

**N.V. Zlobina, M.V. Ershova**

**THE FORMATION OF SCIENTIFIC-INDUSTRIAL CLUSTERS  
IN MACHINE CONSTRUCTION**

On the basis of the systemic approach, it has been proposed to form a scientific-industrial cluster in machine construction for creating innovations, their implementation into production and replication.

The purpose of establishing scientific-industrial clusters is creation and implementation of innovative industrial and household products of machine construction, having high competitiveness in domestic and global markets, being unmatched and including one to several patents.

A scientific-industrial cluster must comprise a research institute or a design bureau (or possibly both), in which innovations are created, tested in pilot production, and finalized for practical use, after which they are applied at factories of mass production, during replication of new equipment.

Also, particular attention is paid to motivation for creating and using innovations at different management levels:

- at a country level, the main venture capital fund is created for financing the works on acceptance and review of applications, as well as on expert assessment of an innovation;
- at a regional level, the regional funds are established for financing the implementation of innovations into production process;
- at enterprises and organizations, the funds are established for using innovations, as well as incentive funds, from which authors are encouraged for obtained and implemented patents.

The same benefits are enjoyed by individual citizens obtaining patents, not associated with their main work.

The effect resulting from implementation of innovations is distributed across all participants, involved in creation and implementation of innovations within a cluster

**Key words:** novelties, innovations, systemic approach, venture capital funds, cluster

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**ENTERPRISE MANAGEMENT**

**V.N. Goncharov, E.V. Kuripchenko**

**THE STRATEGIC ANALYSIS OF COMPETITIVE POSITIONS OF AN  
ENTERPRISE**

The article discusses the need to analyze the marketing environment of the enterprise, which is due to the relationship of the company as an open system with environmental factors. In order to determine the competitive position of the poultry-farming enterprises of Luhansk region conducted SWOT - analysis, which is an analysis of the internal environment of enterprises and based on the identified characteristics to determine their strengths and weaknesses, and the analysis of environmental factors, which, depending on their influence are the potential or probable threats for businesses.

To identify strengths and weaknesses were analyzed: production, organization management, personnel, marketing and finance. We compared the strengths and weaknesses of the available capacity and the most likely threats in the following areas: competition, marketing, demand, economic, political and legal, social and environmental factors.

Based on the results of the study developed strategic alternatives for the development of poultry farms, taking into account the various combinations of the factors of marketing the external environment and internal environment of enterprises, selected the most rational strategy.

The strategy includes the following activities: to reduce dependence on imports of domestic poultry hatching eggs by restoring the parent stock; protect the interests of their own products through the use of protection methods; increase the sowing of peas and soybeans as a food base component for poultry; create marketing departments in enterprises for the introduction of marketing in their activities. These measures will ensure increase of competitiveness of poultry farms Lugansk region in modern conditions of managing

**Key words:** marketing environment, SWOT-analysis, strengths, weaknesses, opportunities, threats, poultry-farming enterprises

**E.P. Enina**

### **THE SCIENTIFIC SUBSTANTIATION OF MANAGEMENT AND OPERATION OF MACHINE-CONSTRUCTION ENTERPRISES**

The problems of organization and management in science-based industries of the Russian Federation must rest upon a solid foundation of scientific knowledge. One of the main conditions of effective management and operation of machine-construction enterprises is maintaining the pace of its sustainable development and effective production.

In recent years, the Russian economy has faced a problem of substantiating the system of measures for management and operation of machine-construction enterprises. At present, we have not yet found an effective way of combining partial coefficients into a single composite index, which would help to assess the efficiency and productivity of machine-construction enterprises.

In the present article, it is proposed to use a composite evaluation index, based on optimization methods complying with the criterion of «efficiency-cost-time», which is based on expressing the content and scope of functions (tasks or works) through end results of operation processes in conditions of sanctions and financial constraints.

