

SYSTEM PHENOMENOLOGICAL MODELS IN ECONOMICS AS AN INSTRUMENT OF DECISION-MAKING

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Abstract. The purpose of the article is provided with creating a new decision-making method for the conditions of modern economy. For solving this problem, we offer to use the method of phenomenological models. The result of using this method is a model of managed economic system and its' external environment. This model is based on the positions of two theories. The first one is a system management, the second is provided with various styles of management. When the economic system is structured, we make its' phenomenological model which connects the indicators of resources' streams in the system and the parameters of changes created by a manager. In discussion, on the base of this model we account the preferable meanings of the parameters.

Keywords: organizational management, economic system, system management, management functions, decision-making, phenomenological modeling.

Formation of an institutional economy requires new methods of management decisions making in economic systems at all levels (from the state management of national economy to individual enterprises and organizations). Nowadays in Russia at all levels of economy so-called "manual" management dominates. It means that for each specific problem a manager creates a decision based on his own subjective attitudes. But in the conditions of institutional economy, management should be institutional too [8]. Of course, it does not imply the complete elimination of subjective factors from management process. It is impossible, because every manager (unlike, for example, an engineer at the factory) leads the social system, where the central element is a human with intelligence and consciousness. But nevertheless, it is important to reduce the share of subjectivity in the decision-making process, since without it, Russian economy is doomed to further stagnation.

The present work is devoted to the new method of decision-making. This method considers the most valuable ideas formulated within individual managerial theories.

The most important among them are four theories:

- general theory of managing large complex systems (AA Bogdanov, N. Wiener, K. Shannon, S. Bir) [1];
- theory of behavioral economics (A. Tversky, D. Kahneman) [7];
- system management (J. Kornai, GB Kleiner) [9];
- theory of stylistic variability in organizational management (I. Adizes, GB Kleiner, I. Drohobytsky) [2, 6].

An analysis of modern approaches to understanding organizational management shows that in spite of all differences their common feature is that the basis of management is information. At the heart of each act of development, adoption and implementation of the management decision is the analysis by the manager of the initial information about the managed economic system (hereinafter - the ES) and its external environment and the synthesis of new information. In the framework of the general theory of the control of large systems, the law of information-order is formulated, according to which an increase in the amount of information in the system leads to an increase

in the measure of its orderliness and a decrease in entropy. The decrease in the entropy of the system is accompanied by a change in the links of its elements with each other and with the external environment, and this leads to changes in the processes of exchange of material, energy and information resources between them. Hence the basic hypothesis is derived that every act of making, making and implementing a solution is a change in the resource exchange between elements within a managed system and with elements of its external environment.

On this hypothesis, two basic principles of this work are based, which introduce new into the process of studying and practical realization of organizational management of ES in comparison with existing approaches.

According to the first principle, the process of development, adoption and implementation of a decision in organizational management considers the changes that are taking place in it, not only in the managed ES, but in the entire economic system, including the ES and its external environment. Brevity, this concept is referred to simply as an "economic supersystem").

According to the second principle, the functioning of the economic supersystem is considered as a set of resource-exchange processes between its elements, the management decision as an act of changing these processes in the supersystem as a whole (and not only in the managed ES). The proposed principle provides a basis for assessing the correctness of the solution being developed, considering how the associated changes in the processes of return and the acquisition of resources of the managed ES correspond to similar indicators of other elements of the economic tax system of which it is a part.

On the basis of the stated principles of the author's research, the following results are obtained.

1. The approach to structuring of an economic supersystem in which the solution is developed and realization is offered. The idea of changing the resource exchange between the elements of the economic supersystem as the main result of the

management decision was introduced to streamline the process of its development. To do this you must order firstly the elements of economic sustainability themselves, and secondly, the resource-exchange processes between them. And this must be done from the position of their connection with the outcome of the decision.

Based on the approach to the structuring of economic systems, developed within the framework of system management. He proposes to divide them into subsystems of 4 types depending on the space-time constraints. The approach assumes adaptation to the conditions of a specific task, on which the choice of criteria for space-time limitation depends.

For the economic supersystem, considered in this paper, the central element is the change in resource exchange resulting from the decision. Other elements should be grouped according to the space-time relations with it. But these connections cannot always be precisely defined. The basic premise of the study is the consideration of management as an information process. Therefore, it is proposed to consider the links of changing the resource exchange not with the elements themselves, but with the characteristics of the perception of information about them by the manager who develops the solution. The present economy distinguishes two characteristics of the perception of information: the degree of impact on the outcome of the solution (short-range interaction - directly, or long-range - indirectly) and representativeness (only for the current solution or for other similar solutions). These characteristics of information on the elements of economic super-systems correspond to the characteristics of physical space-time limitation, by which they can be grouped into four types of supersystems.

The second result is the classification of resource-exchange processes of the economic supersystem and the indicators characterizing it. In the first approach, the resource-exchange processes are divided into the primary transfer of resources (costs) and the response of receiving resources (winnings). This division is supplemented

by representations of the theory of stylistic variability of management, according to which the main characteristics of ES are the ability to transmit and receive resources in the short-term and long-term perspective, these characteristics are associated with 4 basic managerial functions. It turns out the classification of 4 types of resource-exchange processes associated with these functions.

Resource-exchange processes of each of the 4 species are grouped, depending on the belonging of the elements of the economic supersystem connected to them to one of the 4 subsystems. As a result, the functioning of economic sustainability is considered as a set of 16 integrated resource-exchange processes.

This functioning continues until the moment of elaboration, adoption and implementation of the decision. The act of implementing the solution becomes a new element of the economic supersystem. The new element implements the same 4 resource-exchange processes as the existing subsystems. The indicators of resource exchange of the new element are quantitative characteristics of the changes implemented by the manager in the economic supersystem in the course of implementing the solution. Further they are called the sought-for indicators of resource exchange changes. These indicators should be calculated by the manager in the process of developing the solution.

The links between the indicators of resource exchange in subsystems and the sought-for indicators of resource exchange change show the transition of the economic system from one state to another in the process of developing, adopting and implementing a solution. Before the

beginning of this process, the supersystem is characterized by a set of indicators of exchange with the designation (before the solution). Then the manager implements changes in the resource exchange, characterized by indicators with an index of changes. After the implementation of the solution, the indicators of resource exchange acquire new values.

Formally, the change in the indices of resource-exchange processes is represented in the form of a model where the expression of each of the sought indices of the change in resource exchange through 3 others transforms the description of exchange processes into a mathematical system of equations with four unknowns.

To solve the problem of developing a solution in the form it is proposed to use the toolkit of phenomenological modeling. Its result is a phenomenological model, the construction of which does not attempt to reveal the general laws governing the development of the modeled object, but only to generalize the phenomena associated with it for forecasting and changing its development on a short-term time interval [10]. The orientation of phenomenological modeling on forecasting and changing the development of modeled objects in the short term determines the choice of this type of modeling as the basis for the toolkit for developing operational solutions in the organizational management of the ES. A detailed description of the proposed methods is contained in the author's papers [3, 4, 5], where the general conclusion is drawn that phenomenological modeling is organically included in the general scheme for supporting decisions in organizational management.

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