. Kolesova, M.N. Osmova, S.N. Silvestrova, I.N. Rykov and other economists from near and far abroad.

In domestic analytics, this issue was considered in the following directions. So, a significant contribution to the development of the theoretical and methodological foundations and patterns of functioning and development of the Kazakhstan national innovation system was made by the research of domestic scientists - U.B.Baimuratova, F.M. Dnisheva, A.A. Alimbayeva, F.G. Alzhanova, S.B. Abdygapparova, A.B. Zhanbozova, A.D. Tleubekova, G.A. Kenesheva, E.V. Smirnova, J.A. Temirbekova, S.I. Bishimbayeva and others.

The Kazakhstan segment of the analysis of the specifics of the development and implementation of state programs is presented in the works of K.Isatayeva, D.Nurkhaliyeva, S.I. Omirbayeva, R.M. Zhunusova, Zhushupova AK, Utibayeva G.B., Idrisova M.M. etc. The features of the budget process as a basis for state planning were generally analyzed in the works of S.Zh.Intykbaeva, A.A. Adambekova, R.S. Parmanova and others.

A review of previous research shows that if there is a scientific interest in public administration of innovation processes, the analysis of the specification of state innovation development programs, as well as the modernization of programs into projects within a transformational economy, has not been adequately reflected as an independent subject of scientific research.

The purpose of the dissertation is to solve the scientific and practical problem of the formation of an innovative and technologically competitive economy in Kazakhstan based on the development of recommendations for improving the strategic performance of state innovation development programs with their methodological and applied specifications.

Objectives of the research. The implementation of this goal necessitated the formulation of the following tasks, the logical sequence of the solution of which reflects the main stages of the research undertaken. So, the main tasks include:

- research of the place, content and typology of state programs in the system of state regulation of the economy;
- identification of the genesis of the conceptual foundations of the national innovation system and its decomposition in the state innovation development programs;
- generalization of the world experience in the implementation of state innovation development programs with the identification of macrostructure priorities;
- systematization of the institutional support of state innovation development programs in Kazakhstan;
- analysis of the effectiveness of the implementation of the State Program of Forced Industrial-Innovative Development for 2010-2014 (SPFIID);
- analysis of the strategic potential and applied performance of the State Program for Industrial Innovation Development for 2015-2019 (SPIID);
- identifying the possibilities of implementing the project approach in state innovation development programs;
- development of modern strategic guidelines for state programs of innovative economic development;
- development of a synergistic model of the state program of innovative development of the Republic of Kazakhstan.

The object of research is the mechanism for the development, implementation and modernization of state innovation development programs of the Republic of Kazakhstan.

The subject of the research is institutional and reproduction ties in the process of developing, implementing and modernizing state programs for the innovative development of the national economy.

Scientific novelty of the dissertation research. The most **significant results**, containing **scientific novelty**, include the following:

- 1) identification of gnoseology and common dominants of state programming from a general methodological, organizational, methodical, spatial-temporal and reproductive positions;
- 2) systematization of the conceptual framework of innovation development and structuring of the national innovation system with detailing the components of state innovation development programs;
- 3) identification on the basis of a comparative analysis, the dominant forms of functional profiles of country variants of state innovation development programs and their effective dynamic structure, highlighting the distribution anchors for adaptation in the domestic environment;
- 4) structuring the institutional support of state programming in the Republic of Kazakhstan;
- 5) identification of the performance and innovation results of the State Program of Forced Industrial-Innovative Development (SPFIID) for 2010-2014 and the State Program of Industrial-Innovative Development (SPIID) for 2015-2019, including in a comparative context;

6) methodological systematization of the toolkit of the project approach and its implementation in the structure of state programming with the allocation of modern strategic guidelines of state innovation development programs;

7) building a synergistic model of the state innovation development program of Kazakhstan based on the convergence of the process and project blocks, based on the dynamics of innovation factors and segment advantages and the strategy of economic growth in Kazakhstan.

The main provisions of dissertation research submitted to the defense. The following provisions are developed by the author:

- identify the place, content and typology of state programs in the system of state regulation of the economy;
- clarification of the genesis of the conceptual foundations of the national innovation system and its decomposition in state innovation development programs;
- generalized world experience in the implementation of state innovation development programs with the identification of macrostructure priorities;
- systematic institutional support of state innovation development programs in Kazakhstan;
- the effectiveness of the implementation of the State Program for Accelerated Industrial-Innovative Development Program and State Program for Development and Innovation including in a comparative context
- substantiated the possibilities and prospects for the implementation of the project approach in state innovation development programs with the development of their strategic guidelines;
- there is a synergistic model of the state program of innovative development of the Republic of Kazakhstan.

