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PROJECT MANAGEMENT BASED ON THE INTERNATIONAL STANDARD ISO

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Analysis of project management practice based on international standards, in particular ISO 21500, indicates that methodology of project management can be widely used in agriculture and food industry of Kazakhstan. For these purposes, it is needed to ensure active and targeted outreach, provide consulting support, standard documentation for selection, planning and implementation of projects, methods of financial and resource management, training, technological knowledge, etc. aimed to improve project implementation, efficient tenders and competitions.

Анализ практики управления проектами на основе международных стандартов, в частности ISO 21500, показывает, что методология проектного менеджмента может получить широкое распространение в сельском хозяйстве и пищевой промышленности Казахстана. В этих целях требуется проведение активной и целенаправленной разъяснительной работы, обеспечение консультационного сопровождения, нормативной документацией по отбору, планированию и прохождению проектов, методами управления финансами и ресурсами, обучение технологическим знаниям и т.д. для улучшения реализации проектов, эффективного проведения тендеров и конкурсов.

Халықаралық стандарттар негізінде, атап айтқанда, ISO 21500, жобаларды басқару тәжірибесін талдау, Қазақстан ауыл шаруашылығы мен тамақ өнеркәсібінде жобалау менеджмент методологиясынкең ауқымда тарату мүмкін екенін көрсетеді. Осы мақсаттарда жобаларды іске асыруды жақсарту, тендерлер мен конкурстарды тиімді жүргізу үшін белсенді және мақсатты бағытталған түсіндіру, кеңес беру жұмыстарын нормативтік құжаттармен таңдап алу, жоспарлау және жобаларды өткізу, қаржы және ресурстарды басқару әдістері, технологиялық біліммен және т.б. бойынша қамтамасыз ету жұмыстарын жүргізуді талап етеді.

Keywords: international standards, agricultural sector, project, quality, management processes, certification, manager, programs, implementation.

Ключевые слова: международные стандарты, аграрный сектор, проект, качество, процессы управления, сертификация, менеджер, программы, внедрение.

Тұтқалы сөздер: халықаралық стандарттар, аграрлық сектор, жоба, сапа, басқару процестері, сертификаттау, менеджер, бағдарламалар, енгізу.

International standards used in all sectors of the world economy, including agricultural, are voluntary, but they contain the actual specifications on the products, services and advanced practice, as well as help to increase and improve production effectiveness. As a rule international standards are developed and adopted by consensus, which has a positive effect on the reduction of barriers trading in various goods and services, primarily products for agricultural purposes.

No doubt, one of the most authoritative Institute in the sphere of standardization is International Organization for Standardization (ISO), founded in 1946 by 25 national organizations for standardization and operating "to promote the international coordination and to unify the industrial standards". Nowadays 165 countries are presented in the ISO. The current structure of ISO, according to the data 2014, have about 3511 technical bodies, including 238 technical committee, 521 sub-committee, 2592 working groups [1].

Prior to ISO are such important tasks as, the promotion of standardization and related activities in the world in order to guarantee the international exchange of goods and services, also promotion of cooperation in intellectual, scientific, technological and economical fields. Business field of ISO has been expanded and

related to standardization in all fields except electrical technology and electronics, which belongs to the competence of the International Electro technical Commission. Therefore it applies to the agrarian sector of economy. In addition to standardization, ISO also deals with certification.

By the beginning of the 2015, number of ISO standards was 20493, 1468 among them are international standards and standard documentation adopted and published in 2014. Besides that, during one 2014 year was registered 1852 new projects. Total amount of international standard projects under consideration by ISO is 2200 projects. Along with this, there are 5,6% of working international standards and 3,8% of projects of the new standards[1].

International ISO standards expand to nearly all aspects of technology and management of modern business: from food safety to computers, as well as agricultural industry and health care.

