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# Formation of Innovative Strategies for the Development of Mining Enterprises in the Metallurgical Complex

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**Abstract:** *The article studies the theoretical foundations for the formation of innovative strategies for the development of mining enterprises of the metallurgical complex on the example of the Navoi Mining and Metallurgical Combine. On the basis of the studied data, the problems of the activities of the Navoi Mining and Metallurgical Combine in the formation of an innovative development strategy were identified and proposals were developed to help eliminate shortcomings.*

**Keywords:** *strategy, innovation, economic development, Navoi Mining and Metallurgical Combine*

## I. INTRODUCTION

There is no single strategy for all enterprises in terms of content, each business entity acts as a unique open system with its own individual characteristics. Currently, there are many approaches to develop an innovative strategy for the development of an enterprise. In a modern market economy, competitiveness is a key factor in sustainable development. In turn, sustainable economic development is ensured by the formation of innovative strategies for the development of enterprises. In the new institutional environment, characterized as a digital economy, mining enterprises are not developing steadily enough. Mining enterprises of the metallurgical complex carry out economic activities with a low level of technical and technological equipment, unsatisfactory speed and effectiveness of innovative transformations. In order to improve the efficiency of management of mining enterprises of the metallurgical complex through the implementation of preventive and counteracting measures aimed at maintaining the correspondence between the internal potential of the management system and the external digital environment, the use of special research, organizational and management tools is required. This circumstance requires a new approach to the development of an innovative strategy for the development of mining enterprises of the metallurgical complex.

## II. MATERIALS AND METHODS

Research methodology. The study used monographic, economic analysis, comparison, logical analysis, abstraction, induction, deduction, SWOT analysis. So, innovative development strategies can be formed on the basis of statistical indicators, expert assessments and ranks.

## III. RESULTS

Ensuring the efficiency of mining enterprises of the metallurgical complex in the conditions of an innovative economy is based on the implementation of innovative strategies for their development, including approaches to managing the risks of innovative activities and organizational and economic mechanisms for introducing innovative resource-saving environmental and economic activities.

The state enterprise "Navoi Mining and Metallurgical Combine" is a diversified enterprise that carries out a full production cycle from prospecting to exploration, mining and processing of ore to obtaining gold of 999.9 fineness. During the years of independence of the Republic of Uzbekistan, the Navoi MMC has entered a completely new stage of development. As a result of technical and technological modernization of existing and construction of new processing facilities, the plant has achieved significant success in production. The main divisions of NMMC JSC:

- 1) Northern Mining Administration (Uchkuduk);
- 2) Central Mining Administration (Zarafshan);
- 3) Southern mine administration (Nurabad city);
- 4) Mine Administration "GMZ-1" (Navoi);
- 5) Navoi Machine Building Plant.

During the years of independence of our country, the plant has built and put into operation:

- a) Hydrometallurgical Plant No. 3 (GMZ-3)
- b) Hydrometallurgical Plant No. 4 (GMZ-4)
- c) Hydrometallurgical Plant No. 5 (GMZ-5)
- d) Hydrometallurgical Plant No. 7 (GMZ-7)

The plant is a modern industrial cluster in which a solid foundation has been created for the introduction of new forms of integration of science and technology. In the Innovation Center and research laboratories of the plant, research is carried out in many areas of mining and processing of ores.

During its glorious history, the plant has achieved recognition of foreign partners from the developed countries of the world and has a successful experience of cooperation with well-known foreign companies in the implementation of modern mining and transport equipment, the development and implementation of advanced technologies, and the creation of new industries.

In the current processes of globalization, in order to increase competitiveness and strengthen international integration, NMMC has switched to a joint-stock form of ownership. The enterprise is implementing a number of measures to introduce a modern corporate governance system, prepare financial statements in accordance with the requirements of international standards, aimed at improving the plant's activities, turning it into a leading global company in terms of production technology and a full participant in the international financial market.

The priority direction of the NMMC activity is the industrial development of mineral resources, mining and processing of minerals, in particular precious metals and precious stones. The main product of the plant is gold. The gold produced by the plant is sold to the Central Bank of the Republic of Uzbekistan.

The calculation and analysis of the main economic performance indicators is of great importance. This allows you to understand the prospects for change and development of the enterprise, evaluate the work, find methods to reduce resource costs. The efficiency of the enterprise directly depends on the analysis of the management and operation of the enterprise, considered from all sides of the activity.

Table 1.  
Information on key performance indicators JSC NMMC for January-June 2022<sup>1</sup>

№	The name of indicators	unit of measurement	January February	January March	January June
1.	Product output	Billion sum	8 864.9	14 251.8	28 992.1
2.	Disbursement of funds under the Investment Program	Million USD	56.5	100.6	251.8
3.	Creation of new jobs	unit	390	590	1510
4.	Reducing the cost of production	Billion sum	142.3	231.2	492.4
		%	4.9	5.3	5.8
5.	The volume of production of localized products	Billion sum	77.2	133.3	282.6
6.	Purchase of products within the framework of intersectoral industrial cooperation	Billion sum	585.9	979.3	2 291.9

Modern mining enterprises operate in conditions of high complexity, uncertainty and dynamism of the external environment, therefore one of the main priority areas of activity is the formation of innovative strategies for the development of mining enterprises of the metallurgical complex. Features of mining enterprises are capital intensity, energy and material intensity of production. Investment resources play a significant role in the formation of the resource potential of an enterprise in the mining and metallurgical industry. It is they who determine the existing opportunities for enterprises to introduce simple and extended

<sup>1</sup> From the financial statements on the main performance indicators of NMMC JSC for January-June 2022, [www.ngmk.uz](http://www.ngmk.uz)

reproduction. The main goal of investment activity is to ensure the effective implementation of alternative strategies for industry enterprises, which is achieved through the implementation of the following tasks:

- Achievement of high rates of economic development of enterprises;
- Maximization of income from investment activities;
- Minimization of investment risks;
- Ensuring financial stability and solvency of industry enterprises.

