

## **ABSTRACTS**

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### **THEORY AND METHODS OF PRODUCTION ORGANIZATION**

*Turovets O.G., Rodionova V.N.*

#### **ECONOMICS AND PRODUCTION ORGANIZATION AT INDUSTRIAL ENTERPRISES IN CONDITIONS OF IMPORT SUBSTITUTION**

The problem of import substitution is linked with the task of intensive development and mastering the manufacture of new products and the creation of new technologies. The main characteristics of industrial import substitution procedure have been specified, namely, adaptive production, the availability of the organizational and economic mechanism for implementation of innovations; the compliance of the methods of production organization with the requirements for the technical and technological base; the efficiency of management; the provision of production with workers and management experts; the implementation of personnel policy, oriented at continuing education, training and motivation of the personnel; the flexible system of production management, oriented at task solution; the manufacture of import-substituting and competitive products; the creation of organizational and economic conditions, providing the opportunity for raising the efficiency of company activity through applying the principles of lean production; the choice of the indicator system for assessing the production and economic activity, reflecting the technical and economic features of import-substituting production. The goals of production in conditions of import substitution have been specified. The statements have been justified which determine the usefulness of production process automation. The provision has been proposed on advisability of applying the principles of lean production

**Key words:** company, import substitution, economy

*Kostina G.D., Akulcheva M.V.*

#### **NETWORK SINERGIZM IN THE CONDITIONS OF HORIZONTAL INTERACTION PRODUCTION STRUCTURES**

The article describes the features of various forms of company interaction in the market environment, and presents the results of the comparative analysis of various types of horizontal interaction. Special attention is given to the organization of horizontal system interaction. The concept of enhancing the horizontal corporate links has been proposed, based on the competence approach. The types of synergy are described, and the scheme has been proposed featuring the creation and provision of synergy in the system of horizontal company interaction which includes the level structure and the conditions for establishing the horizontal interaction, among which are: trust, consensus, interaction and its types, the features of strategies and resources, and the opportunities for their coordination in conditions of the innovative environment. The article presents the features of modelling the situation which ensures the compliance of market participants with the requirements of horizontal business network cooperation, and sets the requirements for creating the system of core competencies as to develop the procedure for selecting partners in the cooperation network. The paper shows the possibilities of using the developed concept taking account of the organizational consequences of transition to network synergy, and the complexity of partnership organization, with regards to variety of business types and geographical regions

**Key words:** horizontal networks, interorganizational cooperation, the concept of interaction, core competencies, synergistic effect, cooperation, industrial structures, synchronization, harmonization

*Kazakova N.V., Savelieva I.V.*

**INTERACTIVE PLANNING OF HIGH-TECH ENTERPRISES ON THE BASIS OF  
SYNERGETIC APPROACH**

The article substantiates the urgency of the problem of raising the efficiency of planning the activity of a science-based enterprise on the basis of the synergistic approach. The author presents the allegation that the data on synergistic effects, occurring in the production system of a science-based company, must be taken into account when drawing up plans for a future period. This will help to increase the accuracy and flexibility of planning, enhancing the company adaptation to changes in the external and internal environment. The article presents the factors, impacting the creation of synergy, gives the classification and definitions of synergistic effects, and proposes the methodology of interactive planning based on the synergistic approach which makes it possible to increase the flexibility and accuracy of economic and financial parameters through fuller account of the combination of external and internal factors. The author of the article proposes the cost-based mathematical model for assessing the synergistic effects arising from the combination of fixed and random factors influencing the deviation of profitability, and studies the existing methods of forecasting, allowing to take account of random components and risks. In conclusion, the article highlights the practical importance of the proposed methodology of interactive planning, based on the synergistic approach

**Key words:** interactive planning, synergistic approach, science-based company, efficiency of planning, industrial system

*Schetinina I.V.*

**CONCEPT OF ECONOMICAL PRODUCTION AS FACTOR OF INCREASE OF  
COMPETITIVENESS OF PRODUCTION**

The essence of lean production can be fully disclosed from the standpoint of solving the problem of improving the product competitiveness. As a concept of raising the product competitiveness, lean production represents a special system of business process organization in the fields of management, marketing, production and work.

