

Processes in Models of the Solution of Tasks of Management of the Enterprises

Vinogradova E. Yu.¹, Pivneva S. V.², Denisova D. A.², Soldatov A. A.²

¹ Ural State University of Economics (RUSSIA)

² Russian State Social University (RUSSIA)

tft-swetlana@yandex.ru

Abstract

In article describes main principles of designing of information system for realization of support of decision-making by a management of managing subjects. Also, in the article describers ordering of modern scientific representations about intellectual information technologies in a context of allocation of a subject field of their application.

Keywords: intellectual information technologies, information systems, management of the enterprises.

1 INTRODUCTION

Process of development of the effective unified technique of creation and introduction of the automated system which is characterized by existence of ability of a message a configuration of orders and maintenance of clients to adapt under activity of the company of a certain branch, to consider specifics of production, a possibility of change of system in the shortest terms and also orientations to strategic objectives of the company, still remains insufficiently worked. In article scientific justification of automation of model of the solution of tasks of business management by means of development of a method of formation and development of complex system of economic planning and management is offered which feature is reorganization of business processes at production management, studies dependence of management on character and a condition of the enterprise. Introduction of uniform system of the classification of income and expenses suitable for each business unit, within process of management of production will allow the enterprises to come to essentially new level of efficiency of activity, to distinctly represent under what articles income and expenses of each separate division or the enterprise was distributed.

Deepening of market transformations in economy of the Russian Federation, strengthening of the competition as a result of globalization of the world market, transition of an industrial complex to innovative model of development have significant effect on statement and the solution of new questions in a control system of production. In such conditions information opportunities by means of a combination and development of various elements, methods, models and instruments of planning, modernization of already existing methods raise.

2 REPRESENTATION OF A COMPLEX SOCIAL AND TECHNICAL SYSTEM

The financial structure must correspond to kinds of activity of the company. This approach will allow to estimate results of activity of the enterprise for each direction having the budgets, having provided their effective management.

Integral part of information system is creation of structurally functional model of the solution of problems of planning and management with differentiation of business processes.

Processes are classified on the main and auxiliary. The main processes create new quality of production. Auxiliary processes create infrastructure of the enterprise. The person, responsible for process, has the right to change and improve it and is the owner of process. Borders of process are defined by an interval from the moment preceding the first operation (border of "entrance") and till the moment following the last operation (border of "exit") [1].

The interface of process represents the organizational, technical and information mechanism when which using the interrelation between processes is carried out. Therefore optimization of activity of the enterprise has to be organized business around - processes for the purpose of overcoming their

fragmentariness for achievement of considerable improvements of key indicators Therefore the main objective of creation of the process focused enterprise is allocation business - processes according to grocery lines and functional divisions with their subsequent connection in through processes which are aimed at creation of different types of production. [2]

Each company represents difficult socially - technical system. The concept "system" used in modern practice, has a set of semantic nuances and values. In this regard it is necessary to define the values directly related to the system analysis of activity of the enterprise. The most suitable definitions are given below.

The system has the following integrative properties:

- the variety and distinction of components relates to their functional specificity and autonomy;
- the properties which are absent in separately taken components can be present at system in general;
- structure that means existence established interrelations and the relations between system components, their distribution on hierarchy levels.

Achievement and maintaining desirable result of behavior of system acts as its main objective. Interpretation of the purpose of system in relation to the enterprise - aspiration to optimum result which represents maximizing value of the capital on condition of constant preservation of the established liquidity level, achievement of the goals of production and realization taking into account social tasks. [6]

The main objective of system is the description of a way of achievement of the goal fixed by the expected numerical characteristics. The set of the interconnected purposes represents their system. It is possible to allocate several classifications of systems of the purposes which treat:

- short-term (performance in a year or earlier) and long-term (performance through the period exceeding 1 year) the purposes;
- tactical and strategic objectives;
- financial, production, social purposes, improvement of quality of production and others.

3 MODELING OF BUSINESS PROCESSES

As a result, the system can be characterized as an ordered subset of objects which are interconnected with each other more closely, than with the external environment. An object (an element, a component) is a part of system which is distinguished from the others agrees to the sign formulated by the interested person. [7] The choice of objects and their relationship depends on opinion of the interested person. In that case the enterprise can be considered as a production system, and in the form of organizational and economic or social systems.

Within this approach it is made:

- division of elements into various levels of abstraction (with the limited quantity of elements at each level);
- restriction of a context which has to include only essential details;
- application of strictly certain rules of record;
- stage-by-stage achievement of desirable result.

Conditional reception which allows to present system in the form convenient for perception and also to carry out assessment of its complexity, decomposition is. By means of decomposition there is an allocation of separate structural elements and their interrelations according to certain signs. [9] Use of reception of decomposition allows to avoid possible difficulties in understanding of a subsystem. The dimension and complexity of system, the purpose of modeling determine decomposition depth.

