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Methods for improving the processes of innovative development of the Russian military-industrial complex

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Abstract. The study examines the management process of the modern domestic military-industrial complex. An analysis of the features of its past and current state has been performed, and promising directions for its future development have been identified. This problem is of particular relevance due to the high importance of the complex in ensuring the military security of Russia, as well as in the innovative development of science-driven and high-tech sectors of the economy. The use of the system analysis method allowed evaluating the mechanisms for regulating the production diversification activities of defense enterprises in recent years of market transformations of the national economy. Based on the conducted research, scientifically based recommendations have been proposed for improving the structure and methods of functioning of the military-industrial complex, as well as its interaction with public and private enterprises.

Key words: military-industrial complex, diversification, science-driven and high-tech enterprises, management process, system analysis, market transformations.

Introduction.

The sharp deterioration in the military-political situation in the world in recent years, the anti-Russian hybrid war unleashed by the United States and its allies, as well as the efforts made by a number of highly developed countries to politically and economically isolate Russia, create significant difficulties in the economic development of the Russian economy. These difficulties could be overcome in the new, extremely unfavorable conditions of the country's socio-economic development by reorienting the Russian economy toward segments with high added value, supporting, first of all, its production rather than the financial sector. In such conditions, increasing the pace of development of Russian industry and its technological level is impossible without strengthening the role of innovatively active enterprises and increasing the real efficiency of their

activities. These include enterprises of the military-industrial complex (MIC), which have intellectual property, develop and implement new or improved products, technological processes, perform technology transfer, and other types of innovative activities. Since the times of the Soviet Union, military-industrial enterprises (MIEs) have been drivers of innovative development of the domestic economy [1]. The higher the innovative activity of MIEs, the more expedient their operation is, since this is a strategic characteristic of their development efficiency.

Main part

1. The current state of MIEs.

Solving the problem of enhancing the innovative development of MIEs in unfavorable external and internal conditions requires a significant increase in their management efficiency. Some currently used mechanisms and tools for managing these enterprises, as practice shows, no longer correspond to the new tasks and conditions for the development of the country's economy and state building. They do not consider many new factors influencing this process in modern conditions, since their methodological foundations were developed during the period of the liberal financial and economic model of the country's development adopted in Russia at the end of the last century or during the recovery growth of enterprises in this complex. They focus enterprises not on creating a new innovative product with high added value, but on making a profit in a short time.

A retrospective analysis of the practice of managing MIEs is a necessary condition for its improvement at the present time. The defined circumstances determine the high relevance of the problem considered in the study as improving the optimal management of MIEs contributes to an increase in the efficiency of their activities. Its solution has an impact on the prospects for the socio-economic development of Russia, military, economic, technological, and information security of the country.

Despite the large number of studies on the issues under consideration, a comprehensive and generally accepted approach to improving the management of MIEs development, considering the radically changed conditions of the socio-economic development of Russia, does not exist to date. Therefore, an analysis of the historical development of the management process of the Russian MIC should be accompanied by the development of proposals for its improvement.

2. Reorganization of the MIC at the end of the last century.

In the early 1990s, as a result of the spontaneous liberalization of the Russian economy, there was a partial loss of controllability of the scientific and industrial sphere of the country's economy. This had a negative impact on the MIC, the main carrier of Russia's scientific, technical, technological, and human resource potential. As a result, the MIC, as the least oriented (due to its main function) to the spontaneous demands of the market, without adequate government support,

was subject to destruction and significant reduction in the course of political influence on the methods of its management [2]. During the collapse of Russian industry in the 1990s, caused by the breakdown of the state-planned management system, a conversion policy was imposed on the MIC by the liberal-oriented leadership of the country. As a result of the implementation of this policy, 60% of MIEs had to switch to self-financing. The conversion was performed at a rapid, not always justified pace. As a result, the state defense order decreased by 5 times in 1991–1995. By 1996, more than half of the MIEs were corporatized. Purchases of weapons and military equipment were sharply reduced, for example, the order of tanks practically ceased by 1995, and orders for helicopters were completely canceled. Funding for MIEs has been reduced. The amount of budget funds not received by them increased and amounted to RUB 1.0 billion in 1993, and RUB 29.0 billion in 1998 [3].