A feature of the mechanism for the implementation of investment and innovation activities of industrial enterprises is that it includes the constituent elements of innovation and investment activities. In the course of investment activities, resources are invested in updated equipment, which is necessary for the production of an improved product, but created without using the latest discoveries of fundamental science. This allows you to reduce the initial investment compared to innovative projects and get additional profit due to the competitive advantages of an improved product.

#### IV. DISCUSSION

Investment and innovation activity, on the contrary, begins with the establishment of the necessary characteristics of improved products, which determine the requirements for equipment for its production. Then the existing equipment is analyzed and a plan for its modernization is developed, taking into account the innovative and inventive developments of the labor collective. Based on these data, the required amount of financing, its sources and other economic characteristics of the project are estimated. The problems of forming innovative strategies for the development of mining enterprises of the metallurgical complex are quite complex for the modern economy, therefore, in the development of a scientific and methodological apparatus for the formation of innovative strategies for the development of mining enterprises of the metallurgical complex, which differ in taking into account industry features and the specifics of their manifestation, one should:

- 1) To identify latent deterrents for the innovative development of mining enterprises of the metallurgical complex; the author's approach distinguishes the allocation of groups of resource, production and environmental factors, which made it possible to present the innovative development of mining enterprises of the metallurgical complex as a purposeful dynamic process, to systematize its directions, which comprehensively ensure the competitiveness of mining enterprises of the metallurgical complex; propose measures of state support for innovative development, taking into account the specifics of the economic activity of mining enterprises of the metallurgical complex;
- 2) An approach to the development of an innovative strategy for the development of mining enterprises of the metallurgical complex is proposed, which differs from the known ones by using an economic and mathematical model of risk management and a system of functional strategies based on the use of universal performance indicators that allow analyzing the state of management of innovative development, gradually implementing innovative strategies, and increasing efficiency. innovation management, intensify innovation processes and ensure balanced innovative development of mining enterprises of the metallurgical complex;
- 3) A methodological approach to managing the risks of innovative activities of mining enterprises of the metallurgical complex is substantiated, characterized by a combination of three interrelated stages of risk management (risk monitoring, risk uncertainty reduction, risk optimization), the use of an original system of indicators for assessing the innovative activities of mining enterprises of the metallurgical complex by risk groups based on the results activities of mining enterprises of the metallurgical complex (production and resource risks, personnel risks), consolidated financial indicators reflecting the most significant results (investment risks, financial risks), environmental and technological indicators (environmental risks, technological risks), which allows evaluating and comparing various types of risks of mining enterprises of the metallurgical complex, regardless of their diversity in production and organizational activities, as well as to predict their possible the appearance in the future to promptly make management decisions to eliminate the influence of external and internal factors on innovation;
- 4) To develop an organizational and economic mechanism for the implementation of an innovative resource-saving environmental and technological system of mining enterprises of the metallurgical complex based on a systematic approach, characterized by an original set of principles, tasks, measures to minimize waste processing, optimization of resource efficiency and environmental friendliness, which allows not only to obtain marketable products, but also to dispose of processing waste, including the technology for calculating the effectiveness of the implementation of an innovative resource-saving eco-technological system of mining enterprises and a metallurgical complex;

- 5) Propose a strategic map for regulating the innovative development of mining enterprises of the metallurgical complex in terms of resource saving, formalized in the form of a system of goals, objectives and directions for innovative development, allowing at the federal level to solve economic, social and environmental problems of optimal satisfaction of the need for mineral raw materials, including tasks resource provision.

The theoretical significance of the formation of innovative development strategies is to substantiate provisions that expand the understanding of the significance of latent factors of constraint on the innovative development of mining enterprises of the metallurgical complex; substantiation of the approach to the development of an innovative strategy for the development of mining enterprises of the metallurgical complex; development of proposals for the formation of innovative strategies for the development of mining enterprises of the metallurgical complex using the mechanisms of state regulation; development of an organizational and economic mechanism for the introduction of an innovative resource-saving eco-technological system of mining enterprises of the metallurgical complex. The practical significance lies in the possibility of using theoretical provisions, methodological principles, strategic tools for regulating innovation activity and the mechanism for forming an innovative strategy for the development of mining enterprises of the metallurgical complex for planning the activities of mining enterprises in the region. metallurgical complex and its structural subdivisions, ensuring their long-term efficient and sustainable development.

## V. CONCLUSIONS

The management system for investment and innovation activities at an enterprise is the art of coordinating labor and material resources based on modern management methods throughout the entire life cycle of improved products. The main result of the management of investment and innovation activities should be considered the achievement of the goal in terms of the composition, volume, cost and time of work on the production of improved quality products. At the same time, the parameters of preferential optimization are the term of work performance and cost. The level of quality of improved products is a necessary condition, and the available resources determine the system of restrictions.

Investment and innovation activity is one of the forms of real investment; it occupies an intermediate position between innovation and extensive development investment. Its purpose is to respond to the demands of the market, and it is carried out mainly in the manufacturing sector. The motive and factor in the implementation of investment and innovation activities of enterprises should be to encourage innovation and invention in the team, which creates prerequisites for the widespread use of "human potential".

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