The concept of lean production is oriented towards optimizing the flow of value creation, reducing all types of loss and improving the quality of manufactured products on the basis of applying the set of specific interrelated methods and tools.

The article deals with the issues concerning the need for increasing the competitiveness of products manufactured by domestic enterprises owing to tougher competition both in foreign and domestic markets. It gives the definition of the concept of "product competitiveness". The key indicators of product competitiveness have been considered. The essence of lean production has been disclosed from the standpoint of solving the problem of increasing the product competitiveness. The classification of lean production methods has been proposed, which are divided into those aimed at improving the quality and those oriented at loss reduction

**Key words:** product competitiveness, lean production, lean production methods, product quality, the cost of products

*Demidenko A.A., Omelchenko I.N., Korshunov D.I.*

## **THE ANALYSIS OF METHODS FOR EVALUATION AND MONITORING THE PROCESS OF INDUSTRIAL QUALITY CONTROL**

The article describes seven Japanese tools for managing the quality of production process, their relative strengths and weaknesses. The evaluation criteria used were as follows: the area of method application; the method of data comparison; the objectives pursued; the type of data collection; the sample size; the methods of data analysis and presentation; the form of analysis implementation; variability and features of diagram plotting; the method of efficiency evaluation; the method of verifying the correctness of method implementation. Based on the results of the study, the combined method has been developed which consists of consecutive processes, namely, Ishikawa diagrams, scatterplots and Pareto charts. The findings obtained in the article will facilitate the choice of the appropriate method for specific production conditions. The proposed combined method can become a successful alternative to application of Japanese tools of quality management and control

**Key words:** quality management, the methods of evaluation and quality management, the comparison of quality management methods, the efficiency analysis of quality management, the method of graphics, Ishikawa diagram, Pareto method, the scatterplot, the histogram method, the method of checklists, the method of control cards, the method of data scattering

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**COMPANY  
MANAGEMENT**

*Volodina N.L.*

## **THE TRENDS IN THE PROMOTION OF CORPORATE SOCIAL RESPONSIBILITY IN RUSSIA**

The growth of industrial activity has formed the basis for solving the problems of social responsibility. The implementation of corporate social responsibility is linked with gaining a number of opportunities and competitive advantages, and therefore, we observe the growing interest in the development of projects having social importance.

In the process of developing the concept of corporate social responsibility, a number of points have emerged that reflect its essence. There are several approaches to interpreting the concept of corporate social responsibility. Corporate social responsibility is a universal concept that characterizes the social activity of the company.

The article describes the components of corporate social responsibility, namely, economic responsibility, legal responsibility, environmental responsibility, ethical and philanthropic responsibility. The perspective directions of developing certain forms of corporate social responsibility components have been proposed, which result from objective processes of modern company development and the conditions of its functioning

**Key words:** social responsibility, development, environmental responsibility, volunteerism, economic responsibility

*Shashlo N.V.*

## **ORGANIZATIONAL AND ECONOMIC MECHANISM OF STRATEGIC MANAGEMENT OF FOREIGN ECONOMIC ACTIVITY OF COMPANIES**

The article substantiates the urgency of developing the organizational and economic mechanism of strategic management of foreign economic activity of companies in conditions of high-level competition in foreign markets. It emphasizes the necessity for reviewing the traditional approaches to management along with creating innovative mechanisms of control systems. It is proved that the organizational and economic mechanism of foreign economic activity is the competitive company advantage. The model of the organizational and economic mechanism of strategic management of corporate foreign economic activity has been worked out. It was revealed that the most effective approach to the process of strategy formation in the organizational and economic mechanism is the one based on the research by I. Ansoff, M. Porter, A. Thomson, A.J. Strickland and P. Kotler, as well as on concepts of BSCol, adapted to the company activity. This approach is characterized as the combined one. A modified strategy map has been developed featuring the balanced system of corporate foreign activity indicators. The indicators have been proposed featuring the balanced indicator system of corporate foreign activity

**Key words:** organizational and economic mechanism of strategic management, the effectiveness of the management organization, foreign economic activity, synergy, system, integration

*Anisimov A.A., Aniskin Y.P.*

## **THE ORGANIZATION OF CORPORATE TRAINING ON THE BASIS OF TECHNOLOGICAL MICROCLUSTERS**

The article presents the results of research into problems of increasing the innovative company activity through organization of corporate training of specialists on the basis of technological microclusters within the National Research University.

