

Project management – standard for today’s modern company

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Abstract

Project management is one of the most popular tool in the companies in today’s competitive environment. There are many successful companies, in which the project management has the key position. Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. Project management is accomplished with the processes such as initiating, planning, executing, controlling, and closing. The project team manages the work of the projects, and the work typically involves competing demands, stakeholders with differing needs and expectations and identified requirements. It is important to note that many of the processes within project management are iterative in nature. This is in part due to the existence of and the necessity for progressive elaboration in a project throughout the project life cycle.

Keywords: project, project management, project manager, processes

I. INTRODUCTION

At present, if the company wants to be successful on the market, it must be competitive and must be able to innovate in the area in which operates. Companies are constantly looking for new solutions to be as flexible as possible while offering a high level of quality. In doing so, they try to decrease costs as much as possible, because then companies can work effectively and offer attractive prices for their products. In these matters, project management assists them.

The project needs to be properly planned and managed nowadays. Newly emerging technologies have become and are still becoming a very significant factor in the number of companies, which has greatly changed the work environment and the creation of new projects in the project management sector.

II. PROJECT AND PROJECT MANAGER AS THE BASIS OF THE PROJECT MANAGEMENT

A project is a planned set of interrelated tasks to be carried out at a fixed time and within certain costs and other limitations.

The following features specifically characterize projects [1]:

- Uniqueness, contain a number of unique stages that consist of activities and processes.
- Content of a significant degree of risk and uncertainty.
- From the project, it is expected to produce results that can be quantified within predetermined parameters, for example, quality parameters can be defined.
- Start and finish dates are clearly defined.
- Projects have clearly defined costs and resources.
- During the project, workers can be deployed in the project organization on a temporary basis (the organization of the project can be created by the founding organization, this organization can be modified during the course of the project)
- Projects can be, but also can't be long-term and to a certain extent subject to internal or external influences (EN ISO, Quality Management System, Quality Management Guidelines for Projects).

For the leaders it is important to identifying purpose unity and directing the organization. Leaders should maintain and create an internal environment in which employees are fully involved in fulfillment of the company's goals. A project manager should be appointed in the shortest possible time. The project manager is a person who has a defined responsibility, but also has the designated competencies, with which he manages the project and ensures the creation of QMS (quality management system). The responsibility assigned to the project manager should be based on the attributed responsibility and should be comparable. Management based on a project organization should assume responsibility and leadership in creating a quality culture through these activities [2]:

- It defines the quality policy and specifies the goals of the project (including quality).
- It identifies the infrastructure and used resources to guarantee the achievement of specific project goals.
- It provides the organizational structure leading to the fulfilment of the specific goals of the project.
- It makes decisions that are based on facts and information about facts.
- It motivates workers in the project structure to improve processes and products.
- It plans preventive actions in the future.
- It ensures compliance with EN ISO, QMS (Quality Management System), respectively Guidelines for quality management in projects.

Fig. 1 shows the interconnection of a project manager in the context of relationships.



Fig. 1 Project manager in the context of relationships [2]

The role of the project manager is a role that brings together several specific personalities. The project manager must be a planner, coordinator, negotiator, controller, and organizer. The main task of the project manager is to manage the team of staff that work on the project. The role of the manager is not to perform processes but to manage them. The project manager is also the person responsible for the project team. If the project consists of subprojects (several smaller projects), it is ideal if a specific project manager is responsible for each particular subproject. [3]

Each subproject manager is subordinate to the project's main manager, because for the project as a whole is responsible the manager of the whole project. The main capabilities that a project manager should have can be defined as follows [4]:

- Project manager should have an overview about the project parts, the project progress, the problems that have occurred and how the problems are solved.
- Project manager should apply direct communication with all project staff, direct and timely delivery of necessary information important for the performance of their task.
- Project manager should ensure project organization, i.e. linking of work tasks with resources.

