FIRST PHASE OF PROJECT MANAGEMENT PROCESS

Andrea SIKOROVÁ, Martin LAMPA, Andrea SAMOLEJOVÁ

1,2,3VSB - Technical University of Ostrava, Ostrava, Czech Republic, EU,
andrea.sikorova@vsb.cz, martin.lampa@vsb.cz, andrea.samolejova@vsb.cz

Abstract

Project management is based on a process concept by which we understand all the activities and subjects involved in the project. When planning a process, it is necessary to meet the basic requirement that is that the activities must be planned and logically connected to each other. Due to the uniqueness of each project, it is relatively difficult to determine the specific processes, methods and techniques generally applicable to each project. On the other hand, it is especially important for more sophisticated projects to set certain procedures and processes so that the project can be effectively managed. Each project contains considerable uncertainty. An agreement on how the project should be managed contributes to the reduction of this uncertainty that is a description of the key processes and game rules for the project team and its closest surroundings. The authors of this article capture their experience in project management of a research plan in its first phase.

Keywords: Project management, process, methods, organization

1. INTRODUCTION

A project is a controlled process that has its beginning and end and precise rules of control and regulation. The project is unique, defined in time, money and resources, is implemented by a team of people, is risky and solves the partial activities of the project in order to achieve the desired results. The first phase of the project management process includes the activities and subjects involved in the project. The authors describe the selected research project processes in the first phase. They apply their own knowledge and experience from a project team and capture the issues that have already occurred in past in planned project. The article describes selected tools and techniques applied in the project in relation to procedures and processes. Gantt chart, the organizational structure of management team, the responsibility and competency matrix for each position in the management team are applied in practice. The article provides instructions in the first stage of project process control, method and organization according to certain rules and principles.

2. PROJECT MANAGEMENT AND PROCESS MANAGEMENT

Project management is based on process concepts by which we understand all activities and subjects involved in the project. When planning a process, it is necessary to keep the basic requirement, that the activities must be planned and *logically connected* to each other. No idle time should occur during which work is needed to be finished in order to eliminate duplication and achieve *optimal use of logistical procedures*. We also include all preparatory work that is necessary to ensure the smooth running of the project in each process, especially if the project partners also participate in the project. To understand the procedural concept of project management, it is necessary to clarify the basic concepts: project, process, project management and process management. [1]

Project can be perceived as an action that is unique, defined, diverse, complex and risky. It is unique because it is not a recurring process, it's something new. It is determined materially, temporally, financially, or possibly has further determination. It is diverse because, according to the set objective, it requires different skills of different people. It is complex because the solution is not easy and can't be done in only one consultation. And it is risky because it's always something new and we lack experience; there is little time, money, a lot of different

people are involved, everything is quite complex, so there are a lot of uncertain events that can somehow disrupt such an action. [2,3]

Process occurs in everyday life without us realizing it. We are all going through the educational process, i.e. we gradually acquire knowledge of the program for life and occupation. Production processes, their fluidity and performance are on the agenda of most business management meetings. The ever-increasing level of automation and control of workflows requires that specific processes to be mapped and imprinted into technological backgrounds. Processes of all kinds surround us in such a close proximity that we take them for granted. We do not see their essence anymore, but we get excited or worried by the results we use. **A process** is a series of logically related activities or tasks to create a predefined set of results. When we talk about processes, we often deal with process design and description, process models and flows. [4]

Project management is a tool to introducing a defined change that cannot be ensured otherwise than with a project perceived as a sum of activities forming the path from the initial state to defined final state. Project management is the effort of people involved in the project who use their knowledge and project management methods to get to predetermined goals in a pre-defined time. At the same time, it is necessary to ensure a balance not only between the range of work, time, cost and quality, but also between interest groups, their needs and our expectation from the project outcome. [5]

