INTERNATIONAL PROJECT MANAGEMENT

Veronica PRISACARU

MINISTERUL EDUCAȚIEI
ȘI CERCETĂRII
AL REPUBLICII MOLDOVA

PROIECTUL ÎNVĂȚĂMÂNTUL SUPERIOR DIN MOLDOVA

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World Economy; International Economic Relations

Veronica PRISACARU

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PRELIMINARIES

The course unit *International Project Management* encompasses a series of theoretical and methodological approaches to the principles and tools used for planning, effective monitoring, summarizing, and evaluating the outcomes of activities within international projects. This course distinguishes itself by offering both a conceptual and operational framework for the qualitative development of project proposals as well as for their effective management.

The importance and relevance of this course unit are underscored by the growing recognition of project-based management as a managerial approach that enables the optimal organization of human, material, and financial resources. It serves as a key reference point in the design and implementation of development strategies.

Thus, the practical value of this course unit lies in two main areas:

1. It facilitates the acquisition of relevant competencies for the application of project management tools in general.
2. It supports the development of skills for drafting compelling project proposals for international funding.

The core competencies developed through this course include:

- Understanding theoretical and methodological approaches to project management and applying them effectively at different stages of an international project's lifecycle;
- Drafting persuasive project proposals;
- Monitoring project activities effectively, including through quality team management;
- Managing project resources efficiently;
- Conducting risk and quality management in projects.

The development of these competencies is supported by an effective blend of traditional and modern teaching, learning, and assessment methods, aiming to transform students into active participants in the educational process. These methods include problem-based learning, debates, case studies, group work, project-based learning, student partnerships in implementing activities, and more.

The competencies acquired through this course will enable students to successfully undertake roles involving the planning and management of projects—as project managers, professionals, or specialists in various fields (including human resources), as advisors or consultants in international project management, as training managers and trainers, research interns, and others. They will also support entrepreneurial initiatives and the preparation of competitive project proposals for organizational development.

The *International Project Management* course unit also offers opportunities for the further development of advanced competencies in managing international projects through doctoral studies in the field of *Social and Economic Sciences* and through ongoing professional training aligned with labor market needs.

Teaching Languages: English

Target Audience: Students enrolled in the Bachelor's program 0410.2 *World Economy; International Economic Relations*

1. INTERNATIONAL PROJECT MANAGEMENT – INTRODUCTORY ASPECTS

Content Units:

1.1. The Concept of a Project
1.2 Types of Projects and Their Characteristics. Specific Features of International Projects
1.3. The Life Cycle of an International Project
1.4. The Essence and Historical Evolution of Project Management
1.5. Principles of Project Management

Skills

- defines the project, international project, project management;
- identifies the particularities of different types of projects;
- analyzes the life cycle of an international project;
- analyzes the historical evolution of project management;
- argues the need to respect the principles of project management;
- argues the significance of international project management at the current stage in the context of the concern for the strategic objectives assumed by the entities.

Responsibility and autonomy

The graduate autonomously analyzes the international project management process from the perspective of respecting the related principles and identifies optimal solutions for its rationalization.

Terms of Reference:

Project – a set of interrelated work processes carried out over a specific period of time, aimed at achieving a particular objective that generates a useful result.

International Project – a bilateral, trilateral, or multilateral collaborative project involving organizations from different countries.

Project Life Cycle – the time period during which the project is carried out.

Project Management – the conscious application of a coherent set of principles, rules, knowledge, methods, techniques, and tools used in planning, organizing, leading, and controlling a project.

1.1 The Concept of a Project

It is believed that the term *project* originates from the Latin *projectum*, derived from the verb *proicere* (to throw something forward), which is formed from the prefix *pro-* (indicating something that precedes a following action) and the root *iacere* (to throw).

The concept was first used by architects. Thus, in the 15th century, Filippo Brunelleschi was tasked with completing the Florence Cathedral by adding a dome. Before starting the work, he created a sketch (*progetto* or plan) of the dome, using various perspectives to offer a geometric representation of the future structure.

The English literature adopted the term *project* to refer to "a plan for something that is to be undertaken."

According to the Romanian Explanatory Dictionary, the term *project* has several meanings, including:

- a plan or intention to undertake something, to organize, or to accomplish a task;
- the initial form of a plan (economic, social, financial, etc.) that is to be discussed and approved in order to gain official status and be implemented;
- a technical work carried out based on a given topic, including the technical framework, drawings, justification of the utility of the designed object, and its placement.

In current approaches, a project is defined as:

- "a set of interrelated work processes that take place over a specific period of time, aimed at achieving a certain objective that generates a useful result" (Nicolescu, 2011, p. 499);
- "a temporary effort undertaken to create, with limited resources, a unique product or a unique service" (*A Guide to the Project Management Body of Knowledge*, 2000);
- "a set of interdependent activities that are carried out according to a plan and with well-defined costs in order to achieve a certain objective and specific results within a well-determined timeframe" (Bulat, 2011, p. 6).

It is incorrect to consider that a project is synonymous with a business plan (which must present the current situation of a company and its competitive economic environment), or with a feasibility study (which must demonstrate the necessity and advantages of implementing a project idea).

1.2 Types of Projects and Their Characteristics. Specific Features of International Projects

Projects can be classified according to various criteria, as follows:

1. **By scope:**

- ***International level*** – projects involving bilateral, trilateral, or multilateral collaboration, with the participation of institutions from other countries;
- ***National level*** – projects with an impact on the entire country, involving institutions from across the nation, and aimed at developing a country-wide system;
- ***Regional and local level*** – projects involving the development of one or more regions, municipalities, or zones;
- ***Organizational level*** – internal projects of administrative institutions, local public authorities, etc.

International projects, **in turn, have a number of specific features that distinguish them from other types of projects, due to the following aspects:**

- ***Cultural and linguistic diversity:*** Teams are often multicultural, which requires effective intercultural communication management. Differences may arise in work styles, perceptions of time, hierarchy, negotiation, etc. Translation and interpretation may be necessary to ensure clarity in documentation and communication.
- ***Different legal and regulatory frameworks:*** Legislation can vary significantly from one country to another (e.g., labor laws, data protection, procurement). Compliance with both international and national regulations is essential.
- ***Time zone differences:*** Coordinating meetings and tasks becomes more complex. Flexible work tools and policies (e.g., asynchronous work) are required.
- ***Funding and currency exchange:*** Projects may be funded by international organizations (e.g., EU, UN, World Bank). Budget management may involve multiple currencies and risks related to exchange rate fluctuations.
- ***Stakeholder management:*** A large and diverse number of stakeholders may be involved: governments, NGOs, international institutions, private companies. A clear communication strategy and alignment of objectives are necessary.
- ***Logistics and mobility:*** International transport of equipment or materials may be required. Administrative difficulties related to visas, work permits, and transportation can arise.
- ***International standards and methodologies:*** International standards are often applied (e.g., PMI, PRINCE2, ISO). Advanced skills in cross-border project management are needed.

- ***Need for international competencies:*** Project managers must have skills in negotiation, adaptability, intercultural leadership, and knowledge of international legal and financial systems.

2. **By source of funding:**

- ***Internally funded*** (from the state budget, banks, etc.);
- ***Externally funded*** (from international organizations);
- ***Co-financed*** (partially funded from other resources).

3. **By objective and activity domain:**

- Industrial projects;
- Social projects;
- Commercial projects;
- Cultural projects;
- Environmental protection projects;
- Scientific (research) projects;
- Educational projects;
- Management projects.

4. **By scale:**

- ***Small projects***: lasting up to one year, involving limited financial resources, and allowing direct evaluation;
- ***Medium projects***: lasting between two and three years, involving medium financial values and technological requirements, evaluated through periodic reporting;
- ***Large projects:*** lasting over three to five years, involving significant financial resources, advanced technological requirements, using specific tools and programs, and evaluated through control reports (Veverița et al., 2015, pp. 12-13).

Regardless of their nature, projects share a set of common characteristics:

1. Each is unique, differing from any other;
2. They have clearly defined objectives;
3. They require a specific volume of resources and a budget;
4. They have clearly established deadlines;
5. Every project involves the development of an implementation plan;
6. They are carried out by a project team (created ad hoc);
7. They require a specific set of indicators and methods for quality evaluation (Zirra, Munteanu, pp. 10-11).

1.3 The Life Cycle of an International Project

The project life cycle refers to the period of time during which a project is carried out.

There are various approaches to defining the phases that make up the project life cycle. While some authors highlight six phases, others identify five, and some only four. In fact, each of these approaches includes the same consecutive actions that need to be followed.

Below is a brief overview of the project life cycle, according to the latest version of the project management guide developed by executive director Jim Lombardi (Lombardi, J., 2018). The author outlines four phases in the execution of a project:

I. Initiation Phase

In this phase, a business problem (or opportunity) is identified, and a business case is defined that offers various solution options. A feasibility study is then carried out to evaluate each option, and the final solution is recommended. Once the recommended solution is approved, a project is initiated to deliver the approved solution.

II. Project Planning

This involves the creation of the following deliverables:

- **Project plan** (highlighting objectives, activities, tasks, deadlines)
- **Resource plan** (identifying required workforce, equipment, and materials)
- **Financial plan** (identifying the costs of labor, equipment, and materials)
- **Quality plan** (ensuring quality objectives, assurance measures, and control processes)
- **Risk plan** (identifying potential risks and actions to mitigate them)
- **Acceptance plan** (listing the criteria that must be met for client acceptance)
- **Communication plan** (specifying information to be communicated to stakeholders)
- **Procurement plan** (identifying products to be sourced from external suppliers)

At this stage, the project is fully planned and ready for execution.

III. Project Execution

This involves carrying out each action planned in the project planning phase. While activities and tasks are being executed, a number of management processes are undertaken to monitor and control the project deliverables. This includes identifying changes, risks, and issues, reviewing deliverable quality, and assessing each delivered product against the acceptance criteria. Once all products have been completed and the client has accepted the final solution, the project is ready for closure.

IV. Project Closure

This phase involves delivering the final products to the client, handing over project documentation, closing supplier contracts, releasing project resources, and

communicating the project closure to all stakeholders. The final step is conducting a post-implementation review to assess the overall success of the project and to document all lessons learned for future projects.

1.4 The Essence and Historical Evolution of Project Management

Project management involves the deliberate application of a coherent set of principles, rules, knowledge, methods, techniques, and tools used in the planning, organizing, leading, and controlling of a project (Andronie, 2014).

If we examine projects as time-constrained actions, we can affirm that the history of projects runs parallel to the history of humanity. For instance, famous undertakings such as the construction of the pyramids in Egypt or the Great Wall of China can be considered early forms of projects. However, as a distinct field, project management dates back roughly to the period of World War II. The event that is widely seen as marking the transformation of project management into an independent discipline and profession is the execution of the Manhattan Project, which aimed to build the atomic bomb. Due to its massive scale and importance, this project required the optimal organization of human and material resources, relying on a systemic approach to management methods. It also highlighted the need for trained professionals in project management. Later, the project-based approach expanded to fields like information technology and high-tech industries. Initially adopted by large private companies, project management was eventually embraced by the public sector as well.

Following World War II, with the intensification of economic competition, development itself began to be conceptualized in project terms. The design and implementation of development strategies—namely forecasting and organizing activities—are by nature key responsibilities of project-based management. The growing interest in this field has led to the inclusion of project management in academic offerings, as both individual courses and full study programs, including at the master's and doctoral levels (Bârgăoanu, p. 9).

