

# **ABSTRACTS**

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## **THE PRACTICE OF PRODUCTION ORGANIZATION**

**E.V. Volkodavova, A.P. Zhabin**

### **THE METHODOLOGY OF ASSESSING THE NEED FOR IMPORT SUBSTITUTION AT AN INDUSTRIAL ENTERPRISE**

The problem of import substitution of certain foreign-manufactured goods with their Russian counterparts still remains urgent. The key strategy of import substitution in the industry of the Russian Federation is creation of conditions for domestic manufacturers which will ensure sustainable economic development and stimulate the largest economic growth in industries, which are still dependent on import goods and services.

Despite the import substitution policy of the RF Government, that created the tools and mechanisms of implementing the policy of import substitution, and the emerging stable tendency towards declining dependence of Russian industrial enterprises upon imports, the import content in high-tech products of advanced processing is still significant. In connection with this, the article investigates the issues related to assessing the need for import substitution at industrial enterprises. The sustainable development of key industries in current conditions of business management can only be attained through increasing the output of import substituting products within the country which is not always profitable for a manufacturer. Therefore, the article addresses the feasibility of import-substituting production organization. The methodology has been substantiated which assesses the dependence of import substitution upon foreign manufacturers as well as the requirements for import substitution at industrial enterprises. The implementation of this methodology will enable the industrial enterprise managers to specify and reduce the level of import substitution, on condition of rationality and economical feasibility of import substitution process organization

**Key words:** import, export, dynamics and qualitative characteristics of deliveries, organization of import substitution, level of import dependence, non-competitive import, components of import substitution

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### **THE COMPREHENSIVE ASSESSMENT AND PLANNING OF ORGANIZATIONAL FLEXIBILITY OF THE INDUSTRIAL SYSTEM**

The article proposes the method of evaluating the level of flexibility that characterizes the actual development and potential use of the current system of production organization and management in conditions of rapid updating of products.

The conducted research is underpinned by the following provisions: the level of flexibility is impacted by a number of factors; the set of factors is specified in compliance with the requirements for basic components of organizational flexibility; each factor is represented by a totality of constituent features and parameters; all factors, related to the level of flexibility, are investigated in their relationship and interdependence; the conducted analysis is based on the methods of comparison, decomposition of aggregate indicators into specific ones, identification and measuring the impact of certain factors on the results of their interaction, and the comprehensive expert assessment.

In process of evaluation and analysis of the flexibility level, the following tasks are set and solved: the selection of factors which determine the system flexibility to the fullest extent; the quantitative expression of the degree to which each factor impacts the level of system flexibility; the assessment of internal flexibility reserves and identification of the ways of its optimal implementation; planning the optimal system flexibility. The tasks being solved determine the essence of the main phases of evaluating organizational flexibility.

Planning the flexibility is regarded as part of production planning, focused at increasing the efficiency of the production system through adaptability to consumer requirements

**Key words:** methodology, organizational flexibility, assessment, planning

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## **COMPANY MANAGEMENT**

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### **THE PROCESS APPROACH TO DEVELOPMENT OF ADAPTIVE STRATEGY OF AN ORGANIZATION BASED ON ANALYSIS OF ITS EXTERNAL AND INTERNAL ENVIRONMENT**

One of the requirements set by the standard GOST R ISO 9001-2015 is identification of external and internal factors in the quality management system of an organization, which relate to its intentions and strategic planning, impacting its ability to achieve the intended results. According to the standard GOST R ISO 9001-2015, the comprehension of organizational environment is the process in which factors are identified, impacting the intention, objectives and sustainability of an organization, while the means of expressing its intention include the vision, mission, policies and purposes of an organization. The article presents the methodological approach to developing the organization strategy on the basis of PEST, SNW and SWOT-analysis of its external and internal environment. The approach has been considered in which adaptive strategy is developed by the morphological method, through the results of analyzing the impact of political, social and technological factors of external environment on the ways and trends of modification of its elements. The established causal relationships and tendencies of modifying strategy elements as objects impacted by external environment factors, the nature of impact and possible strategy changes represent the examples of possible implementation of an approach to shaping the adaptive organization strategy, based on PEST, SNW и SWOT-analysis

**Key words:** PEST, SNW и SWOT-analysis, external and internal environment factors, adaptive organization strategy, quality management system

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## **ECONOMIC PROBLEMS OF PRODUCTION ORGANIZATION**

**A.V. Egorova**

### **THE METHODOLOGICAL APPROACH TO IMPROVING THE COST MANAGEMENT SYSTEM AT ENTERPRISES OF CONSTRUCTION MATERIALS INDUSTRY BASED ON VALUE STREAM MAPPING**

In the search of management approaches, focused at increasing the efficiency of enterprise performance, the special role belongs to the system of «lean production», the practical implementation of which does not always produce the planned effect. The article reviews the approach to creating the sub-system of cost management in the controlling system at enterprises of construction materials industry. In its implementation, the methodological approach has been proposed for improving the cost management system at enterprises of construction materials industry based on value stream mapping. The paper investigates the levels of cost management at enterprises of construction materials industry, as well as their functional interaction in creating the cost management system throughout the whole value chain, based on value stream mapping. It is proved that this approach will help to improve the cost management system at enterprises of construction materials industry, since it provides the opportunity for rapid and adequate reaction to changes in external environment and internal state of an enterprise. The paper discloses the role of a value stream map and the phases of its creation with regard of specific features of business processes at

enterprises of construction materials industry. The algorithm has been formulated for the process of value creation and cost management in each business chain of the industrial process of product manufacture, and the centres of cost reduction have been specified

**Key words:** cost management, management system, lean production, controlling, value stream map, functions of management, construction materials, business process, impact factors

