

Problems of Projects Assessment in Terms of New Industrialization of Russia

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Abstract - In the article the problems related to evaluating efficiency of investment projects within the framework of realizing new industrialization of Russia are analyzed. The main tendency that provides for innovation activity namely is regarded. Variants are analyzed of conducting innovation strategy formulated in the "Forecast of Social and Economic Development of the Russian Federation for a period till 2030". A conclusion is made on the necessity of realizing the third variant aimed at developing breakthrough technologies. As an example in this field it is proposed to study a project on creating a system of information-analytical searching based on the methods of artificial intelligence and aimed at fulfilling functions of intellectual management of innovation activity. The necessity to evaluate such projects from the position of the state, i.e. to evaluate their social efficiency, is also proved in the article. A variant of possible assessment of the project's effects on the scale of the country is determining the value of saving of time spent on searching scientific and technical information necessary for innovation activity. Moreover, in the article analysis of the present legislative base regulating innovation activity is conducted. Conclusions are made the present legal standards do not propose adequate approaches to evaluating innovation projects and their influence to the economy of the country. Besides, the projects in the sphere of new industrialization of Russia due to their novelty and vagueness of the final results demand more thorough examination which is impossible without attracting highly skilled specialists of assessment.

Keywords—*new industrialization; innovation activity; systems of information-analytical searching; intellectual management*

I. INTRODUCTION

The most important factor providing new industrialization is innovations. Without their applying it is difficult to create competitive economy similar to knowledge economy. At present Russia's transition to innovation way of development is a vital necessity recognized both on a level of the authorities and among experts, analyzers and businessmen.

Nowadays a necessary condition for national economy positive development is innovations, being realized, if possible, rapidly. By the results of numerous studies economic return of investment in innovations exceeds

profitability in many other spheres. Investment in innovations and supporting them science can be a highly effective way of resources placement. However, the receipt of effects from such investing is usually delayed that essentially raises its risk.

Choosing priorities of scientific and technological development and methods of management of creating new equipment and technologies in a scale of a country, industries and separate enterprises, i.e. choosing effective innovations was always a substantial problem. To manage innovations competently it is necessary to elaborate a whole complex of methods and approaches realized at various economic levels from the viewpoint of systems analysis and artificial intelligence.

II. LITERATURE REVIEW

Growth of the problems' number and complexity brings about the development of very diverse managerial methods [1-4]. Active usage of information technologies leads to emergence of the data large volumes [5] processing of which requires special methods. Moreover, for the up-to-date management the increase of weakly structured information volumes and vagueness in the models being used are typical, and it also requires to create new methods, for example, such as robust and adaptive ones [2-4, 6, 7]. Determination of efficiency and characteristics of Russian non-stationary economy initial conditions under which innovation activity is conducted and real investment projects are put into effect; a description of the main conceptual apparatus used in this process and the most important principles on which evaluating efficiency of this activity is based is regarded in works [8-10]. Along with it, a significant attention is given to comparative analysis of methods applied under evaluating investment projects and programs being realized in Russia and in the West. It is shown that complete analogy does not exist and for Russia its own methods and approaches are necessary.

III. METHODOLOGY OF RESEARCH

Speaking of innovation development of the economy, its innovation strategy, it should be understood well that it is a part of the state's investment strategy, representing a long-term program of stimulating investment inflow in global

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development of the country, perspective industries, life quality increase and human capital. Transition to innovation economy in Russia is desirable to be realized on the base of qualitative investment strategy, in that case innovation return will be more considerable.

In the “Forecast of Long-Term Social and Economic Development of the Russian Federation till 2030”¹ three variants of innovation development are declared. The first one – inertia import-oriented technological development under which the whole attention is paid to supporting macro-economic stability along with low budget expenditures on technological progress. The second one – “catching up development and local technological competitiveness” aimed not only at economic reequipping on the base of import technologies, but acupuncture stimulation of national engineering as well. The third one – achieving the leadership in the main scientific and technical sectors and fundamental research, that demands considerable efforts of the state on modernization of scientific-research, development activity and fundamental science, concentration on the breakthrough scientific trends [11].

A general solution can be found in orienting to mixed strategy with elements of leadership in some segments where competitive advantages are already observed or can be created in a short time, but with realization of catching up strategy in a number of economic and industrial sectors simultaneously with rehabilitation of engineering and construction potential. However, the existing sanctions more and more facilitate the situation under which the main variant of bringing national economy to the world level just the third variant of development is becoming, and its prior trend should be elaborating breakthrough technologies in the field of new industrialization in Russia.

For competent management of creating national technological and product innovations it is essential to elaborate a whole complex of methods promoting realization of technologies for automatic search and analysis of intellectual activity results aiming at information supporting subjects of innovation process subjects, as well as subjects of taking reasonable management decisions.

IV. PRACTICAL SIGNIFICANCE AND RESULTS.

In this connection a system is constructed based on artificial intelligence methods and intended for information-analytical search and scientific-technical information analysis, as well as forecasting perspective trends (further – SIAS – System of Information-Analytical Search). The System should combine lots of searching types, including cross-language search. By the developers’ idea the System will perform functions of intellectual management of innovation activity and thus facilitate achieving strategic state goals of economic growth.

Such a project can influence greatly the economy of the country. For its assessment it is necessary, first of all, to account the results exceeded the limits of the participants’

direct financial interests and acquiring value for all the members of the society, i.e. to evaluate social efficiency [8, 12, 13].