III. PRINCIPLES OF SUCCESSFUL PROJECTS AND PROJECT MANAGEMENT

The success of project management depends not only on the principles of project management listed below but also primarily on the rational handling of time units. Although the points mentioned below are, in essence, simple and clear, it may be a major problem for many projects to observe all principles. These principles are [5]:

- Goals of the project: specification of project results that have to be achieved by the project, evaluation of alternatives and other possibilities to achieve the desired result.
- Promoter support: if the company is involved in the project, it is important that the promoter obtain clear support for the project, in particular the supply of all necessary resources (money, employees, time, etc.).
- Collaborators: people working on a project are the key to the result, so they must meet all the required criteria when choosing them.
- Responsibilities and competencies: If a project is shared among several team members, the responsibilities of each member of the team must be clearly defined for a specific result.
- Quality monitoring: it is necessary to specify quality requirements and to monitor their development throughout the project, in the case of continuous inspection by the project promoter, it is ideal to record the results.
- Partitioning: the project should be divided into stages, while each section will be easily measurable.
- Planning: larger and more complex projects require rough planning of the project as a whole and detailed planning of its parts.
- Project revision: regular review and comparison with the project plan, monitoring of new circumstances and additional editing, or overall project change.
- Connections monitoring: each part of the project must be communicated with every members, stakeholders, etc.
- Personal engagement: nothing in the project is as essential as the team depends on the project, so the motivation is the most important factor.
- Documentation: a thorough documentation is also required, for the overall project statement, any notes and modifications to the project have to be managed.
- Completion and submission: successful completion of the project also involves the submission of documentation and project results.
- Final recapitulation: after completing each project, it is essential to learn something new and to avoid the errors that occurred in the project.

If we want to achieve project management at the level we have set, it is necessary to allocate for this task team of people who will be responsible for the project. We designate these people as project manager, respectively the so-called project leader. The basic areas of project management are shown in Fig. 2. [6]

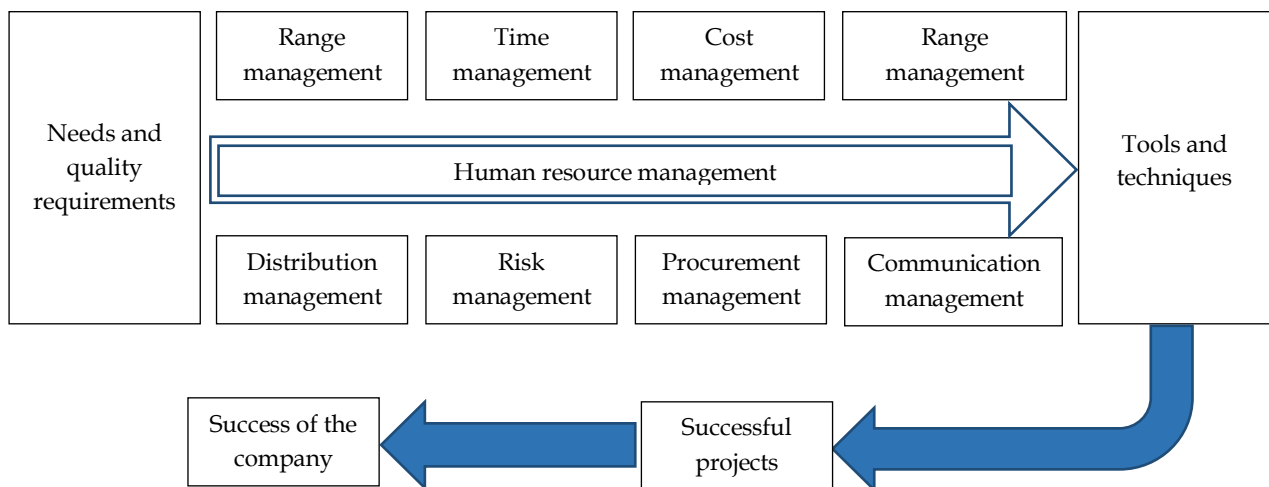


Fig. 2 Basic areas of project management [6]

IV. RESPONSIBILITY MATRIX IN PROJECT MANAGEMENT

Description of the responsibility matrix and its purpose can be summarized as follows: During the preparation phase of the project and its implementation, it is necessary to divide the work on the project between the project team. We will achieve this by assigning one specific person to each part of the project, and it will be clear which person is responsible for the job. It will also be clear with whom the work will be consulted and who should be informed about the realized activities.

