

Integration and convergence of federal targeted programs for priority directions of development

Programas federales para finalidades específicas de las tendencias prioritarias de desarrollo

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ABSTRACT:

The article outlines possible conceptual and partially methodological results related to the coordination of measures and activities aimed at stimulating the constituent entities of the Russian Federation in the field of production and implementation of integrated federal target programs that are innovative in nature (fully or partially). This paper suggests a system-engineering interpretation of the federal innovative targeted program as a special type of management strategy, which is considered as a particular case of the implemented innovation strategy in the domestic economy. To improve the efficiency of program-targeted management, the author suggests introducing inter-program coordination mechanisms.

Keywords: innovation activity, federal targeted program, convergence, strategy, feasibility study, expert evaluation of the program

RESUMEN:

Fueron formulados los resultados mayormente conceptuales y parcialmente metódicos relacionados con la coordinación de la práctica y actividades de estimulación estatal de los sujetos de la actividad productiva y económica en Rusia en términos de formación e implementación de los programas complejos federales para finalidades específicas con carácter innovador (en total o en parte). Fue presentada la interpretación sistemotécnica del programa federal innovador para finalidades específicas como tipo especial de la estrategia de gestión y demostrado el hecho de que es un caso individual de la estrategia de innovación de la economía nacional que está en curso de implementación. Para asegurar el aumento de la eficacia de la gestión programática y de finalidades específicas será oportuno introducir los mecanismos de coordinación interprogramática.

Palabras clave: innovación, programa federal para finalidades específicas, formación de convergencia, estrategia, estudio de factibilidad técnica y económica, evaluación especializada de programa

1. Introduction

The use of the organizational and economic mechanism of federal targeted programs

(FTPs) is one of the potentially effective means of regulating Russian business, understood in a broad economic sense. Those include fully or partially innovative programs, which are conditionally called federal innovative targeted programs.

Some of the current federal targeted programs (FTPs) in Russia directly or indirectly focus on creating external conditions favorable for the development of domestic production. However, due to time diversity, different developers and federal curators, and for some other objective and subjective reasons, these FTPs are in a state of disharmony. Whereas, the corresponding inconsistency between FTPs in various aspects not only can lead to the irrational and ineffective expenditure of limited resources but also induces long-term and significant direct and indirect damages.

This noted phenomenon has been observed for a long time. However, there are still no practical effective converging measures and no methodological and instrumental apparatus for the integration of the FTPs. The situation is significantly aggravated by the two negative circumstances such as incomplete (at least – budget) and intermittent funding of the corresponding FTPs and their non-additivity. In particular, subject matter FTPs are most often not revised in terms of content or in terms of their characteristics – including financial and economic ones, that is, they are inferior in performance characteristics of the implementation environment to the corresponding FTPs. Among other things, they lag far behind the dynamics of external sanctions.

Therefore, the development of management technology for harmonization of the federal targeted programs or technology for generating harmonized innovative federal programs seems to be relevant – both in terms of synthesis and analysis. In the end, this technology should lead to the complexes of consistent supporting and implementation measures and activities, as well as its direct use in the development of applied recommendations.

The purpose of the study is to survey the main priorities for the development of integration and convergence of federal targeted programs for priority directions of development in Russia. The author provides an analysis of the implementation of federal targeted programs and their role in the investment activities of Russia, along with the structure of federal budget spending on the implementation of federal targeted programs. The study used methods of comparative analysis and systematization. The proposed interpretation of the innovative federal targeted program and the tools for its synthesis and analysis are considered in its main content for other types of programs and projects. The study will make it possible to more effectively coordinate the implementation of federal targeted programs.

Grilli et al. (2018), Bryan and Lemus (2017) examined the current state of research and policy development related to the dynamics of financing innovation, identifying gaps in the literature. Kennedy et al. (2017) and Kapetanious et al. (2018) in their works studied national innovation systems, arguing that financing innovation programs involve considering the current state of the country and its financial environment. Batabyal and Yoo (2016) studied the dependence balance of economic growth in the region on the financing of innovative programs. Dumitrescu and Dogaru (2016), Hu et al. (2018), Padilla-Pérez and Gaudin (2014) believe that financial crisis serves as a powerful catalyst for innovation reforms.

