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Project Management of Organizations

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ABSTRACT: High business activity of economic entities is necessary for Russia to make a transition towards dynamic post-crisis development. The higher efficiency of project management in organizations, especially of innovative projects, should accelerate the upgrade of the national economy, which is one of the most important conditions of a successful structural transformation of the economy. This should contribute to creating conditions aimed to ensure fast economic growth, long-term sustainable development of the Russian economy and better welfare of Russian society.
The management of project activities is not trivial for many reasons. One of them is a decrease in solvent demand for many products and services, fewer possibilities to draw external funds and partners' confidence in new projects. Accordingly, it is essential to alter approaches to project management, to introduce preventive management by applying economic and mathematical tools and new information technologies.

Keywords: Economy, business process.

I. INTRODUCTION

Nowadays, the efficient execution of projects is not possible without professional project management. Even now, many companies, primarily high-technology services providers, broadly apply project principles to the operation of their divisions or entire enterprises. To this end, enterprises establish special project management offices, purposefully introduce corporate project management systems and train staff professionally.
The article's objective is to develop theoretical and methodological provisions for the organization and the subsequent conduct of project management in enterprises, with preventive components. These provisions are based on the results of imitation modeling of an enterprise's business processes. The theoretical basis consists of scientific articles written by Russian and foreign scientists concerning the problems related to project management, preventive management, results of fundamental and applied studies in the field of business modeling, federal and regional statutory legal acts, official statistical data, materials from periodicals, websites, as well as data received in Russian enterprises, which are subjects of the study.

II. PROPOSED METHODOLOGY

A. Block Diagram
Management in any organization is a process of interaction among the managing and managed systems, as well as the external environment. The managing system generates certain orders that a managed object accepts for execution. Management constitutes the selection and the implementation of the best (by a certain efficiency criterion) managerial decisions from a certain quantity of possible in accordance with the system's goal given restrictions and based on information about the state of a managed object and the external environment.
Methods of comparison and generalization are used when analyzing approaches to project management.
As defined by the Project Management Institute, a project is a temporary enterprise designed for the creation of unique products, services or results [1]. A project's main features are the clear beginning and termination and, as a rule, execution in the conditions of substantially limited resources, including financial and human.
Projects are often used as a tool to achieve an organization's strategic plan. First of all, operations and projects differ by the fact that operations are carried out and repeated in the course of projects on both a temporary and unique basis.
Accordingly, a project can be described in terms based on its own features. A project is a temporary effort taken to create a unique product or service. Temporary means that every project has its clearly defined beginning and end. Unique means that a product or a service has specific features putting it apart from all other products or services. For many enterprises, projects are a response to those requests that cannot be addressed in their ordinary course of corporate activities [2].
Projects are executed at all levels of an organization. They can involve several people or several thousands of people. Their duration can vary from several weeks to several years. Projects can involve divisions of an organization or divisions of a number of organizations, for instance, joint stock companies or partnerships. Projects are vitally important for the implementation of an organization's business strategy because projects define the execution of a strategy. Examples of projects are as follows:

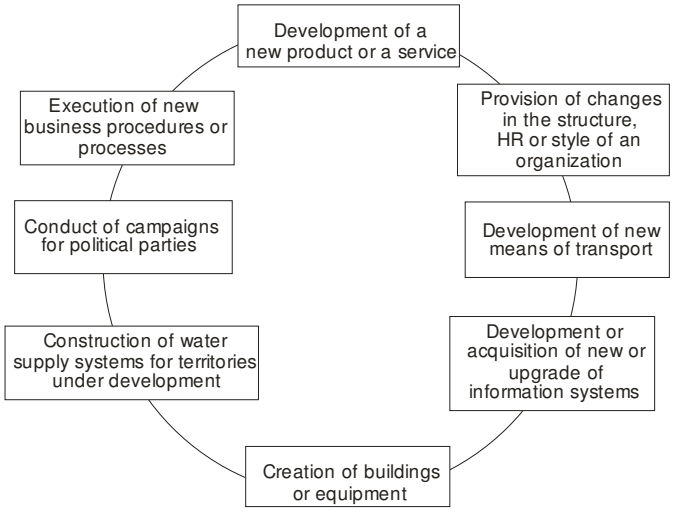

Fig. 1. Examples of project execution [3].

