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System Analysis in Socio-Cultural Management: Theory, Methodology and Technology

Abstract: *Introduction.* The topicality of the article' topic is due to the growing need for methodological and technological development of systems analysis in the transition of mankind to the information age, the complexity of social relations and the predominance of unsystematic, fragmentary thinking of modern managers. *Purpose and methods.* The purpose of the article is to substantiate the theoretical and methodological principles and practical recommendations for the implementation of systematic analysis in socio-cultural management. The methodological basis of the study is the dialectical principle of cognition, systemic, historical, cultural, philosophical, organizational, cybernetic and synergetic approaches to the study of organizational phenomena and processes. *Results.* The basic theoretical concepts of system analysis have been analyzed. The essence, role, significance of systematics and system analysis in the modern man's life and society have been revealed. The methodology of system analysis as a unique form of cognition in socio-cultural management has been substantiated. The types of system analysis have been determined, which allows forming a holistic view of the possible directions of its implementation in the management of socio-cultural activities. The technology of conducting a systematic analysis of objects and problem situations in socio-cultural management has been developed. *Conclusions.* The scientific novelty of the research results is the deepening of the theoretical and methodological foundations of systems analysis in socio-cultural management on the basis of modern philosophical, organizational, cybernetic and synergetic approaches. The practical significance

of the obtained results is manifested in the possibility of their use in the management of objects and situations of the socio-cultural sphere, as well as in the supplementation of the general theory of systems and socio-cultural management with new scientific ideas.

Keywords: system, system analysis, socio-cultural management, methodology, technology, managing the object, problem situation.

1. Introduction

The problem formulation. Systems analysis is a form of modern man thinking, an effective way of mental activity, which provides significant discoveries in science, inventions in technology and achievements in production. Without a systematic analysis is complete now no scope highly professional activity, including social and cultural. It is safe to say that many mistakes in the socio-cultural sphere are caused by the fact that managers have neither systems theory nor systems analysis. Important decisions are often made on the principle of "tossed coin", without seeing their impact on various subsystems of a complex and interdependent social organism. Managers of companies, their structural subdivisions are practically unfamiliar with the management principles of complex systems that are in the self-development process. The tasks that life puts in front of them are not solved just because they cannot understand them and formulate them in system categories. The tragic consequences of unsystematic managing activity are largely due not simply to a lack of understanding of the system, but the inability to translate creative ideas into actions that would not violate the systemic laws of organizations, society and the environment.

Systems analysis is one of the most important inventions of mankind, without the use of which unthinkable successful management in almost any field of human activity, including socio-cultural. Possession of systematic analysis, systematic modeling and forecasting is the highest characteristic of human mental culture. This is especially true for managers who have to constantly deal with the systematization of information, systematic research, which can be carried out only with special knowledge and skills.

State study of the problem. The great practical significance of systems analysis leads to constant attention to it, both by various intellectuals and, especially, specialists in the field of management. Without mastering this unique method, creative self-realization and professional activity are impossible today. However, the growing need for systems thinking requires special scientific research.

Research in this area has a long history. The earliest use of systems analysis can be traced back to antiquity, although at that time the term "sys-

tems analysis" did not exist. Further development of this cognition method took place in the following historical stages. However, it received its highest development and application only since the twentieth century (Martynyshyn et al., 2020). The result of such a long evolution of a systems approach to the knowledge of various social phenomena and processes are the following four basic theoretical concepts for understanding systems and implementing systems analysis in management: philosophical, organizational, cybernetic and synergetic.

These theoretical concepts of systems analysis differ significantly. Thus, *the philosophical concept* is based on the categories of wholeness and integrity, as well as ontological and epistemological ideas about the system (Laszlo, 1972; Rakitov, 1977; Afanasyev, 1980; Shchedrovitckii, 1981; Uyomov, 2000; Gvishiani, 2007; Shagiakhmetov, 2009; Martynyshyn & Kovalenko, 2016, 2017, 2018). According to the ontology, systematic is a form of existence of the world, its various objects in nature and society, and from the standpoint of epistemology it is a way of seeing and cognition these objects by man (manager). However, the system, as a philosophical category, does not reflect the whole object managing, which combines content and form, but only its form. This important circumstance, which is limiting to the knowledge of the full picture of reality, should always be kept in mind when conducting a systematic analysis in management.

The organizational concept is based on the key concepts of organization and disorganization of the system, which determine its behavior and properties. This concept is based on such concepts as: interconnectedness and functional specialization of system elements; horizontal and vertical connections between system elements; the system unity with the external environment; the system belonging to the system of the highest order, where it is an element; cyclical development and the system degradation (Bogdanov, 1922; Bertalanffy, 1968; Parsons, 1977; Setrov, 1971; Blauberg, 1973; Sadovskii, 1974; Ackoff, 1974; Yudin, 1978; Chernyak, 1975; Tyukhtin, 1988; Drohobytsky, 2017). These and other concepts of the system focus system analysis not only on the analysis of the elements unity, but also on the consideration of the system inclusion in the external environment and competitive interaction with it.

The cybernetic concept of systems analysis is based on the idea of the decisive role of information in systems of different nature and the possibility of developing general principles for control these systems based on mathematical modeling. The basic concepts of this concept are: "process", which solves the problem of optimal transformation of information flows and resources; "input" is a flow of consumed resources and information; "output", which means the result of the transformation of inputs, i.e. created products (products, services, source information); "feedback", which arises as an information process between

the output of one element and the input of another, the previous element of the system and allows you to regulate the behavior of the system (Wiener, 1948; Ashby, 1956; Mesarovic, 1964; Glushkov, 1964; Lange, 1970; Mesarovic & Takahara, 1975; Rapoport, 1986; Drohobytsky, 2018).

Popular today is *the synergetic concept* of systems analysis in management, which arose as a reaction to the limited analytical capabilities of traditional approaches in a radical change in the systems conditions, especially social, increasing their instability, uncertainty and dynamism. Its main principles are the provisions of: the systems openness, the difference between their properties from the properties of individual elements; consideration of the system both from the standpoint of hierarchy and its absence; taking into account the self-organization of the elements; presence of linear and nonlinear processes, imbalances; negative and positive (provided that self-organization prevails over management) feedback (Haken, 1977, 2006, 2012; Prigogine, 2000; Vasilkova, 1999; Prangishvili, 2000; Spitcnadel, 2000; Chernogor, 2008; Tarasenko, 2010; Malinetskii, 2017; Trubetskov, 2018; Martynyshyn et al., 2020). However, this concept has not yet been sufficiently developed and there are no generally accepted methodological tools.