Process management focuses on what creates and adds value from the customer's point of view. Process management is not a set of functions, but a set of processes. This means the successive sequential activities performed by individual sections in order to achieve the desired goal that is negotiated in the contract. Process management needs to be elaborated in detail, for rational logistics, time savings, and expedient and cost-efficient spending. [1] Project process management scheme in the first phase is shown in **Figure 1**.
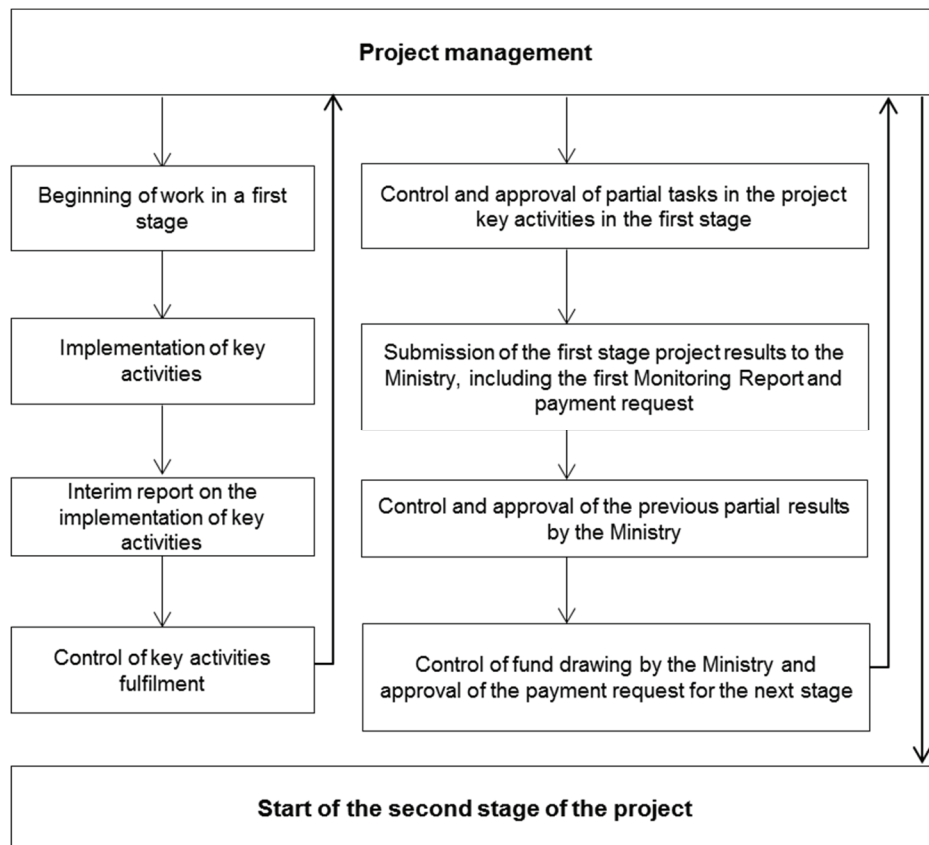

Figure 1 Project process management scheme in a first phase

Project management is carried out through processes that are organized **in two dimensions.**

1. In 5 basic process groups:

- **launching,**
- **planning,**
- **realization,**
- **monitoring and control,**
- **termination.**

These process groups are linked by the results produced by the respective processes. The output of one process is the input to the next process. The final outputs of one process coincide with the necessary inputs of the following process, which are linked to each other and thus **logically interconnected**, so the change in the output of the previous process is reflected at least in one of the following processes.

2. In 10 thematic process groups [5]:

- **Integration**: processes of interdependence management.
- **Interest groups**: processes related to stakeholders.
- **Scope**: processes related to defining the project scope and managing its change.
- **Sources**: processes related to workers (allocation and use of human resources in project framework).
- **Time**: processes related to time limits (planning and its control).
- **Costs**: processes related to costs (budget and its control).
- **Risks**: processes related to risks (identification, analysis, elimination).
- **Quality**: processes related to quality and verification of project product quality and quality of project management.
- **Procurement**: processes related to purchasing (specification of purchase requirements and its realization).
- **Communication**: processes related to communication with stakeholders.