1.5 Principles of Project Management

The scope and popularity of project management (as both a practical activity and a field of academic study and research) have encouraged the identification of a set of principles that should underpin it. These principles are based on the following premises:

- All individuals involved in the project share the same objectives;
- The project's objectives are transparent and clearly stated (there are no hidden or undeclared goals);

- Those involved in the specific project activities are honest with one another;
- Each team member possesses the minimum required knowledge and experience in project management, as well as a basic understanding of the project's specific domain;
- All team members want the project to be successfully completed;
- All team members clearly understand who the funder is, what the funder's objectives are, and who the project is aimed at (i.e., the client/target audience/beneficiary group) (Andronie, 2014, p. 25).

The fundamental principles of project management are illustrated in **Figure 1.1**.

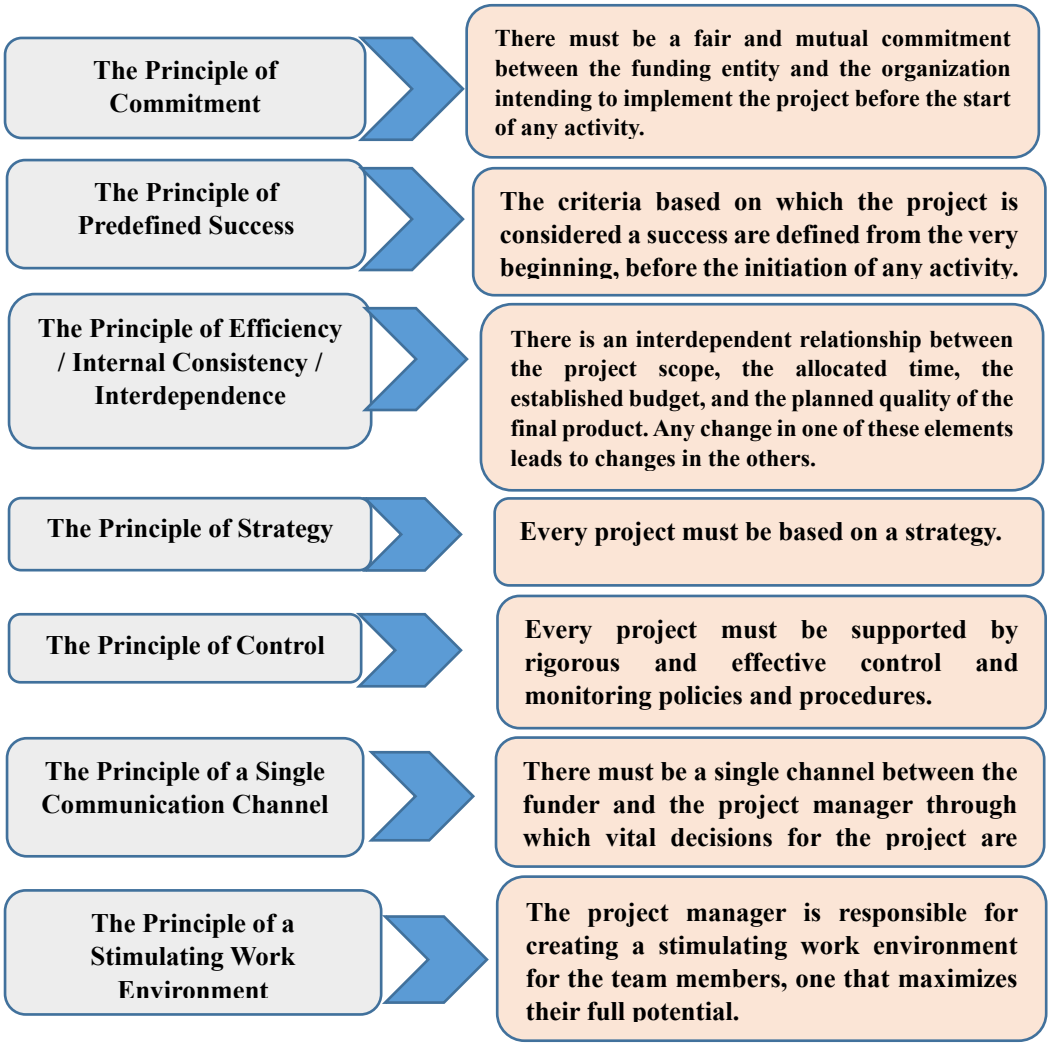


Fig. 1.1 Fundamental Principles of Project Management

Source: developed by the author based on: (Andronie, 2014; Bârgăoanu).

PRACTICAL APPLICATION

Case Study. You have been included in the working team of an international project whose main objective is to develop an action program aimed at educating the population in the northern region of the Republic of Moldova about environmental issues. During the first meeting, the following topics were addressed:

1. Communicating the general objective of the project;
2. Familiarizing the team with the activity plan and task allocation.

At the opening of the meeting, the team leader introduced the team members (5 people), mentioning their qualifications and work experience. From the information provided, you deduced that 3 team members are economists, and 2 are lawyers. The team leader also holds a qualification in law. Of the 5 team members, only 2 have project work experience.

After becoming familiar with the main objective of the project, you personally asked for clarification on the project's international partners, specific objectives, and target groups. The team leader answered that these are not so important at the moment and would be communicated later.

After the work tasks were assigned, one of the team members asked for clarification on the deadlines for presenting the results and the format of presentation. The team leader answered that these would also be communicated later, individually, citing time constraints. The meeting concluded with the scheduling of the next meeting.

You asked the question: "What will be the schedule for the meetings, and will they be held at regular intervals?" You were told that each meeting will be scheduled by contacting each member and confirming their availability. The meetings will not be regular but will occur as needed.

Identify the mistakes made in the early stages of the project.

Specify the impact that the mistakes could have on the effectiveness of the project activities.

SELF-EVALUATION QUESTIONS

1. Define the concept of a project.
2. Explain how a project differs from a business plan.
3. Clarify the types of projects according to various classification criteria.
4. Present the specific features of international projects.
5. Outline the common characteristics of projects.
6. Define the essence of a project's life cycle.
7. Briefly describe the phases of a project life cycle.
8. Define the concept of project management.
9. Briefly describe the historical evolution of project management.

10. Argue the connection between project management and the development of an organization.
11. Clarify the essence and significance of the principles of project management.

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2. GENERAL CHARACTERISTICS OF THE STAGES OF INTERNATIONAL PROJECT MANAGEMENT

Content Units:

2.1 Project idea development and formulation
2.2 Project proposal planning
2.3 Project initiation and team formation
2.4 Project implementation and monitoring
2.5 Closing the project

Skills

- reveals the essence and content of the stages related to international project management;
- identifies the internal and external factors that influence the project development process;
- formulates a relevant project idea, argues its relevance;
- argues the significance of effective project management at each stage of its evolution.

Responsibility and autonomy

The graduate autonomously selects a relevant international project idea and the managerial behavior model throughout the stages of the given project.

Terms of Reference:

Project Idea – a reasoning initiated as a result of recognizing a practical need or a significant problem that requires an immediate solution.

Project Stage – a logical and organizational division of the project implementation process into distinct periods.

Project Proposal Planning – the process through which the project's objectives, the necessary activities to achieve them, the involved resources, deadlines, and the monitoring and control methods are established in a structured and systematic manner.

Project Implementation – the phase in which the project plan is put into action, meaning the previously defined activities are effectively carried out to achieve the proposed objectives.

2.1. Project Idea Development and Formulation

Every project is based on an idea and is initiated following the recognition of a practical need or a major issue that requires an immediate solution. The idea becomes viable if funding sources for its implementation have already been identified.

The formulation of a project idea is often the first challenge faced by those intending to submit a project proposal. To address this issue, several guiding points are recommended:

- The existence of a real problem, as well as possible solutions which, if applied, would guarantee optimal results. For example, in a locality where many young people live but lack adequate conditions for leisure, a potential project idea would be the creation of a sports and recreation center. Implementing this idea would help achieve a wide range of objectives: creating opportunities for meaningful leisure time; making a real contribution to promoting a healthy lifestyle; increasing young people's interest in working and living in that locality; contributing to crime reduction, etc.
- Studying the themes of past and ongoing projects.
- Consulting individuals with advanced experience in the area of interest.
- Analyzing strategic priorities and the policies promoted in the relevant field.
- Conducting post-factum, current, and forecast analysis of the situation in the area of interest. For example, to initiate a project proposal aimed at creating a consultancy center for young entrepreneurs, it is necessary to examine the business evolution over at least the last 10 years in both quantitative (number of businesses created, number of people involved, etc.) and structural terms (branches, sectors of activity); to identify current data about existing businesses; and to study forecasts regarding business evolution in the current economic and political context. An important aspect is the investigation of the success factors of certain businesses as well as the causes behind the termination of others. As a result, one will be able to identify key subjects that should form the basis of the future consulting center's program.
- Understanding the funder's priorities is also particularly important, especially when aiming for the acceptance of a non-reimbursable funded project. At the same time, efforts must be made to identify the common ground between the funder's and the beneficiary's priorities and to present them as convincingly as possible, thereby demonstrating the relevance of the project idea.

To assess the relevance of the project idea, it is recommended to answer the following questions:

- Is the need that underlies the project truly real?
- Is solving this issue a priority for the organization? Does the solution fit within the organization's strategic plan?

- Must the project be implemented now, or can it be postponed?
- Is the proposed project idea indeed the best way to solve the identified problem?
- Does the organization proposing the project have the technical, managerial, and financial capacity to implement it?

If one cannot affirmatively answer these or some of the questions above, the project idea needs to be reconsidered. Also, multiple hypotheses are not acceptable for specific questions. It is important to base the idea on successful previous experiences and real data and facts obtained through evaluation and monitoring.

In the finalization process of the idea, it is crucial to correctly formulate the project objectives, because, based on these, the necessary actions, participation promotion methods, volume of resources, monitoring methods, final outputs, success criteria, etc., will be established. It is incorrect to assume that the objectives are known by everyone and do not need to be explicitly stated.

2.2. Project Proposal Planning

By its very essence, project planning represents the process through which a project's objectives, the necessary activities to achieve them, the involved resources, deadlines, and monitoring and control methods are established in a structured and systematic manner. The planning phase — drafting the document that underpins the implementation of a project, regardless of its scope, final products, budget, duration, etc. — occupies a top position in the hierarchy of project management activities. The significance of this stage lies in the fact that, as experience shows, most projects fail due to planning errors (Bârgăoanu, p.4).

As described in the project life cycle, the planning process must include:

- **Identification of objectives, activities, tasks, and deadlines.**
- **Resource plan** (workforce, necessary equipment, and materials).
- **Financial plan** (identifying the costs for labor, equipment, and materials).
- **Quality plan** (ensuring quality objectives, assurance measures, and control mechanisms).
- **Risk plan** (highlighting potential risks and actions to be taken to mitigate them).
- **Acceptance plan** (listing the criteria that must be met for client approval).
- **Communication plan** (highlighting information to be communicated to beneficiaries).
- **Procurement plan** (identifying products to be sourced from external suppliers).

Although different authors present this phase differently, its core activities remain the same.

The significance of project proposal planning lies in the fact that the project plan becomes the basis for subsequent monitoring of the project's direction and progress.

A well-structured project must provide answers to the following questions:

- **Why?** – shows the motivation behind writing and implementing the project, explains the problem faced by the target group;
- **What?** – indicates the goals and objectives of the project;
- **How?** – presents the strategies, proposed solutions, plans, and actions;
- **Who?** – indicates the allocation of responsibilities for project implementation;
- **With what?** – shows the human resources (the team) that will contribute to the implementation and the financial resources upon which the activities will be based;
- **When?** – indicates the project duration, the timeline of each activity, and the project completion date (Veveriţa, 2015, p.12).