To a large extent, the negative processes taking place in the MIC at that time were due to the uncertainty of the prospects for its development. The planned mechanisms for the development and implementation of strategic decisions in the field of military construction and development of the MIC at this time were largely broken, and new ones were not created. At the same time, it was not considered that there were circumstances that determined the need and significance of planning and justification of strategic decisions made in determining the directions of MIC development. The first circumstance was that the cost of measures to ensure this development was very high. The second circumstance was the specificity of the results of measures implementing this development, which consisted in the fact that they were characterized not only by economic indicators. Therefore, the use in the MIC of methods of analysis and substantiation of management decisions traditional for the economy of civil industries is impossible, or is only partially permissible and with great restrictions.

During the transition period (1992–1999), the greatest damage to the management of these processes was caused by its most important element – planning. During the Soviet period, planning by domestic economic science was characterized as the main way of implementing the economic and organizational function of the state, the leading element of the country's economic mechanism. Since the end of the last century, planning began to be interpreted only as a management function, inherent mainly at the campaign level and being of an indicative nature. In the works published under the editorship of E.T. Gaidar, devoted to the analysis of the economy of the transition period, there was no place at all for the concept of “planning” [4–6]. Meanwhile, in a number of highly developed countries with market economies, planning has been and is widely used in regulating the activities of MIEs and its horizon currently amounts to up to 10 years.

3. Program-target planning.

In the Soviet Union and Russia, the MIC management system has changed several times.

During the period of implementation of program-target planning (from the late 1960s – early 1970s), a system began to function in the military-economic field, the main elements of which were the annual plans for the supply of weapons and military equipment (WME), a five-year development plan for the national economy, and ten-year weapons development programs [7]. The most important elements of strategic management of the defense industry were long-term plans. At the beginning of the economic transformations in the 1990s, this management system was practically destroyed and, first of all, this affected long-term plans.

However, the economic practice required an increase in the role of the state in regulating the activities of MIEs and the horizon for their management [8]. Therefore, on January 1, 2000, the Fiscal Code of the Russian Federation was introduced, in accordance with which the development of long-term financial plans was provided. This measure became an important stage in the improvement of the MIC development management system, but problems associated with planning (forecasting) its strategic development remained. When elaborating programs for the development of MIC activities, the so-called budget planning, which was based mainly on methods and techniques that were used 40–50 years ago, continued to remain predominant for a long time.

The most acceptable methodological decision-making tools for justifying activities related to MIC development are program-target planning and military-economic analysis. At the same time, even with the availability of this toolkit, a large number of unresolved and sometimes not even formalized problems of a scientific and methodological nature remain in various areas of managing the development processes and reorganization of the Russian MIC. The main problem consists in the development of new approaches to assessing the efficiency of budget expenditures by calculating the relationship between the predicted results of the MIC activities and the costs of achieving them, as well as determining the degree to which these results have been achieved. The complexity of its solution lies in the fact that the management of the processes of development and reorganization of the Russian MIC must combine elements of market transformations that form the economic environment of its functioning, and state regulation inherent in centralized systems, which include the Russian military establishment.

4. Transition of the MIC to market functioning.

Russia's adaptation to the conditions of a market economy revitalized the transition to a treasury system for executing the military budget (although a lot was said about the negative aspects of this transition) and the introduction of cost accounting in the budgetary sphere. These measures were supposed to ensure the creation of an information base for the military-economic justification of decisions in the field of military development [9]. However, in general, the problem of creating a unified system for obtaining and analyzing economic information in managing the organizational, economic, and innovative development of the MIC has not been solved to the

required extent.

At the beginning of the 21st century, the MIC again began the transition to program-targeted budget planning for its development, which was based on the need to direct budget resources to achieve socially significant and, as a rule, quantitatively measurable performance results with simultaneous monitoring and control over the achievement of intended goals and results. The noted measures allowed partially correcting the mistakes of the 1990s. However, the emerging progressive trends in MIC development in the long term were not yet sustainable, since the defined result was largely due to the growth of its export component and the implementation of the model of restorative economic growth. The reason for the instability of MIC development at the beginning of the 21st century was that its structural, technological, and institutional transformation for a long time was not performed systematically enough, both from the point of view of prosecuting a clear and balanced scientific and industrial policy in general, and from the point of view of bringing the MIC potential to compliance with the long-term requests of the Armed Forces of the Russian Federation for WME, linked to the specific goals of the military reform being executed at that time.

