

ABSTRACTS

THEORY AND METHODS OF PRODUCTION MANAGEMENT

Mylnik V.V., Mylnik A.V.

ROBOTIZATION INDUSTRIAL PRODUCTION BASED ON ARTIFICIAL INTELLIGENCE

The article investigates the processes of development robotics industrial production based on artificial intelligence in the dialectic development of social and economic systems. The historical development of robotics is analyzed. Three generations of robots have been examined in the context of technological development. The study designed structural-functional robot third generation, which includes the major subsystems, responsible for implementing the control of sensory functions, communication and motor skills of the robot. The authors examined the specific features of adaptation and integration of robots in human society. It is proposed to forecast technological development of robotics. The authors formalized two main objectives for collaboration robots with people in the process of working interaction. The dependence development of the robots from the development of computer hardware and software systems artificial intelligence has been identified in the article. The authors determined the factors of synergetic effect on the base of integration industrial robots in robotized complexes

Key words: industrial robots, robotized systems, artificial intelligence, industry, a synergistic effect.

PRODUCTION MANAGEMENT PRACTICE

Turovets O.G., Rodionova V.N.

THE CONCEPT OF LEAN MANUFACTURING PRINCIPLES' IMPLEMENTATION

A great number of problems that have to be addressed in transition to innovative production systems requires the development of strategies for lean manufacturing implementation, along with matching the objectives of the program with available resources, and specifying the organizational and economic conditions of its realization. The paper presents the analysis of current practices in implementing the lean manufacturing tools. Three strategies of production system reorganization have been singled out, namely, the development of the programme for implementing the lean manufacturing elements; practicing the principles of lean manufacturing within the department; the progressive increase of operating efficiency based on implementation of lean manufacturing techniques. In view of the peculiarities of lean manufacturing, presented in this paper, the concept of implementing the lean manufacturing techniques has been proposed, which is based on four principles. These are systematic orientation; the unity and interrelation of corporate goals and customer requirements; the necessity for economic assessment of organizational decisions and the openness of the project. The approach developed by the authors results in creating the organizational process model of implementing the lean manufacturing programme. The structure of the model includes: the evaluation of the company's resource potential and the external business environment; the statement of mission, the objectives and the core principles of lean production systems; the elaboration of the basic strategy for implementing the lean manufacturing techniques; the specification of the basic strategy, with reference to resources / capabilities, processes / products; the specific actions aimed at implementing the lean manufacturing programme.

Key words: production system, implementation concept, principles, organizational model.

Borisov A.A.

FORMATION THE SYSTEM PARAMETERS FOR DEFINING THE COST OF ENGINEERING BUSINESS

The addition to the traditional set of parameters for evaluation the business information on non-financial results of enterprise activity and intangible assets is an important task. The work proposed the system of parameters allowing to define and to manage the cost of engineering business. The key parameters of engineering business, which are defining competitive advantages of its production (or services) and cost are the next: volume realized products, the net income, structure operational technological costs, amortization (including from intangible assets), productivity in a cash equivalent, a share intangible assets in the structure of manufacturing capital, capitalization investments and a share the products created at a level of engineering marketing. Focus on dominant factors of business capitalization will allow managers to increase the validity of the adopted strategic and operational decisions

Key words: cost, parameters, engineering business, manufacturing-technological system, intangible assets, controlling, center of financial responsibility.

Kuznetsova E.Y., V.V. Tyagunov

MODERN INTERPRETATION OF THE «7S» MODEL IN PRACTICE OF INDUSTRIAL ENTERPRISES COMPETITIVENESS RESEARCH

The authors have made an attempt to single out those peculiarities of the company's internal environment that exert greatest influence on its choice of the competitive strategy. Well-known model "7C" is used as a theoretical model. It was developed by the consulting group McKinsey, for identification conformity between the internal environment of the enterprise and possible type of competitive strategy. With the view to transfer this model into practical instrumental system, a detailed review category of its components is being done. The comparisons possible variants competitive strategies on typology proposed by A. Yudanov, and characteristics the internal environment of the enterprise used in the model "7C" are being done on the basis of the discussed model. The authors draw conclusions about possible limitations applicability the model "7C" for the analysis compliance of the internal environment of the industrial enterprises to the chosen strategy competition

Key words: internal environment of the company, «7s» model, competitiveness, Violent strategy, Patient strategy, Commuant strategy, Explerent strategy.