Looking at both dimensions, we get the matrix of processes that are required to establishing the procedural character of project management. [5]

3. METHODS AND TECHNIQUES USED IN PROJECT MANAGEMENT

For successful project management, it is essential to use tools and techniques to help project managers control and effectively manage the procedures and processes to achieve the intended objective. The basic tools are statistical, mathematical, economical and information models and methods that help leading, predicting and evaluating the project course. Basic tools and techniques include network analysis methods, logical framework methods, Gantt charts, methods of evaluating the project state of work, methods of project economic efficiency evaluation, financial analysis methods, presentation methods and many others. [5,6]
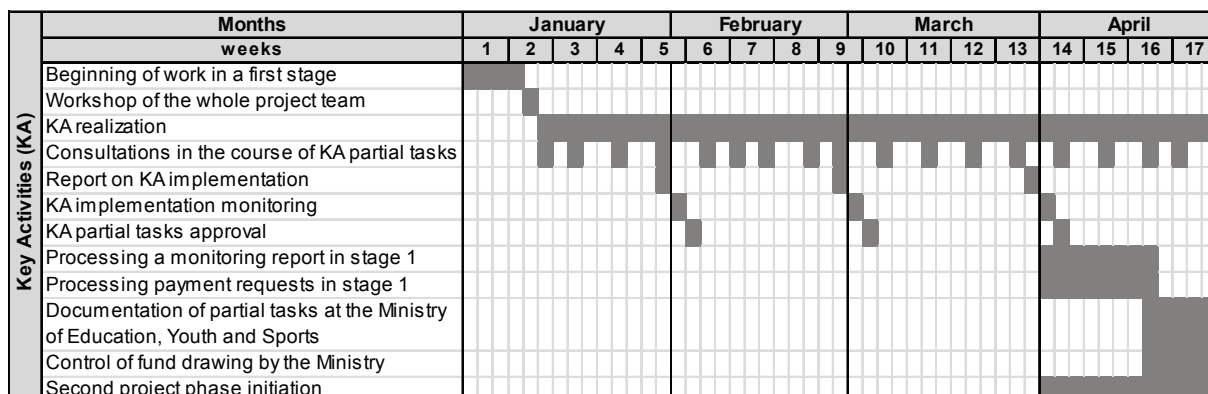
Months		January					February				March				April			
weeks		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Beginning of work in a first stage																		
Workshop of the whole project team																		
KA realization																		
Consultations in the course of KA partial tasks																		
Report on KA implementation																		
KA implementation monitoring																		
KA partial tasks approval																		
Processing a monitoring report in stage 1																		
Processing payment requests in stage 1																		
Documentation of partial tasks at the Ministry of Education, Youth and Sports																		
Control of fund drawing by the Ministry																		
Second project phase initiation																		

Figure 2 Gantt diagram for a first phase of a project

These techniques are applied **creating a project schedule** that represents a plan of interrelated activities with assigned dates, durations, milestones, and resources. The most commonly used are bar graphs, milestone charts or network diagrams. An example of a project plan in a first phase is shown in the form of the Gantt chart in **Figure 2**.

For successful teamwork, various walkthroughs or brainstorming methods are used. For dealing with the behaviour of people in the project, a definition of a team role, group leadership styles, assertiveness principles, mind maps, change coaching are used. [1]

4. RESEARCH PROJECT ORGANIZATION

Organization is one of the core managerial activities that is an essential component of a project management organization. The specifics of the project management are logically followed by the organizational specificities. The most important are the labour distribution, creating of organizational units and the project organizational structure, including the delegation and balancing of the competences and responsibilities of the subjects (persons or organizations) involved in the project. The main input into the project organization process is the project plan, resource requirements, stakeholder register and approved changes. The main output is the descriptions of roles and organizational chart of the project organization. The organization of the project involves the establishment of a project team, the definition of the temporary project organizational structure and the organization of the activities, performances and functioning for completing the project. This requires a description of the future project organizational structure elements relationship to individual activities (clear description of competencies of managers and project team members - determining responsibility and delegation of authority). [5,7]