The realization of the proposed methodology and optimization of measures, related to development of high-tech production, will allow us to implement the activities and set the trends of improving the procedures for optimization of high-tech production in innovative activity. The article reveals the essence of indicators assessing the performance, the cost of processes (stages operations, etc.) and the cost-effectiveness of efforts and resources at branch parts of machine-construction enterprises

**Keywords:** efficiency, productivity, cost, processes, costs of efforts and resources, operation, management

**O.K. Ivanova**

### **THE ANALYSIS AND ASSESSMENT OF HUMAN RESOURCE MANAGEMENT AT INDUSTRIAL ENTERPRISES OF DONETSK REGION**

In the article, it is proved that the quality of manufactured industrial products is intrinsically linked with the process of human resource management, exercised not only by heads of industrial enterprises of Donetsk Region, but also by state and local authorities. Generally, human resource management has a global nature and reflects the search by modern enterprises and organizations for establishing effective systems of realizing industrial and creative potential of their employees, and activating the human factor to achieve effectiveness and competitiveness of enterprises. The article generalizes the concept of «human resource management», which involves the basic processes of formation, distribution, re-distribution, use and development of human resources. The article reviews the system of human resource management at three levels (i.e. national, regional and entrepreneurial), and describes the main sub-processes of management for each level. The methodological approaches to evaluating the efficiency of human resources at organizations have been studied. The author's approach to analysis and assessment of human resource management has been proposed, which consists in multifactor

evaluation of independent processes of human resource management. The paper assesses the human resource management in Donetsk Region, with selection of efficiency criteria for each process

**Keywords:** industry, human resource management, analysis and assessment, formation and development, distribution and re-distribution, use of human resources, efficiency

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## **INNOVATION PROCESS MANAGEMENT**

**V.V. Ilyuk**

### **THE METHODOLOGICAL APPROACH TO MANAGING INNOVATIVE PROJECT STAKEHOLDERS**

The article reviews the methodological approach to work with interested parties (stakeholders) of innovative projects, having different administrative, managerial and material resources. After stakeholders are respectively classified as supporters, abstentions and opponents of the project, they are grouped in terms of their significance and the degree of impact upon the project. It is also determined whether they are interested or not interested in the results of the project.

Since the project is implemented within an organization or a group of organizations, the priority task is the application of this model to define the relationships and responsibilities of an organization, implementing the project, the one initiating it, cluster participants and other projects of the company. Within this model, the usable concepts are «contribution» and «stimulus-reaction». Therefore, in the analysis of project management stakeholders, the unit of business analysis is a project, not an organization.

The article proposes the algorithm of stakeholders' impact at different spans of the project lifecycle. It is suggested that the scientific-economic approach must be used for modelling the assessment and relationships with stakeholders. The complexity and peculiarity of work with stakeholders consists in the fact that an innovative project assumes the integration of its participants and executors into clusters, causing the need for engaging the general project manager, i.e. the system integrator of the project

**Key words:** non-equilibrium conditions, balance, innovative activity, methodology of management, stakeholders, interested parties, interested persons, project management, knowledge area model, identification of stakeholders, management of interaction with stakeholders

**E.Yu. Kuznetsova, S.V. Kuznetsov**

### **THE FORMATION OF THE INNOVATION MARKET**

Most experts and researchers of processes taking place in the domestic economy, agree that the possibilities of the commodity economy have been exhausted. As international experience shows, the only alternative, capable to ensure the sustainable growth of national economies, is the innovative way of development. The development and implementation of innovative policies carried out by State authorities, and material encouragement of economic entities for realization of innovative projects, do not bring the desirable results. The purpose of this investigation is identification of bottlenecks in the process of generating innovations, the detection of regularities, associated with implementation of this process, and the proposition of ways for optimizing the innovative activity in terms of creating innovations. In the course of research, the comparative analysis of structures of national innovation systems of the Russian Federation and developed countries has been conducted. The key indicators characterizing the innovative activity have been analysed on the basis of statistical data. Based on the results of work, it was

revealed that domestic organizations (i.e. the entities of innovative activity) are far behind in terms of the number of intellectual property objects (i.e. patents, licenses, know-how), which are one of key indicators of innovation development and determine the «core» capability of industrial enterprises in innovative production. The main reasons for this gap consist in insufficient scope of financing the stages of applied scientific studies and R&D work, and complete lack of working institutions of sectoral science in most application areas of research. According to authors, the measures that can improve the current situation and ensure the growth of innovative activity at industrial enterprises, increasing the output of innovative products, appear to include the growth of expenses on stages of applied scientific studies and R&D works, and the encouragement of industrial enterprises for performing the work of this kind

