

## ABSTRACT AND REFERENCES

## CONTROL PROCESSES

DOI: 10.15587/1729-4061.2017.111859

**FORMING CONCEPT OF INTELLECTUALIZATION INFORMATION PROVISION OF MANAGING AN ENTERPRISE (p. 4-14)****Alla Grinko**Kharkiv State University of  
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The article is devoted to solving topical problems of theory, methodology and practice of technological and intelligent improvement of the informational enterprise management. Recommendations for conceptual development of accounting were given proceeding from the technological support of generating information for management. The mechanism of innovative development of accounting and analysis for a comprehensive modification of information environment of the subject of economic management was developed. Actualization and modification of the basic provisions of organization of information support of enterprise management were substantiated. A system of expressions (axioms) was obtained to ensure effectiveness of the innovative development of information management of the enterprise. Technologies for formation and updating the information management of enterprise were modified. Modeling of the enterprise accounting policy based on the approximation of theoretical and methodological principles of technological and intelligent management concepts was substantiated.

**Keywords:** information support of management, accounting policy, intelligent system, accounting information, accounting process.

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DOI: 10.15587/1729-4061.2017.110112

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The model, which effectively contributes to creation of maximum reasonable value of construction projects, was proposed. The proposed system is characterized by the fact that due to its convenient coherence, it adjusts the influence of its separate methods (elements) on project value in a cumulative manner. The need for such a model was driven by global challenges, such as necessity to

reduce greenhouse gas emissions and to increase power efficiency of satisfaction of social needs. Characteristic feature of the proposed model is that it is composed of six interacting components, which collectively are self-sufficient for efficient engineering and management of construction projects. This concept is presented in the form of a “crystal” of cumulative application of three pairs of methods. The first pair includes value engineering and building information model. The second pair includes “benefits-costs” analysis and the theory of dynamics of project value. The third pair includes profiling of contract systems and pricing strategies. Each element of the proposed model, playing its natural role, coherently complements and reinforces its other elements. This model allows balanced decision making in terms of availability of various competing priorities of all stakeholders. The key priority of the cumulative model is preventive reaction to potential problems in the course of project implementation. It was established that the aforementioned pairs of methods and the model in general bring convenient and efficient synergy to architecture, engineering and management of construction projects. The synergy, which is a basic feature of the proposed model, provides a presence of two characteristics at the same time: complete coverage of project tasks that are solved and convenient compactness. It is the main advantage of the Crystal model of value management. Dynamics of usefulness and value of the project of office center construction within several consecutive sessions of model application model was calculated, it was shown that quality of project result almost reached its maximum. It demonstrates feasibility of further research in this direction and expansion of a range of projects of model application.

**Keywords:** project management, engineering, architecture, balanced value, synergetic effect, decision making.

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DOI: 10.15587/1729-4061.2017.109534

DEVELOPMENT OF PRINCIPLES AND METHOD OF ELECTRONIC PROJECT MANAGEMENT (p. 23-29)

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The principles of electronic project management (e-PM) implementation project-oriented enterprises are proposed. The decision-making tool in e-PM is the electronic project manager, which automates the project management process. The paper deals with the management of only those projects that can be clearly formalized in the planning and control of implementation: information resources creation and provision projects.

A method for managing the timing of the procedures implementation in information resource creation and provision projects is proposed. This method allows “compressing” and “stretching” the implementation of the project, depending on both the deadlines and those labor resources that are allocated to perform the procedures. The method execution example is given.

Electronic project management technology is implemented in the project information management system PrimaDoc-T. In this system, automatic project planning, documents (information) processing processes distribution, project documents archive maintenance are implemented.

**Keywords:** electronic project management, electronic project manager, meta-methodology, resource management.

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**DOI: 10.15587/17294061.2017.110286**

**MODELING OF MATURITY OF GENDER-ORIENTED PROJECT MANAGEMENT OFFICE (p. 30-38)**

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The theoretical and practical models of project management offices and the basic principles of creating a Gender-Oriented Project Management Office (PMO<sub>G</sub>) are analyzed. Attention is drawn to the peculiarities of gender logical project management systems. Approaches and methods for assessing the maturity of the project office are defined.

The gender component is extrapolated to the contextual parameters of the project management knowledge areas. The model of estimation of PMO<sub>G</sub> maturity in the context of the development of gender-oriented project management is developed. It is noted that the level of gender responsibility of PMO<sub>G</sub> can range from advisory support to the continuous improvement of gender-sensitive project management.

A mathematical description is proposed for estimating the level of PMO<sub>G</sub> maturity. Eight levels of PMO<sub>G</sub> maturity are outlined: “definition of goals and objectives of the PMO<sub>G</sub>”; “organization of PMO<sub>G</sub>”; “development of methods for effective gender-oriented project management”; “development of the organization gender competence”; “recognition of PMO<sub>G</sub> effectiveness”; “PMO<sub>G</sub> – center for gender-based project management”; “creation of additional, inclusive, gender project values”; “center for the development of gender-oriented project management”. The global criterion range as a maturity indicator of PMO<sub>G</sub> is calculated for each level.