5. Features of diversification of MIEs.

In order to ensure this sustainability, diversification of MIEs was identified as one of the main directions for MIC development. It involved repurposing the defense capacities of MIEs by mastering the production of a wide range of civilian products. The main goals of this diversification were as follows:

- maintaining the MIC viability through a more complete realization of its capabilities, reducing the threat of loss of its personnel, scientific, and production potential;
- technical and technological re-equipment of civilian sectors of the economy on the MIC basis by means of replicating innovations produced by the MIC, which would reduce costs and increase the competitiveness of the entire Russian economy.

The possibility of achieving these goals is explained by the fact that MIEs are better equipped technologically and have more personnel than enterprises in other production sectors. Russia has not had and does not have another base for innovative economic development, alternative to the MIC, since the innovative activity of MIEs is three times higher compared to enterprises in other industries. This allowed many of them, even in crisis conditions, to basically maintain their viability (although the factor of the need to perform innovative modernization of MIEs was critical). Moreover, due to the defined circumstance, the MIC at the beginning of the 21st century managed to restore its position in the global market for military products, giving stability to the trend of increasing its exports, since many MIEs were able to reproduce the latest scientific achievements, bringing them to the level of technical and technological innovations. The

efficiency of the realization of these opportunities depended mainly on the military-economic policy of the state and the mechanisms for its implementation [10].

The main difference between the diversification of enterprises performed in the 20th century and the conversion of the 1990s is considered to be the declared (and partially implemented) technical and technological re-equipment of enterprises in the civilian sectors of the economy on the basis of the MIC [11]. The ongoing diversification of MIEs contributes to a certain extent to solving these problems. However, a radical change in the military-political situation in the world, the introduction of large-scale anti-Russian sanctions and a special military operation in Ukraine led to a significant increase in the needs of the Russian Armed Forces for WME, i.e., led to changes in the target objectives of activities implemented by MIEs.

6. Innovative diversification of production.

In the new conditions of military development that have emerged in 2022, the MIC is supposed to move from diversification of enterprises to innovative diversification of production at MIEs. Its difference from enterprise diversification is that it involves:

- increasing the volume of production of products that the state currently needs to the greatest extent, i.e., military products;
- implementing the innovative diversification of production at the expense of the federal budget;
- performing the technical and technological modernization of MIEs in the course of innovative diversification of production;
- state planning of diversification activities.

When performing innovative diversification, the object of planning should be, first of all, the process of WME production and not economic entities and their financial interests. The important task of innovative diversification of production is to find rational options for replacing existing weapons with new versions of products created during the implementation of diversification measures. Its solution should be based on an analysis of possible options for the joint use of existing and new product samples by WME customers, as well as on an assessment of the economic characteristics of the process of their creation. Such problems should be solved through a multivariate comparative military-economic assessment of the efficiency of traditional and new samples of military products obtained as a result of diversification of production through the implementation of the following integrated management procedures:

- assessment of the increment in the efficiency of solving a military mission by a weapon system at fixed costs for its implementation, suggesting the possible joint use of existing and new WME models, compared with the efficiency of solving it only with existing models;
- assessment of the reduction in costs for solving a military mission with a weapon system

at a fixed efficiency of its implementation when using existing and new WME models together, compared to the costs of performing it only with existing models.

7. Planning for production diversification.

The results of solving these tasks should become the initial data for planning the diversification of the production of military products at MIEs. These tasks are, in essence, military-economic and can only be solved at the state level, and not at the level of individual enterprises. Therefore, an efficient MIC transition from the diversification of enterprises, in which enterprises themselves largely determined its tasks, focusing on the needs of the market, their capabilities and economic benefits, to the diversification of production, the tasks of which should be determined by the state, could be performed only by means of having a federal governing body that implemented the full function of planning the WME production. With the current approach, diversification plans are developed by the enterprises themselves with a focus on the target figure for the share of civilian products in total production and are then summarized by integrated structures, corporations, and the MIC as a whole. Innovative diversification of the production of military products, in contrast to the diversification of enterprises, requires strict directive planning by developing plans in an iterative manner across management levels “top-down” with a focus not on percentages and shares of civilian products, but on a specific range of military products, the need for which is determined by the state. Consequently, it is advisable to create a management body for defense industry enterprises in its functions, tasks, and powers similar to the State Planning Committee of the USSR (Gosplan SSSR), which had structural units solving military-economic problems. This idea, in the current difficult conditions of the country’s socio-economic development, has found its understanding in the country’s economic management bodies [12]. It was actively discussed, for example, at the round table “Gosplan 2.0 as a mechanism for stimulating economic development” held at the Federation Council of the Russian Federation in November 2022. At this round table, First Deputy Head of the Ministry of Industry and Trade of the Russian Federation V.S. Osmakov stated that the creation of the State Planning Committee: “... allows, on the one hand, to limit themselves to the field of activity where the state has enough information and leverage over industrial enterprises, and on the other hand, to get the effect precisely from planning production activities along the entire value chain” [13]. Therefore, the idea of recreating the state planning system in industries related to ensuring state security has found support.