Unresolved issues. The popularity of systems analysis in socio-cultural management today is very high. Among all research methods, system analysis is central, and all other methods can be confidently attributed to its vague servants. At the same time, whenever the question of methodology and technology of systems analysis in management is raised, insurmountable difficulties immediately arise due to the fact that there are no established intellectual technologies and methodologies of systems analysis in theory and practice. There is only some experience in applying a systems approach in different countries. Thus, there is a problematic situation, characterized by the ever-increasing need for methodological and technological development of systems analysis, which has not been developed enough. The situation is further complicated by the fact that there is no unambiguity in understanding the essence of the system analysis, despite the long history of system ideas development and their application in practice.

2. Purpose and methods

The purpose of the article is to substantiate the theoretical and methodological principles and practical recommendations for the implementation of systems analysis in socio-cultural management, use of which will provide an opportunity to ensure systemic in management organization of socio-cultural sphere.

Achieving this goal involves solving such problems:

– analyze the basic theoretical concepts for understanding systems and implementing systems analysis in management;

– to reveal the essence, role, significance of system and system analysis in the life of modern man and society;

– substantiate the methodology of systems analysis as a unique form of knowledge in socio-cultural management;

– identify types of systems analysis that will form a holistic view of possible directions for its implementation in the management of socio-cultural activities;

– to develop the technology of system analysis of the managing object (socio-cultural enterprises);

– to develop the technology of system analysis of problem situations in socio-cultural management.

The methodological basis of the study is the dialectical principle of cognition, systemic, historical, cultural, philosophical, organizational, cybernetic and synergetic approaches to the study of organizational phenomena in the socio-cultural sphere. Based on the dialectical principle of cognition, each socio-cultural system is considered in the process of continuous development, change, transformation and relationship with other systems of society. At the same time, special attention is paid to the fact that the socio-cultural system is a contradictory unity of various opposites, which while being in a state of unity and struggle. Their mutual struggle is an internal source of any changes, development and self-development of the system and ultimately leads to the resolution of contradictions, which is the transition from the old to the qualitatively new state of the system.

The construction and functioning of socio-cultural systems are studied from the standpoint of a systems approach, according to which they are a complex, open, dynamic complex consisting of a set of interconnected subsystems and elements united by a common goal.

The historical approach allows studying the origin, formation and socio-cultural systems development, to better understand their essence and predict possible trends in the future, and cultural is to identify cultural values, meanings, cross-cultural differences, etc.

The research methodology also covers philosophical, organizational, cybernetic and synergetic approaches to the study of socio-cultural systems and their management, based on relevant theoretical concepts of systems analysis in management.

Research methods. The following general and special methods were used in the research process: contextual-analytical is to study the existing scientific provisions on the research problem; terminological is when clarifying the content and scope of the "system analysis" concept; phenomenological is to reveal the essence of the system and system analysis; structural-functional is

during the analysis of construction of systems and organizational mechanisms of their functioning; semiotic is in order to clarify the meanings inherent in socio-cultural systems; classifications are during the development of the system analysis typology; comparative is when comparing different types of systems and system analysis, establishing their similarities and differences; modeling is to display systems, predict possible scenarios of their development; observation is when collecting empirical data about the research object; abstraction is in order to highlight the essential properties of socio-cultural systems and distraction from the secondary; analysis and synthesis are in-depth study of the nature of systems; theoretical generalization is to formulate conclusions.

Research information base. The information base of the research was the fundamental scientific works of domestic and foreign scientists on the theory of systems and systems analysis, the theory of organizations, the theory of socio-cultural management. As an empirical substantiation of theoretical and methodological principles and practical recommendations for the implementation of systematic analysis in the management of socio-cultural activities, we also used the results of the authors' own research, obtained on the basis of observations of construction and operation of socio-cultural enterprises.

3. Results and discussion

3.1. Systematic and system analysis in human activity

We are going through a time that can undoubtedly be called a systemic revolution. The root causes of this phenomenon have not been fully elucidated, but the late twentieth and early twenty-first centuries have indeed been a turning point in the civilization development. Systematic from the category of abstract concepts has passed into the category of pragmatic, entering the life of each of us in the form of real economic, political, socio-cultural, communication and other systems. Information played a special role in this process. The rapid development of technical means of communication, primarily electronic and computer, has led to an information "explosion". The place of our work, living became a single information space, connecting us into a holistic real-time system. Managers were attacked by a huge flow of heterogeneous information, which is impossible to perceive without systematization.

In order to live normally, work, function in a world of complex system relations, huge and endless information flows, you need a new approach to analysis and management decisions, which would cover the problem situation not in parts, but in full. However, the style of thinking of modern managers

has not changed humanity has entered the era of systems and information with the former fragmentary thinking and hopeless hope to solve pressing problems by the traditional empirical method of "trial and errors".

Fragmentation is fully reflected in the structure of scientific knowledge of management. Traditional sciences: economics, cultural sciences, psychology, sociology and others are local in the sense that deals with the study of management in parts, highlighting individual facets or fragments. The more sciences study the same system of socio-cultural management, the more difficult it becomes to use the acquired knowledge in their entirety. The more sciences study the same system of socio-cultural management, the more difficult it becomes to use the acquired knowledge in their entirety. The knowledge itself forms such a complex information conglomerate that it becomes more and more difficult to understand them. Even specialists in related fields of knowledge, studying the same management system of the socio-cultural field and speaking the same language, cease to understand each other. And here the point is not in the language of communication, but in the fact that each of them, considering the system in turn, does not see it as a whole. The negative consequences of such a fragmented, differentiated approach to cognition of systems are obvious: the substitution of integral fragments leads to incorrect identification and evaluation of problem situations, to the unfoundedness of management decisions and to numerous miscalculations in their implementation.

Searching for a general algorithm for solving various theoretical and applied problems, in the twentieth century a new direction emerged, which was called "Tectology" (Bogdanov, 1922), or "General Systems Theory" (Bertalanffy, 1945, 1968). At the heart of this scientific direction (based on the ancient notion of the integrity of the world order) was an attempt to develop a single (systemic) approach to knowledge of all things, phenomena, and processes of the world. The result of this work was to create a general theory of systems, based on which the principles and patterns valid for systems in general, regardless of their nature. However, it soon became clear that this task was impossible and could only create a new, even more abstract theory than existing mathematical theories. As a result, in the 70s of the last century there was some departure from the construction of a general theory of systems and the emphasis of researchers shifted to the development of systematic scientific approaches aimed at solving specific problems in society and nature. The consequence of this was the allocation of certain areas of system activity: system cognition, system evaluation, system modeling, system design, system forecasting and others, including system analysis (*Figure 1*). Each of the areas of systemic activity has specific features, in particular, in management, as well as common principles in different areas of application.