For receiving a complete picture of activity of the enterprise it is necessary to integrate one of the allocated structures taken as a basis with the others as separately taken subsystem is not capable to provide modeling of business processes completely. Usually as a basis information or functional subsystems undertake. Each enterprise possesses considerable number of subsystems that involves existence of many structural elements and communications between them. Any structural element and

communication have specific properties which need to be described. Attributes by means of which it is possible to set qualitative and quantitative characteristics of the modelled elements, for example, the name, the author, a unique code, time and date of creation, costs of function performance, its detailed description belong to the integral properties. Each of the set characteristics is formalized and is applied in the course of carrying out the analysis and drawing up the report.

The model is represented by the set of certain symbols (graphic, mathematical and others) which is adequately describing certain properties of the modelled object and relation between them. The notation is the system of symbols accepted in a certain model. Also, the hardware which realizes the chosen methodology with creation of the existing models considering the notation accepted for concrete model acts as means program.

The models applied for the structural analysis must reflect:

- set of functions, necessary to performance;
- processes which are capable to provide performance of these functions;
- the organizational structures providing performance of functions;
- the required data and the relations between them for performance of the specified functions;
- the material and information streams arising during performance of functions.

It is important to define technical properties which the information system at the enterprise must possess.

Within the solution of objectives, the technique of construction KSEPIU at the enterprise is offered.

The first design stage of system includes decomposition of a complex of problems by reference of each specific objective to above-mentioned groups. At the second stage identification of a method of the decision is made for each group of tasks.

4 CONCLUSIONS

In conclusion it should be noted that as important factors of success of introduction of the automated system support of an innovation from the management and attraction at all stages of end users of system to which they belong both the management and the staff of economic services, and employees of department of information technologies in addition act. [10-11] In case they are involved in process of creation and introduction of system at early stages of its formation, there will be an opportunity to avoid many shortcomings of system regarding discrepancy to qualifying standards and also their interest in achievement of a goal will promote success of the project in general.

REFERENCES

- [1] Belyaev VK (2013) Ekonomicheskaya otsenka upravlencheskih resheniy [Economic assessment of administrative decisions], 1st edn. BGUEP Publishing, Irkutsk, p 310
- [2] Carberry EJ, Bharati P, Levy DL, Chaudhury A (2017) Social movements as catalysts for corporate social innovation: environmental activism and the adoption of green information systems. *Bus Soc* 0007650317701674. <https://doi.org/10.1177/0007650317701674>
- [3] Fomina AV, Avdonin BN, Batkovskiy AM, Batkovskiy MA (2014) Upravlenie razvitiem vyisokotekhnologichnyih predpriyatij naukoemkih otrasley promyshlennosti [Management of development of the hi-tech enterprises of the knowledge-intensive industries], 1st edn. Creative Economy Publishing, Moscow, 400 p
- [4] Forkmann S, Ramos C, Henneberg SC, Naudé P (2017) Understanding the service infusion process as a business model reconfiguration. *Ind Mark Manage* 60:151–166. <https://doi.org/10.1016/j.indmarman.2016.05.001>
- [5] Konova O, Komarov I, Lisin E (2012) The relevance of power generating capacities based on the combined cycle power plants of high power. *Czech J Soc Sci Bus Econ* 1(1):101–109. <https://doi.org/10.24984/cjssbe.2012.1.1.11>
- [6] Narkuniene J, Ulbinaite A (2018) Comparative analysis of company performance evaluation methods. *Entrepreneurship Sustain Issues* 6(1):125–138. [https://doi.org/10.9770/jesi.2018.6.1\(10\)](https://doi.org/10.9770/jesi.2018.6.1(10))
- [7] Popov AI (2012) Sozdanie novoy modeli razvitiya: modernizatsiya i usloviya perehoda k innovatsionnoy ekonomike [Creation of new model of development: modernization and conditions of transition to innovative economy]. *Izvestiya Sankt-Peterburgskogo Universiteta Ekonomiki i Finansov* 4:18–26
- [8] Vinogradova EYU (2012) Strukturno-funktional'naya model' intellektual'noj informacionnoj sistemy upravleniya predpriyatim gazotransportnoj otrasli. *Prikladnaya Informatika* 1(37):122–132
- [9] Vinogradova EYU, Galimova AI (2017) Principy formirovaniya korporativnoj informacionnoj sistemy dlya vnedreniya na rossijskikh predpriyatiyah. *Izvestiya Ural'skogo gosudarstvennogo ehkonomicheskogo universiteta* 2(70):111–123
- [10] Zhu Q, Sarkis J (2004) Relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese manufacturing enterprises. *Oper Manage* 22(3):265–289. <https://doi.org/10.1016/j.jom.2004.01.005>
- [11] Pivneva S.V., Ivanova T.N., Akhmetzhanova G.V., Kurilova A.A., Anisimova J.A. (2019) Applying an Algorithm for Vertex Minimization of Non-deterministic Finite Automata (NFA) on the Basis of a Multi-heuristic Approach for Studying Social and Economic Performances of Region. In: Popkova E. (eds) *The Future of the Global Financial System: Downfall or Harmony*. ISC 2018. Lecture Notes in Networks and Systems, vol 57. Springer, Cham