The proposed evaluation tool can be used by the PMO<sub>G</sub> directors and top management of gender-responsible organizations to self-assess the progress in the development of gender-based project management, as well as to select the actions needed to move to a higher level of maturity.

**Keywords:** project office maturity; gender-oriented project management; gender mainstreaming.

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DOI: 10.15587/1729-4061.2017.111547

### DEVELOPMENT OF THE SUBSYSTEM OF FORECASTING FOR THE SYSTEM OF MARKETING INFORMATION MANAGEMENT AT AN INDUSTRIAL ENTERPRISE (p. 39-51)

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The theoretical generalization, which is revealed in the development of conceptual and methodological principles and methodical



provisions related to formation and functioning of the forecasting subsystem of the marketing information management system at an industrial enterprise, is presented.

The market is a social phenomenon in which the availability of valuable marketing information reduces uncertainty, ensures the promptness of making managerial decisions, makes possible to avoid threats and creates a basis for increase in the efficiency of a production process and competitiveness. Therefore, the control of changes in the marketing environment requires the creation of a marketing information management system at an industrial enterprise, which is based on effective methods of collection and analysis of marketing information. Markets of industrial enterprises make possible to create and test progressive marketing information management systems.

There are trends that cause worsening of prospects for economic growth at the current state of the marketing environment of industrial enterprises. Growth of these risks is facilitated by trends of globalization, informatization, social changes. Such an increase in business risks causes an increase of the role of forecasting. The classical concept of a marketing information management is enhanced and system is restructured and the creation of a subsystem of forecasting is improved. The methodological approach to the functioning of forecasting subsystems of marketing information systems of industrial enterprises based on the model of statistical forecasting of sales volume is offered.

The proposed procedure to overcome a general lack of forecasting methods is related to the failure to take into account an inaccuracy of observations on which the forecast is based, – it is based on the use of fuzzy mathematical methods. It is shown on its basis how traditional forecasting methods can be successfully upgraded for the case when the initial data are given unclearly.

**Keywords:** marketing information, marketing information management system, types of forecasts, forecasting methods.

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DOI: 10.15587/1729-4061.2017.111971

**SUBSTANTIATION OF STRUCTURE OF THE PORT HANDLING EQUIPMENT FLEET BASED ON A MULTICRITERIA APPROACH (p. 52-59)**

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The model that allows substantiation of choice of the optimal structure of the port handling machinery fleet was constructed and analyzed. In today's competitive environment in the field of port business, it is necessary to primarily focus on the interests of clients, in particular in the process of consideration of alternative options of development of handling equipment fleet. In this regard, it is reasonable to choose not the strategies, allowing us to minimize costs (or to maximize profit), but rather strategies, slightly yielding in terms of expected economic indicators, but significantly enhancing the quality of port services. To achieve the balance in the system of relationships "cargo owners – ports – ship owners", the authors proposed the technique of determining of structure of the fleet of port handling equipment, which will make it possible to take into account the interests of all participants of the market of port services. To determine the values of average annual costs, profits of the production transshipment complex and the average vessels' berthing time, the procedure used the apparatus of mass service theory. In order to achieve optimum ratio of listed indicators, the methods of multicriteria optimization were used in the work. A fleet can include both stationary and mobile equipment. This technique makes it possible to achieve the balance between economic performance of the port operation and average berthing time of vessels under conditions when the time between ship calls is a random magnitude.

**Keywords:** port handling equipment, multi-criteria evaluation, Pareto frontier, mobile equipment.

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DOI: 10.15587/1729-4061.2017.112356

**RESEARCH OF EFFECTIVENESS OF UNIMODAL AND MULTIMODAL TRANSPORTATION INVOLVING LAND KINDS OF TRANSPORT (p. 60-69)**

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Modeling of a delivery system, which renders services of international material supply, usually is performed from the positions of the deterministic approach. This allows us to determine clearly the scope of effective use of transport technologies, which in practice can give a negative result. In connection with this, the probabilistic-statistical

approach to simulation of cargo delivery time at unimodal and multimodal transportation was proposed in this research. To account for all possible conditions of delivery, factor space was constructed based on the route Ukraine – Italy and a plan for an extreme experiment was developed. Replication of experiments within each series was performed through simulation of such random processes as vehicles' arrival at the border checkpoint, changes in technical motion speed of a vehicle and time of transportation request placement. As a result, regression models of estimation of cargo delivery time on delivery condition "just in time". They represent additive functions by the following parameters: downtime at a border checkpoint, delivery distance (for unimodal transportation), and supply distance, dispatch distance and section speed of a train (for multimodal transportation). They served as the basis for determining of effectiveness of application of unimodal and multimodal services on example of route Ukraine – Italy. It was found that when performing delivery by the unimodal option, rolling stock turnover on the route increases up to 47 per cent. In this case, if the pessimistic scenario of the supply system functioning is taken into consideration, efficiency of application of the multimodal transportation option approaches that of the unimodal. While taking into account hour indicators of the delivery process, expediency of application of the unimodal transportation option, based on heavy motor trains, becomes apparent. This refutes common opinions about economically reasonable expediency of application of motor transport as the main transport at the distance of up to 500 kilometers.

**Keywords:** unimodal transportation, multimodal transportation, delivery time, stochastic process, extreme experiment.

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