The responsibility matrix is a functional tool that is used to specify the responsibilities and competencies of specific team members for various parts of the work. For this purpose, the literature uses the term RAM, which comes from the Responsibility Assignment Matrix, or also RACI, which is a matrix according to the abbreviations of the title of responsible relations in English language. The layout of the work project into smaller work packages is efficiently implemented within WBS (Work Breakdown Structure) workflows to ensure a breakdown of work.

In relation to responsibility matrix, we distinguish these basic relationships [7]:

1. **Accountable**
It is a person who has the right to approve the outputs of the activities. Outputs from each of these activities (area or work package) must be subjected to the approval of the person who is responsible for the activity in the structure. One person always approves one activity. In the case of absence of liability attribution, or where responsibility is attributed to multiple persons, is a condition that is false and because of this situation, when no one is responsible for the matter or thinks that someone else in charge of this task will be responsible for the matter. The opposite situation is when there is no one responsible for the job, which also doesn’t lead to the result.
2. **Responsible**
Person responsible for carrying out the activity. This is a member of the team, who realizes either directly the operation or secures the course of the operation. One package may include more people. It is also possible to combine it with the activity “Accountable”.
3. **Consulted:**
It is the person who has the task to consult the course of work. In most cases, the area is closely related to this person. In most cases is accompanied by a person who is a specialist in that aspect and can represent the role of a counselor. There may be more individuals with the same relationship assigned to one particular package.
4. **Informed:**
This is a person who is informed during the course of the project about the actual status of the area. In most cases, it is just about team members who need to know the current state of work. The way, with which will be other people informed, should be set up at the start of planning within the communication plan (regular reports, personal meetings, etc.). There may be more individuals with the same relationship assigned to one particular package.

V. PROCESSES IN THE PROJECT

The project is often composed of non-standard tasks (e.g. for innovative projects) and therefore there is a high risk of failure. Project management is provided by teams from multiple departments of the organization, involving many people, while project coordination can’t be managed in a comprehensive way by common management procedures.[8]

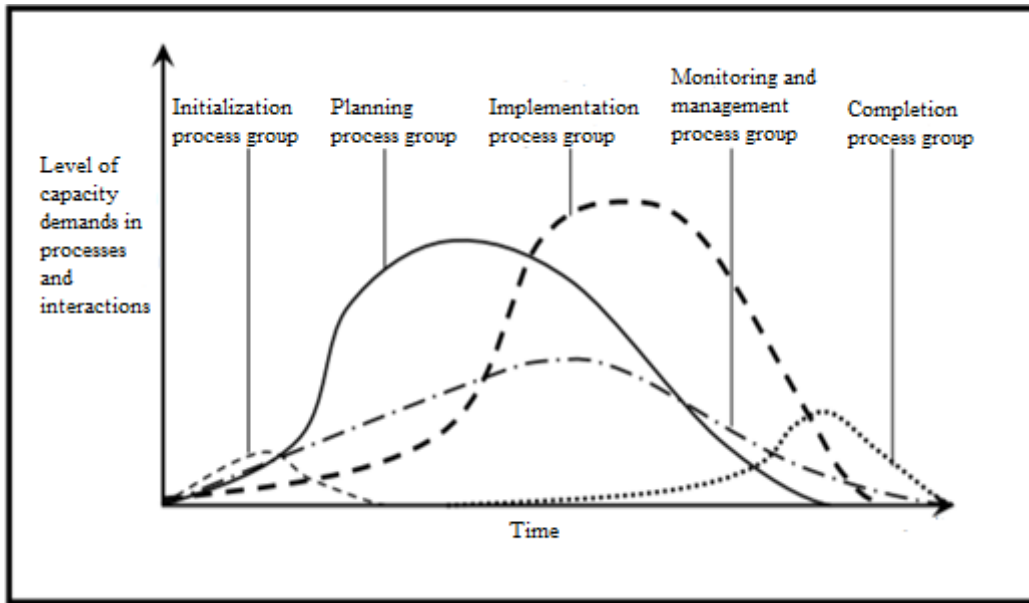


Fig. 3 Interaction of processes in the project [8]

The project management system consists of the following main process subsystems [8]:

- I. Initialization,
- II. Planning,
- III. Implementation,
- IV. Monitoring and management,
- V. Completion.