When it comes to projects funded by the European Union, in most cases, project proposals are completed using standard forms that, in turn, greatly guide and simplify the planning process. At the same time, some forms may be very detailed, requiring a large amount of data, while others are more concise, merely signaling the information the funder expects to receive.

The project proposal drafting stage must receive the utmost attention for at least two reasons:

1. As mentioned earlier, projects fail if they are not well planned. The execution phase is particularly difficult and fraught with risks, even when the project has been rigorously designed. But risks are significantly amplified when a negligent or unprofessional approach is taken during the planning phase.

2. The project proposal serves as an official document and will be the reference point for relations with the funder. An essential condition is the realistic formulation of activities, avoiding the temptation to inflate the number of activities, overstate the organization's technical and managerial capabilities, or exaggerate the own contribution in order to increase the chances of project approval (Bârgăoanu, p.41).

A more detailed exposition of the project proposal planning process can be found in Content Unit 3.

2.3. Project Initiation and Team Formation

This stage involves creating the project team (in accordance with the project plan). Specifically, the following actions take place:

- The **project manager identifies** the individuals who will be part of the working team;
- **Roles and responsibilities** are clearly distributed among the team members. These are explicitly explained to each person, as well as how they will coordinate and work together;
- The **roles and responsibilities are recorded in writing** (in a document). This also contributes to team members' awareness of the seriousness of the tasks they have undertaken.

One of the key skills a project manager must possess is the ability to **delegate tasks**. The manager must be capable of seeing the big picture and coordinating the team's actions. When a manager becomes personally involved in every task, they lose sight of the overall situation and may overlook important aspects.

Another important skill project managers should have is the ability to **unify the team**, so that team members complement each other and cooperate effectively. The team's work should not only result in individual products but also in outcomes generated through collective effort, following the synergy formula: **2 + 2 = 5**.

2.4. Project Implementation and Monitoring

Project implementation refers to the stage where the project plan is put into practice — i.e., the previously established activities are carried out to achieve the proposed objectives. The success of this phase largely depends on the thoroughness of the project proposal**.**

However, practice shows that no project unfolds 100% according to plan, due to a wide range of internal and external factors that may intervene. The success of a project's implementation depends on the ability to minimize or eliminate the influence of these factors.

Internal factors include:

- Inaccurate assessment of available resources (financial, human, material, informational, etc.);
- Lack of ongoing communication between the applicant and the funder;
- Managerial inefficiency during implementation;
- Inability to adapt or revise the initial project plan, etc.

External factors include:

- Natural factors (natural disasters);

- External economic influences (unfavorable changes in exchange rates, taxes, etc.);
- Political factors;
- Emergence of conflicts of interest;
- Negative reactions from groups affected by the project (rejection, lack of interest, etc.);
- Disappearance of the problem the project was originally designed to address.

The **monitoring process** of a project serves two major goals:

- Tracking the extent to which activities are carried out according to the project plan;
- Making timely interventions to ensure the project remains effective.

Key **monitoring elements** include:

- Costs/resources;
- Task deadlines;
- Project scope;
- Product quality.

In the case of non-reimbursable funding projects, the funder also performs rigorous monitoring**.**

Monitoring project costs and activity timelines is particularly important. For this purpose, **specialized software** such as *Primavera Project Planner* or *Microsoft Project Manager* can be used (with official Oracle Primavera download instructions available through a specific registration process). These tools offer the advantage of processing large volumes of data and presenting it systematically (in the form of charts, tables, etc.). However, these programs should be viewed as **monitoring tools**, not as decisive factors for the success of a project.

Ongoing cost tracking and rationalization **c**an also be done using a continuously updated table (Table 2.1).

Table 2.1. Project Cost Monitoring

Activity	Activity Code	Costs incurred to date		Costs to be incurred by project completion		Allocated Budget
		Planned	Actual	Planned	Actual	

Source: (Bârgăoanu, p.24)

Table 2.2 can be used for monitoring the timelines for the completion of project activities.

Table 2.2. Monitoring the Timelines for the Completion of Project Activities

Activity	Activity Code	Relationship with other activities	The responsible person	Start date		End date		Comments
				Planned	Actual	Planned	Actual	

Source: (Bârgăoanu, p.25)

In the monitoring process, the need to modify the scope of the project can be identified. The scope of the project can be modified through:

- **Restriction** (some actions are excluded as they are no longer necessary);
- **Expansion** (additional actions are included);
- **Total change** (the scope is completely modified).

The modification of the scope must be coordinated with the beneficiary and the funder, often requiring additional resources.

Compliance with product quality standards is also an important area of monitoring. Violations of these standards can occur due to variations in costs, deadlines, and scope, which can have detrimental consequences on the project's performance.

2.5. Closing the Project

One of the defining characteristics of a project is the finite temporal component in which it evolves.

Closing the project is necessary due to a series of advantages:

- Ensuring a formal framework when the project is concluded;
- Systematizing and promoting the knowledge and good practices accumulated, thereby amplifying their use by as many beneficiaries as possible;
- Exercising strong motivational effects on the participants due to the acknowledgment of the successes achieved.

The activities related to the closure phase of the project can be systematized into two groups:

I. Administrative Activities:

- Delivering the final results and obtaining confirmations regarding their acceptance by the beneficiaries;
- Preparing and submitting the final financial reports;
- Informing partners about the closure of the project and its outcomes;
- Closing the project accounts (if special accounts were opened);

- Internal evaluation of the project with an analysis of performances and failures. It is extremely important to identify the “lessons learned” from the execution of each project. A detailed analysis of the project activities must be carried out in light of successes and failures, highlighting aspects that require more serious or different approaches in the future;
- Public announcement about the closure of the project.

II. Knowledge Transfer:

- Organizing an event (roundtable, workshop, seminar, etc.) with the participation of the team and beneficiaries or their representatives, during which the project results, its benefits, opportunities for continuing activities, “lessons learned,” good practices, etc., will be promoted. Thus, the event will also serve as a marketing tool in promoting the obtained products or services (for example, certain guides or other works published, or training courses can be presented to attract potential beneficiaries in the coming period).
- Preparing and publishing an executive summary of the project, which could serve as a reference for future projects;
- Using the project results as a basis for continuing activities or initiating complementary activities in other projects;
- Including the project results in the study content of initial and continuing training programs in relevant fields;
- Using the data obtained during the project in scientific investigations, with active promotion at various scientific forums, etc.

PRACTICAL APPLICATIONS

Case Study. Project Proposal titled "Application of ICT Tools in the Process of Public Opinion Evaluation Regarding the Political and Economic Situation of the Country" The proposal contains a series of activities for which the deadlines for completion were omitted. Additionally, for the activity "Study of international best practices in applying ICT tools for evaluating public opinion," a budget of €1500 was estimated, with two planned trips to a partner organization in another country. However, it was not specified in which of the three partner organizations from different countries the meeting will be organized, nor the number of participants.

Identify the negative consequences of the errors made in the planning process of the project proposal.

Specify the actions that need to be taken to make the necessary corrections.

Case Study. You have been appointed as the manager of a project titled "Improving Water Supply Systems in Rural Areas of Moldova." You have been

informed of the activities to be undertaken, the deadlines for each, and the requirements for the final products that need to be delivered to the beneficiary.

Identify what additional information you need to ensure the successful completion of the project activities. Justify the significance of the additional information required and specify how you would obtain this information.

Case Study. As the leader of a project working group, you were familiarized with the tasks, including by signing a document that outlined the actions to be taken, the deliverables, and the deadlines for presenting the project outputs. During the project, you had numerous written messages and discussions with the project coordinator from the funder, where you received new instructions regarding what should be presented. Each time, you promptly responded and sent the revised materials based on the latest instructions, without receiving immediate confirmation of their review. Later, you repeatedly received further instructions to revise the materials, which required repeated interventions in their content.

Identify the mistake made in the process of receiving the tasks from the project coordinator. What solutions can be found for the situation created?

SELF-ASSESSMENT QUESTIONS

1. Specify the stages in project management.
2. Highlight the subjects that need clarification during the project conception and formulation stage.
3. What important aspects need to be addressed during the project planning stage?
4. Justify the significance of rigorous planning for the successful subsequent implementation of the project.
5. Specify the main objectives of project monitoring.
6. Justify the need for rigorous project monitoring.
7. How can accessible software programs (Primavera Project Planner, Microsoft Project Manager, etc.) contribute to the successful monitoring of the project?
8. Justify the benefits of using software programs in the project planning and monitoring process.
9. Describe the actions taken during the project closure stage and justify their significance.

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3. DEVELOPMENT OF INTERNATIONAL PROJECT PROPOSALS

Content Units:

3.1 Structure of the project proposal
3.2 General rules for drafting the project title and summary
3.3 Identifying and describing the project problem
3.4 Description of the beneficiaries and target groups of the project
3.5 Presentation of the general objective and specific objectives of the project
3.6 Developing the activity plan
3.7 Description of project results. performance indicators
3.8 Justifying the sustainability and impact of the project
3.9 Project budget development
3.10 Building the logical framework matrix

Skills

- reveals the structure of a project proposal;
- justifies the importance of following the basic rules for drafting the project title and summary;
- identifies and justifies the problem that supports the project idea;
- constructs the problem tree of the project;
- specifies the beneficiaries and target groups of the proposed project;
- formulates the project's objectives: general and specific, using the objective tree technique;
- develops the activity plan using the Gantt Method;
- formulates the project results;
- develops the performance indicator system in relation to the project's results;
- justifies the sustainability and impact of the project;
- prepares the project budget;
- drafts the logical framework matrix for the project proposal.

Responsibility and autonomy

The graduate independently develops an international project proposal.

Terms of Reference:

Project Proposal – a request for financial assistance in implementing a project;
Project Problem – the tension (gap) between the desired situation and the existing reality;

Target Group – the group or entity that directly benefits from the project;
Beneficiary – a group or entity that gains long-term advantages from the project;
General Objective of the Project – the goal to be achieved, aiming at long-term benefits for society, a group, an organization, etc.;
Short-term/Specific Objective – contributions towards achieving the general objective;
Project Activity – an action planned according to a certain logic in order to meet the proposed objective and obtain the desired results;
Gantt Chart – a horizontal bar chart illustrating project activities over time, indicating the start and end times as well as the duration of these activities;
Project Result – the "product" of the activities carried out during the project implementation period, whose achievement leads to fulfilling the project's objectives;
Objective Verification Indicator, Performance Indicator – a measuring tool that makes it possible to quantify, in SMART terms, the level of achievement of the project's proposed objectives as a result of its implementation;
Project Sustainability – the continuation of a project's essential activities, even on a smaller scale, after the funding ends, so that the target groups continue to benefit;
Project Impact – the effects of project implementation on a large number of people within a sector, region, or country;
Project Budget – the total estimated cost for project implementation.

3.1. Structure of the Project Proposal

A project proposal is defined as a request for financial assistance in implementing a project and outlines the organization's plan to carry out the project, providing detailed information regarding the intention to implement it, how it will be managed, and the expected results.

A project proposal is a detailed description of a series of activities aimed at solving a particular problem. To be successful, the document must meet the following requirements:

- provide a logical presentation of a change-generating idea;
- illustrate the importance of the idea;
- show the relationship between the idea and past actions;
- articulate the activities for the proposed project (Rădulescu, 2017, p. 297).

