

UDC 330=111

V.V. Glukhov, N.N. Kuzin

SYSTEM ASPECTS IN THE THEORY OF ORGANIZATION

В.В. Глухов, Н.Н. Кузин

СИСТЕМНЫЕ АСПЕКТЫ В ТЕОРИИ ОРГАНИЗАЦИИ

The system aspects of theory of organization are expounded in this article. The look of authors is expounded that principles of functioning of organization must at first form the system of principles. Principles must be based on connections, rules of construction of rational structures, and also organization and rationalization of processes.

THEORY OF ORGANIZATION, SYSTEM. PRINCIPLES OF ORGANIZATION. ECONOMY. ORGANIZATION.

Излагаются системные аспекты теории организации. Изложен взгляд авторов о том, что принципы функционирования организации должны вначале сформировать саму систему принципов. Принципы должны быть основаны на соединениях, правилах конструкции рациональных структур, а также организации и рационализации процессов.

ТЕОРИЯ ОРГАНИЗАЦИИ. СИСТЕМЫ. ПРИНЦИПЫ ОРГАНИЗАЦИИ. ЭКОНОМИКА. ОРГАНИЗАЦИЯ.

The basics of the theory of organization enable us to consider organization as an object of projection and management with the inherent mechanism of co-ordination through communications. This fact helps us to suppose that, from the point of economic cybernetics and a systems approach, organization can be considered with the criteria, applicable to a «living organism», which functions in an external environment and a diverse internal environment, in other words, represents a self-organized system. Having this conception in the «arsenal», the basics of the theory of organization enable us to construct any types of organizational structures, reflecting the principles selected above and based on the laws of organization, principles of its function and project. The consideration of these conceptual basics of the theory of organization makes it possible to predict that managers-economists will be interested in getting knowledge how the categories of social and economic organizations are examined as objects. An important value

will have scientific interest, related to disclosure of the laws, and also the principles of organization in the conditions of the influence of human factor on the activity of the organization.

Considering the performance of social and economic organizations, it is desirable to emphasize that their structural construction depends on the kinds, types of firms due to their functions, organizational forms and forms of integration and co-operation typical of noncommercial organizations.

Taking into account the features mentioned above concepts and models, which reflect the stages of the development of the theory of organization, and also models of their construction, are needed. Considering the laws of organization, it is necessary to examine the properties of economic organizations, laws of their functioning, and also specific laws of social organization, because, even in generalizations every organizational system, which involves the man, does not stop being social.



For the substantial addition to the theory of organization with a further movement from sociology to economics, principles of functioning of the organization must form a system of principles at first, being based on system-organizing connections, rules of construction of rational structures, and the organization and rationalization of processes.

Any businessman, choosing a sort of activity and the scale of «construction» of the organization, must understand the fact that a «construction» could collapse, if it, as any system, would not have enough connections. Talking «a construction» in this aspect, we mean that a structure, scale and legal form of the organization which would give an answer to a question: «How will the characteristics of the product be changing fixed in the system of economic document in dynamics and in the different intervals of time?».

Any organization involving people is a complex organism that can be named an «ant hill», if, without knowing its specifics and who does what, we try to examine its structure. Any organization has certain features, such as an image or format, major and minor traditions, cultural relations and reputation. If there is long-term strategy in the system of the organization, it is possible to argue that this structure can successfully develop and effectively use its resources.

Currently, there is a recognized definition of the theory of the organization with its principles, laws and rules of the development of the organization as an object, its evolution, mechanism of functioning, interdependence of its parts and elements with an external environment for the achievement of the new aims [1].

An earlier thesis was that a theory of organization is an area of scientific knowledge, which studies general laws explaining its structure, functions and the development of all the types of the organizations as complex dynamic systems, having a goal [2].