Slabinsky S.V.

**PECULIARITIES OF THE USE RISK MANAGEMENT INSTRUMENTS IN COMPANY'S
BUSINESS PROCESSES**

The article explores the role of risk management in the management of industrial enterprise in modern conditions. The work studied the main tasks of the risk management system, as well as its management instruments. It was noted, that statistical methods play the most important role during studying risk management of industrial enterprise. Nevertheless it was noted, that, in the conditions of uncertainty external and internal environment, the use of the expert estimate is more expedient. The author studied advantages and disadvantages methods of estimate and analysis risks; fields of their applying. The paper presents the results of the survey manager's production systems about the state of risk management in Russian enterprises on the basis of which main methods for identifying, evaluating, analyzing and neutralization risks in the production activity of the enterprises are defined

Key words: production risk, research, evaluation and risk analysis, methods of influence on risk.

Naydis O.A.

**METHOD OF PROVIDING INFORMATION ABOUT ACTIVITY OF STRUCTURAL DI-
VISIONS ENTERPRISES MEANS OF INTERFACTOR PRODUCTION
AND ECONOMIC RELATIONS**

The article describes the ways of presenting quantitative information which characterizes companies as objects of organizational management. The method has been developed to present information intended for heads of organization departments, which ensures the analysis of factors with a more complete view of their relationship, thus, creating the basis for making more effective organizational and administrative decisions. The information is presented as a description of the interfactor industrial-economic relations, in which the most important factors are selected proceeding from their direct impact on the economic performance of the structural divisions of companies. The possible couples of factors are analyzed in terms of their industrial and economic content, which makes it possible to reveal the types of relations, recommended for practical use. The rationale for management and administrative decisions, based on the proposed method, can help to improve the performance by presenting the complex relationship of factors, that is adequate to real interaction of objects and processes in the company activity

Key words: enterprises, organization, control, relations, factors, structural divisions.

Chetvertakov S.I.

MANAGEMENT OF FUNCTIONING AND DEVELOPMENT INTEGRATED UNITS SUGAR BEET SUBCOMPLEX

The article considers the forms, stages, driving forces and trends of integration agricultural enterprises in Russian Federation. The paper gives the author's definition and identifies the benefits agroholding forms of agroindustrial integration, in the form of guarantees to obtain raw materials, the possibility obtaining a greater share of the land. It provides a systematic approach and removal of contradictions in sugar beet subcomplex, concentration of investment; reduce costs and risks, obtaining market advantages, income equalization. The paper has been identified weaknesses management of agroholdings: reducing the speed and quality of management decisions, increasing the time period to bring them to employee, deteriorating monitoring performance. The paper presents the results of examination organizational structure of leading in the sugar beet subcomplex agricultural holding "Prodimex" and its management system. It has been determined why management in such large formations becomes more cumbersome and vulnerable. The article reveals the rates of concentration and increasing improved production efficiency of agricultural division the «Prodimex-Holding» LLC «Central Black Earth agricultural company» in the integration process

Key words: integration processes, agroholding, management, sugar beet subcomplex, organizational structure, development.

ECONOMIC PROBLEMS OF PRODUCTION ORGANIZATION

Nifontov A.I., Chernikova O.P.

THE TECHNIQUE MULTI-LEVEL ASSESSMENT OF THE EFFECTIVENESS PRODUCTION AND ECONOMIC ACTIVITY OF THE COAL-MINING ENTERPRISES

The article suggests grouping cost attributable to variable and fixed costs, in terms of economic elements, articles and technological processes of underground coal – mining. The paper also proposes methods multilevel assessment efficiency of production and business activities of coal - mining enterprises. They include the calculation of indicators the operational analysis for the boundary of deficit-free, break-even, the real breakeven and debt breakeven. Given in addition to current costs of production and sales coal products, taxes and costs which are paid from ongoing profit, as well as current liabilities, economists can improve the accuracy of the information about the financial situation on coal - mining enterprises, and take timely action to stabilize it. Grouping costs and developed methods multilevel assessment efficiency of production and business activities of industrial and coal mining enterprises can be adapted for use in other areas

Key words: efficiency, fixed and variable costs, sales revenue, profit margin, the stock of financial strength, operational lever.