Russian scientists also consider the development of federal targeted programs aimed at the development of innovation. Thus, Faskhutdinov (2015), Klochikhin (2012), Idrisov et al. (2016), and Cheremukhin et al. (2016) consider the problems of the further development of the Russian economy and reveal factors hindering the development of innovation clusters. Kharchenko (2014), Sosnovskikh (2017), Beliakov and Kapustkina (2016), Malganova and Zagladina (2015) study the strategic development of the regions in Russia and its innovative component. Medvedev (2016), Mau and Ulyukaev (2015) consider the economic problems of the Russian economy due to the imposed sanctions based on the analysis of global economic growth trends of macroeconomic policy.

2. Methodology

The methodical research apparatus includes general scientific and economic methods; it is a synthesis of abstract-theoretical analysis, system, factor, and structural-functional analysis, the logical approach, statistical methods, simulation, and the situational and quantitative approaches. The authors also used specific methodical tools of economic and mathematical modeling, etc.

Numerous statistical materials, reporting data of the executive authorities, monographs and periodicals, Internet resources of the leading research centers in Russia, and the results of authors' own research served as the information and legal framework for the study. The authors also examined decrees of the President of Russia, resolutions of the Federal Government, other regulatory legal and methodological documents of the legislative and executive authorities of all levels of government in the Russian Federation, including program documents.

3. Results

Today, there is a rather unusual situation, when sufficiently effective management methods are either considered inapplicable in Russian practice (for example, due to "capitalism", "Western" or "Eastern" features of the Russian economy) or referred to the category of atavism and anachronisms of the socialist administrative-command system. At the same time, there are unsubstantiated references to the extraordinary anarchic nature of the Russian economy, its specific features and a distinct development trajectory. In the authors' opinion, the apparatus for targeted programming or targeted planning for the development of enterprises and commercial products is one of such undeservedly discarded management tools.

Such a statement outwardly looks completely irrelevant – formally, quite a lot of federal programs and their analogs are being implemented in Russia today, including complexes of research projects of the Ministry of Education and Science of the Russian Federation and several other federal ministries (Sosnovskikh, 2017). Furthermore, there are numerous unorganized and even non-inventoried regional, corporate, interstate, intra-company and other targeted programs (TPs) and their semantic analogs.

However, upon closer, even superficial consideration, they turn out to be endowed with a whole range of conceptual and technical deficiencies.

Those include:

- the exclusively formal nature of these TPs, serving as a documentary reinforcement of the need for someone to do something in order to achieve something;
- emasculated informative meaning, limited to the formation of an unstructured and empirically generated set of measures and activities that must be implemented by the persons in charge subject to adequate funding, and sometimes at their own expense;
- lack of control and self-adaptation mechanisms, static state;
- ignorance of the market nature of the economy and limitation of financial and economic mechanism to direct subversion at the expense of external funds – primarily, budgets of the appropriate level;
- lack of a feasibility study, even if emasculated or formalized.

In fact, target programming is nothing but the most important, defining element of permanently updated strategic management.

The motivation for the use of target programming is shown below as the authors cite the important features of modern commercial products and enterprises that produce them. First, the time for design and development in mass production is calculated at least in years, although today several foreign companies declare the reduction of these periods (due to the intensive use of computer-aided design and production preparation management) to months, which is not yet confirmed in practice, at least in mass practice. Secondly, the related costs are noticeable even on the scale of the budgets of industrialized countries, including Russia. Thirdly, due to several reasons, the period of exploitation of commercial products often exceeds 10-15 years, and for some types and

samples, it reaches 50-60 years (considering conservation, modifications, renovation, re-equipment, and reassignment to the new scope of application). Based on this inertia of the industrial potential and the costs of productive operation, the refusal to implement program-targeted management leads to a deliberate inefficiency of such management. The targeted programs (TPs) and interstate TPs, the implementation of which involves Russian participation, are a complex of research, design, production, socio-economic, organizational, economic and other measures coordinated by resources, performers and timeframes, that ensure an effective solution of challenges in the field of state, economic, technological, environmental, social and cultural development of the Russian Federation.