According to the World Bank methodology “under evaluating project expenses and benefits the other cost of project resources and products should be taken into account: instead of financial cost for direct project participants it should be economic cost for the society. For transition from financial analysis to the economic one, it is necessary to conduct a number of financial results corrections” [13]. Projects’ flows should be expressed in economic prices reflecting their value for the society. Moreover, there is a need to account the consequences of fulfilling the project in related industries of national economy. Under evaluating social efficiency there are a number of problems:

- 1) Problem of determining social rate of discount;
- 2) Problem of determining economic values of resources (necessary for using in calculations instead of financial prices);
- 3) Problem of evaluating consequences of fulfilling project in social and ecological spheres of the society vital activity (externalities assessment);
- 4) Problem of evaluating consequences of fulfilling project in related industries of national economy, namely, calculating effect of internal demand change.

As a rule, to solve these problems these or those palliative methods are applied [14, 15]. The approach to evaluating efficiency of the System being constructed is based on a provision that the SIAS will make it possible to increase significantly scientific-technical labor productivity at the expense of decreasing time for searching the necessary information practically for all the types of innovation activity. It is essential for a variety of categories of innovation process participants: from students, scientists and engineers-inventors to experts and officials of the state bodies.

In this case, as a result of constructing and introducing the SIAS a value for the society will be saving of time spent on processes of searching the information needed for innovation activity, moreover, with significant widening possibilities for its finding. The effect is calculated as a difference for situations “with project” and “without project” (i.e. “with system” and “without system” – using the existing instruments). According to classical approaches to evaluating social externalities, price of time for the members of the society is assessed by value of labor payment in a time unit.

Expected social efficiency of this project even under the most careful suggestions and understated forecasts turned out to be rather high. The given assessment was preliminary and during its calculation a ten-year period was regarded (it included 4 years of elaboration and 6 years of exploitation), while similar strategic projects have large-scale influence for the economy and the consequences of their realization to a full extent make themselves out to be just in a long-term perspective, increasing labor productivity, creating comfort

¹ Elaborated by the Ministry of Economic Development of Russia, (text is given according to the state of April 30, 2013 <http://www.economy.gov.ru/>)

environment for scientific-research activity and considerably raising innovation activity in the country.

V. CONCLUSIONS AND RECOMMENDATIONS

The analysis fulfilled in the article enabled to formulate the following conclusions and recommendations:

- 1) Evaluating investment projects social efficiency is necessary, especially of those being fulfilled by innovation development institutions.
- 2) Existing regulation documents in the field of evaluating investment projects do not reflect to the necessary extent the approaches to their influence in social-economic sphere.
- 3) As new industrialization should be directed to realization of effective innovation projects, the absence of competent rules of their assessment retards its development.
- 4) Projects in the field of new industrialization due to their novelty and vagueness of the final results demand more careful working over, and it is impossible without attracting highly-qualified specialists in the sphere of assessment.

VI. DISCUSSION

Systematic activity of the state on creating environment for the county's innovation development imperatively demands corresponding legal and methodological support. However, in official documents methods of evaluating the results of realizing large technological projects from the society's viewpoint are paid obviously insufficient attention. Undoubtedly, passing the Federal Law "On Scientific, Scientific-Technical and Innovation Activity in the Russian Federation"² (further – FL Project) will be an important step, though the documents of such level set, as a rule, general concepts and a framework character for the requirements. Article 72 "Evaluating Efficiency of Spending Budgetary Funds Directed to the State Support of Innovation Activity" determines the most essential conditions, such as orientation of the state investment to realization of the state policy and achievement of the determined goals in a corresponding sphere (part 2, Article 72 of FL Project). In this work (part 5, Article 72 of FL Project) for the subjects of the state support the importance of the availability of the documents determining strategy, goals, tasks and order of granting innovation activity the this support is very important. For these documents themselves the requirements are established (part 6, Article 72 of FL Project): measurability of goals and tasks, possibilities of efficiency assessment, interconnections of the stated goals and tasks with the key indicators of structural subdivisions and administrative boards, as well as a number of others (part 7, Article 72 of FL Project). Elaborating the rules of efficiency and its criteria assessment themselves according to the Law Project is entrusted to the Government (part 3, Article 72 of FL Project).

² Project, prepared by the Ministry of Education and Science, text is given according to the state of March 28, 2018 <http://regulation.gov.ru/projects/List/AdvancedSearchi#npa=79415>

On the 4-th of April, 2018 the Decision of the RF Government No. 392 of March 31, 2018 was adopted at last: "On approving the rules of evaluating efficiency, particularities of determining goal-oriented character of using budgetary funds directed to the state support of innovation activity and extra-budgetary sources of funds, the return of which is secured by the state guarantees, as well as criteria applied under such evaluation" (further – the Rules). As the Government registered itself³: "At present the rules for evaluating efficiency of innovation activity adopted at a legislative level are not available. To the institutions of innovation development for the part of control bodies the existing rules of checking up budgetary organizations are applied. Such an approach does not account particularities of innovation activity." Naturally, this document was especially expected by the economists, specialized on evaluating investment projects efficiency, and their hopes were mainly connected with evaluating social efficiency which had the most important value for innovation projects. However, those hopes were not fully realized, though the attempt of regulation in this very complex sphere itself is, certainly, very valuable.

The rules are directed, first of all, to evaluating the activity of numerous development institutions that are financed by the state and are delegated of the right to invest in prior innovation projects as well, but introducing these Rules in practice is rather far.

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³ <http://government.ru/docs/31942>

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