Bukreeva I.N.

IDENTIFICATION OF RESERVES INCREASE THE EFFICIENCY OF PRODUCTION SYSTEMS

This publication is devoted to the possibility of applying FMEA-analysis to identify organizational reserves for improving the organization effectiveness of production systems. The purpose of the study is the definition of the list organizational reserves to improve organization effectiveness for the production system by solving tasks. They are: classification reserves by components of the organization production system; revealing the essence of FMEA-analysis. The tasks also include formulation milestones and directions FMEA-analysis of production systems; using FMEA-analysis to study the production system engineering enterprise; definition organizational reserves on the base of analyzing the results. Object of study is engineering enterprise Voronezh region "Borkhimmash". The main results of the study are in achieve the above stated purpose and objectives. They also include the development of the author's approach to identifying ways increasing the efficiency of the organization production systems

Key words: organization of the production system, organizational reserves, FMEA-analysis, priority number of risk.

QUALITY AND COMPETITIVENESS OF PRODUCTS

Mustafaeva D.G., Mustafaev M.G.

METHODS AND PRINCIPLES OF MANAGEMENT AND ORGANIZATION OF COMPETITIVE PRODUCTION

The article gives the description of approaches allowing increasing production efficiency and quality of produced goods. The principles and communication of systems improving production processes, ensuring reliability and quality at various stages of production have been defined. They allow combining quality and reliability of creating a continuous process of improvement and perfection of the products and their competitiveness. Preliminary stages of production preparation for the formation the foundations, ensuring the reliability and quality, which are united by the integral plan at all stages of production are important. The system of internal relations of quality by links and quality requirements at each stage allow providing high quality products and conformity production processes. The basis for development of plans to control the results of production is to analyze possible failure and possible consequences. The article shows the components of strategy, organization, management and improvement of products quality

Key words: efficiency, quality, system, reliability, process, control.

Shchetinina I.V.

ORGANIZATIONAL-ECONOMIC MECHANISM IMPROVING PRODUCT COMPETITIVENESS INDUSTRIAL ENTERPRISE

The article is given the concept organizationally – the economic mechanism of increase competitiveness of production in the industrial enterprise. The need of formation and realization of this mechanism at the domestic industrial enterprises is being proved. The principles of formation the mechanism are being examined. The model of the mechanism representing structure of the mechanism to increase competitiveness of production, the organizational and economic methods for putting the mechanism in to action is being proposed. The paper also describes organizational forms, object and the subject influence which provide structures of the mechanism, sequence of stages for implementation the process for increase competitiveness production. The main functions which will carry out the offered mechanism at the industrial enterprise are also considered; the organizational contents structure of the mechanism increase competitiveness of production on the industrial enterprise, including constant elements, and the elements acting on the temporary basis are offered. The key functions of department ensuring competitiveness are being examined; the contents providing structures of the mechanism is revealed

Key words: organizationally – economic mechanism for increasing the competitiveness of production of the industrial enterprise, the principles of formation the mechanism, organizational structure of the mechanism, providing the mechanism.

Shichkov N.A.

SYSTEM OF QUALITY MANAGEMENT, INTEGRATED WITH MANAGEMENT ACCOUNTING (CONTROLLING) OF THE ENTERPRISE

The problem of creation an effective integrated management system is based on international standards of quality management and controlling. It is very actual problem for the commercial enterprises of a production system in regions. This article presents a methodology for the development and implementation of a process model management for organizations, working on the management accounting. Methods of management and control indicators of the effectiveness and efficiency the production processes are considered in the paper. They are discussed considering tax payments included in the structure of operating costs. Applying the "process approach" allows to systemize the activities of the organization; to allocate resources and efforts to improve effectiveness and efficiency. The combining informational-accounting and quality management system implements tasks of the organization production process to ensure the specified properties of consumer products and services

Key words: management, process, efficiency, effectiveness.