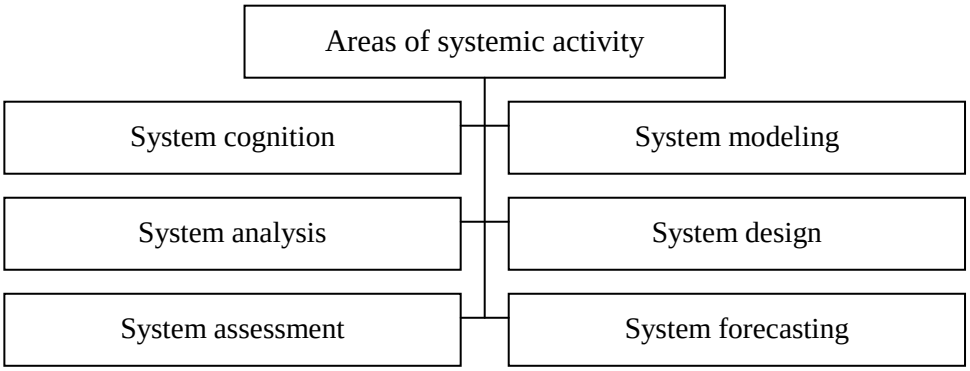

Figure 1. Classification of systemic human activity
Source: own development

It should be emphasized that today in the scientific literature there are almost no developments in various fields of knowledge, which would not pay attention to system activities, including system analysis. At the same time in management they are quite rightly considered as effective ways of organizing management. However, there is almost no methodological justification for them. As for system analysis in management, it is now not a developed practices, but rather a growing mental declaration, which does not have a serious methodological support.

In addition, today, systems analysis is often identified with certain types of system activities, and sometimes the understanding of systems analysis is narrowed: reducing it to one of its components, such as structural and functional analysis, a set of mathematical methods for systems research, system patterns, etc.

Studying the special scientific literature and practice of modern sociocultural manager, we can conclude that in the process of its development, system analysis has outgrown the scope of a simple method that helps managers choose the best management solutions in problematic situations, and today is an interdisciplinary scientific field in this way:

– from the theoretical point of view it is, first, concepts and principles of statement and the decision of practical problems of sociocultural activity on the basis of system ideology; secondly, ways to integrate the methods and results of research of special disciplines in the target technology aimed at solving the problem; third, methods, techniques and models of complex research of various system objects and situations;

– from the applied point of view, the subject of system analysis are utilitarian problems of different hierarchical levels (local, regional, national, international), associated with the creation of new and improvement of existing organizational systems in the socio-cultural sphere.

3.2. Methodology of system analysis

The purpose of systems analysis as a scientific method of cognition based on a systems approach is to use existing and develop new methodological tools to study the content of complex theoretical and practical problems of society and nature, preparation and justification of effective solutions to solve these problems. However, to understand the system analysis and features of its application in socio-cultural management is possible only if we compare it with the traditional application adopted in the natural sciences. It is known that there the correctness of the use of methods is determined by compliance with the following requirements: the ability to accurately verify the assumptions underlying the study; reproducibility and clear repeatability of results; objective unambiguity of conclusions, their independence from the personality and interests of the researcher (manager).

In the implementation of systems analysis in the social sciences, in particular in socio-cultural management, whereas an element there are poorly structured and poorly formalized factors (people, teams), these requirements are usually not met due to incomplete information, its inaccuracy, lack of understanding managers who prepare and make management decisions, goals and ways to solve the problems under study, the inability, due to their complexity, to take into account all factors, often insufficient study and more. Therefore, systems analysis in management, as an essential element, includes the human factor, people's intuition, human-machine procedures for finding optimal (or at least acceptable) rational solutions, thus creating a systemic unity of object and subject.

According to *Jermen Gvishiani* (2007), systems analysis is nothing more than enlightened common sense at the service of modern analytical methods. It can be useful in developing and considering alternative approaches to various problems of society. At the same time, there is an attempt to measure what can be measured, and to define as clearly as possible what cannot be measured, leaving the decision-maker with the difficult task of making judgments about the immeasurable. Thus, systems analysis in the social sciences, including socio-cultural management, differs significantly from the system analysis carried out in the natural and exact sciences, primarily by the presence of immeasurable factors.

In addition, the decision-making process in socio-cultural management includes feedback procedures, i.e. obtaining information from the object of management, preparation of the management apparatus based on it and development of effective adaptive decisions. And, as a rule, the procedure of the system analysis has iterative character with repeated mutual coordination of the received intermediate results, that is, as a matter of fact, during carrying out the system analysis system synthesis is carried out at the same time. It is often defined as the formation, based on methods of system analysis, rational structure and parameters of individual elements, directions and intensity of their interaction.

Methodology of systems analysis in socio-cultural management, in our opinion, is a set of basic theoretical concepts, principles, methodological approaches and specific methods. Consider its main components (*Figure 2*).

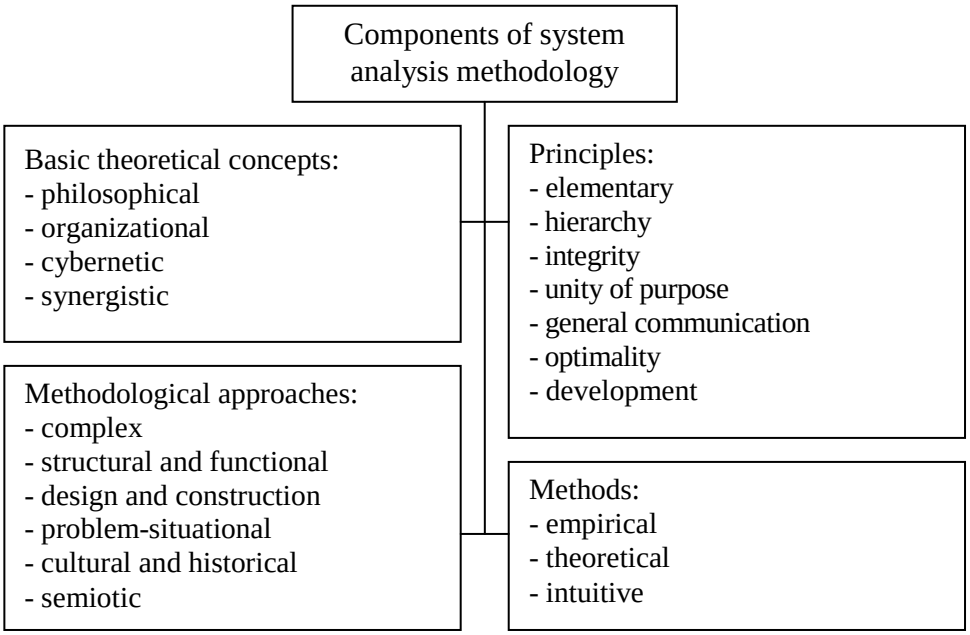

Figure 2. The structure of the methodology of system analysis
Source: own development

The introduction has already considered the main theoretical concepts for the implementation of systems analysis in management is a philosophical, organizational, cybernetic and synergetic concept. They are the basis for systematic analysis in socio-cultural management, because the theory is not only a reflection of reality, but also a method of its reflection, i.e. it performs a

methodological function. On this basis, systems theories are included in the methodology of systems analysis.