The theoretical and practical significance of the research lies in the fact that the scientific propositions substantiated by the author and conceptual approaches enable a deeper understanding of both the processes of state programming and the directions of innovative development. Summarizing elements of the research can become the basis for optimal models of state programming, evaluation of existing programs and parameters of innovative development of Kazakhstan, problems of the functioning of the domestic innovation system. **The practical significance** of the study lies in the fact that the findings of the dissertations can be used in the development of portfolios of innovative development projects, the forms and conditions of the transition to an innovative economy, the strategy of state innovation policy; in the development of integrated innovation development programs at the level of the republic and regions; to substantiate targeted innovation programs and projects, as well as local innovation systems.

The theoretical, methodological and informational basis for the dissertation research was the work of domestic and foreign economists; legislative and other regulatory legal acts of the Republic of Kazakhstan; materials of the periodical economic press; statistical and analytical data of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan; analytical materials

and expert assessments of specialists; information resources on the studied problem in the Internet.

In the course of the research, the methods of positive, normative, comparative and system analysis, synthesis, synthesis and scientific abstraction, as well as a set of mathematical and statistical methods were used: tabular and graphical methods for presenting data, methods for analyzing absolute, relative and average values, analyzing the time series, structural analysis, relationship analysis, index method.

Publication of research results. On the topic of the dissertation, the author has published 12 scientific works, totaling 7.77 pp, including one article in an international scientific publication, included in the Scopus database (volume 0.7 pp), three articles (volume 3.77 pp) in the journals included in the list recommended by the Committee on the Control of Education and Science MES RK, four articles (volume 2.77 pp) in the collections of domestic and foreign international scientific conferences.

Testing and implementation of research results. The main provisions of the dissertation research were tested in the open press, reported at international and republican scientific-practical conferences. The content of the dissertation is reflected in 12 publications of the author, including in scientific journals included in the Scopus - 1 database, in publications recommended by the KKSON - 3, in materials of international scientific conferences - 4, other publications - 4. The results of the thesis were studied and implemented in Practical activity of the State Administration "Management of Industry and Industrial-Innovative Development of the Karaganda Region", being an adequate scientific and methodological basis for improving the measures of state support for innovative development in the region m level.

The structure of the dissertation consists of introduction, three chapters, conclusion, list of references and applications. The dissertation contains 44 tables, 28 figures, 4 appendices and a list of references, including 207 titles.

In the first chapter "Theoretical bases of development and realization of the state programs of innovative development of economy" the author investigates a place, the maintenance and typology of the state programs in system of state regulation of economy; reveals Genesis of conceptual bases of national innovative system and its decomposition in the state programs of innovative development; generalizes world experience of realization of the state programs of innovative development with identification of macrostructure priorities.

The program-target approach is based on the logical scheme "goals→paths→methods→means", that is, it not only documents the situation, but also algorithms the consequences, which distinguishes it from most other methods. Thus, the subject of programming first specifies the goals ("goal tree"), and then develops an algorithm, a model of actions to achieve them. Therefore, the specificity is not the "Futurum-forecasts" of the system, but the concretization of programming optimal "Futurum-results".

In the dissertation the general parameters of the state programming are systematized by the author from general methodological, organizational, methodical, spatio-temporal and reproductive positions.

The presence of the world applied experience of program-target planning, has not led to the creation of a unified methodology for the formation of programs. The main reason for the lack of a holistic methodology and a generally accepted standard methodology for the development and implementation of state programmes is the specification of both the programmes and the socio-economic status of each individual country.

For successful functioning of the state programs of innovative development the analysis of conceptual bases of innovative activity, its structural and institutional registration in the form of national innovative system (NIS) and change of paradigms of management is necessary. We have referred to the main approaches of NIS definition: element-by-element approach, strategic approach, functional approach, management approach. Such a system analysis and concretizes the possibilities of state programming in the field of innovation.

For effective innovative development of the country, first of all, it is necessary to analyze foreign experience in order to adapt it within the framework of domestic state programs. The present analytical discourse in the work was built according to the following coordinates. The first the definition of global trends in the financing of innovative development in the framework of national programs. This would make it possible to rationalize domestic state programmes in terms of budget design. The second the identification on the basis of comparative analysis of the dominant forms and functional profiles of country variants of state programs of innovative development and their effective dynamic structure with the allocation of "anchors" spread for adaptation in the domestic environment.