Despite the large number of standards developed by ISO, the standard in the field of project management adopted only in 2012: An international standard of project management ISO 21500: 2012 (hereinafter - ISO 21500). Until that time, there was no ISO standard of the project management, and the regulation was carried out to associated or related management issues, which were based on such standards as ISO 10006: 2003 "Quality Management Systems. Guidelines for quality management in projects », ISO 10007: 2003" Quality Management Systems. Manual configuration management », ISO 31000: 2009" Risk Management. Principles and Guidelines" [2].

The ISO 21500 determines the principles and procedures based on best practices of project management. It can be used in all types of organizations, including government, private or public and also can be used for projects of any type, irrespective of their complexity, size and duration. Project managers can use it as a guide for successful realization of projects and to achieve results in various industries, including agricultural and food industry.

Advantages of using of ISO 21500 includes:

stimulating the exchange of knowledge between projects and organizations to improve the realization of projects;

providing effective procedures of tenders (tenders) using common terminology of project management;

providing flexibility in attraction of project managing staff and ability of working in international projects;

description of the universal principles and procedures of project management.

ISO 21500 became the first international standard of series of project management. It is designed to match with accompanying international standards such as ISO 10006: 2003 “Quality Management Systems. Guidelines for quality management in projects”, ISO 10007: 2003 “Quality Management Systems. Manual configuration management”, ISO 31000: 2009 "Risk Management. Principles and Guidelines" as well as with specialized industry standards

The strategy of any organization defines its capabilities, which are evaluated and must be documented. Selected opportunities in the future can be transformed into a business plan or other similar document on the basis of which initiates one or more projects that bring results. These results can be used to obtain the benefits that are used as input for the further realization of the strategy of organization [3, P. 42-43].

According to ISO 21500, every project is a unique set of processes consisting of coordinated and controlled operations with dates of commencement and completion performed to achieve the objectives of the project. With it requires the achievement of the results that satisfy specific requirements. The project may be subject to many limitations. Although many projects are similar, each one is unique. The differences between the projects are in their progress; the influence of interested parties; resource usage; restrictions; relationship processes to ensure results.

Many experts agree that the interpretation of the essence of the project as presented in ISO 21500, is more progressive than the definition formulated in the international standard PMBOK. In particular, in the PMBOK definition is based on the fact that the project – it is(1) the operation carried out (2) in a limited period of time (3) with a unique result. Several ISO standards, including ISO 21500, define project as aunique set of processes

Who is right? in fact, the overall project management - it is a purely administrative discipline. Out of its competence are products and services more related to the competence of industry practices, which knows what technology they are made with, and is able to determine their degree of uniqueness? Thus, the ISO standards 21500 and PMBOK does not allow to generate knowledge about the products of the project to make technological conclusions about the level of their uniqueness. It is not possible to determine whether its a project or not, because of absence of such special knowledge. That's why it is also difficult to determine projective management methods being used reasonably or not. This is due to the fact that any administrative discipline does not consider the product and its attributes as uniqueness, but engaged in the processes.

The main difference between operational and project management is not in the product, but it’s in how to manage the process of manu-

facturing the product. Operational management means the realization of operations on the same set of standard schemes. The benefits of project management consists in the fact that it is able to control the so-called "chaos", ie arbitrary and complex combinations of operations that can form new combinations, either because of the uniqueness of the product or due to the variability of standard products, either due to risks affecting the production of standard products. Operational management is powerless in a "unique chaos", but is able to successfully produce unique products that differ only due to incorrectness of manufacturing techniques or combinatorics of orders components.

PMBOK defines a project necessarily with unique results. However, this axiom has narrowed the possibility of using project methods without rational grounds, but simply by initiating a postulate. Moreover, in practice, it is not necessary for all projects to have unique results.