The result of management is organizing the project as a group of people with infrastructure. In this group, superiority and subordination, and authority and responsibility are agreed upon. The organization of the project involves the design and maintenance of the relevant project roles, organizational structures, responsibilities and capabilities for the project, see **Figure 3** Organization chart of the project management team.
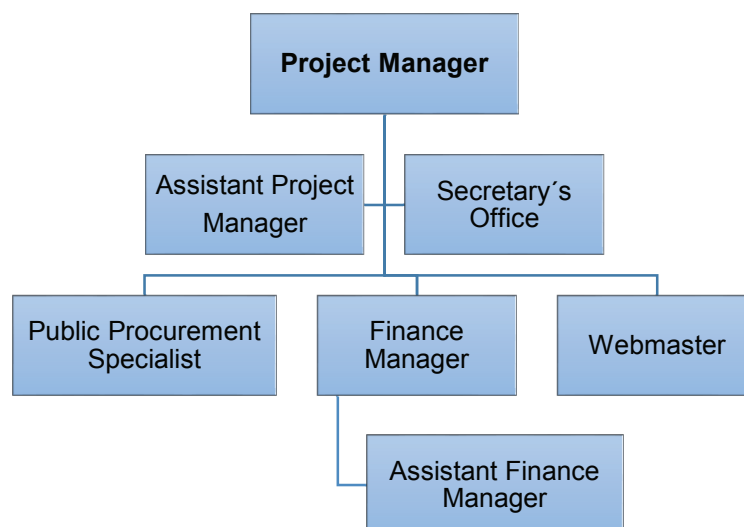

Figure 3 Organization chart of the project management team

The project management level fully depends on the people who make up the organizational structure of a specific project. Although it is important to accomplish the individual partial tasks that result from the work of individuals or smaller working groups, the overall success of the project in reaching the stated objective is strongly dependent on the cooperation of the entire project team. Each project has its organizational structure,

which has its rules of decision, superiority and subordination, negotiation rules and task execution rules, and a hierarchical system of sharing responsibility for partial results to the overall goal of the project. [8]

We can use a responsibility matrix that represents a clear and specific definition of the competences of the persons in team for specific project activities (tasks). The responsibility matrix clearly defines the competences of the identified persons for all elements of the Word Breakdown Structure (WBS). The example of responsibility matrix for a management team is shown in **Table 1**.

Table 1 Responsibility matrix of management team

Position / Activities	Project Manager	Assistant Project Manager	Finance Manager	Assistant Finance Manager	Secretary's Office	Public Procurement Specialist	Webmaster
Planning	approves and implements	prepares backgrounds			prepares backgrounds		
Budget	approves		performs consults	prepares backgrounds	preparing backgrounds		
Communication with project partners	performs	informs	consults the budget				
Communication with the Ministry	performs		performs				
Preparation and announcement of PP	approves					performs	
Communication with PP suppliers						performs	
Checking partial project activities	approves						
Website	informs approves	prepares backgrounds					performs
Partial activities evaluation	performs approves						

In the case of a large project, it is a group of different specialists with different competencies. The **Project Manager is responsible** for the project team coordination in achieving the objectives, setting up a project management plan, setting the rules for the operation of the project team, managing and motivating the project team, monitoring and evaluating the project progress in time, changing management, communication with project partners, delegating responsibility for delivering outputs to project team members. [9] **The Assistant Project Manager** carries out tasks of the project manager under his or her direct leadership. He or she coordinates tasks among members of the project team, analyses the status of partial activities, writes meeting minutes, prepares background papers, and reports to the project manager. **The Secretary's Office job** is to serve all the administrative, documentation needs of the project and ensure the smooth running of all project information flows. **The Finance Manager** is responsible for the project budget, prepares the payment request, sends substantial and minor changes to the project in the financial field, checks the financial milestones, vacation days and all the financial project activities. **Assistant Finance Manager** prepares background to

payment requests, accounting documents, invoices, orders, delivery notes and all documents required by financial management. **The Public Procurement Specialist** prepares tenders in accordance with pre-established rules of the Ministry (grant provider) and the Public Procurement Act. He or she records all tenders and bears full responsibility for them. **The Webmaster** publishes project information according to pre-defined mandatory publicity on websites and updates them.