**Key words:** innovative activity, innovation market, fundamental research, applied research, R&D works

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## **REGIONAL ASPECTS OF PRODUCTION ORGANIZATION**

**S.V. Zakharov**

### **THE METHODOLOGICAL APPROACHES TO EVALUATING THE FUNCTIONING OF COMPLEX PROJECTS AT A REGIONAL LEVEL**

The article highlights the importance of organizing complex projects in the form of economic zones and territories with special regime. Depending on the tasks assigned, such projects make it possible to expand the scope of foreign economic cooperation, solve the problems of employment, raise the living standards of the population, intensify the scientific and technical activity, and increase the productivity of enterprises. For successful implementation of complex projects, the regional authorities must consider both the general development patterns of complex projects and their specific features that must be adapted for real domestic economic situation. As a result, the author has proposed the methodological approaches to evaluating complex projects, with account of introducing such parameters as regulatory and legal support; the formation of management, control and monitoring systems; spatial planning and information support; social-economic results; the level of industrial infrastructure development. Each parameter is specified on the basis of quantitative assessment of current complex projects in the Russian Federation. The structure of the proposed approach is represented in the schematic form, and the necessity for its practical application is substantiated by the analysis of work results of advanced development territories «Nadezhdinskaya» and «Ostrov Russkii». In conclusion, it is noted that the application of the specified parameters for evaluating complex projects will help to avoid risks in terms of regulatory, legal and social-economic support of the complex territorial development project

**Key words:** the factors of industrial infrastructure development, organization of complex projects, methodological approach, social-economic development, special economic zone, advanced development territory

**S.V. Chuprov**

### **NON-LINEAR METAMORPHOSIS AND INNOVATIVE PERTURBATIONS IN DEVELOPMENT REGIONAL INDUSTRY'S MANAGEMENT**

Attracting views and tools of non-linear dynamics allows to better understand the role and nature of innovation impact on functioning of Russian industrial enterprises in the environment with restructuring that is specific to them. An increased sensibility of the regional industry to innovations implies developing knowledge-intensive productions and forming the economy of knowledge. Nowadays, the evolving economy in its behavioral character is non-stationary which

is a source of its metamorphosis, findings and losses of stable functioning. Justification of high mobility of the regional economy and its industry depression is illustrated by official statistics inflation and the re-sults of innovative activities of the industrial sphere of Irkutsk Oblast.

It is plain to see the increasing dynamism of the regional industry, the rigidity and turbulence of its environment: industrial enterprises influenced the non-stationary environment that causes in them non-linear processes with features inherent in them, opening for the entities' management fa-vorable conditions and incentives for slow and rapid phases of innovative transformations in the industrial sphere. In order to specify and clarify the features of nonstationary and stationary systems behavior, the article presents an analysis of corresponding mathematical equations intended to cal-culate the stability of the described movements. The ways of solving problems of ensuring optimali-ty along with costs and losses sustainability related to innovative products manufacturing by an in-dustrial enterprise are discussed. The peculiarities of nonstationary processes and companies per-formance in this environment are identified

**Key words:** innovation, nonlinearity, nonequilibrium, instability, industrial enterprise, development, synergetics, stationary state, management, stability, chaos

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## **QUALITY AND COMPETITIVENESS OF PRODUCTS**

**M. I. Samogorskaya**

### **THE STRUCTURING OF EXPENSES, CONSTITUTING THE COST OF MACHINE-CONSTRUCTION ENTERPRISE PRODUCT QUALITY**

The goal of improving the quality of domestic machine construction products is becoming particularly urgent in conditions of economic crisis and sanctions policy of the West. The analysis of quality costs is an effective economic tool, which helps to identify the main problems of quality and outline the ways of its improvement. The analysis is being conducted in terms of the relevant cost classification, adopted by an enterprise. The problems of quality cost classification are fairly often discussed in the scientific literature, primarily, with reference to foreign schools of quality management. The viewpoints of domestic authors remain understudied. In this connection, it was necessary to conduct the analysis of quality cost concepts of the most prominent Russian specialists in this area.

The paper proposes the author's approach to structuring of expenses, constituting the quality cost, which is focused on «zero defect» strategic concept of quality cost management. With reference to specific nature of a machine-construction enterprise, the article specifies the structure of quality costs, being a part of compliance costs, and also defines the structure of necessary costs and losses as part of non-compliance costs

**Key words:** quality value, quality costs, compliance costs, non-compliance costs, strategic quality cost management