Project methods can be effectively used for mass production, if the orders are large, limited-edition, multifunctional and technically difficult. In this case project methods and EPM-tools can be more effective than the ERP-system, because EPM-tools just set up for complex combinations of processes. In practice, in each case it requires an analysis for the use of project or process (operational) approach. Recommendations based on the uniqueness of the product can give a standard ISO 21500. Actually ISO 21500 for the first time removed a taboo on adaptation of project methodology to the serial production. [4]

In accordance with the PMBOK Guide aim of the project is the production of goods. Focus on the product is missing in the standard ISO 21500. On the other hand, the definition of the project from the ISO standard retained the word "unique" in relation to the processes, that caused problems with the definition given in the Guide PMBOK. As defined by ISO 21500 set of processes of the project - the result of its implementation. Accordingly, the project planning begins after the start of operation. How, then, to understand the word "unique"? It turns out, you can start something, but it does not mean the project, by definition of the project, set by the standard ISO 21500. This applies, for example, commercial projects such as the construction of a model house, because it is difficult to apply the word "unique" for such a set of processes. Because of the word "unique" in the definition of the project in the ISO 21500, the whole standard becomes self-contradictory document. The main part of it contains 40 standard processes constantly occurring in the most of projects. Thus standard allows to unify the processes, but on the other hand, it requires a combination of unique processes. Therefore, you need a proper understanding of the concept of the project in the ISO standard based on the word "unique" because the confusion in this matter could lead to problems in the interpretation of the state of ISO 21500.

The concept of “Project Management” is defined by ISO 21500 as the usage of methods, tools, techniques and skills to work with the project. Management of the project includes the integration of the various stages of the project life cycle. From other side project management implements through the processes. Herewith, processes selected for the project realization should be systematically linked. Each stage of the project life cycle should have concrete results. These results should be regularly reviewed during the realization of the project in accordance with the requirements of the customer and other interested parties. The ISO 21500 clearly separates the concept of internal and external management of the project. Herewith, there are two different words: «management» and «governance».

Stakeholders and Project Organization. In order for the project to be successful, project stakeholders, including the organization running the project must be described in detail. The roles and responsibilities of stakeholders should be clearly defined and communicated to them based on the goals of the organization and the project. Interaction with stakeholders should be carried out through the processes of project management.

Project organization is a temporary structure which includes roles, responsibilities, levels and limits of authority within the project. The organizational structure may depend on the legal, commercial, interagency and other agreements which exist or may arise between project stakeholders. However, it may include the following roles and responsibilities:

a) a project manager who directs and manages the work of the project and responsible for the results of the project;

b) project management team supporting the project manager in the management and administration of project works;

c) the project team directly involved in the execution of the project.

Project management may include:

supervisor of the project, which formalizes the beginning of the project, making executive decisions, resolves issues and conflicts that are not included in the functions of project manager;

the steering committee, providing project management by the first project managers (senior management).

In the project management can participate additional stakeholders:

customers or their representatives, which form the requirements for the project and accept the results of the project;

suppliers that provide resources for the implementation of the project;

the office of project management, which has experts who can perform different functions, including the management, operation of standardization, training, project management, control of planning and monitoring of the project.

The life cycle of the project. Projects typically consist of stages which are determined by the needs of management and control. These stages should follow a logical sequence from start to project closure, and use resources to generate results. For effective project management during the entire life cycle at each stage must be completed a certain set of actions. All stages of the project together constitute the life cycle of the project. Stages are separated by decision points, which may vary depending on the needs of the organization and the environment of the project. The point of decision-making contribute to the management process of the project. To the end of the last stage of the project should be achieved all the results.

In ISO 21500 introduced the concept of external control of the project through control points, typically spaced along its phases of implementation. In modern tools and techniques the control points form a "road map". In the standard pointed that it is necessary primarily for external management (governance), but however there is no indication of such a need for an effective internal project management (project management, project organization). The consequence of this in practical application of the standard is that a road map on control points is becoming the tool of the project sponsor. This division into internal and external management in ISO 21500 implemented more consistently than in the PMBOK.