The structural elements of the project will be included in the project form and are determined by each donor individually, the specific nature and type of the project, as well as by specific requirements of the funding institutions. However, projects generally share several common elements:

1. Project Title
2. Executive Summary
3. Description of the addressed problem and project rationale
4. Description of the project beneficiaries and target groups
5. Statement of the general and specific objectives of the project
6. Activity plan and project implementation methods
7. Description of expected results
8. Justification of the project's sustainability and impact
9. Detailed project budget
10. Description of the implementing organization and the project implementation team

Each component of the project proposal requires a responsible approach. It is a mistake to place too much emphasis on some components while superficially addressing others.

The specific requirements that must be followed when drafting the components of the project proposal will be discussed in the following sections.

3.2. General Rules for Drafting the Project Title and Summary

When drafting a project title, the following basic requirements must be observed:

- it should be short;
- it should be concise;
- it should refer to the project's key results or its core activity.

A well-designed title is attractive and easy for evaluators to remember. At the same time, if titles are too long or too general, evaluators may either reject such projects or require more time to evaluate them.

Below we present examples of successful and unsuccessful project titles (Table 3.1).

Table 3.1 Examples of successful and unsuccessful project titles

Successful Project Titles	Unsuccessful Project Titles
Economic Development Initiatives through Local Actions	Environmental Education
Managementul deșeurilor furajere în or.	Protecting the Waters of the River ..... from Wastewater Discharges by Mobilizing Local Households, Economic Agents, and the State

Cross-border Cultural Activities – A Premise for Sustainable Cooperation	Stimulating the Socio-Economic Development of Settlements Along the Lower Course of the River .... and Promoting Tourism in the Border Area through Road Renovation
Strengthening the Capacity of the Economic Cooperation Center in the Central Region	Facilitating Rural Mobility

Source: (Bulat, 2011)

The title is placed on the title page, which typically includes: the project title, the name of the main organization and the project partners, the location and date the project was prepared, and the name of the funder to whom the project proposal is addressed.

The summary is a very important element of the project, because when a large number of projects are submitted, the evaluation usually begins with the summaries. Sometimes, summary evaluation is included as one of the phases of the evaluation process, and if the summary is not well thought out, there is a risk that the project will not be admitted to the next evaluation stages.

The summary must contain:

- a statement of the problem;
- the project objectives;
- the organizations that will implement the project;
- the key activities of the project;
- the total project budget.

The summary should be completed after all the funding application forms have been filled in. The recommended length of the summary ranges from 10 lines to 4 pages, depending on the size of the project.

3.3. Identifying and Describing the Project Problem

Formulating the project's problem is a key success factor, because the significance and relevance of the problem influence the funder's decision to accept the project.

A problem represents the tension (difference) between the desired situation and the existing reality. A well-formulated problem requires a clear understanding of its location, main causes, and possible components (Verevița, 2015, p.18).

The problem description is recommended to have the following structure: a) **Presenting the problem context** – a description of the social, economic, political,

and cultural environment in which the project is initiated. It is advisable to use relevant official statistical data, results of research or surveys carried out, or results of surveys made public by the implementers. At the same time, excessive data should be avoided. If the volume of data is too large, some of it should be included in annexes.

b) **Identifying the problem** – stating the specific problem(s) that the project aims to solve.

c) **Justifying the project** – arguing the importance of the addressed problem(s) for the local community, organization, or society, as well as the negative consequences of not solving them.

The quality of the problem analysis process can be assessed based on how well it answers the following questions (Veverița, 2015, p.18):

- Is the problem important and urgent?
- What would happen if the problem were not solved?
- Can the problem be solved within a determinable and realistic time frame?
- What impact would solving the problem have on the groups involved?
- Does the problem align with governmental, regional, or sectoral priorities?
- Is your organization/institution, together with partners, capable of addressing and solving this problem?

To facilitate the problem selection process, it is recommended to use a table in which the identified problems are listed and evaluated with a score from 1 to 5 based on several criteria (Table 3.2).

Table 3.2. Evaluation of Identified Problems for Project Proposal Development

Evaluation Criterion	Problem 1 Content	Problem 2 Content	Problem 3 Content
Importance of the problem			
Urgency of the problem			
Feasibility			
Existence of support from stakeholders			
Total Score			

Source: (Veverița, 2015).

After identifying the central problem, it is necessary to formulate it as clearly as possible so that it is accessible to any reader. The problem should reflect a *need* of the target group, not simply a *lack* of something.

A common mistake in identifying and describing the problem is presenting multiple problems. However, the project should address only a limited range of issues. To resolve such a dilemma, it is advisable to use the **Problem Tree** technique.

The **Problem Tree** is a method through which objective needs and constraints that can be addressed within a project are highlighted. Applying this method involves the following steps:

1. Identifying the major existing problems in a community, organization, or specific situation.
2. Selecting the *main problem* from the range of identified issues—one that is solvable and, once addressed, will bring significant results for the target group and beneficiaries.
3. Identifying problems that are related to the main problem.
4. Establishing cause–effect relationships and presenting them schematically.
5. Verifying the logical relationships and completeness of the diagram.

A generalized representation of the problem tree technique is shown in **Figure 3.1**.

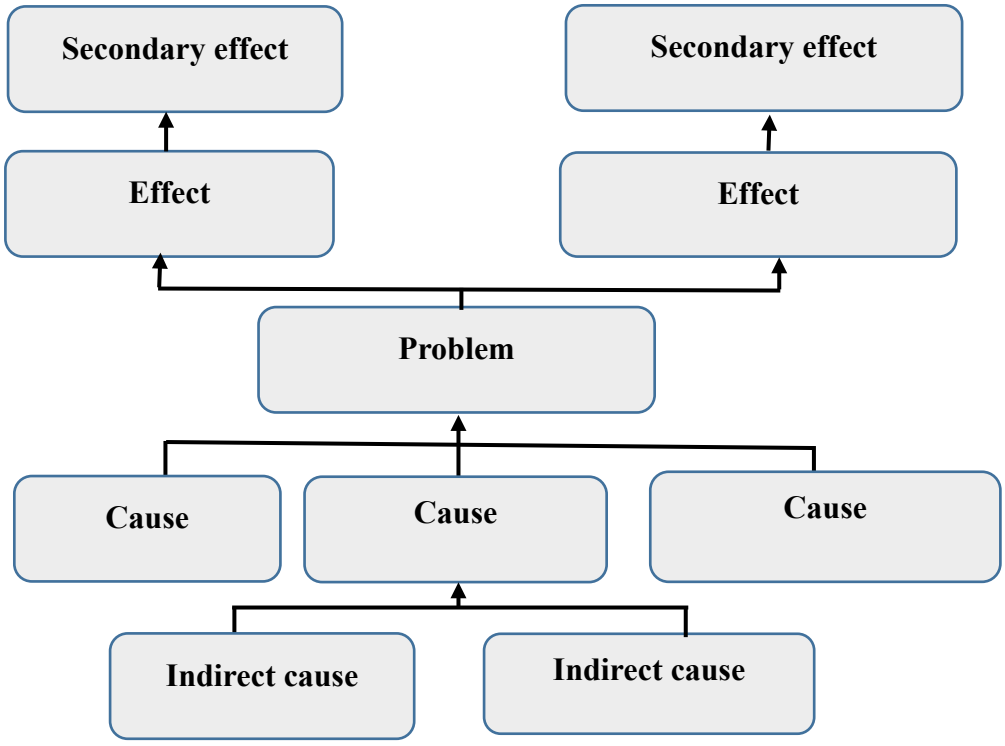


Fig. 3.1. The Problem Tree

Source: (Bulat, 2011; Veveriță, 2015).

3.4 Description of the Beneficiaries and Target Groups of the Project

Target groups refer to the group or entity that directly benefits from the project. The target group represents a portion of the project beneficiaries. Identifying the target group occurs during the problem analysis phase. Therefore, it is important to establish who will be affected by the achievement of the project's objectives. If the project actions impact their interests and influence their behavior, then this group can be considered the target group.

Beneficiaries are groups or entities that will gain long-term benefits from the project. For example, in a project aimed at improving drinking water quality, the target groups might be municipalities from several localities where concrete activities will be carried out (including procuring special equipment, receiving training, etc.), while the beneficiaries would be the residents of these localities.

Here is an example of how to state the target group and the beneficiaries of a project:

Target Group:

- 170 public officials from 11 local public authorities (LPA) of levels I and II in the districts X and Y;
- Over 100 economic agents from the districts Y and Z;
- 30 NGOs operating in region W;
- Vulnerable groups and women from districts X and Y;
- Investors and the donor community.

Beneficiaries:

- The target group mentioned above, as well as the population of districts X and Y (approximately 35,000 inhabitants), including: women (51% of the population), vulnerable groups, and LPAs in the neighboring districts Y and Z;
- Other beneficiary institutions: 12 preschool institutions, 15 secondary education institutions; 12 cultural clubs in districts Y and Z; 17 libraries, including 6 children's libraries, 2 music schools, 3 arts schools, 2 museums, 75 historical monuments; vacation resorts: T, M, G, etc. (Veveriță, 2015, p.25).

3.5 Presentation of the General Objective and Specific Objectives of the Project

The **general objective** of the project represents the target to be achieved and aims at providing long-term benefits for society, the group, the organization, etc.

Achieving the general objective means solving the problem as formulated in the needs identification phase. However, achieving the general objective is not always guaranteed by the targeted project, often requiring the implementation of multiple projects.

The **general objective** of the project must align with the funder's program to which the project is applying and must meet the following requirements:

- It must be attractive to the groups involved in the project;
- It must sufficiently justify the existence of the project;
- It must be expressed as a final state, not a means.

Here are some examples of general project objectives:

- Sustainable socio-economic development in the cross-border area of Anenii Noi (Republic of Moldova) and Iași (Romania) through the development of the regional agents' capacity to implement joint projects in waste management;
- Strengthening and intensifying cross-border cooperation in the social field between Leova district and Vaslui county;
- Ensuring the infrastructure, logistics, and resources necessary for initiating and developing sustainable cross-border cultural cooperation between local communities in the Republic of Moldova and Ukraine;
- Promoting professional journalism in the economic and legal fields, in line with ethical standards, public interest, and professional values (Veverița, 2015, p.23).

Short-term objectives or **specific objectives** represent contributions to achieving the general objective. Specific objectives should answer the question, "What do you ultimately want to achieve?" and not "What do you want to do?" These objectives can be achieved in multiple ways and through several activities. If there is only one way to achieve the objective, then it is actually an activity.

An objective must be **SMART** (Specific, Measurable, Achievable, Realistic, Timely), meaning it should meet a series of elements represented by the SMART acronym. These elements are:

- **Specific** – it should be closely related to the general objective of the project;
- **Measurable** – there should be quantitative and/or qualitative indicators for the proposed objective;
- **Achievable** – feasible to accomplish;
- **Realistic** – the project must ensure that superior effects are obtained compared to the efforts;
- **Timely** – there must be realistic deadlines for obtaining results.

As mentioned earlier, the formulation of objectives is based on the previously developed problem tree. The negative situation illustrated in the problem tree will be transformed into a positive one by reformulating the identified problems in a positive light. As a result, the positive formulations become the objectives. These are presented in a logical scheme called the **Objective Tree**, which, in turn, provides a clear perspective on the future improved situation (Fig. 3.2).