Corporate training is a relatively new form of training, oriented at targeted preparation of specialists for science-based industries and for advanced innovative development of companies.

Corporate training presupposes the participation of teachers, researchers, developers and technologists in educational programs. In these conditions, the crucial factor is successful interaction between the participants of educational programs in process of training specialists.

The proposed methodological approach is based on using cluster method in mastering the specified professional competence and using the results of foresight research, which creates the conditions for the growth of innovative activity of specialists having received corporate training.

The efficiency of corporate training directly depends on staffing of such an educational model, and on the degree of interaction between teachers, researchers and manufacturers in process of training specialists.

Corporate training within national research universities promotes the increase in the effectiveness of specialists' preparation to ensure the sustained growth in the intensity of innovative development of the national economy

**Key words:** corporate training, technological microclusters, foresight research, road maps

*Syschikova E.N.*

**THE ANALYSIS OF THE STATE OF INDUSTRIAL SECTOR OF THE RUSSIAN  
ECONOMY AND THE PECULIARITIES OF ITS DEVELOPMENT**

The paper studies the specific features of the industrial sector in the Russian Federation. The detailed analysis has been carried to show the dynamics of change and transformation in the field of national industrial production over the past several years. An attempt has been made to conduct the sectoral SWOT analysis, the conclusions of which would be typical for a certain set of Russian industrial companies. Also, on the basis of the conducted analysis, two groups of tasks have been singled out, namely, the consistent implementation of institutional reforms along with economic modernization, and the effective industrial policy. The solution of above-mentioned tasks is necessary to solve the problem of economic growth quality, ensuring the sustainable development of not only the national socio-economic system but, primarily, the sphere of industrial production, given the fact that the forced or breakthrough scenario would be hardly feasible in the nearest future

*Key words:* national economy, industrial production

*Kuripchenko E.V.*

**THE METHODOLOGICAL APPROACH TO ENSURING THE COMPANY  
COMPETITIVENESS**

The need for saturating the market with domestic products, improving quality, and expanding the product range is constantly growing, so the problem of competitiveness is critical to economic development as a whole and separately for each company.

This article describes the different approaches to defining the concept of "competitiveness", as a result of which the main characteristics of this concept have been specified, namely, its comparative and temporary nature. On the basis of the conducted research, the author's definition has been proposed.

The starting point for ensuring the company competitiveness is the assessment of its current level, and forecasting its progress. In order to obtain the most accurate results of competitiveness assessment, one should clearly define the purpose of its implementation, examine the reliability and quality of information available, taking account of the peculiarities of the area of company activity, and so on.

As a result of our investigation, the main approaches and methods of competitiveness assessment have been studied. Based on the results obtained, the complex classification of methods has been proposed, which serves as the basis for developing the methodology of assessing the competitiveness of a particular company

*Key words:* competitiveness, competitive advantages, competitiveness assessment

*Zharikov V.D., Zharikov R.V., Zharikov V.V.*

**THE OPTIMIZATION OF SCIENCE-BASED PRODUCTION FLOWS FOR  
MANUFACTURING INNOVATIVE PRODUCTS**

The article deals with the problem of a science-based company, characterized by the appropriate structure of the staff (designers, technologists and electronic engineers, creating innovative products, constitute half of the staff; a quarter of it includes the marketers of these products, and another quarter of the staff are managers and workers who manufacture new products on the basis of new technologies and using new equipment.

The paper demonstrates the possible optimization of industrial cycle duration with transfer to the method of stream production. The example is given showing the effective work of the company involved in innovative activity. The new development is highly competitive which allows the product users to save capital investments and recurrent costs, and helps to protect the environment by means of petrol vapour recuperation, which, consequently, makes it possible to save and recycle petrol by reducing or eliminating its emission into the atmosphere

*Key words:* high-tech production, optimization, innovative products, principles, laws

*Dudareva O.V.*

**THE PECULIARITIES OF ASSESSING THE INVESTMENT PROJECTS OF MACHINE-  
CONSTRUCTION COMPANIES IN THE PROVISION OF STATE SUPPORT**