The principles should be understood as the basic, basic provisions, some general rules of cognitive activity, which indicate the direction of scientific knowledge of socio-cultural management, its object and subject, but do not indicate a specific truth. These are developed and historically generalized requirements to the cognitive process, which perform the most important regulatory roles in cognition. Substantiation of principles is the initial stage of methodology construction. The most important principles of systems analysis in socio-cultural management include the following principles: elementary, hierarchy, integrity, unity of purpose, general connection, optimality and development. Systems analysis is a kind of integral of these principles.

Methodological approaches to systems analysis in socio-cultural management unite a set of techniques and methods of system activities implemented in the practice of analytical activities. The most important among them are complex, structural-functional, design-constructive, problem-situational, cultural-historical, and semiotic.

An important component of the methodology of systems analysis is methods. Their arsenal is quite large. Accordingly, there are different approaches to their selection (Ignateva & Maksimtcov, 2001; Kapitonov, 2006; Tarasenko, 2010). In our opinion, the methods of systems analysis can be divided into three groups: empirical, based on the use of knowledge and experience of specialists; theoretical, which are based on a formalized representation of systems; intuitive, based on the feelings of managers-analysts.

3.3. Types of system analysis

To determine the types of systems analysis in socio-cultural management, we use the method of classification, which allows dividing the total scope of the "systems analysis" concept by certain key features of the management in socio-cultural sphere. The scope of the generic concept of "system analysis" is divided into species, and species, in turn, are divided into subspecies. All this in the end allows forming a holistic view of possible areas of system analysis in the management of socio-cultural activities. Note that the question about classification of types of systems analysis has not yet been developed in science. There are some approaches to solving this problem (Chernyak, 1975; Spitcnadel, 2000; Uyomov, 2000; Drohobytsky, 2017). However, quite often the types of systems analysis are reduced to methods of systems analysis: operations research, mathematical modeling, and so on. Regarding systems analysis in socio-cultural management, there are no such classifications at all.

In our opinion, as key features for the classification of types of systems analysis in management, it is advisable to use the following criteria (*Figure 3*):

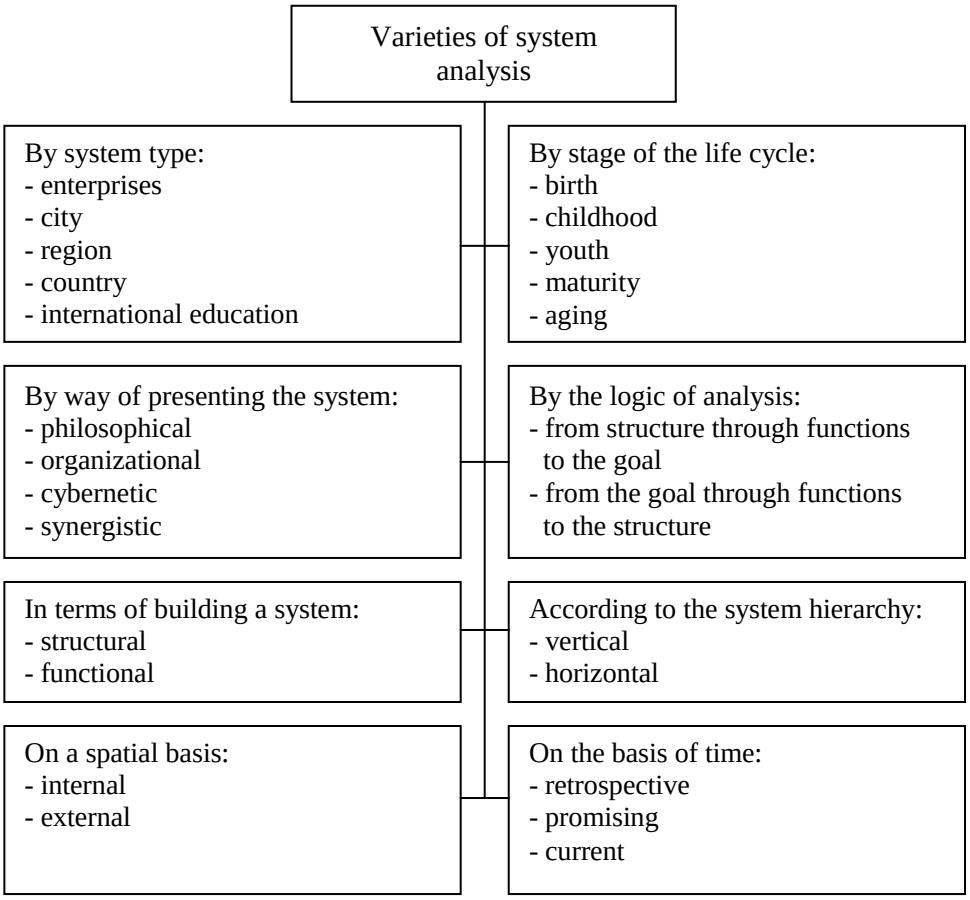

Figure 3. Typology of system analysis
Source: own development

1. Type of social system. The system as an object of management will be different for different types of enterprises, cities, regions, countries, interstate (transnational) entities, which will be determined by the managing scale, culture, and mentality. In turn, the features of the system-enterprise of the socio-cultural sphere will depend on the industry in which the activity is carried out (theater, museum, concert and tour, etc.).

2. The method of the system representation. To date, there are four main ways of presenting the system: philosophical, organizational, cybernetic and synergetic. An expert system analysis manager can use any of these methods.

When conducting a systematic analysis of socio-cultural enterprises, in the current conditions of ultra-high dynamism and instability of the environment, it is advisable to use all four ways of presenting objects.

3. Building a system. It has two aspects: the structural aspect, which determines the composition of the system and the relationships between the elements; functional, which defines the functions of the system and its elements. Accordingly, there can be two types of analysis: structural and functional.