B. Algorithm

In any organization, management is a process of interaction among the managing and managed systems, as well as the external environment. The managing system generates certain orders that a managed object accepts for execution. Management constitutes the selection and the implementation of the best (by a certain efficiency criterion) managerial decisions from a certain quantity of possible in accordance with the system's goal given restrictions and based on information about the state of a managed object and the external environment [4].

To manage is to set goals, to analyze problems, to develop and take managerial decisions, to organize and to control them.

An aggregate of interrelations and interaction among elements of a management system, i.e. managerial relations, arises in the course of management. They aim to stabilize or optimize the performance of a managed object in accordance with the goal set and a set of criteria designed to assess the efficiency of the system's performance.

Managerial relationships are executed via managerial decisions. They constitute a form aimed to express straightforwardness, methods to execute needs, interests and other operative motives of subjects involved in a system's managerial relationships [5, 3].

The concept "system" is most often determined as aggregate of mutually related elements defining the integrity of the formation as its properties are not limited to those of its components. Main features of a system are various elements, which mandatorily include the core one, relationships and interactions, integrity of their aggregate (the external and internal environment), a combination and compliance of properties of the elements and their totality as a whole [6].

The managing system is thereby an aggregate of those bodies and persons who take a straightforward action given information about the state of an object of management and the external environment, and the managed system is an object that is targeted by a certain managerial effect in order to provide it with specific forms of development (behavior) for the purpose of achieving planned results [7].

Outlining or identifying a system is the division of a certain area of the material world into two parts, one of which is considered as a system, an object of analysis (synthesis) and the other as the external environment.

The external environment is a set of objects (systems) that exist in the space and time, which, as assumed, produce an effect on the system, i.e. this is an aggregate of natural and artificial systems for which this system is not a functional sub-system [8].

The knowledge of regularities, which the system has, allows predicting in advance the form of their behavior in case of any changes in the environment. This, in turn, makes it possible to take more effective decisions to regulate future events.

The system is always in any of these states. The state of the system is an aggregate of the state of its components and relations among them. To set a specific system means to set its states starting from the inception to its end or a transition into another system [9].

The consideration of mutual relations between the system and management leads to the concept "management system".

The management system is an aggregate of actions required to coordinate joint activities of people; this aggregate should have all the above properties of the system [10].

Systems are considered management systems when they are designed to produce such an effect on an object of management that transforms this object into a desirable state and (or) provides parameters of its processes with certain quantitative or qualitative properties. Necessary changes in a managed object (process) are made under the influence of managing signals [11].

The management system, which consists of functionally interacting elements, as any system of activity, constitutes an aggregate of material, technical, personnel, information, financial resources and organizational conditions of activities that ensures the integrity of the management system, i.e. the elaboration, adoption and implementation of managerial decisions.

C. Flow Chart

Functional components of the management system, as of any activity, which present an object of organizational design, are

– executives, officers in charge, i.e. staff or personnel of a subject of management;

– organizational techniques, statutory reference information, instructions and management methodologies;

– information that is used for the analysis of a problem and the elaboration of managerial decisions, material resources for the implementation of decisions;
– an organization's operating conditions, which include organizational, economic, production and household ones;
– the content or a result of managerial activities (documents, the state of an enterprise's production, investment and financial activities, etc.).
The system with management comprises three sub-systems (Fig. 2): the managing system, an object of management and the communication system.

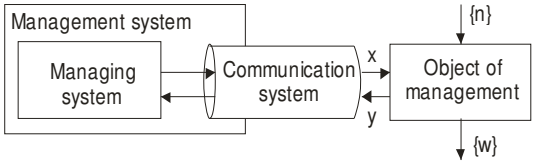

Fig. 2. System with management.