REGIONAL ASPECTS OF THE ORGANIZATION OF MANUFACTURE

Pidoymo L.P., Andreev M.V.

ASSESSING THE PROSPECTIVENESS OF REGIONAL CLUSTERS

The problem of assessing the regional clusters is being considered in this article. The work proposed to apply tools for point scoring current parameters importance of regional clusters, in addition to the method evaluating effectiveness cluster formations rule-based Hartwick. In accordance with the obtained score integral significance, regional clusters are classified on the basis of the dynamics on the following groups: working, latent, potential and desirable. Proposed tools have been used to assess the identified by authors clusters of Voronezh region. Based on the result of applying point score assessment are presented the ranks clusters of the Voronezh region. Applying proposed scoring tools, in our opinion, allow to improve the system of formation the development priorities of the region and to minimize both private and public investment risks

Key words: regional cluster, indicators of the cluster, ranking score.

TRAINING AND RETRAINING

Zhgulev E.V.

PUBLIC-PRIVATE PARTNERSHIP AS A MECHANISM TO PROMOTE THE DEVELOPMENT OF FURTHER PROFESSIONAL EDUCATION

The article proposes a model of public-private partnership between the authorities, private business, public organizations and educational institutions in the context of the regional education policy; one of the options has been considered in which the educational interests of business community and academic organizations are converged, that is, the foundation and functioning of the Scientific and Educational Centre at the company. The article states, that St.Petersburg was the first Russian area to create its legislative framework for public-private partnerships, having passed the Law of St.Petersburg № 627 100 dated December 25, 2006 «On the Participation of St. Petersburg in Public-Private Partnerships», which became a model for other regions of the Russian Federation. The aim of the Scientific and Educational Centre is to create a positive environment for developing innovative entrepreneurship and educational activities of the industry's companies and the region as a whole. This is executed on the basis of the intra-company training system, united by a single concept and methodology, and developed for managers and experts at all levels, complying with the development strategy of the customer company and the tasks set for its separate structural divisions. The basic principles underlying the foundation of the Scientific and Educational Centre, have been proposed. The foundation of the Scientific and Educational Centre promotes the creation of a positive environment for developing the innovative entrepreneurship as well as for continuous professional and educational activity

Key words: public-private partnership, additional professional education.

Romanov B.A.

THE ANALYSIS OF THE INVESTMENT INDUSTRIAL PROJECT WHICH IS CARRIED OUT BY GROUP OF THE ENTERPRISES WITH USE OF OPTIMISING MATHEMATICAL MODEL OF A RESHAPING OF CAPACITIES

The article presents the example of industrial investment project analysis, carried out by the group of companies using the optimization mathematical model of manufacturing and distribution of products, which involves the conversion of the company's production capacities. The target function of the optimization model is a vector, the components of which are the production of finished goods and the cost of conversion. One of these components is maximized, while another is minimized. The core of the optimization model is the system of balance equations of manufacturing and distribution of products between enterprises. The conversion of production capacities is described by the matrix, whose row elements represent the capacity shares of donor companies, to be converted into ones of recipient companies. Accordingly, the columns of the matrix represent the capacity shares of recipient companies acquiring the production capacities from donors. The specific cost of conversion is determined by the conversion coefficient matrix, whose elements comply with the conversion matrix. The total cost of conversion is determined as an element-by-element product of the conversion matrix and the conversion coefficient matrix. The essence of the investment project is the investment of funds with the purpose of increasing the output of finished goods on the basis of converting the non-applicable production capacities by a group of companies involved in the same industrial investment project; the transformation of companies into the required production capacities, or the construction of new enterprises. The example of the capability analysis has been presented showing the possibility of 2-, 4- or 10-fold increase of production by an automobile assembly plant, producing 50000 automobiles a year

Key words: the investment industrial project, capacity of the enterprise, multicriterion optimization, reshaping of capacities.