4. Spatial feature. System analysis of socio-cultural management can be carried out both within the system, then it is an internal analysis, and in its environment is an external analysis. To obtain a complete picture of the system in space, it is necessary to conduct these two types of system analysis.

5. Life cycle stage. The socio-cultural enterprise system will have different characteristics at different stages of its life cycle. They are widely described in the scientific literature and the expert manager who carries out the analysis should consider it at development of the program of the system analysis for this or that enterprise life cycle.

6. Logic analysis. The expert manager can choose one of two directions of logical system thinking during the analysis: from structure through functions to the purpose, or from the purpose through functions to structure. In our opinion, it would be expedient to apply two directions of logical thinking; first one, and then another, which would provide a higher degree of the results validity of systems analysis.

7. System hierarchy. The hierarchy of the enterprise system has two axes: vertical (administrative) and horizontal (coordinating). Accordingly, there is a need for two types of systematic analysis of socio-cultural management: vertical and horizontal.

8. A sign of the times. System analysis can be performed for different periods of time of the system: retrospective, current (situational) and future, depending on the tasks facing the researcher-manager of socio-cultural activities.

The proposed classification, in our opinion, gives a complete picture of the types of systems analysis in socio-cultural management.

3.4. System analysis of the managing object

Today, the problem of systematic analysis of the managing object is given a significant place in the concepts of various authors (Chernyak, 1975; Kapitonov, 2006; Plotnitsky, 2008; Spitcnadel, 2000; Shagiakhmetov, 2009; Tarasenko, 2010; Drohobytsky, 2017). At the same time, when selecting successive stages of system analysis, scientists do not attach enough importance to such important steps of analysis as the model (system) formation of the

enterprise and analysis of system organization in statics and dynamics, which deprives the system analysis of the managing object of system sense.

In our opinion, the process of system analysis of the object of management is the result of a synthesis of operations of the system approach and scientific research and should include the following successive stages (*Figure 4*):

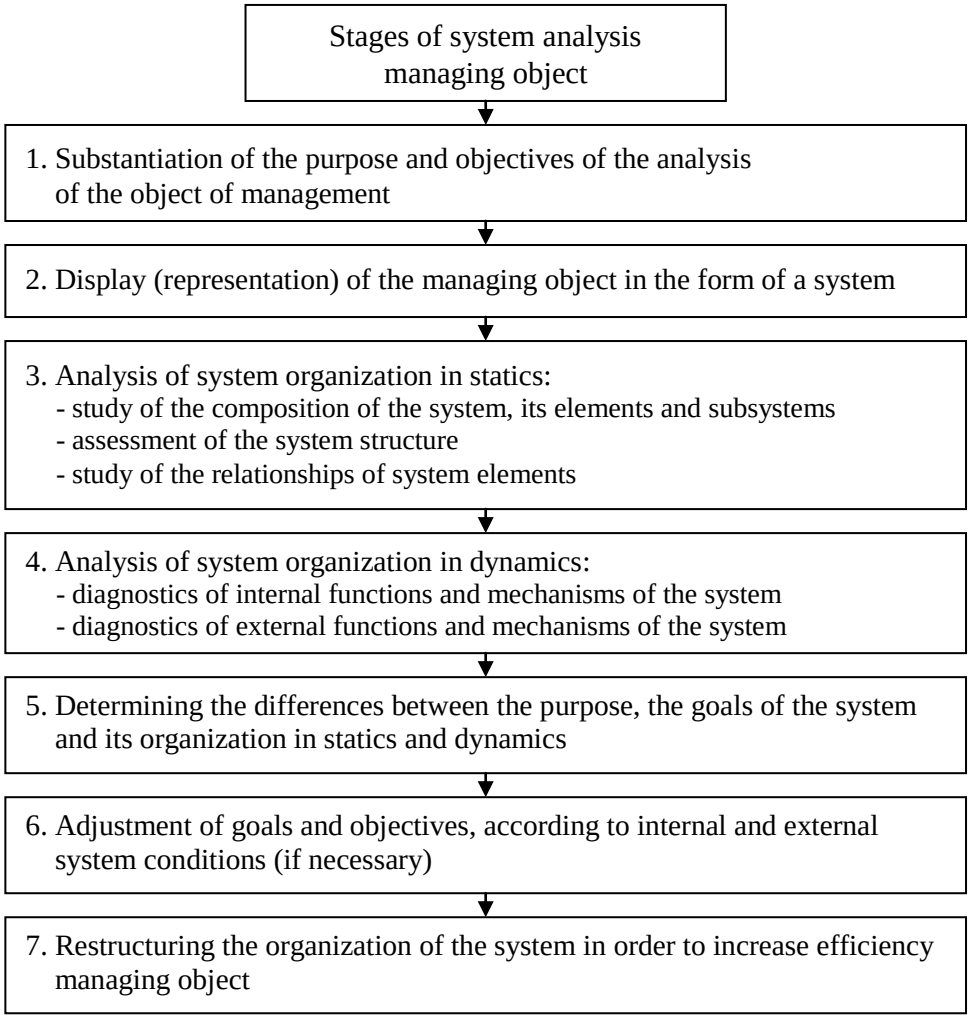

Figure 4. Technology of system analysis of the managing object
Source: own development

1. There is substantiation of the purpose and objectives of the analysis of the managing object. When substantiating the purpose of system analysis, it is necessary, first of all, to determine what type of analysis will be carried out:

complex or aspect (creative, production, financial, marketing; current, retrospective, prospective; internal, external, etc.). This, in turn, will determine the tasks of system analysis, set its content and tools.

2. There is display (representation) of the managing object in the form of a system. Today, the main scientific way of displaying the managing object (enterprises of socio-cultural activities) is the modeling method. Its philosophical basis is the original postulate of reflection as a specific interaction of two substances, as a result of which one substance (actually existing) is reproduced in another, which is called a system or model. As a result, the reflection takes the form of the interaction of reality and human consciousness of the manager. Reality through the senses is perceived and affects the manager's consciousness o, resulting in the formation of a model (system) in his mind, which he in any way reproduces on a particular medium. Then the manager analyzes it (system analysis) and makes management decisions. Thus, the model carries information about the reality perceived by the subject of management and expressed by him in the form of mental construction, drawing, graphic image, formula, verbal text, etc. Therefore, any model is objective in its content and subjective in its form. This means that for the same real managing object, you can build completely different models that reflect the subjective view of a manager on the managing object.