In ISO 21500 in the category of the general terms noted the relationship between concept and process. Project management is accomplished through processes using a number of concepts and competencies. The process is a set of interrelated actions. Processes used in projects typically fall into three main categories:

the processes of project management that are specific and determine actions with the help of which the project is managing:

production processes that are not unique, but are the result of the determination and creation of specific product, service, or result and vary depending on the results of the project;

support processes that are not unique, but provide support for the processes of production and project management in aspects such as logistics, finance, accounting, and security.

ISO 21500 is considering only the project management processes. However, it should be noted that product and supporting processes and project management processes often overlap and interact throughout the entire project.

Thus, in ISO 21500 held the boundary between sectoral and general methodology of project management. From the point of view of the standard, all the branch methods are the same. This means that the project manager like administrator should manage the same agricultural production, and the factory for the production of tomatoes, and construction of warehouses. To ensure that the project manager has managed to do that, the standard provides requirements for the processes for approaching to each other on the basis of branch procedures. This is one of the main objectives of standardization - easy connection of various techniques among themselves at the expense of the general conceptual apparatus and the same structure of the processes in the part where the techniques are integrated. In addition to industry methods, ISO 21500 can operate effectively also under integration with workflow techniques.

The project management processes, that allocated in ISO 21500, we propose to consider not selectively, but consistently and in more detailed.

ISO 21500 defines the recommended processes of project management for use during the execution of the project in general and its individual stages. These processes are suitable for projects of any organization. Project management requires coordination and, consequently, each process to be used must be linked with other processes. Some processes may need to be repeated to completely define them, to bring them in conformity with the requirements of the stakeholders and to reach agreement on the objectives of the project.

For the project manager together with the stakeholders it is recommended to carefully consider the processes and apply them according to the needs of the project and the organization. The process is not necessarily uniformly applied in all projects or in all stages of the project. The project manager should adapt the management processes for each project or stage, i.e. to determine which processes are needed and what level of fidelity to use for each process. This adaptation is carried out with regard of the adopted policy of the organization.

To succeed, must be performed the following actions regarding the project:

select appropriate processes required to achieve project objectives;

use a defined approach to develop or adapt the characteristics of the product and the development of plans of execution the objectives and requirements of the project;

to comply with the requirements of the customer and other stakeholders;

to determine and control the content of the project within the constraints, taking into account project risks and resource requirements to achieve project results;

to ensure adequate support from the implementing organisation, including the fulfilment

of obligations on the part of the customer and the project Manager.

According to ISO 21500, the project management can be considered from two perspectives:

from the point of view of project management as a process group (initiating, planning, execution, control, completion);

from the point of view of group processes in the subject areas as subject groups (integration, stakeholders, content, resources, time, cost, risk, quality, procurement, communication).

In ISO 21500 there are five groups of processes.

1. Initiating process group. The processes of initiation are used to start the project or phase, identify tasks, and to authorize the project manager to begin work on the project.

2. Planning process group. Planning processes are used for detailed planning. This detalization should be sufficient to develop a baseline, based on which measured and monitored the implementation of the project.

3. Implementing process group. The processes of implementing are used to perform work management project and ensure the achievement of results defined in the project plan.

4. Controlling process group. The management processes used to monitor, analyze, and regulate the progress and performance of the project in accordance with the plan. If necessary can be taken preventive and corrective actions, implemented change requests to perform the tasks of the project.

5. Closing process group. The processes of closure are used to formally close the project or phase, analysis of accumulated knowledge with a view to their use in the future.

Process group, usually repeated for each phase of the project. However, not all processes can take place in the project or its phase. In practice, processes are often performed at the same time, overlaping and interacting with each other. If we compare the process group that is allocated in ISO 21500, with groups of processes allocated in PMBOK, they are the same, except for the group of processes of control, which in PMBOK is called the group of processes monitoring and management.

Simultaneously with the groups of processes in ISO 21500 distinguished 10 subject groups.

1. Integration. Subject group integration includes the processes of identification, definition, combination, unification, coordination, control and completion of the various operations and processes related to the project.