**V. D. Kalachanov, A. N. Novikov, V. I. Kalachanov, N. N. Pronkin**

**THE DEVELOPMENT OF THE COMPREHENSIVE SYSTEM OF CRITERIA FOR OPTIMIZING THE PRODUCTION ACTIVITY FUNDING AT INDUSTRIAL ENTERPRISES (AS EXEMPLIFIED BY AIRCRAFT CONSTRUCTION)**

The shortage of enterprise funds creates the necessity for additional funding. The ways of satisfying the requirements for additional funding must be assessed using special criteria. These criteria must optimize both the direct effect of the decision taken, and its conformity with the enterprise strategy. For this purpose, the authors propose to use the system of balanced scorecards, in which the enterprise strategy is recorded in the quantitative expression of its purposes. The article develops the system of criteria for assessing and selecting the ways of production activity funding at enterprises of aircraft construction. These criteria address both the direct cost of finance and other indicators related to financing efficiency, such are liquidity of enterprise assets, its long-term stability, and the impact of financing mode on economic value added.

The calculation of such parameters is based on forecasting the cash flow in choosing one or another method of funding. Such methodology complies with current financial management requirements and promotes the maximization of financial efficiency and sustainability of an aircraft construction company. The proposed indicators will help to minimize the costs of financial support of the industrial system of an aircraft construction enterprise. The optimization of their values will enhance the enterprise liquidity, and select the best ways of funding, based on the criteria of financing cost and its impact on the overall enterprise value

**Key words:** financing, efficiency, liquidity, cash flow, optimization

**G.A. Mustafaev, D.G. Mustafaeva, M.G. Mustafaev**

**METHODOLOGICAL ASPECTS OF ORGANIZATION AND INCREASING THE EFFICIENCY OF INDUSTRIAL PROCESSES**

The paper addresses the methodological approaches to organization and increasing the efficiency of industrial processes during product manufacture. In production activity of an enterprise, the organization of reliable and accident-free operation of industrial equipment has a significant impact on the industrial process and the quality of output products. The choice of methods and forms of organizing the industrial equipment maintenance impacts the efficiency of the entire production process. The FMEA analysis and creation of expert systems are designated for detection of possible malfunctions, defects and shortcomings of industrial equipment and its smooth operation in the production process, taking action for their elimination, compiling the list of possible malfunctions and their impact upon operation of other elements and implementation of the industrial process as a whole. The urgency of operations, defining the area of prompt intervention in the process of industrial equipment servicing, is determined in tabular manner, on the basis of point-score assessment of the frequency of malfunctions and the probability of their detection and consequences. In formalizing the process of solution finding, the topological schemes are used, which are represented as event trees, giving the idea of the state of an object and the alternative ways of the process flow. The article describes the factors of increasing the efficiency of interaction between a decision-maker and an expert system, the scheme of organizing the industrial equipment maintenance system and the composition of the knowledge base for the expert system of equipment servicing. The organization of the industrial equipment maintenance system helps to reduce cost and increase the preparedness of equipment for work through growing accuracy and reliability of planning, as well as

through reduction of equipment downtime. It ensures the production efficiency and the optimal course of the industrial process, improving the quality of output products

**Key words:** organization, efficiency, process, equipment, quality, method, operation, factor, analysis, model, solution

**E. N. Syschikova**

### **AN INTEGRATED APPROACH TO THE ASSESSMENT OF THE EFFICIENCY OF INDUSTRIAL ENTERPRISES**

The article is devoted to development of a comprehensive methodological approach to enterprise performance efficiency assessment. As a basis of comprehensive enterprise performance efficiency assessment, it is suggested that the system of enterprise management must include 4 key subsystems (financial, personnel, operational, industrial), which form the required level of innovative activity of an enterprise, with due information support of management. At the same time, it is pointed out that the production subsystem is one of the most essential subsystems of management, since it generates economic benefits of enterprise operation and development. Thus, the methodology is based on consideration of differentiated contribution of each enterprise management subsystem (i.e. personnel, financial, operational, industrial) into obtained results and observed effects. The methodology includes a certain sequence of analytical actions, resulting in calculation of the composite index of economic shift. The proposed methodology is characterized by consistency, and uses an objective approach, based on calculating a certain set of analytical indicators, which makes the results of these calculations relevant and fairly reflecting the current enterprise performance efficiency in the context of the main subsystems of management. This will allow making substantiated and appropriate decisions having strategic, tactical or operational focus, so as to subsequently promote the growth of production efficiency, maximizing the economic and other benefits

**Key words:** management system, efficiency, industrial enterprise

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## **MARKETING AND SALES ORGANIZATION**

**A. E. Brom, N. V. Zharkov**

### **THE MODEL OF OPTIMAL AGGREGATE SIZE OF DELIVERY**

The support of decision-making in the areas of procurement and delivery is one of the most pressing problems owing to complexity of task formalization, which determines the limited implementation of such methods at an enterprise. The streamlining of procurement logistics allows the enterprise to effectively manage the available resources and respond to all threats occurring in internal and external environment of an organization. The effectiveness of procurement largely determines the enterprise effectiveness. The article is devoted to the method of reducing costs on procurement and delivery of components, as exemplified by an industrial enterprise. The existing system of interaction between a manufacturer and a supplier has been shown. The article addresses the urgent problem of determining the optimal size of component delivery. The model of optimal aggregate delivery size has been proposed, which is able to satisfy both parties of contractual relationships. On the basis of problems identified, the paper presents the calculation of optimal transmission order quantity and the optimal aggregate size of delivery. All findings of the article are applicable and well substantiated. The results of the work have a clear practical focus and can be recommended for implementation at an enterprise

**Key words:** industrial enterprise, optimization, Wilson model, optimal order quantity, optimal delivery size