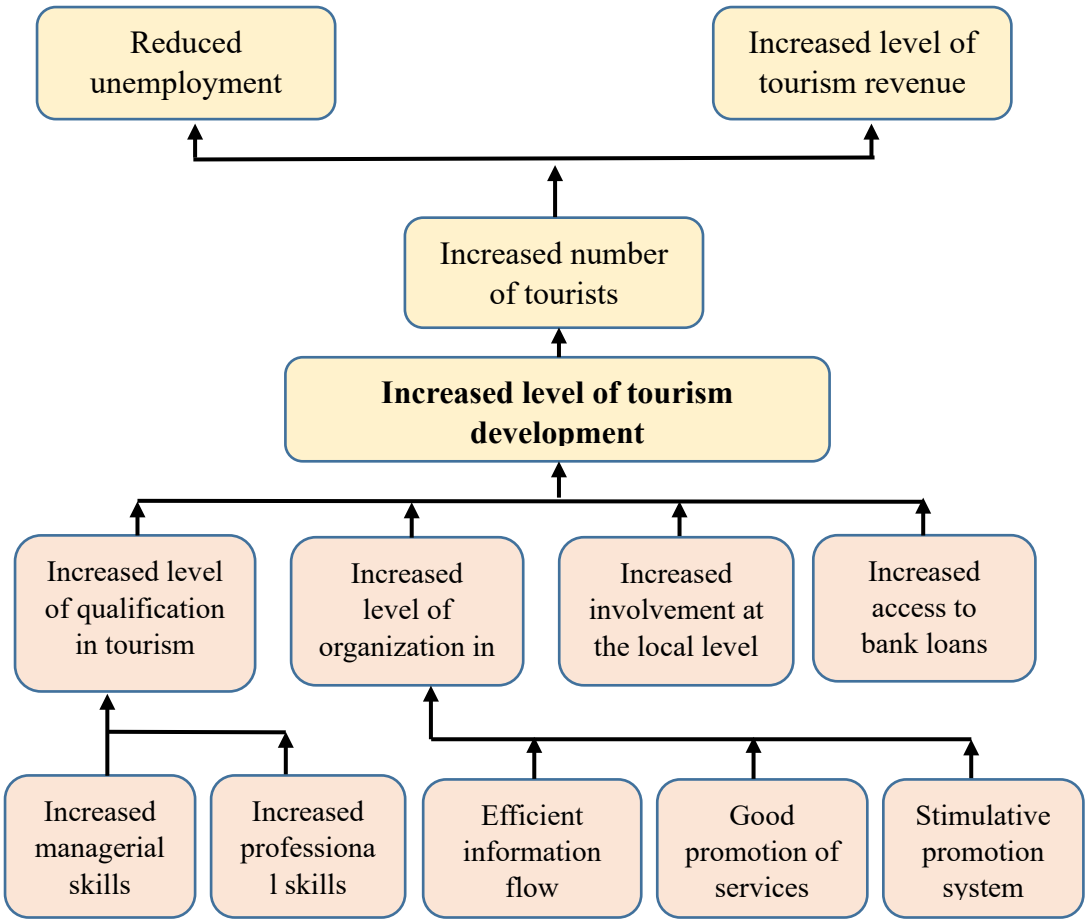


Fig. 3.2. The Objectives Tree

Source: (Savin and Ghițu, 2013, p.19).

3.6 Developing the Activity Plan

Project activities represent a set of actions, arranged in a certain logical order, aimed at achieving the proposed objective and obtaining the desired results. Each objective corresponds to at least two activities, which can in turn be divided into sub-activities. However, it is incorrect to formulate too many activities. In general, it is recommended to define between two and at most four or five activities for a single objective.

Typically, activities answer the questions "How will the implementation team carry out the project?" or "What needs to be done to achieve the proposed objective and desired results?". When formulating activities, the following requirements should be respected:

1. They should lead directly to results.

2. Only those activities that are carried out directly within the project should be included, not those carried out by other groups or organizations.

3. They should be formulated as actions that need to be taken, not as final states (they should begin with an action verb, e.g., organizing, developing, performing, etc.).

4. The time allocated for implementing each activity should be realistic. It is important to distinguish between eligible and non-eligible activities. Eligible activities refer to the set of permitted actions that will be carried out and can be completed for the project to take place. Non-eligible activities are those actions that cannot be financially covered within the project. Typically, funders specify the list of eligible and non-eligible activities in advance. The following Table 3.3 provides examples of eligible and non-eligible activities for the project.

Table 3.3. Examples of Eligible and Non-eligible Activities Related to the Project

Eligible Activities	**Non-eligible Activities**
Creating networks between different organizations/public administrations	Actions aimed solely or mainly at individual sponsorships for participation in workshops, seminars, conferences, and congresses
Organizing training seminars/roundtables/workshops/festivals	Actions referring solely or mainly to individual scholarships for studies or professional training courses
Research activities	Projects that have already been approved for funding from other sources, including other European Commission programs (If the project, in whole or in part, has been proposed for funding from other sources, the applicant must provide the necessary information in the full application)
Developing prefeasibility and/or feasibility studies	Projects related to the tobacco industry, distilled alcoholic beverage production, firearms, and ammunition
Developing new local development strategies	Activities of a political, ideological, or religious nature, etc.
Collecting information, analyzing and processing data for describing the current situation, diagnosing the area (documentary research, databases, consultations, evaluations, working groups, surveys, participatory actions, etc.)	
Activities promoting cultural heritage values, etc.	

Source: Developed by the author based on (Veveriţa, 2015, p. 30-31).

As previously mentioned, activities can be further detailed into sub-activities that logically relate to the main activity and the specific objective they correspond to. In larger projects, various activities may be grouped into project components.

Presenting the project's activities can be done using a simple table or more sophisticated tools such as the Gantt Chart, critical path method, and others.

Representing the activities in a simple table involves creating a table with columns for activities, sub-activities, tasks, deadlines, and responsibilities.

The Gantt Chart (in English, Gantt chart; in French, Diagramme de Gantt) is a horizontal bar chart that illustrates the activities of a project over time, indicating the start and end times, as well as the duration of these activities. The diagram can also mention the individuals responsible for the activities. As previously stated, the diagram is named after Henry L. Gantt (1861-1919), a mechanical engineer and management consultant who developed this graph between 1910 and 1915 for production scheduling at a company in the USA.

The Gantt Chart is in the form of a matrix with two axes: one horizontal to indicate the time period required for each activity, and another vertical, which indicates the tasks. In practical use, it can be presented in different versions, one of which is shown in Figure 3.3.

Building the Gantt Chart involves the following consecutive steps:

- Defining the activities to be performed.
- Determining the start and end dates for each activity.
- Determining the duration of each activity.
- Specifying the previous activity for each task.
- Setting the priority level for all activities within the project’s planning.
- Defining the relationships between activities.

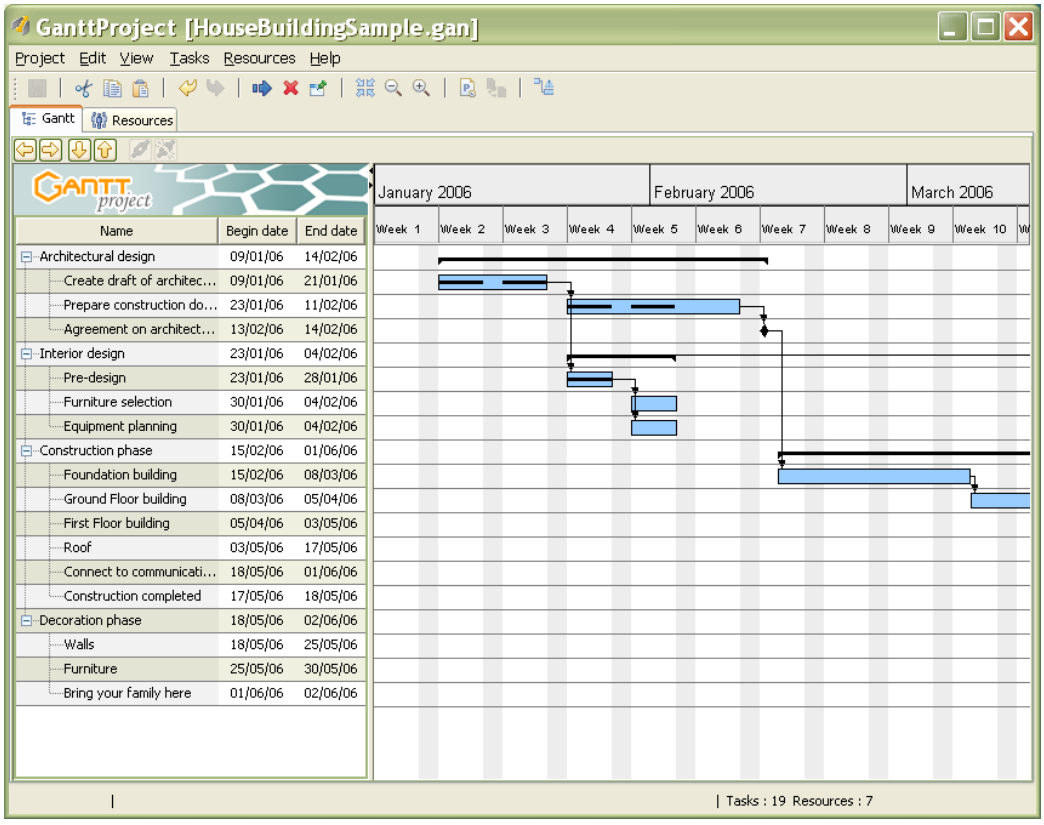


Fig. 3.3 Gantt Chart Model

Source:http://prbeta.ro/blog/wp-content/uploads/2012/03/diagrama-gantt-3.png

To facilitate the construction of the diagram, the data obtained from the operations described above can be systematized in a table, as shown below (Tab. 3.4).

Table 3.4. Initial Data for Constructing the Gantt Chart

No.	Activity Code	Activity Name	Start Date	End Date	Duration (days)	Previous Activity Code	Priority Level

Source: Developed by the author based on (Rădulescu, 2017, p.103).

Among the main advantages of the Gantt method are (Rădulescu, 2017, p.100-101):

- It is an appropriate tool for designing activities with easily estimated durations.
- It has a simple construction.
- It is easily adaptable to less complex projects.
- It is easy for users to understand.

- It is comprehensive (can cover between 15 and 20 tasks, illustrated on a single page). However, it is important to note that more tasks may clutter the diagram and create confusion.
- It provides an overview of the work that needs to be done.
- It is useful for monitoring and controlling the execution of project activities.
- It allows for the analysis of critical activities (tasks that must be completed as quickly as possible because any delay will affect the final duration of the project), offering the possibility of rationally allocating material, human, and financial resources.

Along with the mentioned advantages, the Gantt Chart also has several disadvantages:

- It is difficult for complex projects with more than 20 activities.
- It does not allow for presenting more complex tasks, and it cannot express the work assigned, the human resources involved, or the difficulties encountered in the task elements.
- Based on the diagram, only delays, postponements, or deadlines exceeded can be identified during the project monitoring process.
- It can give the wrong impression that the project is very simple.
- It does not provide an exact picture of resource consumption.
- It does not reflect interdependencies between activities.
- If there are changes in the duration or start/end times of activities, the diagram must be redrawn.
- If time intervals are incorrectly estimated, the entire diagram is compromised.
- In the case of weakly defined tasks, errors can occur when determining the time intervals necessary to complete them.

Currently, there are software programs that facilitate the construction and updating of the diagram.

The Critical Path Method (CPM) was developed by DuPont in 1957 to solve a problem related to the shutdown of a chemical factory for maintenance and its subsequent restart under optimal conditions.

In essence, the Critical Path Method is a deterministic approach that allows control of the time and execution costs of a project, using only a single time duration associated with each activity, which results in high accuracy (Rădulescu, 2017, p.110).