In the systematic analysis of socio-cultural management, modeling is considered as the main method of scientific knowledge related to the improvement of methods for obtaining and recording information about objects of management, as well as the acquisition of new knowledge based on model experiments. In recent decades, models have been developed with extensive use of computer technology.

Historically, the method of modeling was preceded by the method of scientific empiricism. Empirical research is based on the experience of managers and is limited to observations, information gathering, and classification of the studied phenomena and conclusions formulation based on logical inferences. Empiricism today has not lost its scientific significance as a method that precedes any model knowledge.

Depending on the language used, models are conventionally divided into descriptive, formal and formalized. Descriptive, or verbal, models are developed on the basis of natural language tools. As a rule, they consist of scientific texts accompanied by block diagrams, tables, graphs and other illustrative material. Their main purpose is to serve as a generalized and at the same time quite complete expression of the manager's knowledge about the studied object of management within the capabilities of a particular scientific concept. In systems analysis, descriptive models are inextricably linked to formal and formalized,

because they contain the initial data needed to build formal and formalized models, and they are a visual form of expression of the managing object.

Formal models are a way of concentrated expression of knowledge, ideas and hypotheses about the managing object in the form of mathematical expressions and relations. They are used to describe well-structured problems, where the properties of the studied managing objects can be expressed in quantitative form. Various means of the modern mathematical apparatus are involved for construction of such models. These models are a tool that allows you to assess the effectiveness of the system in quantitative terms.

Formalized models (logical-linguistic) are used to describe poorly structured problems. These are also mathematical models, but they are built on the basis of soft computational language tools (fuzzy sets, relational, frame languages) and are implemented on computers in the form of logical-linguistic models.

The main requirement for any model is that it be adequate to the managing object, otherwise the meaning of modeling is lost. Obviously, the creation of an adequate model is possible only if the properties and relationships of the object being modeled are known. But, if unknown, empiricism and intuitive thinking, which also play a significant role in systems analysis, remain ways to reflect the object of control.

3. There is analysis of system organization in statics. Statics is an orderly, balanced state of the organizational system as a whole, regardless of changes (both positive and negative) that occur in the external environment. All parameters and indicators that reflect the activities of the enterprise system remain unchanged for a long time. Analysis of the organization of the enterprise system in statics involves: studying the composition of the system, its elements and subsystems; assessment of the structure of the system; study of the relationships of system elements. Elements and subsystems of the enterprise of sociocultural activity are its internal primary and secondary divisions, and also separate workers, managers and owners of the enterprise. During the analysis the structure of divisions, vertical and horizontal communications between them (administrative, technological, economic), and also a place of each division, the worker, the manager in structure of system-enterprise is studied. The existing structure of the enterprise can be hierarchical (linear, functional, mixed, divisional, etc.), network (non-hierarchical), hybrid (combination of hierarchy with network), depending on the conditions and traditions of the enterprise.

4. There is analysis of system organization in dynamics. Dynamics is the functioning of the organizational system under the influence of the applied management actions aimed at achieving the goals and objectives of the enterprise, taking into account the changing conditions of the external environment.

Analysis of the organization of the system in the dynamics involves the diagnosis of its internal and external functions and mechanisms. The following are analyzed: whole systems and their decomposition; type of functions (linear, nonlinear, internal, external), assignment of functions to the relevant departments; behavior of the system in conditions of uncertainty, in critical situations; organizational mechanism of functioning, coordination of internal and external functions, the problem of optimal functioning and restructuring of functions; position of the system in the environment: system boundaries, nature of the environment, openness, balance, stabilization, balance, the mechanism of interaction between the system and the environment, adaptation of the system to the environment, factors and influences of the environment; stability, homeostat, controllability, centralization and peripherally, optimality of organizational structure; system development: mission, system-forming factors, way of life, stages and sources of development, processes in the system – integration and disintegration, dynamics, entropy or chaos, stabilization, crisis, self-recovery, transition, randomness, innovation and restructuring of the enterprise system.

5. It is the determination the differences between the purpose, goals of the system and its organization in statics and dynamics. The organization of the system must clearly correspond to the purpose and strategic goals of the enterprise system, taking into account the conditions of the external environment. In the absence of such compliance, the achievement of these goals and objectives becomes impossible. Therefore, at this stage, all the differences between the desired and existing states of the organization of the system in statics and dynamics are determined.

6. There is an adjustment of the purpose and the purposes according to internal and external conditions of system. This stage of the system analysis of the managing object is carried out if necessary, for example, if the external environment of the enterprise has changed significantly, as well as in many other cases when there is a need to adjust the purpose and objectives of the enterprise. It is advisable to use the method of "goal tree". The goal tree is built on the basis of vertical and horizontal integration, which allows coordinating the activities of all elements and subsystems of the enterprise. The basis for building a goal tree is their decomposition; the division into smaller goals. The number of decomposition levels depends on the complexity, scale and degree of specification of certain goals, type and features of the organizational structure of control, the system-enterprise hierarchy. The goal tree allows you to focus the activities of all units of the system to achieve higher goals. If the hierarchy of goals is built correctly, then each unit, performing its own tasks, contributes to achieving the goals of the entire enterprise system.

7. There is restructuring the organization of the system in order to increase the efficiency of the managing object. In case of discrepancies between the organization of the enterprise system and its goals, the system is restructured and reconfigured in accordance with the overall goal and objectives.

We have considered the general scheme of the system analysis of the enterprise of sociocultural activity as object of management which, of course, is not exhaustive. It, depending on the specific conditions of the analysis, can be supplemented and clarified by the specifics of a particular branch of sociocultural sphere (theater, library, museum, etc.).

3.5. System analysis of the problem situation

The manager of socio-cultural activities has to constantly deal with various problem situations. Its effectiveness and competitiveness are determined by the ability to understand the situation and the adequacy of management decisions to address it, or the ability to direct the development of the situation in the right direction – in favor of the organization. In this case, a systematic analysis of problem situations, which includes the following successive stages, is important (*Figure 5*):

1. There is the identification of the problem situation and its reflection (representation) in the form of a system. This stage is characterized by the transformation of an uncertain problem situation into a set of information that allows you to formulate goals that determine the whole process of solving the problem. The process of problem identification begins with empirical research, which is based on the experience and intuition of managers, their vision, critical thinking and includes observation, collection, systematization and analysis of data on the problem situation. The results and conclusions of empirical research, in turn, are the basis of the next step of cognition is modeling the situation and reflecting it in the form of a verbal, formal or formalized system, which is subject to rational understanding.