Targeted programs are one of the crucial means of implementing the state structural policy, active influence on the production and economic processes within the authority of the state governing body of the Russian Federation.

The authors suggest the following "life cycle" stages of a targeted program:

- selection of the problem area for program-targeted planning;
- decision on the TP development and its formation;
- examination of the TP project;
- approval of the TP;
- implementation of the TP;
- performance analysis of the implemented TP.

According to the normative and methodological documents, the TP consists of the following semantic sections:

- the scope of problem and justification of the need to solve it using program methods;
- main goals and objectives, deadlines and stages of the program;
- system of program activities;
- resources of the program (sources of financing);
- program implementation mechanism;
- organization of program management and control over its implementation (where control refers to the implementation of supervisory functions of the government bodies);
- performance evaluation, analysis of socio-economic and environmental consequences of the program implementation;
- target program passport.

A TP project implies the application of:

- explanatory note;
- business plan with socio-economic and feasibility studies;
- preliminary budget request for allocation of funds from the federal budget to finance the TP for the following year;
- approval granted by government authorities and, if necessary, agreements (contracts) of intent between the state customer of the program and enterprises, organizations, regional authorities for the level of federal entities, confirming their intentions or guaranteeing the financing of the TP from the budgets of those federal entities and extra-budgetary sources.

Undoubtedly, the so-called innovative FTP (IFTP) as a particular case of the strategy allows for multiple interpretations.

Let us consider FTPs (federal targeted programs) innovative if at least one of the two conditions is met:

- it involves the use of innovative marketable products;
- it provides for the creation (most often – production) of innovative commodity products.

The formation of the IFTPs is a special type of management, including integrating the management activities of several management entities with respect to object and subject localized management, and in the context of certain types of objectives, prohibitions, and managerial influences.

Undoubtedly, the market as an object of management is a complex object, even in the case of partial depletion of its submission.

Accordingly, a conceptual management scheme based on a feasibility study of management strategies should be applied to form an IFTP that will allow for the formation of a cybernetic feedback loop.

Management of the corporate structure is based on a three-stage scheme, which involves:

- substantial statement of the management task;
- formalization of the management task;
- solution to the management task.

Analysis of the IFTP convergence is an important problem of innovative target-oriented programming.

Let us proceed from the fact that there are several FTPs that are recognized as related by their goals and/or activities.

To define the aspects in which the FTPs should be converged, let us proceed from the interpretation of the IFTP introduced above – as a strategy, the content statement and, possibly, the formalization of the management task; and the program activities as specific or local strategies – strategic management decisions.

If one considers the IFTP as specific management tasks that should not disharmonize with the overall management objective and, as a result, among themselves, then the convergence of the IFTP group should imply the fulfillment of all three conditions, including:

- consistency (at least, the absence of antagonistic inconsistency) of management objectives, and, as a result, state indicators and performance criteria. It is noteworthy that the nature of the results of the IFTP implementation, its effects and effectiveness can be taken as an indicator of the state and/or IFTP performance criteria;
- semantic consistency of management decisions – program activities. In particular, there should be no mutually exclusive measures, meaningfully identical management decisions with different parameters, inversions in the logical sequence of the program activities implementation – including the time sequence.

Accordingly, this convergence should be analyzed in at least three main aspects:

- target convergence;
- activities convergence;
- resource convergence.

In this regard, the methodological basis should be used, provided for control in hierarchical management systems (Idrisov, 2016).

Management solutions are presented in the form of a pentad (five-element model) "necessary conditions for implementation – who implements – what implements – when implements – in relation to whom or what implements".