The application of the Critical Path Method involves the following reasoning: the project involves the completion of activities that consume time and resources, which are interconnected through events. Each activity corresponds to a start and a finish event. The graphical representation that illustrates the entire set of project activities and their interdependencies is called a network or graph.

The basic terms used in the application process of this method are:

- Each circle (node) in the network represents an event of the project.
- Each arc, originating from one event and directed towards another event, represents a distinct activity.
- The start event is generically labeled as "i", and the finish event is labeled as "j".

The process of applying the Critical Path Method involves the following steps:

1. Preparing the list of project activities, specifying their durations and dependencies.
2. Building the graph.

When building the graph, the following rules must be observed:

- The order in which activities are represented in the network must correspond exactly to their actual sequence (if it is a production project, the sequence of technological processes involved must be considered).
- The project can have only one start event and one finish event.
- For each activity, there is a single arc between two nodes.
- For each node, there is a predecessor arc and a successor arc, except for the start and finish nodes.
- Connections like those shown in Figures 3.4 and 3.6 are not accepted. The solution is to represent fictive activities using dotted lines (Figures 3.5 and 3.7).
- Loops are not allowed (a start event = the finish event for an activity).
- The use of arc intersections is not recommended.
- Nodes (events) in the network are numbered, and above the arcs (activities), the activities and/or their durations are indicated.
- Distances and angles should be chosen to create a clear graph.
- The network must be smooth and clearly present the flow of the process.

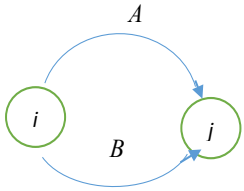


Fig. 3.4.

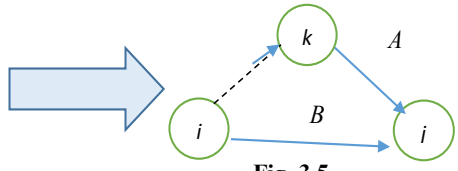


Fig. 3.5.

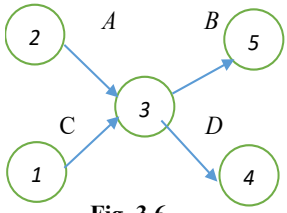


Fig. 3.6.

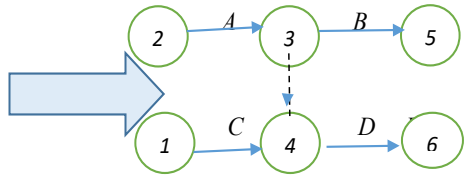


Fig. 3.7.

For a more eloquent presentation of the practical application of the Critical Path Method, we will refer to an example: let's assume that project XXX contains activities A-L. The systematization of these activities is presented in Table 3.5.

Table 3.5. Systematization of the activities of project XXX

Activity	**Direct Preceding Activity**	**Duration, days**
A	-	7
B	-	5
C	A	9
D	B	4
E	A,D	7
F	C	2
G	C	6
H	C	3
I	E,F	7
J	G	2
K	G	9
L	H,J	4

Source: (Classic Methods of Project Activity and Resource Planning and Control).

In **Figure 3.8**, the network of Project XXX is presented.

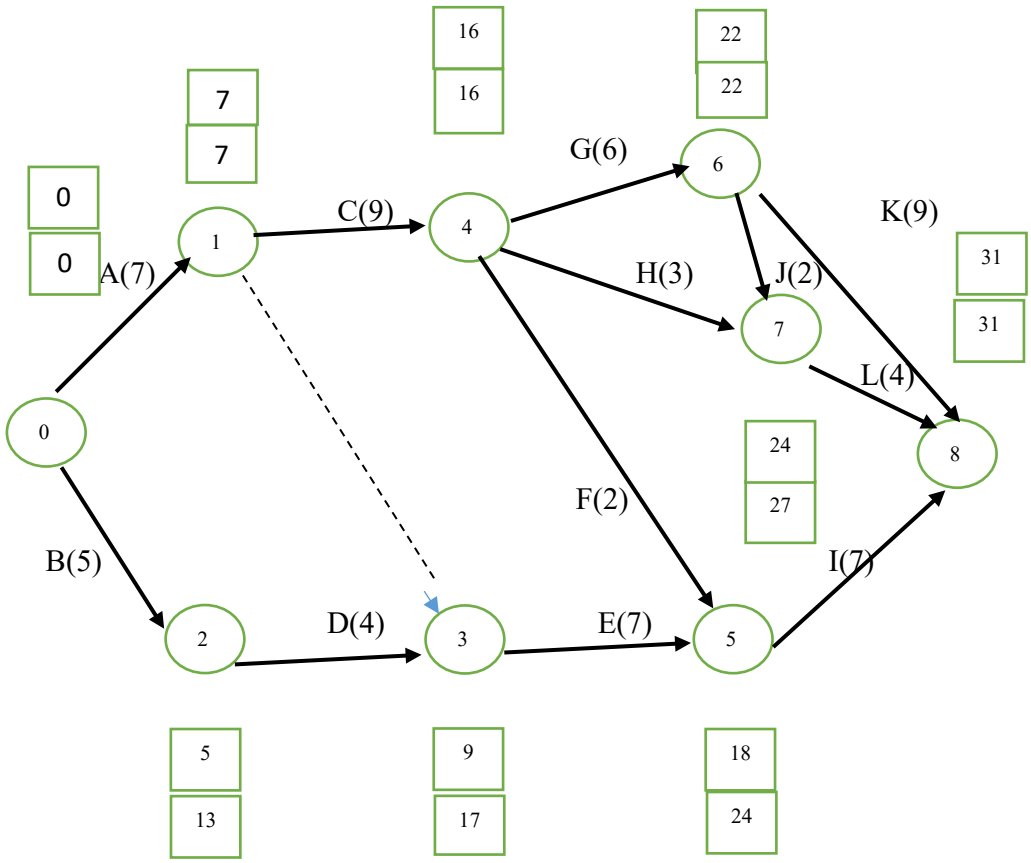


Fig. 3.8. The Network of Project XXX

Source: (Classic Methods of Planning and Control of Project Activities and Resources).

As shown in Figure 3.8, each event (node) is associated with two deadlines:

- **The earliest event time** – this is the earliest moment at which it can occur (TE – Earliest Time);
- **The latest event time** – this is the latest moment it can occur (TL – Latest Time).

In the process of calculating the event deadlines, the following steps are followed:

1. By traversing the path from left to right (Forward Step), the earliest times for the events are calculated and indicated in the top box next to each node of the project (e.g., the earliest time of event 3 in Figure 3.7 will be determined as: TE3 = 5 + 4 = 9 days).

2. The backward step (Backward Step) allows the calculation of the latest times for the events, which are indicated in the bottom box next to each node of the network (e.g., the latest time for event 3 in Figure 3.7 will be determined as: TL3 = 31 - 7 - 7 = 17 days).

Events whose earliest and latest times coincide are called **critical events**. Any delay in these events is not allowed, as it will lead to exceeding the project's deadline.

The path that covers the activities corresponding to the critical events represents the **critical path** of the project (the path with the maximum duration). In the analyzed example (Figure 3.7), the critical path connects events 0, 1, 4, 6, and 8.

Events whose earliest and latest times are different are called **non-critical events**, and they have a time reserve.

A generalized presentation of the specific elements of the Critical Path Method is shown in Figure 3.9.

Characteristics of Events:

Earliest Event Time – The earliest moment the event can occur.

Latest Event Time – The latest moment the event can occur.

Time Reserve for the Event – The available time margin for the event.

Characteristics of Activities:

Earliest Start Time of the Activity – The earliest time the activity can start.

Latest Start Time of the Activity – The latest time the activity can start.

Earliest Finish Time of the Activity – The earliest time the activity can be completed.

Latest Finish Time of the Activity – The latest time the activity can be completed.

Time Reserves for Activities:

Total Reserve – The total amount of time that can be delayed without affecting the overall project deadline.

Free Reserve – The amount of time an activity can be delayed without affecting the start of any dependent activities.

Intermediate Reserve – The time buffer that can be used between two dependent activities without delaying the project's overall schedule.

Safe Reserve – The time buffer that ensures an activity can be delayed without compromising the overall schedule or critical path of the project.

Fig. 3.9. Characteristics of the Elements of the Critical Path Method

Source: Developed by the author based on (Mândru L. and Mândru E; Rădulescu, 2017).

If an activity is initiated at the minimum start time, it will follow the shortest program. If initiated at the maximum start time, the activity will follow the longest program. Implicitly, each activity is associated with four time reserves:

- **Total reserve** – represents the maximum time interval that an activity initiated according to the shortest program can be delayed, so that the total duration of the project is not exceeded.
- **Free reserve** – represents the maximum time interval that an activity initiated according to the shortest program can be delayed, so that neither the total duration of the project is exceeded nor the time reserves of the succeeding activities are affected.
- **Intermediate reserve** – represents the maximum time interval that an activity initiated according to the longest program can be delayed, so that the total duration of the project is not exceeded, and the time reserves of the predecessor activities are not affected.
- **Safe reserve** – represents the maximum time interval that an activity initiated according to the shortest program can be delayed, so that neither the total duration of the project is exceeded nor the time reserves of the predecessor and/or succeeding activities are affected.

By generalizing the above, we deduce the multiple benefits of the critical path method, justified by the solution of a wide range of problems related to project management. These benefits are succinctly presented in Figure 3.10.

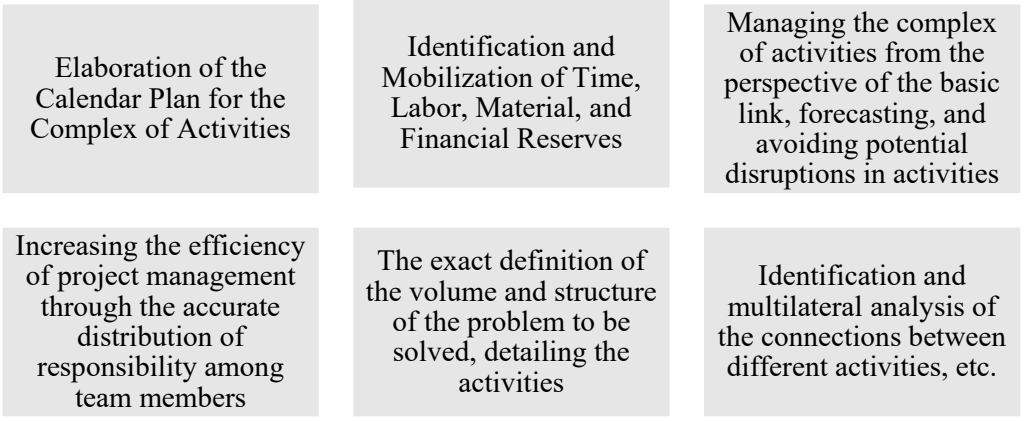


Fig. 3.10. Issues related to project management that can be solved through the critical path method

Source: Developed by the author.

3.7 Description of Project Results. Performance Indicators

The results of a project (in English – *project outcome*) are the "products" of the activities carried out during the project implementation period, and their completion leads to the achievement of the project's objectives.

The results of a project have the following characteristics:

- They represent the consequence of the project's activity;
- They can be generated by one or more activities;
- They are essential steps towards achieving the objectives;
- They are precisely defined and verifiable.

If the specific objectives and project activities have been formulated correctly, the identification and description of the results is straightforward.

Each activity and each objective corresponds to two types of results: quantitative and qualitative.

Quantitative results are expressed through quantitative indicators (e.g., the number of people who have benefited from certain advantages in the project; the proportion of women and men who received training, etc.).