2. Stakeholder. This subject group consists of processes of defining and managing stakeholders: project supervisor, customer and others.

3. Scope. Subject group of content involves the process of defining all required activities and results for the project's successful completion.

4. Resource. Subject resource group covers the processes of identifying and acquiring necessary resources for the project, as people, premises, equipment, materials, infrastructure and tools.

5. Time. Subject group includes the processes of determining the timing of operations of the project, development schedule, monitor and control of the schedule.

6. Cost. Subject group cost consists of the processes of budget formulation and monitoring budget execution to control the project cost.

7. Risks. Risk subject group includes the processes of identifying and managing threats and opportunities.

8. Quality. In the subject quality group include the processes for planning, implementation and quality management of the project.

9. Procurement. Subject group procurement involves the processes of planning and purchasing products, services or results, as well as the management of interactions with suppliers.

10. Communication. Subject group communication encompasses the processes of planning, management and dissemination of information relevant to the project.

These subject areas correspond to similar areas of knowledge PMBOK with a few exceptions. So, if the subject group "Resource" by ISO 21500 standard includes the processes required to identify and acquire all required resources (people, facilities, equipment, materials, infrastructure, tools), PMBOK as a field of knowledge are the only human resources. In addition, in the fourth edition of PMBOK lacked knowledge area "stakeholders management project", and in the fifth version it was added. Thus, the subject groups allocated on ISO 21500, in general, coincide with the areas of knowledge allocated in PMBOK. Description directly of the 39 project management processes is disclosed in ISO 21500 using four key parameters: objectives, brief descriptions, major inputs and outputs.

In general, describing ISO 21500, the experts agree that this standard is based on PMBOK. In particular, the Russian expert in the field of project management, V. Ivanov, notes that ISO 21500 is based on the skeleton of the PMBOK processes. As shown in practice, only used 20-30% of the content of the PMBOK. Therefore, ISO experts made a wise decision: they abandoned the "dinosaur" (PMBOK) and deliberately made the standard very easy and simple, saving those 20-30%, which are often used in practice specialists. In fact, in ISO 21500 transferred all of the best and most important from PMBOK (classifiers processes and terminology) [4].

V. Ivanov's opinion is largely based on the comparison performed by the Polish expert, Professor S. Gashik. He became one of the key experts included in the team PMBOK3 standards and OPM3, thoroughly researched ISO 21500 and came to the conclusion that the notion of "take to the base" perceived by the members of the group to develop a standard in the literal sense [5].

In practice, this has led to the fact that:

to the basis of ISO 21500 formed process model by analogy with PMBOK4;

the new standard of the 39 processes 35 taken from PMBOK4, where 31 process has a direct analogue in PMBOK4;

such knowledge area PMBOK4, like managing time, cost, quality, delivery and risk has not suffered any changes, except for combining some of the processes into one;

knowledge area PMBOK4 renamed to Subjects (subject area), and "communications management" is divided into two parts: stakeholders management and communication management [6].

When implementing governance projects in the agricultural sector of Kazakhstan it is necessary to take into account the peculiarities and specifics of this sector of the economy, which is characterized by:

the lack of financial resources at the majority of agricultural enterprises for the services of consulting organizations in the field of management;

the continuing outflow of skilled personnel from rural to urban areas;

a low level of organization management;

insufficient access to information resources and technologies;

low provision of computers.

In the end, despite the universality of project management methodology for all sectors of the economy, it poorly affected the agricultural sector of Kazakhstan. The analysis shows that project management methodology can be used more widely in agriculture and food industry, which requires to pursue an active and targeted outreach, to provide consulting support. It is also necessary to ensure that agricultural enterprises as legal requirements for the selection, planning and completion of projects, templates and samples of project documents, methodologies, organizational structure changes, changes in accounting, financial management and resour-ces, wage schemes, automation systems design activities to teach technological knowledge and skills of project management.

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