8. Fulfillment of the State Defense Procurement program by MIEs.

In practice, due to changes in the conditions and tasks of their activities, many MIEs in the current conditions are forced to reduce some of the work on the creation of civilian products in order to concentrate personnel and production potential on the implementation of the State Defense

Procurement program. As a result, the Russian MIC has significantly increased the production of priority products for military needs in the zone of the special military operation in Ukraine. Moreover, this was done simultaneously with large-scale work to improve WME, based on the experience of their use in the zone of the special military operation. In order to produce additional WME volumes, enterprises used all possible resources.

It should be noted that, despite the unprecedented sanctions pressure from Western countries and the critical violation of established financial and logistics mechanisms, MIEs are fulfilling all their foreign trade obligations. In 2022, they did not disrupt a single export contract, while implementing the State Defense Procurement program.

Control over the implementation of the State Defense Procurement program is also being tightened. The Criminal Code of the Russian Federation was supplemented with a number of provisions that provided for criminal liability for violation of obligations under contracts within the framework of the State Defense Procurement program. In particular, Article 201.2 of the Criminal Code of the Russian Federation “Violation of the terms of a state contract under the State Defense Procurement program or the terms of an agreement concluded for the purpose of fulfilling the State Defense Procurement program” appeared. Its name completely repeats the administrative article, with the addition that when an official has previously been given an administrative penalty under this article, the next time he should be brought to criminal liability.

9. The main directions for improving MIC management.

More careful and detailed regulation of military production is yielding positive results. The formation of a stable system of cooperation based on domestic materials and components has led, for example, to an increase in recent years from 45% to 77% of the share of the Russian electronic component base used in weapons.

The main directions for improving the MIC management are currently as follows:

1. Refusal of the dominance of managerial rationalism, according to which the success of any enterprise is determined by the rational organization of production, cost reduction, development of specialization, i.e., by the impact of management on internal factors of production. However, in relation to MIEs, especially during the period of innovative diversification of production, the problem of their adaptability to constant changes in the external environment assumes a special role [14]. The flexibility of MIC management is determined by the influence of a combination of environmental factors. The most important role among them belongs to economic, political, legal, socio-cultural, technological, environmental, and other factors of state development, the degree of influence of which has increased significantly at the present time.

2. The use in the MIC management of the tools of systems theory, the theory of strategic management, etc., which allows considering this process in the unity of its component parts, which

are inextricably linked with the influence of environmental factors of the MIC, having a direct impact on its development.

3. The use of a situational approach in the process of MIC managing, according to which the organization of production is a response to external influences on production that are different in nature. The implementation of this approach involves the use of specific management techniques by means of which the factors are identified that being under certain influence, can effectively help achieving the goals set for the MIC [15].

4. Development of indicators for assessing the efficiency of budget expenditures, transition to medium-term budget planning. It is necessary to develop a set of methods and techniques to ensure this transition, including a method of scientifically based forecasting of the target need for allocations for MIC development in the medium term. They should become an integral part of the national investment strategy for the innovative development of MIEs [16].

Conclusion.

MIC management should be aimed at ensuring the continuous process of its efficient functioning. However, the results of the analysis have shown that it does not fully correspond to modern conditions and objectives of MIC development. It has shortcomings that were laid down at the end of the last century, during the period of dominance of the policy of economic liberalism in the country. In modern conditions, when the MIC has again become the leader of the entire domestic economy, the need to improve the MIEs management has increased. First of all, it is necessary to strengthen the role of the state in regulating their development and begin performing directive planning of the MIC activities, as was the case in 1923–1991, when the country had a special body – the USSR State Planning Committee, performing this function. Planning should provide a clearer definition of the goals of MIEs' activities, the necessary means and methods for achieving them. Therefore, the problem of developing (improving) methodological foundations and tools for investment strategic management of the organizational and economic development of the MIC requires a solution to increase the optimality of management decisions and, as a consequence, increase the efficiency of its activities.

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