Qualitative results, in turn, are expressed through qualitative indicators (e.g., an increase in the beneficiaries' knowledge of ICT tools; an increase in the awareness of the need for an environmentally protective attitude, etc.).

In some projects, funders require a distinct presentation of products and results. In this case, "products" refer to the immediate consequence of the project, for example: a guide for using ICT tools, an approved decision, etc.

Objective Verification Indicators (IVo), also known as performance indicators, are measurement tools that enable the quantification in SMART terms of the level reached for the proposed objectives as a result of project implementation. The identification of IVO helps verify the feasibility of the objectives and forms the basis of the project's evaluation and monitoring system. Typically, they answer questions like: "How do we know if what was planned is actually happening or has already happened?" or "How can we check/measure success?"

It is necessary to establish one or more indicators for each objective and activity. An indicator can provide good quantitative information that needs to be complemented with another qualitative indicator (such as the target group’s opinion). However, at the same time, one must avoid the trap of including too many indicators.

Indicators can be:

a) **Direct** – which refer directly to the subject for which they were developed (e.g., the number of children attending school);

b) **Indirect** – which refer indirectly to the proposed subject (indirect indicators particularly refer to behavior changes, living conditions, etc.).

At the same stage, along with identifying and formulating indicators, the **sources of verification of objectives (SVO)** are specified. These sources indicate where and in what form information about the achievement of objectives (both general and specific) and project results can be found.

Table 3.6 presents a model for presenting activities, results, indicators, and sources of verification of project objectives

Activity	Result		Indicator	Source of verification
	Quantitative	Qualitative		
Activity 1.1. Organizing two training seminars on local finance for the local public administration in the northern part of the country.	Two training seminars organized; 30 representatives of local public administrations (LPA), attendees at the seminar.	Well-organized training seminar. New and useful knowledge acquired during the seminar.	Nr. de seminare de instruire organizate; Nr. de participanţi prezenţi la seminar.	Lista participanţilor; Poze de la seminar; Factura fiscală pentru pauza de prânz; Proces-verbal de achiziţionare a materialelor pentru participanţi; Chestionare de evaluare.

Source: (Veveriță, 2015).

3.8. Justifying the Sustainability and Impact of the Project

Most donors want to ensure that the project they fund continues to have a life beyond the end of their financial support and can continue to provide benefits. Project sustainability refers to the continuation of essential project activities, even at a reduced scale, after the funding ends, so that the target groups continue to benefit.

To demonstrate the sustainability of a project, the following actions are recommended:

- Present forecasts regarding actions that will be undertaken after the completion of the project.
- Provide formal evidence (documents) confirming the financial support for project activities after donor funding ends.

Potential sources of future funding may include:

− Co-financing/funds from other donors (local, national, or international donors who may support the project and have a long-term interest in its success);

− Funds from the same donor (through subsequent financing);

− Signing agreements and establishing collaboration with other institutions that could take responsibility for parts of the project or finance it;

− Other sources of funding.

The term *impact* refers to the effects of project implementation on a larger number of people within a sector, region, or country. Impact relates to the benefits gained by the beneficiaries and the positive outcomes resulting from the project's implementation.

A project idea will be more attractive to a donor if it can be shown that the project's results will provide long-term benefits to a large number of beneficiaries. Thus, we conclude that there are clear connections between a project's sustainability and its impact.

3.9. Project Budget Development

The project budget represents the sum of all estimated costs for the implementation of a project. The budget provides a clear overview of the financial resources needed for project implementation and essentially serves as the financial mirror of the project. Developing a detailed and realistic budget allows for efficient management of the resources necessary to achieve the project's objectives. Thus, the budget assigns financial value to project activities, and the overall planning of the project "goes hand in hand" with budget planning. The budget is also a crucial tool for controlling the project's financial resources, as any deviation highlights the need for analysis and correction.

To build the budget, the following premises are required:

- A realistic view of the costs involved in carrying out the activities and achieving the desired results;
- Knowledge of cost eligibility;
- Understanding of the reimbursement mechanism;
- Quality financial planning at the organizational level;
- Awareness of own contribution opportunities and the possibility of in-kind contributions during project implementation (Savin and Ghițu, 2013, p.30).

Budget development must comply with applicable regulations, including:

- Minimum and maximum funding limits;
- Usage limits for certain cost categories: travel, remuneration, etc.;
- Maximum rates for certain expenses (e.g., per diem rates in different countries);
- Co-financing amounts (e.g., at least 10% of the project's value must be co-financed by partners), etc.

The budget development process includes the following stages (Savin and Ghițu, 2013, p.31):

I. Planning the project activities.
II. Estimating the costs for each activity.
III. Estimating possible income sources and revenue amounts.
IV. Evaluating the gap between income and expenses.
V. Developing a cash flow plan.
VI. Identifying solutions to avoid potential cash flow crises (if temporary cash shortages cannot be covered by the organization, the budget must be reconsidered to ensure sufficient funds throughout the project).
VII. Establishing procedures for continuous monitoring of budget execution.
VIII. Periodic review and update of the budget within donor-approved limits.

Depending on the complexity of the form used, the project budget can group costs either by expense categories or by activities. Each of these two approaches has its pros and cons. The first approach requires advanced knowledge in budget planning, while the second demands careful attention to ensure that allocating costs to activities does not exceed maximum limits for certain common expense categories.

The method of developing the budget by cost categories is more commonly used in funding programs. The most relevant types of expenses include: personnel costs, travel expenses, equipment procurement, administrative expenses, and service or construction costs.

Personnel expenses include salaries and per diems. When planning salaries, it is important to consider gross salary (which includes income tax, individual mandatory social security contributions, and mandatory health insurance premiums). For international projects, distinctions should be made between international, national, and local experts, in accordance with market rates and industry practices.

Travel expenses must be planned according to legal provisions or donor requirements. When planning transport costs, the type of travel must be considered: domestic or international. Usually, international travel costs include border crossing fees, international insurance, etc.

Most projects involve equipment procurement. Planning the required equipment is a crucial responsibility, and must be preceded by well-argued justification. The equipment must contribute effectively to project implementation. Some donors impose restrictions on suppliers (e.g., suppliers must be from the EU).

Administrative or office expenses may include rent for offices and vehicles, office supplies, electricity, heating, telephone and internet services, maintenance, etc. These are typically planned monthly, based on current tariffs.

When planning costs for various works (construction, land development, equipment installation, etc.), the price-quality ratio must be considered (as there are

many providers on the market), as well as the projected inflation rate. The same principle applies when budgeting for services (translations, audits, banking services, etc.).

After all expenses have been individually planned, they are presented in a single table, with the total project budget indicated at the end.

3.10. Building the Logical Framework Matrix

It is considered that the Logical Framework Approach (LFA) was developed in the late 1960s to assist the United States Agency for International Development (USAID) in improving project planning and evaluation systems (Veverița, 2015). The logical framework method has since been adopted by the international community for planning, monitoring, and evaluating projects. Over time, various agencies have adapted formats, terminology, and LFA tools. However, the core analytical principles have remained unchanged. Understanding the principles of the LFA is essential for all personnel involved in project design and the provision of development assistance.

Currently, the **Logical Framework Matrix**, which materializes the LFA, is widely used by most funding organizations globally. The matrix is a tabular representation of the problem analysis results for a specific project, composed of **16 cells** (Fig. 3.11). In each cell of the matrix, specific information is presented so that the logical link between the problem situation and the project's objectives, results, activities, inputs, and costs can be tracked. This approach reflects **cause-effect and means-end relationships**, while also clarifying how achievement is verified and what external factors may influence the success or failure of the project.

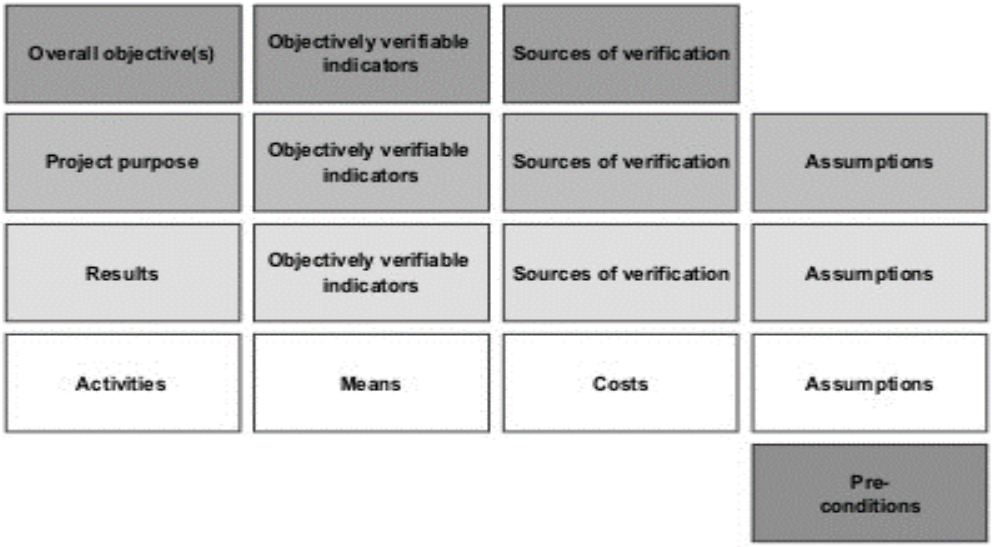


Figure 3.11. Logical Framework Matrix Structure

Source: (Dillon)

The matrix can be developed either at the beginning or after the project is written. However, practitioners recommend perfecting it at the beginning of the project writing process, during the problem analysis and objective-setting stage. By completing the matrix at this point, it is possible to determine from the outset whether there is coherence between the planned elements of the project.

When completing the matrix, it is important to note that for the fourth row, "Activities", it is not mandatory to define indicators and verification sources, but the costs must be presented.

Assuming that the essence and approach to most components of the matrix have been previously presented, we will now refer to **assumptions** and **preconditions**, which must be specified in the last column of the matrix. During the development of project objectives, we find that solving the problem entirely and fulfilling all assumed objectives does not depend solely on the project's activities. Thus, several external factors must be considered as assumptions. Preconditions refer to the initial conditions that must already be met before the project can begin.

In the Logical Framework Matrix, two types of logical links are highlighted: **vertical logic** and **horizontal logic** (Bulat, 2011).

Vertical logic is read in a zigzag, from the end (preconditions) to the beginning (objectives) as follows:

1. If preconditions are met, the activities can begin.
2. If the activities are fully carried out and the assumptions at this level are met, the results will be achieved.
3. If the proposed results are fully achieved and the assumptions at this level are fulfilled, the project’s purpose (specific objective) is met.
4. If the project's purpose is achieved and the assumptions at this level are met, the project has contributed partially to fulfilling the overall objective.

Horizontal logic is read across the rows of the matrix and addresses the following questions:

1. What are the verification indicators by which the achievement of general objectives, purpose, and project results will be evaluated?
2. Where and in what form will we obtain these indicators?
3. What material, financial, and human resources will be allocated to carry out the project activities?
4. What are the costs associated with the project activities and the funding sources?

Among the main advantages of the Logical Framework Matrix (Savin and Ghițu, 2013, p.35) are:

- Integrates all key components of the project;

- Meets the requirements of good project design and helps identify weaknesses of previous projects;
- Is accessible for understanding and application;
- Reduces the project manager's workload;
- Can be used for both internal design and evaluation processes and external organizational development activities;
- Anticipates project implementation, thus facilitating understanding and communication among decision-makers;
- Provides a framework for planned monitoring and evaluation activities;
- Helps facilitate communication between project implementers and donors.