Fig. 3 shows the interaction of each process over time to the level of capacity demands in processes and interactions.

Fig. 4 shows the measuring process performance in projects.

In Fig. 5 we can see the interaction of the process groups in the project.

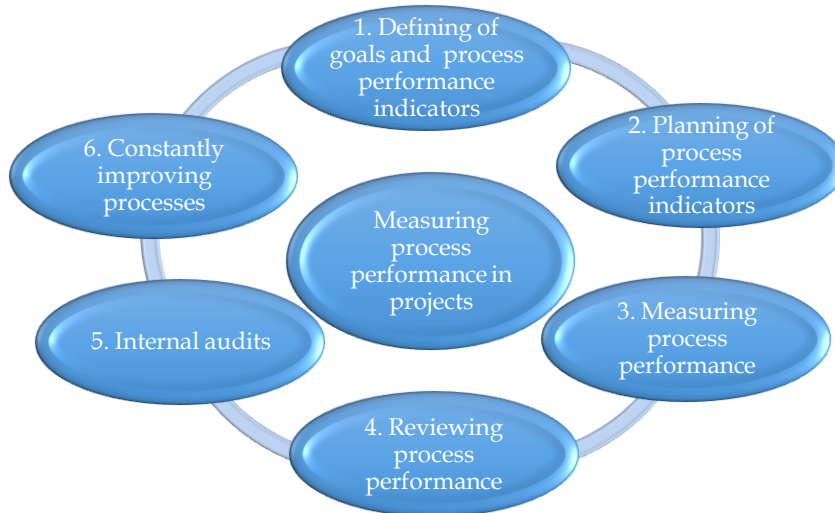


Fig. 4 Measuring process performance in projects [9]

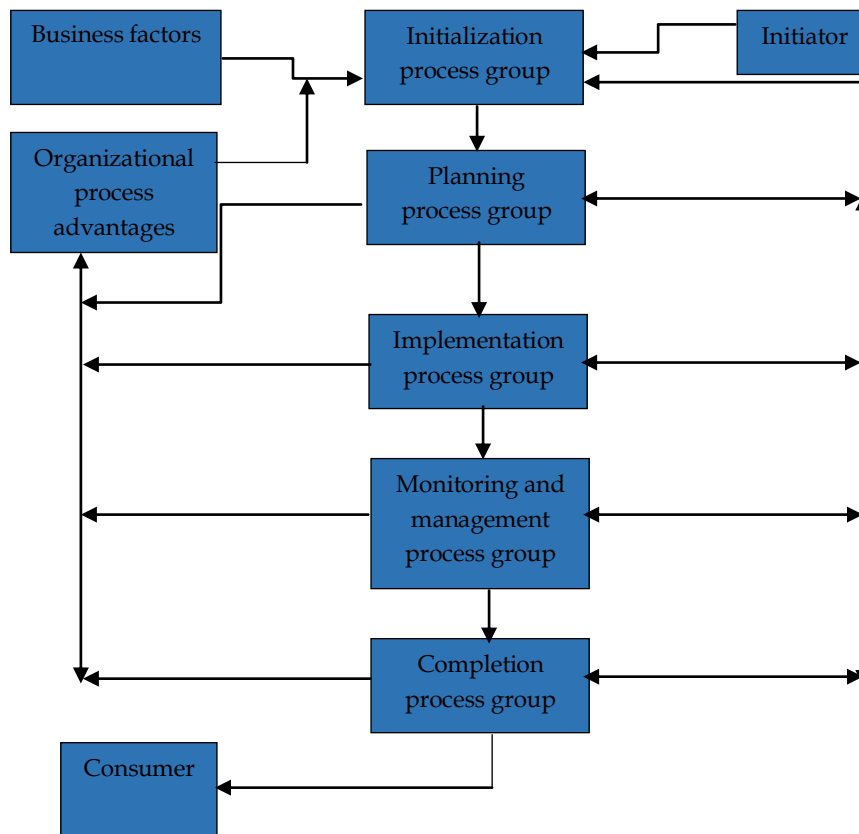


Fig. 5 Interaction of the process groups in the project [10]

VI. LOGICAL FRAMEWORK OF THE PROJECT

Logical framework (Log frame) serves as a guide by setting basic project parameters. It is part of the method of design and management of the project known as the "Logical Framework Approach (LFA)", which fully solve the preparation, design, implementation and evaluation of the project.