2. There is the forming a common goal and goal tree to solve this problem situation. Defining goals and objectives to address the situation is a central stage of systems analysis in management. As the general purpose, as a rule, cannot be directly connected with means of its achievement, its decomposition on the smaller purposes which allow revealing means of their achievement is carried out. The method of gradual division of the general purpose into constituent elements is the method of "goal tree". The division of the overall goal into goals and sub-goals is carried out until it is possible to link the goals of the lower levels of the tree with the means and resources that ensure the achievement of these goals and the goal as a whole.

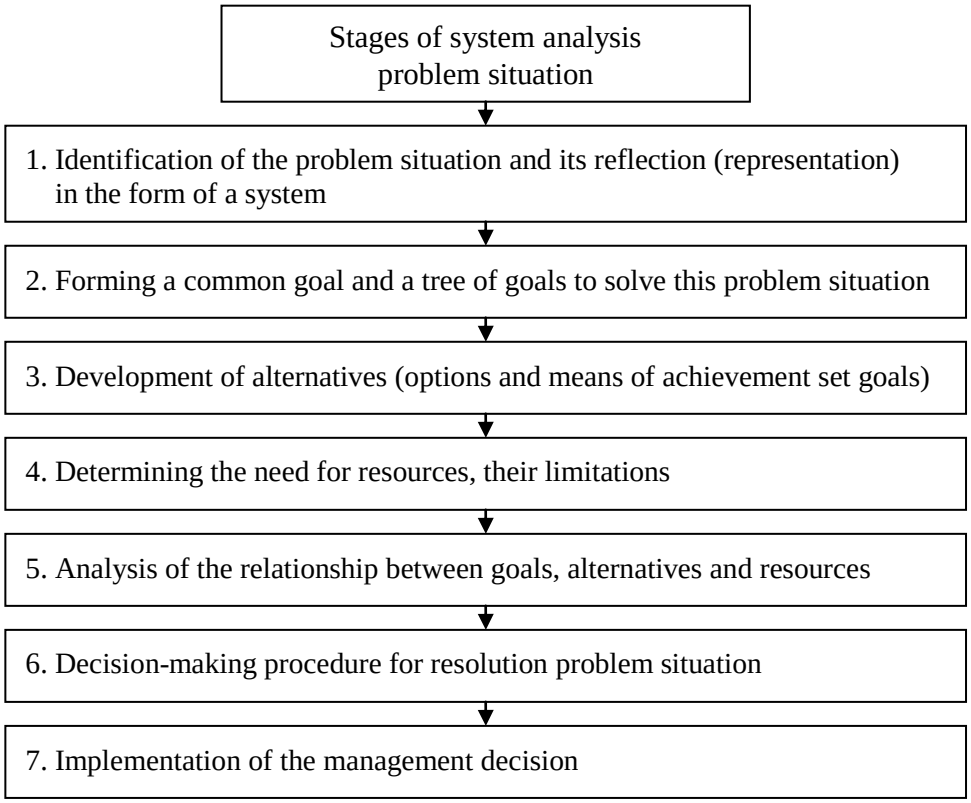

Figure 5. Technology of system analysis of a problem situation
Source: own development

It should be noted that both the formation of the overall goal and objectives, and the process of building a tree of goals are creative processes that belong to the informal part of systems analysis. An essential condition for the correct construction of the goal tree is the presence of deep professional knowledge and the manager-analyst's experience. Despite the fact that the goal tree is formed on a purely heuristic basis, during the implementation of the method of building a goal tree can be divided into two stages: construction of the original version of the goal tree; determining the coefficient of relative importance of its individual elements and the formation of the final version of the goal tree.

When building a goal tree, as a rule, the following conditions are checked: subordination is lower-level goals must be subordinated to higher-level goals, be their components, follow from them, ensure their achievement; comparability is at each hierarchical level should be placed goals, comparable in scale and

value; completeness is the tree of goals should include the whole set of goals arising from the overall goal; interconnectedness is there can be no isolated goals in the goal tree; reality is goals must be achievable in terms of available opportunities and resources.

3. There is development of alternatives (options and means to achieve goals). Since the goals are inseparable from the means to achieve them, the main content of this stage is the development of alternatives to achieve the goals. At this stage, one of the main features of systems analysis is the search for new alternatives. Therefore, system analysis recommendations often emphasize that the manager-analyst could be much more useful if he did not evaluate the obvious ways to achieve goals, but to look for new, sometimes unobvious and unexpected alternatives.

The search for different alternatives is carried out at the following stages: element – structure – functioning. When processing the first two stages, a morphological description of the system-situation is created and a structural analysis is performed, which includes: selection of essential elements and parameters; selection of adequate relationships between them; construction of structural models, mainly in the form of graphs. The next, after the structural stage, is the stage related to the development of functional aspects of the designed system.

At the beginning of the design the most difficult problem is the optimal principles development of operation and the system-situation development. Thus taking into account performance of the set purposes are formulated: the list of tasks by means of the decision of which realization of elements of a tree of the purposes is carried out; distribution of functions between governing bodies of different levels; volumes, types, forms and terms of presentation of information between objects of system-situation; criteria and indicators of efficiency of functioning and development of the system-situation. In the subsequent stages of development, it is important to work out specific issues of management functions. To do this, models of functioning of individual elements of the system-situation are developed, which are combined into a single functional model of the whole system, which allows studying its behavior in time and space. The most convenient tool for such research is simulation models.

4. There is determining the need for resources, their limitations. The content of this stage of system analysis is to identify: the necessary resources; restrictions on certain types of resources; possibilities of substitutions of limited types of resources. The main approach to resource analysis is to assess the resources required to use the capabilities of the system-situation. Resource analysis should be based on the use of resource consumption models. Typically, resource consumption models are expressed as cost as a universal scale for measuring resources. However, for scarce resources, it can also be ex-

pressed in natural kind. On the basis of construction of models "peaks" of the necessary resources which at rigid restrictions on resources can appear essential for achievement of the set purposes in the set terms come to light. On the basis of construction of models "peaks" of the necessary resources which at rigid restrictions on resources can appear essential for achievement of the set purposes in the set terms come to light.

5. There is analysis of the relationship between goals, alternatives and resources. The alternatives developed at the preliminary stage of the system analysis of the situation should be analyzed to choose the most effective options in terms of achieving the goals. The analysis aims to reduce the number of alternatives to a minimum and is the content of this stage.

The choice of the most effective options is most successful on the basis of the analysis of behavior of system-situation in the course of its functioning and development. At the same time the best options will be those that ensure the optimal functioning and development of the system-situation from the standpoint of achieving the goals. To assess the effectiveness of the proposed alternatives, taking into account the interaction of goals and resources, you need to choose the appropriate criteria, which determine both the feasibility of using the alternative and the success of achieving the goals. As a result of such analysis the selection of alternatives is carried out taking into account all available restrictions which provide the most effective realization of the set purposes.