In the second chapter, "System Parameters of the Effectiveness of the Implementation of State Programs for the Innovative Development of the Economy of Kazakhstan", the author systematizes the institutional support of the state programs for innovative development in Kazakhstan; analyzes the performance of the implementation of the SPFIID for 2010–2014, as well as evaluates the strategic potential and the applied performance of the SPIID for 2015–2019.

The formation of the state programming system in market conditions in Kazakhstan was carried out on a systematic basis. The introduction of elements of strategic planning and state programming was carried out in the framework of the reorganization and modernization of the entire system of government. In parallel with the reform of public administration and the reorganization of the planning system, the formation of its legislative framework was carried out. This is confirmed by the practice of adopting a large number of legislative and regulatory acts that reinforce the use of planning and programming in public administration. These provisions laid the institutional, organizational and legal basis for state programming and their use in the Republic of Kazakhstan.

The dissertation systematizes the applied effects of the implementation of the SPFIID and SPIID, and also developed a comparative evaluation map of their innovative results. A comparative assessment of the performance of the SPFIID and the SPIID for innovative development demonstrates the identification of the following trends:

1) the higher absolute (quantitative) values of innovation development indicators are typical for the period of the implementation of the SPIID (2015-2017).

2) the higher relative (qualitative) values of most indicators of innovation development are typical for the period of implementation of the SPFIID (2010-2014).

3) the higher average annual growth rates of most indicators of innovation development (as a percentage of the previous year) are characteristic of the period of implementation of the SPFIID.

In general, a comparative analysis shows a higher efficiency of the SPFIID compared to the SPIID precisely in terms of the growth of relative (quality) indicators of innovative development. The main reason for this, in our opinion, is that, in contrast to the SPFIID, the SPIID lacks indicators and performance indicators related to such quantitative and qualitative parameters of the country's innovative development as: the total volume of innovative enterprises, the degree of innovative transformation of enterprises; the segment of innovative products in total GDP; criterion of innovative efficiency of technological innovations; indicators of innovation infrastructure (number of technology parks, commercialization centers, design bureaus, etc.), etc.

SPFIID and SPIID being large-scale development programs of the country, had a predominantly industrial trajectory, which was laid down in their substantive characteristics and applied target installation. In today's competitive environment, the very implementation of such programs has demonstrated their following bottlenecks:

- the scale of the programs entails multitasking and therefore reduces the positive impact;
- the presence of systemic problems in the development and implementation of state programs in the field of innovative development;
- the impossibility of an objective assessment of the degree of impact of each program document on targets in a given area, as well as the real effects of the implementation of the measures of SPIID with their parallelism with the measures of other program documents.

In the third chapter "Modern strategic priorities of the state programs of innovative development of national economy" the author reveals the possibilities of implementation of the project approach in the state programs of innovative development; develops strategic guidelines and synergetic model of the state program of innovative development of the Republic of Kazakhstan.

Modifying government programs into its more market-oriented form — the design one - makes it possible to concretize the applied effectiveness and avoid the problems of multitasking and extensive target indicators. The active launch of the program-project mechanism of state strategic management of innovative development requires the immediate development of national standards for managing state projects and programs. The development and implementation of national standards for managing state projects and programs will provide:

- securing the basic requirements, fundamental principles, rules for setting goals and objectives when implementing the program-project approach in public administration;
- legal and institutional specification of management tasks with the distribution of areas of responsibility of the subjects of the program-project activities at different stages of the project life cycle;
- formalization of the methodology, algorithms, methods and processes for managing programs and projects;
- formation of a theoretical, methodological and methodical basis for training employees involved in the development and implementation of programs and projects.

As a system of strategic guidelines for the state innovation development program in Kazakhstan, it is advisable to use the author's structure of the indicators of "innovation input" (including 4 sets of indicators) and "innovation output" (consisting of 3 blocks of indicators). This structure is based on the methodological approaches of the World Economic Forum (Global Competitiveness Index), the World Intellectual Property Organization (Global Innovation Index), the World Bank (Knowledge for Development program), the international agency Bloomberg Rankings, the European Innovation Scoreboard, etc.

The final result of the study is a synergetic model of the state program of innovative development of the Republic of Kazakhstan, formed on the previous methodological and methodical basis, consisting of process and project blocks and accumulated on the implementation of the portfolio of innovative projects. The structural elements of this model are the concretization of nine portfolios of innovative development projects of the country according to the goals, target indicators, tasks, selected activities. This model is correlated with the main trends of technological avant-garde development, institutional parameters of the innovation sector, qualitative dynamics of human capital. It is this approach that not only actualizes the problem of the modern quality of the state program of innovative development, but also parameterizes the structure of interrelated projects in methodological, organizational and applied aspects that is adequate to our basis.