The basic principle is to distinguish the required results in the responsibility hierarchy at 3 basic levels [11]:

- Outputs – products that we are committed to deliver to the project owner. These outputs are considered as the required results of the project team activities, which are fully responsible for them.
- Goal –reason, why we produce outputs. Defined state at the end of the project, best formulated as a new acquired characteristics, company's ability. The project manager is responsible for coordinating the team to achieve the project goal.
- Benefits – reason for realization of the project. The benefits and goals of the project together form the business case of the project (investment in the project - reaching the target state must be balanced by adequate benefits). The project owner is responsible for the compliance of the project with the expected benefits.

The Gantt chart demonstrates logical framework of the project. The Gantt chart doesn't fall into the category of network diagrams. A horizontal line diagram captures the relationships between the individual steps in the project. The lines in the graph show the lines with the name of the activity. The bottom of the diagram shows a timeline, where are the appropriate time intervals. Each process in a project is marked with a corresponding line, the length of which depends on the duration of the process. From the complete Gant Diagram, you can imagine the total time required for project implementation, the structure of the project, and the links between its processes. The example of Gantt chart is in Fig. 6.

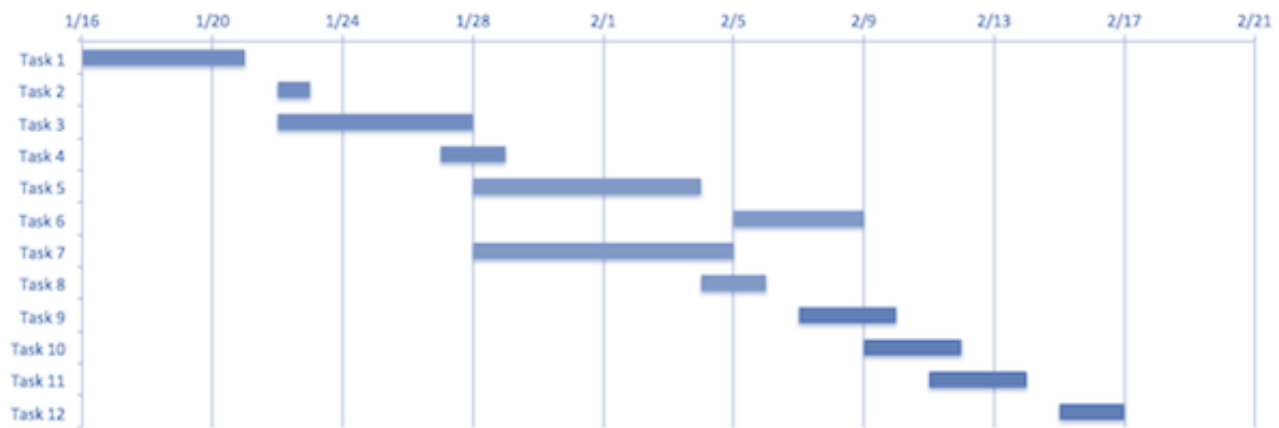


Fig. 6 Example of Gantt chart [12]

VI. CONCLUSION

More and more businesses are engaged in the project management in today's technologically advanced presence. To manage projects successfully, there are many manuals and many procedures that can be used in the company for project management. It is up to every business to choose what strategy to adopt and how it will continue to advance in their field and how it will manage its projects in general.

In order to manage the projects, the company must know the basic principles and procedures of project management. Project management is not only organized by the company itself, but it is necessary to set up a project team for the planning and subsequent implementation of the projects, which assumes all rights, obligations and requirements for the execution of the project at a predetermined time and in the specified quality.

For successful project management, rules must be pre-defined and the project must acquire an acceptable form transformed by the customer's request.[13]

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