The article describes the main aspects of assessing the investment projects of machine-construction companies when providing the State support. It specifies the steps of the procedure of selecting investment projects which are to be included in the program of budget funding, and the factors of assessing the effectiveness of investment projects of machine-construction companies. It is emphasized that the effectiveness assessment of investment projects being implemented is one of the forms of financial control and is aimed at ensuring targeted expenditure and timely response to the circumstances impeding the proper implementation and attainment of the goals pursued by investment projects. The article proves the importance of evaluating investment projects when providing the State support, with account of the analysis of investment attractiveness and social efficiency of investments. Special attention is given to investigating the factors of enhancing the investment attractiveness of machine-construction companies

*Key words:* investments, investment project, State support, funding

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**THE LOGISTICS  
OF PRODUCTION**

*Avedyan E.V., Kachalkin Y.V., Schegoleva T.V.*

**DEVELOPMENT OF THE METHOD OF LOGISTIC SUPPORT  
AVIATION EQUIPMENT BASED ON THE CREATION A MICROCLIMATE LOAD**

The article substantiates the use of integrated logistic support as the main approach to aircraft operation. Within the system of integrated logistic support, special emphasis is placed on procedures and methods of monitoring the compliance of actual performance rates in real operating conditions with project requirements, at various stages of product lifecycle. The procedure of providing the Air Forces of the RF Defence Ministry with air technical products depends on storage conditions of the aviation unit. As one of the possible approaches to studying the impact of climatic pressure on the condition of product storage, the mathematical model has been proposed in the article, which allows to measure the climatic pressure on air products and perform the numerical assessment of the impact of repository air properties on its condition during stationary storage. The description of the mathematical model of climatic pressure calculation is performed with the use of the information theory

**Key words:** integrated logistic support, lifecycle of the product, aircraft maintenance, storage of air products

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## INFORMATION TECHNOLOGIES IN PRODUCTION MANAGEMENT

*Mirskov A.N.*

### THE INFORMATION MEANS FOR PLANNING AND RECORDING THE RESULTS OF THE ACTIVITY OF A SMALL-SCALE INDUSTRIAL COMPANY

The information means (namely, the data system and the algorithm of data processing) have been developed to solve the basic tasks of managing a small-scale industrial company, and they present an alternative to using costly software products.

In order to further determine the cost of manufactured products on the basis of structured information and the proposed description of production sites, the tasks have been solved, which are related to calculating the wage fund of the main production workers under direct piece-rate payment system, measuring the loading factor of equipment as well as using this factor to specify the industrial sites of limited performance. In calculating the wage fund of the main production workers, the tariff rates of performed works have been taken into account. The concept of «production bottleneck» has been specified, and the measures are recommended for increasing the throughput of industrial sites. The planned demand for key materials has been estimated in terms of volume and value. The proposed information means can be implemented both in the form of E-spreadsheets and as a part of the database management system

**Key words:** production management, information support, cost calculation, the estimation of equipment loading factor

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## MARKETING AND SALE ORGANIZATION

*Boev A.G., Voronin S.I.*

### THE FORMATION OF THE MARKETING SYSTEM WITHIN THE PRODUCTION CLUSTER

Voronezh region is one of the major industrial and agricultural centers of the Russian Federation, on the territory of which there are many interrelated industrial enterprises, scientific and educational institutions, and financial organizations. During the period of 2008-2015, more than 10 industrial clusters have been established in the region, which are at different stages of financial and economic integration of their participants. The analysis of the current situation shows that the potential for cooperation between the enterprises within regional clusters has not been fully realized. According to the authors, this is also due to the lack of well-established effective mechanisms for implementing the marketing activities in the greatest number of clusters. The article substantiates the necessity for creating the marketing system in the industrial cluster. The objectives of its activity and the principles of its formation have been classified. The essence of the system has been investigated. The project-network structure of the organization has been proposed, as exemplified by the cluster comprising the manufacturers of oil-and-gas and petrochemical equipment of Voronezh Region. The study of issues, related to marketing activity management in industrial clusters is going to be of particular importance due to the necessity for intensifying the process of import substitution in the domestic economy and the development of vertically integrated structures with high production localization

**Key words:** marketing system, organizational structure, management, industrial cluster, enterprise