In the first definition, unlike the second, the theory organization is already identified as science. In our opinion, this is right. The second part of the first definition stating that the theory of organization is a science about planning new aims, also appears as successful. Despite the disputes, planning of new aims is an actual task of

the theory of organization. What does it depend on? It follows from the essence of organization, in this case – its economic essence. Separate departments of the economic organizations is characterized by those properties, attributes and characteristics that, in certain terms, identify it as an object, for instance, as a firm. In fact, it is not a secret that the functional maintenance of the organization will be right, when its elements, properties and connections will identify it, for example, as a firm providing services, or enterprise producing bricks, etc. However, not only the internal construction will prompt us a difference in these objects (a hairdresser's or a factory) but also the projecting order of the organization.

Therefore, it is necessary to define the set of characterizing factors, which would fit for all types of organizations. Extremely important must be the activity of the organization, the composition of its directions, and the strategy of the market conduct, related to the scales of the firm. There is a specific set of such factors as a legal form, a quantity of the staff, and personnel, industrial, and administrative structures.

Creating (designing) the organization (the firm), it is necessary to get a clear idea of those tasks, which it will implement in a long-term on the basis of those rules, operating conditions, quantitative indexes and quality characteristics which will define the project. But to check the correctness of the organization with the methods, used to create it, in our opinion, is not right. In this sense, remembering the theorem of Godel that if formal arithmetics is uncontradictory, a formula, asserting the absence of contradiction of arithmetics, cannot be created [3].

Explaining to the reader of this article the theorem of Godel in a simplified version, we must consider the following thing... If you construct a theory using methods, based on correct laws, and there is enough knowledge for you in abstract areas, you probably will create it. However, to confirm the rightness of the theory using those methods, by which it was constructed, is not recommended, because of the incorrectness of such an approach. The proof of the rightness of the created theory must be carried out by the methods from another conceptual apparatus. If in mathematics there is

a large number of different methods, we will consider, that methods of economists–cybernetic engineers, realized in the theory of organization, do not compromise the theory. But will such an approach be appropriate for planning of the organization [4]? Obviously so, although he is fully or partly ignored by designers. Well, indeed, setting up a business a physical or a legal entity is unlikely to rely on scientific theories, but on intuition, experience, resources, personal connections, opportunities, etc.

Certainly, there are scientific approaches to the planning of the organization, which require an answer to the questions: in what organizational form will we work? What are our conceptions? What laws will we use? What principles in the planning of the organization will we follow? What should a production process be like? How will organizational culture be disseminated? As we can see, the theory of organization, in this case, uses the results of both related subjects and scientific disciplines to a great extent. In the planning of the organization the influence of sociology is great, because the theory of organization stems from it. The process needs social psychology, jurisprudence, management, economics, etc.

All questions listed above are of systemic nature and can be the factors that underlie the planning of the organization. Presenting the planning of the organization based on a whole set of factors, it is time to switch to the direct constructing of the model of the organization, so that a theoretical result will be obtained (most favorable). By creating the organization in practice using the simulation model and launching the organizational structure, we will arrive at the practical result. The estimation of the theoretical and practical results will show us how close we got to the desired theoretical result and what changes should be made in the model and in reality to correct the situation when the theoretical result is not attained.

Modeling the organization designs, while applying simulation models of organization, it is possible to create a large number of labor collectives and the production frames on the basis of reengineering, on which all foregoing postulates spread similarly; because a model is a system, which has some identical characteristics

with an original. In this case the «original» means the personnel of the organization in the process of production under the impact of different destructive factors, which require reengineering-processes [5].

Using a mathematical language, we have the following picture of the created simulation model of the management of a labor collective: the created model must be an ultimate goal of actions of the collective (complex function); having a large number of factors affecting the collective, beginning with directive influences of the leader of the higher level, influences of the external environment, the flow of information during work, time, etc. [6].

In any organization a team, a department, a bureau, a site as the elements of a system, which reflect private properties of a subdivision, and the structure of the system represents part of the properties in the designed object. Separate properties of the elements are substantially different, therefore they can be examined as partly independent ones. But taking into account their systemic integrity, these properties are in a subordinate communication, which allows us to examine the subdivision as a hierarchical subsystem of the economic system able to counteract destructive factors on the basis of reengineering. Examining the organization as socially polyhedral symbiosis, constructed on the basis of multidimensional classification and often being organized in a hierarchical order, it is possible to define the structure of mathematical model of organization:

- First stratum is an increase of the physical and psychological state of the collective;
- Second stratum is an improvement of quality of professional training, retraining and in-service training, and of technical equipment;
- Third stratum is an increase in productivity, performance of the collective and ability to execute an their work [7].