None of the analyzed IFTPs provided the conditions for the implementation of the program activities, which is a conceptual system-based error. At the same time, the program should at least indicate the obvious conditions of the sequence of implementation – for example, it is impossible to conduct flight tests of an aircraft unless its construction is completed.

It is worth noting that if there was some general, global IFTP, then the problem of converging individual FTPs should be solved in coordination with this problem. The problem would be considered as follows: can a group of management objectives be

recognized as a group of specific tasks of a certain general management objective? If a group of IFTPs (in the form of management tasks) could be presented as specific versions of one common task, all IFTPs of this group would be considered converged. Otherwise, they would be considered unconverted.

Let us consider the following FTPs as a retrospective testing ground to analyze the convergence of the IFTP in the context of civil aviation technology:

- "Development of Civil Aircraft Engineering in Russia in 2002-2010 and up to 2015";
- "Reforming and Development of the Defense-Industrial Complex in 2002-2006";
- "National Technological Base" for 2002-2006;
- "Modernization of the Russian Transport System for 2002-2010".

The following specific features characterize the goals and expected results indicated in the above TPs:

- Most of the program objectives are rather a non-strict description of the means to achieve the goals as desirable, required or specified states of the control object that significantly affect the state of the control subjects meeting their ultimate interests;
- The objectives introduced by the Federal Target Program are little representative or even unrepresentative. They do not only disagree with but often contradict the objectives introduced by the aviation industry and civil aviation of Russia, most of which are directly determined by the current Russian legislation;
- Those management objectives are completely heterogeneous and inconsistent – at least at the inter-program level. In any case, their logical connectedness is not visible. Some of the program objectives have monetary nature while others are subsistence in nature;
- Some objectives are antagonistic. For instance, the target level of sales of marketable products in the amount of 1000 billion rubles indicated in the FTP "Development of Civil Aircraft Engineering in Russia in 2002-2010 and up to 2015" contradicts the target tax deductions in the amount of 300 billion rubles. Thus, the return on sales should be at least 50%, which in principle cannot be realized in practice. Similarly, at an exchange rate of \$1=30 rubles, import substitution would require significantly more than a 1.5-fold increase in the costs of aviation operators because foreign-made aircraft are usually more than one and a half times as expensive as domestic ones. It is also beyond doubt that the maximization of tax deductions, as a rule, conflicts with the improvement of financial and economic enterprises-taxpayers, while the preferential nature of government supplies to the domestic market contradicts the improvement of the suppliers' financial and economic situation;
- Objectives relate to the interests of various parties/persons;
- The majority of goals are qualitative and rather vague in nature and therefore the achievement or non-achievement of these goals cannot be assessed (verified) objectively;
- The expected program results have inherent features identified in relation to the objectives and indicated above;
- Program objectives and expected results almost do not correspond to each other.

Comparing data on federal budget expenditures on research and development, both with and without secret items of expenditures based on the above reports, is possible only in the context of total expenses for science, including civil science, as well as in the context of expenditures on basic and applied research. Code RzPr 0110 "Fundamental research" refers to expenditures on FR (fundamental research). The amount of the remaining RzPr related to science refers to expenditures on AR (applied research). The dynamics of the functional structure of expenditures of the federal budget for science based on the report of the Federal Treasury prepared in accordance with the form 0507021 is presented in Table 1.

Table 1

AR in physical culture and sport	0.03	0.05	0.3	0.04	0.3	0.04	0.3	0.03	0.3	0.04
AR in social policy	0.03	0.05	0.1	0.02	0.1	0.02	0.1	0.01	0.2	0.03

Note: according to the Federal Treasury of the Russian Federation. 2018. Consolidated budget of the Russian Federation and budgets of state extra-budgetary funds for 2013-2017 (<http://www.roskazna.ru/ispolnenie-byudzhetrov/konsolidirovannyj-byudzheto/>)

The largest volumes of expenditure on science are allocated on AR in the national economy (NE), national defense (ND), national security and law enforcement (NS). In 2013-2017, expenditures on these sections averaged 72%.