The communication system includes a direct communication channel, through which input information is transmitted – multiplicity {x}, which includes command information {n} with {x}, and the feedback channel, through which information is given about the state of the object of management – the multiplicity of output information {y} [12].
Multiplicities of variables {n} and {w} accordingly mean the influence of the environment (interferences of a different kind) and indicators, which characterize the quality and the performance of the object of management sub-system. Quality and performance indicators constitute submultiplicity of information about the state of the object of management, {w} with {y}. Moreover, when analyzing the systems each of y_t characteristics should be considered as a potential candidate to the position of an indicator.
The managing system, together with the communication system, forms the management system. A person who makes a decision (PMD) is a key component in organizational technical management systems. This is an individual or a group of individuals who have the right to make final decisions on the selection of one of several control actions.
Straightforward systems or systems with management are classified as cybernetic [13]. Examples of such systems are biological, social, organizational, economic, technical systems, etc.
The management system performs important functions. The following is considered the main groups of the management system's functions:
1. The search and adoption of decisions are expressed in the generation of new information in the course of analysis, planning (forecasting) and operational management (regulation and coordination of actions). This is because the content of information about the state of the object of management and the external environment is transformed into managing information when PMD solves logical tasks and makes analytical calculations in the course of generation and selection of alternatives. This group of functions is the main one because it ensures the elaboration of information actions to maintain it in its current state or when bringing the system into a new condition [12].
2. Routine functions of information processing cover record-keeping, control, storage, search, display, replication, transformation of the form of information, etc. This group of information transformation functions does not change its meaning, i.e. these are routine functions, which are not related to the processing of information in terms of contents.
3. Information exchange functions relate to the measures aimed to bring elaborated actions to the object of management and to the exchange of information between PMD (restriction of access, receipt (collection), transfer of management information in the form of texts, charts, tables, etc. on the phone, data transmission systems, etc.).
3. Functions for self-improvement of the management system.
The sequence of management functions, which are performed in the system in case of changes in the environment, is called a management cycle. Performing a cycle after a cycle, the system approaches a goal specified. Our vision of the management cycle is given in Fig. 3. Information about the current state is transmitted from objects of management to the management system. PMD control its authenticity, analyze whether it contains any deviations from the state required and decide whether it is necessary and possible to change the current state. Upon analysis, an alternative of control actions and operating technical management (regulation), which includes the coordination of actions taken by an object of management, is chosen. The regulation and coordination imply the elaboration of decisions to maintain the system in the condition required or to move along the planned trajectory, after which the system is transferred to a new state based on forecasting and planning. If necessary, a report is forwarded to the senior management body [14].
The consideration of a project's interrelation, the process of management and of the system leads to the "project management system".

III. RESULTS ANALYSIS

Not a single economy can operate for a long time without efficient management [15, 16]. Over the past few years, especially in the conditions of the global financial crisis, this simple truth has been impressively confirmed in the real development of the Russian economy [17,18].
The main distinctive features of the economic conditions in the country are [3] as follows:
– the need for projects aimed to upgrade production facilities;
– poor quality of project management, no experience in anti-crisis management;
– the constant threat of bankruptcy faced by most industrial enterprises;
– problems in drawing funds for the upgrade of production facilities from traditional sources;
– disrupted production ties;
– political instability impeding an inflow of foreign investment;
– higher risks associated with investment in the Russian economy;
– problems related to the secondary issue of securities by privatized enterprises in order to attract additional financial resources;
– no strategic investors due to stock dilution;
– the underdeveloped system of investment risk insurance.
All this leads to the necessity of improving management, including project management. Amid global crisis trends, the vector of project management in enterprises can temporarily deviate (as an option) from industrial projects and current production to investment in human resources.