5.   THE MOST COMMON PROJECT MANAGEMENT PROBLEMS

The most common project management problems do not come from a bad management or control but they are the result of poor assumptions. Here are some examples. In most cases, the objectives of the project are incorrectly defined both in material and formal terms. Lack, vagueness or ambiguity in the formulation of objectives, misunderstanding in communication in the project team or between the grant provider and the project manager. Under- or overestimation of resource consumption, including human resources, availability, or qualification. Weaknesses in the elaboration of a detailed work schedule, methodical deficiency in putting the work schedule into the project schedule and budget. [8]

If individual processes are not planned in detail, it is possible, especially in more complex projects, that these processes will not run at all or will be carried out in error. This is likely to lead to delays and financial losses. In an extreme case this may endanger the entire project. [2]

It is therefore very important to set and plan procedures and processes so that the project can be effectively managed. It is necessary to comply with the basic requirement that the activities must be planned and logically linked.

6.   CONCLUSION

The article deals with project process management and at the beginning clearly presents a set of processes occurring during the first stage of the project plan. It is a series of logically related activities and tasks performed by individual sections in order to achieve the intended objective. In this case it is the procedural character of the process when the individual processes transform inputs to outputs using tools and techniques.

The article describes selected methods and techniques such as Gantt chart, which represents a plan of interrelated activities with assigned scheduled times and milestones. It further describes the organizational structure of the management team that has its rules of superiority and subordination, including a matrix of responsibility and a description of competencies for each position in the management team. The authors and their own knowledge and observation conclusions describe the most common mistakes in project management. In conclusion, it is necessary to provide feedback, solve problems, and manage changes in the project team so that the project achieves the objective.

REFERENCES

[1]   MÁCHAL, Pavel, KOPEČKOVÁ, Martina and PRESOVÁ, Martina. *Světové standardy projektového řízení: pro male a střední podniky*. Praha: Grada Publishing, a.s., 2015. p. 144.

[2]   DOLEŽAL, Jan, KRÁTKÝ, Jiří and CINGL, Ondřej. *5 kroků k úspěšnému projektu*. Praha: Grada Publishing, a.s., 2013. p. 192.

[3]   ROBERTS, Paul. *Effective Project Management: Identify a Manage Risks Plan and Budget Keep Projects Under Control*. London: Kogan Page Publishers, 2011. p. 304.

[4] SVOZILOVÁ, Alena. *Zlepšování podnikových procesů*. Praha: Grada Publishing, a.s., 2011. p. 232.

[5] BOČKOVÁ, Kateřina H. *Projektové řízení: Učebnice*. Martin Koláček: E-knihy jedou, 2016. p. 470.

[6] KUTÁČ, J., KUTÁČ, T., SIKOROVÁ, A., BESTA, P., ŠVECOVÁ, E. Planning of Deliveries in Modern Logistics Systems. In *CLC 2016: Carpathian Logistics Congress*. Poland: TANGER, 2016.

[7] BINDER, Jean. *Global Project management: Communication, Collaboration and Management Across Borders*. London: CRC Press, 2016. p. 312.

[8] SVOZILOVÁ, Alena. *Projektový management: Systémový přístup k řízení projektů*. 3rd ed. Praha: Grada Publishing, a.s., 2016. p. 424.

[9] DOLEŽAL, Jan and KRÁTKÝ, Jiří. *Projektový management v praxi: Naučte se řídit projekty!* Praha: Grada Publishing, a.s., 2016. p. 176.