

# OPERATIONAL PLANNING OF ENTREPRENEURIAL ACTIVITY IN THE INNOVATION INDUSTRY

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## ABSTRACT

***Aim of the study:** The condition for increasing the pace of economic development and technological sovereignty of Russia is the transition of industry to the new principles of functioning characteristic of the digital economy. These principles include globalization, the high flexibility of industrial enterprises, the individualization of products, the development of key technological competencies and the short time to market new products. The analysis of foreign experience shows that the use of technologies that reflect the trends of the digital economy, characterized by the convergence of different technologies that blur the boundaries between the physical, digital and biological spheres, allows for an increase in labor productivity by 45-55%, the speed of assortment renewal by 20-5094, a reduction in production stocks by 20-5094, a reduction in production cycles by 30-5094.*

***Methodology:** The studies of enterprises of machine-building, metallurgical, construction, mining, oil refining and food industries show that the introduction of new technologies, digitalization of the main and auxiliary business processes is significantly complicated by the need to organize on the same technological basis of production of different series: from single to large-scale. At the same time, the existing operational planning tools do not take into account the combined nature of production.*

***Conclusion:** It is the combined type of production that determines the need to solve complex scientific and methodological problems, including the formation of a production planning system at industrial enterprises, the definition of the most rational methods of operational planning taking into account the specifics of the enterprise..*

**Keywords:** Entrepreneurship, Innovation System, Risk Management, Stock, Component, Formation.

## INTRODUCTION

Russian Federation indicate that the indicators of industrial production reached positive values for 2017. However, the leading industries that provide the main economic growth remain extractive and low-tech. In addition, the low value added per person is \$1.4 thousand. in comparison with economically developed countries (\$6-10 thousand), it indicates the insufficient development of industrial production in Russia.

This conclusion is confirmed by high equipment wear and low coefficient of fixed assets renewal (47,794 and 6,994, respectively). Outdated equipment is the main cause of low productivity in our country.

However, on closer examination, it can be seen that low productivity and low production growth are due not only to the wear and tear of the equipment and low level of investment, but also to inefficient organization of production, which is confirmed by the low level of use of production capacity (Abramov, 2016).

As a result of the work, it was found that the current state of the domestic industry as a whole is characterized as insufficiently effective due to systemically caused problems of a strategic nature and associated primarily with inefficient planning and organization of production..

## METHODOLOGY

The economic interpretation of the system's decisions is determined by the following provisions. The traditional technological image is determined by the features of the development of metallurgy to date over the past twenty years. At the same time, the implementation of innovative potential continues to be quite low (the share of innovative products is less than 1094), export growth is due to the predominant products of low redistribution. The competitiveness of the complex at this stage of development is low: A significant predominance of Converter steel, low growth rates of labor productivity, and high resource intensity and environmental load retain the idea of metallurgy as an environmentally dirty industry (Bartodziej, 2017). At the same time, investments in the industry are mainly aimed at updating fixed assets.

The first stage of re-positioning is determined by the beginning of reforms in the industry, which are stimulated by the development of high-tech domestic markets. The growth of demand for high-tech metal products will attract additional investment and increase the innovative activity of enterprises. The first handbooks on the best available technologies (BAT), which have the status of a standardization document, are already coming into force, which at the legislative level will provide in the near future a reduction in emissions of harmful substances into the atmosphere and wastewater. As part of this problem, match the Fl. par.3, the problem of resource intensity will also be solved. The process of transition to each subsequent stage at intervals of at least five years is accompanied by a qualitative change in the parameters of the system.

The second and third stages develop the basic provisions of the model. The impetus for the transition to the second stage of repositioning the metallurgy of the region can be the implementation of the program "*Digital economy of the Russian Federation*". The qualitative development of the system parameters is complex and directly depends on the dynamics of consumer market development (Hill, 1994). A special role in this process is played by the pace of advance of advanced technological solutions aimed at digitalization and robotization of the economy. In the metallurgical industry within the framework of Industry 4.0, the technological base takes into account the development of methods for processing raw materials for additive technologies and the functionality of such technologies in the development of production processes; equipping furnaces and shop equipment with intelligent sensors, automation and robotization interfaces that provide industry enterprises with the advantages of the Internet of things, cloud services, and can significantly improve the accuracy and quality of metal products, labor productivity, reduce transaction costs (Hadas, 2017).