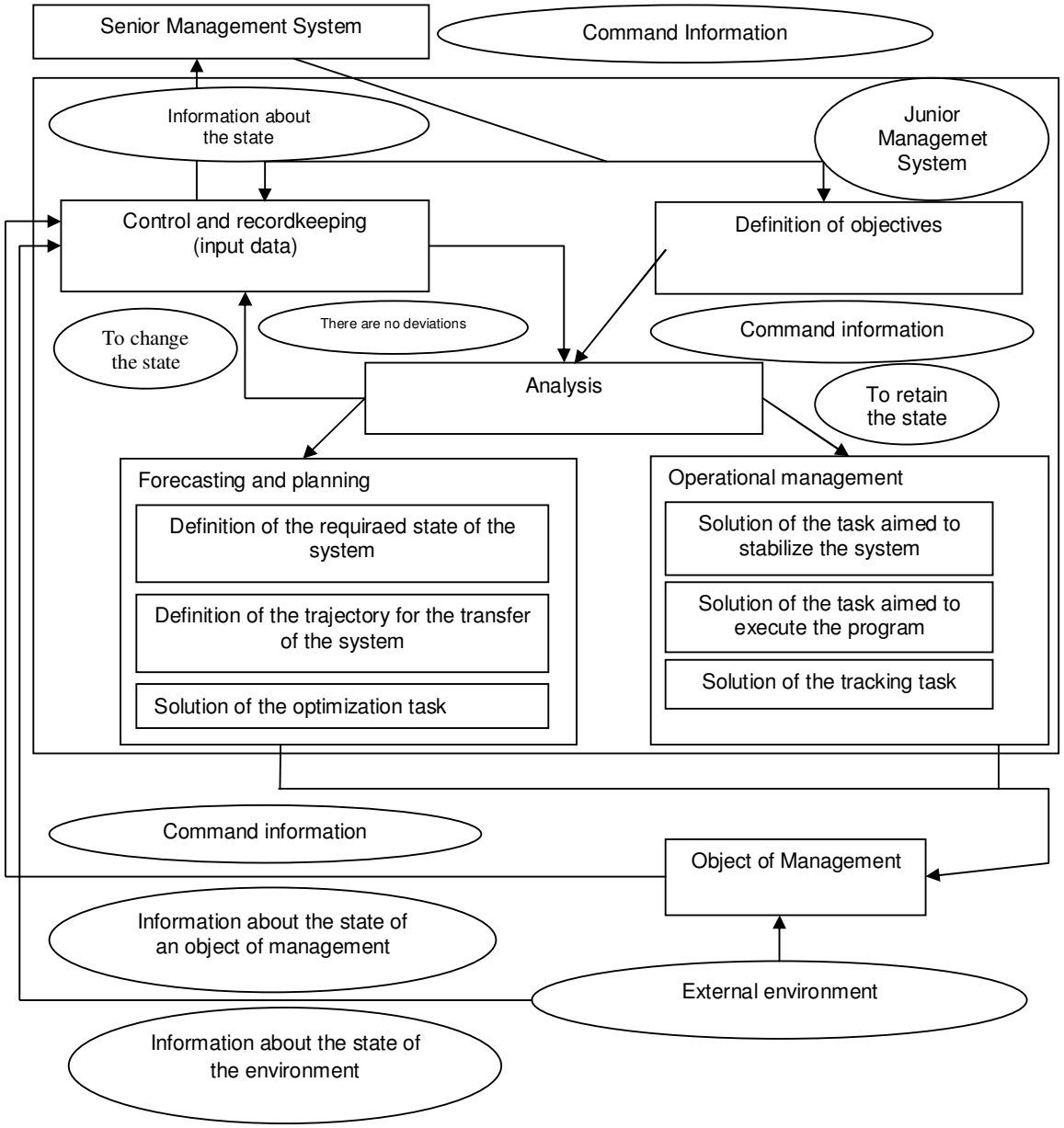

Fig. 3. Cycle of management [13].

At the same time, managers face a number of problems.This study and analysis of research in the field of management [19-23] made it possible to identify important problems that the head of the enterprise have to solve. Analyzing primary objectives that enterprises face in modern conditions, it is necessary to emphasize the following: the need for investment in innovative technologies to ensure development in the post-crisis period; the need for the formation of human resources able to work efficiently in a changing environment; the need for the search for new options of mutually beneficial cooperation with investors; the need for the exploration of M&A opportunities with "related" enterprises; the need for the improvement of features of products, etc.

In this situation, advantages of project management are the focus on results, constant interaction with customers and clients, innovation and measurability of the accomplishment of a specific objective become less noticeable compared with disadvantages. Disadvantages of project management are related to the fact that such management is more expensive. It requires much effort and time because it demands thorough elaboration of a plan and the distraction of a company's resources.

IV. CONCLUSION

Summing up, nowadays the efficient execution of projects is not possible without professional project management. Even now, many enterprises, first of all, high-technology services providers, broadly apply the principles of organizing activities on the basis of a project in their divisions or enterprises. As defined by the Project Management Institute, a project is a temporary enterprise designed to create unique products, services or results. Any project requires management. Management in any organization is a process of interaction among the managing and managed systems, as well as the external environment. In the conditions of the unpredictable and uncontrolled modern business world, traditional methods of management become inefficient. The science of management distances itself

more and more from managers' practical interests because it is focused on planning, analysis and control. For this reason, a new vision of managerial problems, their study and use in practical management are extremely important for Russian managers.

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