6. There is decision-making procedure for resolving a problem situation. Decision-making means choosing the best solution (way to achieve the goal) from a set of acceptable alternative solutions. In making management decisions, a special role belongs to the person with the right to make decisions, i.e. the manager. In this case, the decision made by the head is binding on the executors of this decision.

In the decision-making process, the manager is faced with the need to choose one or more alternative solutions. The need for choice is due to the problem situation, in which there are two states: existing and desired, and there is more than one way to achieve the state (goal). The manager who finds himself in such a situation has a certain freedom of choice, i.e. there are a number of alternative solutions, the choice of which depends entirely on the manager.

Alternatives differ in the consequences they lead to. The consequences of choosing different options are characterized by a certain degree of achievement of the goal and are not indifferent to the decision-maker. In this case, the manager has his own ideas about the advantages and disadvantages of individual alternatives, his own attitude to the consequences of decisions in the implementation of an alternative, and, consequently, to the relevant solutions, i.e. the manager has his own system of advantages.

However, in complex problem situations, the decisions of the solving-making manager are usually incomplete and unclear. They do not allow him to a priori fully analyze the various aspects of the consequences of solutions, to establish their significance in the choice, to form a holistic attitude to alternatives and to justify the selection criterion. In other words, the system of preferences of the decision-making manager is poorly structured. The fundamental difficulty of making a choice in such decision-making systems is the uncertainty of the concept "best alternative", which can be determined only by the method of modeling and optimization.

7. There is an implementation of the management decision. The final stage of the system analysis of the problem situation is the implementation of the management decision to solve the problem situation. It consists of the organization of decision execution, analysis and control of execution. A common mistake managers make is to assume that if a decision is made, it will definitely be made. However, it does not happen. The organization of execution of the decision provides coordination of many people's efforts. Therefore, the manager must strive to avoid conflicts and make people motivated to implement the decision. To do this, first of all, it is necessary to draw up a plan of measures that make decisions a reality. It is also necessary to distribute rights and responsibilities, to build a communication network for the exchange of information and to regulate the relevant relations of subordination. The next step should be to incorporate into the decision a mechanism for obtaining information on the progress of the decision. The basis of such a mechanism should be a system for detecting errors in the implementation of the decision. When such a tracking system works effectively, then problems in implementing decisions can be avoided before they manifest.

The information obtained during the execution of the decision is necessary for the correction of actions. In this case, the information from the original source is always better than a report prepared by someone. In the first case, more nuances are noticed, a more accurate assessment of the implementation of decisions.

The manager's intuition plays an important role in making and implementing management decisions. It includes foreboding, imagination, insight, the ability to see the invisible to rational vision. Developed intuition is the ability to keep everything related to a problem situation in mind throughout the management process, it is the art of management.

4. Conclusions

The article substantiates the theoretical and methodological principles and practical recommendations for the implementation of systems analysis in socio-cultural management. The results of the study allow us to draw the following conclusions:

1. During the evolution of systemic ideas, four basic theoretical concepts for the implementation of systems analysis in management were formed: philosophical, based on the categories of wholeness and integrity, as well as ontological and epistemological ideas about the system; organizational, which is based on the organization concepts and disorganization of the system, which determine its behavior; cybernetic, based on the idea of the decisive role of information in systems and the possibility of developing general principles for their management on the basis of mathematical modeling; synergetic, which arose today in conditions of increasing instability, nonlinearity, uncertainty and super dynamic existence of systems, and is based on their self-organization.

2. Systems analysis in socio-cultural management is an interdisciplinary scientific field, which: from a theoretical point of view includes concepts and principles of formulation and solution of practical problems based on systemic ideology, ways to integrate methods of special disciplines into technology aimed at solving problems, methods and models of complex research system objects and situations; from the applied point of view, the subject of system analysis are utilitarian problems of different hierarchical levels, associated with the creation of new and improvement of existing organizational systems in the socio-cultural sphere.

3. Methodology of systems analysis in management is a set of basic concepts, principles, methodological approaches and specific methods. The theoretical concepts of systems analysis are a way of reflecting reality: philosophical, organizational, cybernetic, and synergetic. The principles should be understood as the basic requirements for the cognitive process: elementary, hierarchy, integrity, unity of purpose, common connection, optimality, development. Methodological approaches combine methods of realization of system activity: complex, structural-functional, design-constructive, problem-situational, cultural-historical, and semiotic. The methodology also includes specific methods: empirical, theoretical and intuitive.

4. Using the method of classification, the scope of the generic concept of "systems analysis" is divided into components, which allows to form a holistic view of the types of systems analysis in management: by type of system: analysis of the enterprise, city, region, country, international education; by the way of presenting the system: philosophical, organizational, cybernetic, synergetic; in terms of construction: structural, functional; on a spatial basis: internal, external; by stage of the life cycle: birth, childhood, adolescence, maturity, aging; by the analysis logic: from structure through functions to purpose, from purpose through functions to structure; in the hierarchy of the system: vertical, horizontal; on the basis of time: retrospective, perspective, current.

5. The technology of system analysis of the managing object (enterprises of socio-cultural activity) is the result of the synthesis of operations of the system approach and scientific research. It should include the following successive stages: justification of the purpose and objectives of the analysis; display of the managing object in the form of a system (model); analysis of system organization in statics; analysis of the organization of the system in dynamics; identification of differences between the purpose, goals of the system and its organization in statics and dynamics; adjustment of the purpose and the purposes, according to internal and external conditions of system; restructuring the organization of the system in order to increase the efficiency of the managing object.

6. The technology of system analysis of the problem situation should be focused on solving the problem, or directing the development of the problem situation in the right direction. It should contain the following stages: identification of the problem situation and its reflection in the form of a system; formation of the general purpose and a tree of the purposes concerning the decision of the given problem situation; development of alternatives; determining the need for resources and their limitations; analysis of the relationship between goals, alternatives and resources; decision-making on solving the problem situation; the decision implementation.

The scientific novelty of the research results lies in the deepening of the theoretical and methodological foundations of systems analysis in socio-cultural management on the basis of modern philosophical, organizational, cybernetic and synergetic approaches.

The practical significance of the obtained results is manifested in the possibility of their use in the managing objects and situations of the socio-cultural sphere, as well as in the addition of general scientific theory of systems and socio-cultural management with new scientific ideas.

Prospects for further scientific research in this direction may consist in the detailed elaboration of technologies of system analysis for certain types of enterprises in the socio-cultural sphere (theaters, museums, libraries, etc.).

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