Each stratum describes certain properties of the subdivision, and intercommunication of strata reflects system integrity. The structure of models can include three links: levels of hierarchy, which model the proper hierarchy properties of subdivisions, being the basis of adjustment in case deviations affect the organization [8].



The designed subdivision is directly included into the firms, making an element of the economic system, thus becoming in relation to the designed subdivision, a metasystem [9].

A mathematical model in our case is a three-strata system. The connection between the strata is carried out through operators (theory of operators). The operators of the first strata control necessary regularities of an increase in the moral, psychological, and physical state of the collective in management. The operators of the second strata determine an increase in the efficiency of knowledge and technology, and, similarly, influence of the crosslinks on the efficiency, which in the end depends on external influences, the level of preparation of the collective, and terms of implementation of production tasks. The operators of the third strata ensure the production possibilities of the collective and their ability to execute their work.

In future, it is necessary to conduct an analysis of distributing management functions in a collective exactly on the basis of the third strata of multitude-theoretic model of the organization, when the collective is prepared to implement production tasks and has enough appropriate technology [10–12]. A third, the main, stratum is a general system stratum, therefore the management of its features is co-ordinated with the requirements of the metasystem (economic system) which includes the designed subdivision (labour collective of the organization). This approach will substantially increase the number of methods of the organization theory concerning the planning of organizations of different types. A principle, uniting together all processes of the organization and managing activity, must be the principle of total introduction of the modern information systems at all performance stages of the system.

REFERENCES

1. **Glukhov V.V., Yakovlev A.A.** Teoriya organizatsii: sozdaniye i funktsionirovaniye organizatsii: uchebn. posobiye. SPb.: Izd-vo Politekhn. un-ta, 2012. S. 8. (rus)
2. Teoriya organizatsii. URL: <http://www.upravlenie24.ru/theororgan.htm> (rus)
3. **Gedel K.** O nepolnote teoremy formalnykh matematicheskikh system. Kurs lektsiy. SShA, 1934.
4. **Glukhov V.V., Gorin Ye.A., Oseyevskiy M.E.** Upravleniye innovatsionnym sotsialno-ekonomicheskim razvitiyem megapolisa: metodologiya, printsipy, mekhanizmy. SPb.: Izd-vo Politekhn. un-ta, 2012. (rus)
5. **Glukhov V.V., Mednikov M.D., Korobko S.B.** Matematicheskiye metody i modeli dlya menedzhmenta: uchebnik. SPb.: Lan', 2000. (rus)
6. **Kuzin N.N., Smirnov A.A., Shkvarok V.M.** Teoreticheskiye osnovy klassifikatsii ugroz ekonomicheskoy bezopasnosti Rossii. SPb.: SPb un-t MVD Rossii, 2011. (rus)
7. **Kuzin N.N., Kolesnikov S.A., Smetanin Yu.V.** Modelirovaniye trudovykh kollektivov. SPb.: Izd-vo «Bezopasnost» Mezhdunarodnoy Akademii nauk ekologii i bezopasnosti zhiznedeyatelnosti, 2004. (rus)
8. **Kuzin N.N., Shubnikov Yu.B., Shkvarok V.M.** Reinzhiniring proizvodstva v sisteme obespecheniya ekonomicheskoy bezopasnosti predpriyatiya. SPb.: SPb un-t MVD Rossii, 2014. (rus)
9. **Lyudvig fon Bertalanfi.** Teoriya iyererkhicheskikh system. Dzheneral Sistem, 1956. S. 1–10.
10. **Kuzin N.N.** Modelirovaniye funktsionalnogo soderzhaniya upravleniya trudovym kollektivom organizatsii kak chasti ekonomicheskoy sistemy. SPb.: SPb un-t MVD Rossii, 2003. (rus)
11. **Shlyago N.N.** System concept of controlling as reflection of modern economical and organizational approaches to the administration task. *St. Petersburg State Polytechnical University Journal. Economics*, 2012, no. 5 (156), pp. 17–21. (rus)
12. **Akmaeva R.I., Epifanova N. Sh., Lunev A.P.** Conditions and prerequisites of the concept of shared values in russian firms. *St. Petersburg State Polytechnical University Journal. Economics*, 2012, no. 6 (161), pp. 87–93. (rus)