## RESULTS AND DISCUSSION

The importance of operational planning of production in modern conditions increases for three reasons. First, the level of operating performance targets of enterprises is increasingly demanding. Secondly, due to the expansion of the product range and the growth of turbulence in the markets, the accuracy of demand forecasts is reduced, respectively, the planning process is complicated and the accuracy of production programs is reduced, so the system of operational planning (SOT) should have high flexibility and speed of reaction to changes in external conditions. Third, the volume of operational planning tasks at enterprises is constantly growing (Aharonovich, 2019).

On the basis of the analysis it can be concluded that the problems of Russian enterprises are systemic in General. The following main problems of domestic enterprises can be identified: inefficient interaction between financial and credit institutions and the real sector of the economy.

Lack of financial resources due to high interest rates on loans and low investment attractiveness. The situation is complicated by the presence of multibillion-dollar debts from Russian industrial companies; high operating costs due to low production efficiency; imperfection of the decision-making system on R & d financing directions. In most Russian enterprises, the R & d financing decision-making system is not supported by a detailed longterm technological strategy; depreciation of fixed assets and degradation of technology; the loss of the domestic base of electronic engineering, which does not allow domestic industrial enterprises to catch up with world production leaders; loss of scientific and technological base (Bartodziej, 2017). In recent decades, a small number of radical innovations have been developed in Russia, which does not allow the country to make a qualitative breakthrough in industry;

With increasing market requirements for product individualization and flexibility of production systems naturally arise production systems with a combined type of production, which have mixed organizational and technical characteristics of the production process.

In order to ensure terminological unity, the definition of a company with a combined type of production was formulated. It is an enterprise that due to the differentiation of consumer demand, supply conditions to the consumer, the need to develop innovative products, is forced to adaptively change the organizational and technical characteristics of the production process. For these enterprises, the urgent task is to develop new approaches to operational planning, due to the unsuitability of existing approaches.

In addition, in the framework of digitalization and globalization processes, the accuracy of product delivery, the duration of the production cycle, the minimum level of production stocks and the maximum possible capacity utilization come to the fore to ensure competitiveness, which is solved by planning and organizing the target material flow in the conditions of existing restrictions (Hanberfellner, 2015). This problem can be successfully solved by using a scientifically based approach to the selection and formation of operational production planning systems.

As a result of the analysis, it was found that at the moment most industrial enterprises of the Russian Federation have a significant backlog in the field of operational planning of production, which can be reduced by the use of operational planning systems in industrial enterprises with a combined type of production (OPS IEWCP).

The work analyzed the existing approaches to operational planning of production. Traditional for the Russian Federation operational planning systems and their varieties used in

Western countries the system of planning and management of production PPC (Production Planning and Control) and the system of automatic planning and development of schedules APS (Automatic Planning and Scheduling) were investigated (Abramov, 2016). The advantages, opportunities and limitations of their use in domestic enterprises were identified.

As a result of the analysis, it was determined that currently there is no unified standardized approach to operational planning at Russian enterprises. Enterprises use a symbiosis of operational planning methods developed in the middle of the twentieth century, modern ERP systems, planning systems developed and actively used in Europe and Japan, lean manufacturing approaches, as well as outdated calendar standards and planning standards, which obviously cannot lead to a positive result.

In addition, existing planning systems and methods are applicable to specific types of production in enterprises. At the same time, no operational planning system can be used for an enterprise with a combined type of production, so this work is relevant for science and practice.

The key scientifically grounded concepts, theories, approaches and principles on the basis of which OPS IEWCP is formed are analyzed, the conceptual model and the organizational and economic mechanism of operational planning of IEWCP is developed, the method of definition of a type of technological strategy of the enterprise is developed, the approach to an assessment and the choice of target indicators of operational activity of the enterprise is formed, the methodical tools of the reasonable choice of basic operational strategy of the enterprise, strategy and methods of tactical planning are defined, approaches to management of production resources, the model of operational and calendar planning of production is presented, and also indicators of efficiency of operation of OPS IEWCP are formed (Shashkova, 2017).