Research costs in the field of NS in 2013-2016 averaged 5.5% of all science expenditures, in 2017 – 4.28%. In 2016, the expenditures on science in the field of ND exceeded similar costs in the field of NE by 22.29%. In 2017, the expenditures decreased by 7.36%. Throughout the study period, expenditures on the NE decreased. Thus, in 2013-2016, the share of expenditures on the NE decreased by 12.27%; in 2017 – increased by 1.33%.

4. Conclusions

Thus, it is legitimate to state that the envisaged goals of the FTP allocated for retrospective analysis contradict each other – both within the framework of specific FTPs and in terms of the expected results.

Most goals are fundamentally unverifiable in terms of their actual achievement.

The activities related to federal programs include a subset of organizational and financial-economic activities.

The analysis of activities of the related programs showed that most activities are engineering or scientific in nature and are associated with R & D (research and development activities) in providing either the creation of aircraft production and the implementation of technical operation of civil aircraft or final and component parts of civil aviation equipment manufactured in Russia.

In this regard, the smallest organizational and financial-economic coherence is found in the FTP "National Technological Base" and the FTP "Modernization of the Russian Transport System". In the latter, almost the only coordinating activity is the preparation of the draft law "On Aviation Leasing".

Correspondingly, FTPs represent an "atlas" of indicative forecasts of government research and development orders related to different stages of the life cycle of a civil aircraft fleet.

It is sufficient to indicate that activities in the field of standardization, economic analysis, and regulatory support would be financed at the level of no more than 1.5% of the total amount of R & D funding.

If one proceeds from the focus on a minimal 4% level of budget allocation for research and development, then organizational and financial-economic measures should be financed at a level of at least 40 million rubles a year.

The authors failed to identify any principles of coordination or mechanisms for coordinating the preparation and implementation of activities in any of the related FTPs.

The activities of related FTPs do not formally contradict each other, but they are not related to each other, and thus the synergistic effect of their implementation is uncertain.

All four selected related FTPs provide for the management of the implementation of each of the separate FTPs through the mechanism of local Directorate. However, theoretically and practically, these Directorates are semi-formal institutions engaged in consolidating the applications of participating companies and their coordination with financing limits. The real scope of administrative competence of the Directorates is not determined – they

do not bear any responsibility and have no real management rights.

Accordingly, it is possible to state that the FTP activities have an indefinite connection with each other and do not form a system. Their impact on the implementation of the FTP objectives and final deliverables is unknown.

There is no mechanism for managing newly created objects of ownership, including objects of intellectual property in the form of R & D results.

In terms of generalizing the above and expanding its use, it should be noted that the corresponding constructions are applicable to all the hierarchical management systems at the macro-, meso- and micro- levels – see, for example, the case of corporate target programs for corporations.

In view of the above, it can be concluded that:

1. Federal targeted programs, including those related to the strategic "life cycle" management of civil aviation equipment, have positive management potential and should be preserved as an institution of the crucial multi-entity strategic management dominated by the federal management level.
2. Most of the federal targeted programs, at least formally, has the character of innovative federal targeted programs, which require further consideration as an institution.
3. In the managerial aspect, the federal target programs should be interpreted as strategies – management objectives with the included decision results.
4. Inter-program harmonization is an urgent management problem, which has not been addressed either theoretically or practically.
5. Program goals of many federal programs required for harmonization are unrepresentative, cannot be achieved, provoke internal and inter-program conflicts and contradict the expected results of their implementation. Furthermore, they do not allow objective verification of the progress in the achievement of goals.
6. Program activities of several federal targeted programs do not formally conflict with each other, but their isolated performance is uncertain, as are the synergistic effects of their implementation.
7. To increase the effectiveness of program-targeted management, it is advisable to introduce inter-program coordination mechanisms.
8. The proposed interpretation of the innovative federal target program and the tools for its synthesis and analysis seem to be appropriate in relation to other types of programs and projects.

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