СПИСОК ЛИТЕРАТУРЫ

1. **Глухов В.В., Яковлев А.А.** Теория организации: создание и функционирование организации: учеб. пособие. СПб.: Изд-во Политехн. ун-та, 2012. С. 8.
2. Теория организации. URL: <http://www.upravlenie24.ru/theororgan.htm>
3. **Гёдель К.** О неполноте теоремы формальных математических систем: курс лекций. США, 1934.
4. **Глухов В.В., Горин Е.А., Осеевский М.Э.** Управление инновационным социально-экономическим развитием мегаполиса: методология, принципы, механизмы. СПб.: Изд-во Политехн. ун-та, 2012.
5. **Глухов В.В., Медников М.Д., Коробко С.Б.** Математические методы и модели для менедж-

мента: учебник. СПб.: Лань, 2000.

6. **Кузин Н.Н., Смирнов А.А., Шкварок В.М.** Теоретические основы классификации угроз экономической безопасности России. СПб.: СПб ун-т МВД России, 2011.

7. **Кузин Н.Н., Колесников С.А., Сметанин Ю.В.** Моделирование трудовых коллективов. М.: Изд-во «Безопасность» Международной Академии наук экологии и безопасности жизнедеятельности, 2004.

8. **Кузин Н.Н., Шубников Ю.Б., Шкварок В.М.** Реинжиниринг производства в системе обеспечения экономической безопасности предприятия. СПб.: СПб ун-т МВД России, 2014.

9. **Людвиг фон Бергаланфи.** Теория иерархических систем. Джеренал Систем, 1956. С. 1–10.

10. **Кузин Н.Н.** Моделирование функционального содержания управления трудовым коллективом организации как части экономической системы. СПб.: СПб ун-т МВД России, 2003.

11. **Шляго Н.Н.** Системная концепция контроля как проявление экономико-организационных теорий управления // Научно-технические ведомости Санкт-Петербургского государственного политехнического университета. Экономические науки. 2012. № 5(156). С. 66–70.

12. **Акмаева Р.И., Елифанова Н.Ш., Лунев А.П.** Условия и предпосылки применения концепции общих ценностей на российских предприятиях // Научно-технические ведомости Санкт-Петербургского государственного политехнического университета. Экономические науки. 2012. № 6(161). С. 87–93.

GLUKHOV Vladimir V. – St. Petersburg State Polytechnical University.

195251. Politechnicheskaya str. 29. St. Petersburg. Russia. E-mail: vicerektor.me@spbstu.ru

ГЛУХОВ Владимир Викторович – заведующий кафедрой «Экономика и менеджмент недвижимости и технологий» Санкт-Петербургского государственного политехнического университета, доктор экономических наук, профессор.

195251, ул. Политехническая, д. 29, Санкт-Петербург, Россия. E-mail: vicerektor.me@spbstu.ru

KUZIN Nikolay N. – St. Petersburg State University MVD.

198264. Liotchika Piliutova str. 1. St. Petersburg. Russia. E-mail: kapitan_morgan@mail.ru

КУЗИН Николай Николаевич – заместитель начальника кафедры «Финансово-хозяйственная деятельность» Санкт-Петербургского университета МВД России, кандидат технических наук, доцент.

198264, ул. Лётчика Пилютова, д. 1, Санкт-Петербург, Россия. E-mail: kapitan_morgan@mail.ru