The stage of development of OPS IEWCP was preceded by the stage of analysis of scientific concepts, theories, approaches and principles that could be the basis of the developed system. System, structural, process and situational approaches were chosen as the basic approaches in the formation of SOPS IEWCP.

The starting point for the development of CMOS IEWCP is the definition of existing competitive and technological strategies. As a basic classification of competitive strategy in the formation of CMOS IEWCP proposed to use the General strategy of Michael porter: cost leadership strategy, differentiation strategy and integration strategy.

The technical level of production allows us to evaluate the material and intangible technological resources of the company. It is characterized by the state of the equipment and production technology.

The high technical level corresponds to the value of 0.81–1. When a value of 0.61-0.80 is obtained, the technical level of production is above average, 0.41-0.60 average, 0.21-0.40 below average, 0-0,20 -low.

Assessment of personnel potential of technological personnel should be carried out in accordance with the approved professional standards, within which the knowledge and skills of technological personnel are compared with the required level of qualification (Novoseltseva, 2015).

Assessment of technological competencies of the organization should be carried out from the perspective of their impact on the creation of competitive advantage in the market. Sustainable competitive advantage is formed by the simultaneous implementation of four conditions: technological competence is a rare, hardly-reproducible, and irreplaceable and of value.

The technological potential of the enterprise represents the current level of research activity of the enterprise in comparison with competitors and the General technological field. As part of the work, the level of technological potential of the enterprise is understood as a set of factors of intensity and focus of research activities (NIL, the level of technological risk, the speed of development of new products and the number of current internal projects of NID. To determine the numerical values of the level of technological potential of the enterprise for each factor, an evaluation scale was developed (Shashkova, 2018).

As part of the analysis conducted in the work, it was determined that the technological strategy of the enterprise is characterized not only by the technological potential of the organization, but also the potential of the technological field in which it operates. The technological field is a set of technologies identified in the industry.

The assessment of the technological field potential level should be carried out in accordance with the perspective profile of technologies (Kukushkin, 2016).

The paper defines the concept of a promising technology profile, which is understood as a sample of technologies corresponding to advanced scientific and technological achievements in the world in the prescribed period in accordance with the life cycle of technologies. The level of potential of the technological field should be assessed by a set of comparative indicators using a comprehensive evaluation method.

## CONCLUSION

As a result of the analysis of data on the state of industrial enterprises, forecasts of development of the economy of the Russian Federation and research in the field of production management, as well as the systematization of modern approaches to production management, it is found that the combined type of production is dominant in the conditions of instability of production orders, essential for the development of domestic industry in the context of globalization and digitalization of the economy, causing a radical change in the requirements for the organization and planning of production systems of enterprises, acquire the development of a rational system of operational planning, applicable to enterprises with a combined type of production.

The analysis of the current state and problems of development of domestic industry. The reasons of low productivity and efficiency of production processes, which are low flexibility of production and insufficient individualization of production orders, are revealed. It is established that the limiting factor of productivity increase is the low level of planning system organization. The main ways of increasing the level of organization of the system of operational planning in enterprises with a combined type of production.

On the basis of the analysis of domestic and foreign approaches to the construction and application of production planning systems at the enterprises, the compliance of the existing conceptual apparatus and methods of production planning with the requirements of intellectual production (high flexibility in the execution of orders, individualization of products) is estimated. As a result of the analysis, it was found that none of the existing systems is not suitable for the integrated satisfaction of all the requirements of industrial enterprises with combined types of production in the digital economy.

The concept of "*Industrial enterprise with a combined type of production*" is proposed, which means an enterprise that due to the differentiation of consumer demand, supply conditions to the consumer, the need for the development of innovative products, is forced to adaptively change the organizational and technical characteristics of the production process (product range,

volume of output, the nature of the load, the coefficient of specialization). The proposed approach allows to identify the differences between enterprises with a combined type of industrial enterprises of mass, serial and single type.

A conceptual model of operational planning in industrial enterprises with a combined type of production, a distinctive feature of which is to take into account the requirements of digitalization of production, types of competitive strategy (cost leadership, differentiation and integration strategy), technological strategy (leader, follower, specialist, conservative, outsider) and the specifics of the enterprise. The conceptual model of operational planning provides a choice of tasks, methods and tools of operational planning in industrial enterprises with a combined type of production.

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