Along with the above advantages, the Logical Framework Matrix also comes with certain limitations (Savin and Ghițu, 2013, p.37):

- Its application does not eliminate the need for other planning and monitoring tools, such as technical, economic, social, and environmental analyses;
- May introduce some rigidity in project management, especially if objectives and external factors are overly emphasized;
- Requires teamwork and managerial skills for efficient team coordination;
- Requires facilitation skills to ensure the genuine and adequate participation of all stakeholders.

PRACTICAL APPLICATIONS

Practical Assignment. Identify and describe a significant and current problem that could serve as the basis for an international project. Describe the problem using the *Problem Tree* technique. Formulate a project title corresponding to the problem described. Describe the project's beneficiaries and target groups. Formulate the general and specific objectives of the project.

Practical Assignment. Develop the activity plan for the project selected in Task 1 using a *Gantt Chart*.

Practical Assignment. Specify the results of the project selected in Task 1 and the corresponding (quantitative and qualitative) indicators. Present the activities, results, indicators, and sources of verification of the objectives in a summary table.

SELF-EVALUATION QUESTIONS

1. Specify the basic elements of a project proposal.
2. State the requirements for the project title.
3. Justify the significance of the project summary.
4. Specify the elements of a project summary.
5. Present the structure of the project problem description.

6. Based on what criteria can the quality of the project problem analysis process be evaluated?
7. Explain the application of the *problem tree* technique in developing a project proposal.
8. Explain the essence of the target group.
9. Explain the essence of project beneficiaries.
10. Define the concept of the general project objective.
11. Define the concept of the specific project objective.
12. Explain how to develop the *objective tree* based on the project's problem tree.
13. What do activities represent in a project?
14. Describe how to use a simple table to clarify project activities.
15. Explain how to use a *Gantt chart* in project activity planning.
16. Explain how to apply the *Critical Path Method* in planning project activities.
17. Justify the importance of using tools like the *Gantt chart*, *Critical Path Method*, or other project planning tools (e.g., *PERT*) for quality planning and monitoring of activities.
18. Clarify the concept of a project result.
19. Explain the characteristics of project results.
20. What types of project results do you know?
21. Justify the importance of formulating project results as accurately as possible.
22. Explain the significance of project performance indicators.
23. How can a project budget be defined?
24. Specify the basic components of a project budget.
25. Explain how to quantify expenses in the project budget.
26. Present the concept of the Logical Framework Matrix.
27. Justify the importance of the Logical Framework Matrix in a project.
28. Describe the main activities involved in developing the project's Logical Framework Matrix.
29. Justify the significance of the Logical Framework Matrix for the project.

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4 PROJECT TEAM MANAGEMENT

Content Units:

4.1 Areas of involvement and skills of the project manager
4.2 Features of the project team
4.3 Evolution of the project team
4.4 Landmarks of a high-performing project team

Skills

- defines the project team;
- elucidates the areas of involvement of project management;
- analyzes the basic roles and skills that form the potential of a project manager;
- distinguishes the specific features of a project team;
- analyzes the stages in the evolution of the project team;
- argues the need to respect the basic rules in order to ensure the performance of the project team;
- distinguishes potential deficiencies in the management of the project team;
- argues the need for certain interventions by the project manager at various stages of the evolution of the project team.

Responsibility and autonomy

The graduate autonomously forms a project team and monitors its activity at various stages of its evolution.

Terms of Reference:

Project Team – a social structure established for a limited time, within which members collaborate to achieve the unique objective of the project team, engagement area, evolution, performance.

Project Team Evolution – the stages a team goes through during the course of a project, from formation to the completion of objectives.

High-performance Project Team – a team that collaborates effectively to achieve the project's objectives, demonstrating a high level of competence, cohesion, responsibility, and result-oriented focus.

4.1 Areas of Involvement and Skills of the Project Manager

A decisive role in ensuring the success of a project belongs to the project manager. Without a capable and competent manager, the chances of success are extremely limited.

The profession of project manager is relatively new, and there are ongoing debates about whether it is truly a profession. The first efforts to design a set of performance standards for the project manager profession date back to 1983 when the Project Management Institute launched the "Ethics, Standards, and Accreditation" project. According to this report, the following areas of project management involvement are defined https://search.pmi.org/default.aspx?q=Ethics%2C+standards+and+Accreditation):

- Scope Management.
- Cost Management.
- Human Resource Management.
- Communication Management.
- Time Management.
- Quality Management.

The responsibilities of the project manager lie in their roles (Bârgăoanu, p. 27):

- To indicate the direction.
- To provide the perspective.
- To perform strategic orientation.
- To align project objectives with the overall organizational objectives.

The necessary, but not sufficient, condition for being a good project manager is having general management skills, which refer to: leadership and management skills, communication, negotiation, problem-solving, influencing the organization, etc. Along with these, relationships with people require a set of special skills, also called interpersonal skills.

The specialized literature highlights six categories of skills that form the potential of a project manager (Savin, Ghițu, 2013, p. 55-56):

1. **Leadership and Management Skills** – Leadership refers to a process in which an individual influences a group towards achieving common objectives. Leadership involves developing a vision and strategies to reach it, communicating the vision to those whose cooperation is needed, and motivating those who will contribute to its achievement. This involves a series of interpersonal skills that must be developed over time.

2. **Communication Skills** – It is the project manager's task to provide clear and complete information, at the right moments, and in the optimal format, to those who need it. Given the variety of interests involved in projects and their rapidly

changing environments, the likelihood of communication errors increases. Special sensitivity and the ability to perform communication in all its aspects facilitate the timely transmission of information within the project, thus influencing everything that is done in the project. This requires a heightened focus on structured aspects of information flow and creating appropriate communication links between people and institutions who need to know how things are evolving.

3. **Negotiation Skills** – Negotiation is the process through which the requirements of a project are met by reaching an agreement or compromise with other stakeholders. In a project, negotiation also occurs when, in order to obtain the necessary resources, the manager has to rely on people over whom they have no direct authority, and who, in turn, have no authority over the project manager. A project manager must negotiate a wide range of elements necessary for the project: resources, schedules or work timelines, priorities, standards and quality conditions, procedures, costs, and labor force-related aspects.

4. **Ability to Create Team Spirit Among Project Team Members** – This ability is essential for the manager, considering that they work with groups of people who often lack experience in working as a team and do not know each other well. Regardless of the status of these groups, managers must be able to instill team spirit, motivating them to collaborate in achieving the desired outcome.

5. **Ability to Influence and Persuade** – Project management also involves situations where it is necessary to influence the actions of others, even without exercising direct authority. The power of persuasion and influence are aspects of interpersonal skills that ensure the quality of communication.

6. **Delegation Skills** – Delegation may seem like an action rather than a skill. In fact, it is the lack of delegation skills that often leads to errors made by project managers, with negative effects on performance. In this context, it is clear that the manager must possess delegation skills so that the project activities can be completed with maximum effectiveness. On the opposite side, a manager's tendency to personally engage in all tasks results in deficiencies in the overall monitoring of the project and ineffective management of the overall situation.

4.2 Features of the Project Team

The team represents a small group of individuals with complementary skills, dedicated to a common goal, shared performance standards, and common methods for which they are mutually responsible.

The project team represents a social structure established for a limited time, within which members collaborate to achieve the unique objective of the project. Managing a project team faces a series of specific traits of such teams, namely:

• It is an ad-hoc team, whose members may not have worked together previously, which creates additional challenges in coordinating their actions.

• Some team members may work full-time, while others may work part-time, which involves additional efforts to coordinate activities.

• The project manager has limited organizational authority but immense responsibility.

• Establishing an efficient project team is the most important lever the project manager has to ensure the success of the project. The team's spirit and enthusiasm will reflect both in the quality of deliverables and in how much the organization will appreciate the project's outcomes (Havrici).

When determining the number and composition of the personnel involved in a project, the following factors are taken into account:

• The type and size of the project;

• General deadlines and phase deadlines of the project (the number of people involved will be higher if deadlines are tighter);

• The importance of the project (a project of greater significance requires a larger number of participants, as well as members from higher hierarchical levels. For example, if the project involves proposing changes to the legal and regulatory framework, the team will include representatives of the bodies authorized to make such changes);

• The areas of expertise addressed and their number, which implies the existence of specialized and qualified personnel;

• The legislation in force;

• Other factors (e.g., the sponsor may require evidence of the official commitment from team members to remain with the organization during the project and even for a certain period after completion, to ensure the sustainability of the projected activities and the project's impact).

An efficient project team is defined by the following characteristics:

• The team shares common goals, and each team member is involved in achieving the project’s objectives;

• Each team member recognizes the talents of others; guidance is accepted from those with experience in a particular field, as well as their leadership when the nature of tasks requires it;

• Responsibilities are balanced among the team members;

• The team focuses its energy on solving the project-specific problems, not on resolving interpersonal conflicts;

• The free expression of differing opinions is encouraged;

• To foster risk-taking and creativity, team members' mistakes are treated as opportunities for learning, not as reasons for sanctions;

• Team members have high personal standards of quality and performance and support each other in achieving them;

• Team members identify with the team, seeing it as an opportunity for personal and professional development;

• The group maintains a comfortable and relaxed atmosphere;

• Team members communicate interactively and frequently;

• Decisions are made through collective efforts, by consensus, etc.

Based on the above, the importance of adhering to the principles of project team success is evident, namely (Havrici):

• Mutual trust in the value and possibility of achieving the team's objectives;

• Awareness of the necessity of each individual's contribution to the success of the team;

• Cultivation of a collaborative environment, where members are encouraged to share their thoughts, ideas, and concerns;

• Creation of a learning environment by supporting junior members;

• Rewarding the team's outstanding results (either financially or non-financially);

• Celebrating successes.

The benchmarks for an efficient team are considered to be:

1. The quality of the competencies possessed by the team members.
2. The attitude of the project manager.

Each team member must possess a set of competencies suited to the project's tasks, as well as to the nature of the work to be executed (creative activity, carried out in conditions of risk and uncertainty, through group efforts). Thus, we deduce that a series of professional competencies, as well as social, personal, communication, and relational competencies, are necessary.

On the other hand, an important factor in the team's success is the attitude of the project manager, who, in turn, must adhere to the following rules:

• Take into account the interests and needs of each team member;

• Set realistic goals for them;

• Make assessments when necessary;

• Provide constructive criticism;

• Stimulate creativity, initiative, and ingenuity;

• Contribute to the establishment of cooperative relationships within the team;

• Perceive useful information and communicate it to team members as quickly, concisely, and eloquently as possible.

4.3 Evolution of the Project Team

The evolution of the project team refers to the stages a team goes through during the course of a project, from formation to the completion of objectives. There are numerous approaches to the stages in the evolution of a team, one of the most widely accepted belonging to the psychologist Bruce Tuckman, who in 1965 identified five stages: forming, storming, norming, performing, and adjourning (Zoltan, Vancea, 2016; Abudi). A brief description of the stages mentioned is provided below.

1. **Forming**: During this first stage, team members orient themselves to the situation and become familiar with one another. This stage is typically characterized by uncertainty and stress. Since team members are striving to adapt both to their new work situation and to each other, managers must be tolerant of long informal discussions where specific aspects of the team are explored, and not view them as a waste of time. Moreover, various special team-building techniques that facilitate the process of familiarization and mutual understanding are welcome.

2. **Storming**: This phase is characterized by conflicts and misunderstandings related to the clarification of individual roles among team members. To help the team move past the storming stage, managers must encourage team members to feel free to criticize any team-related issues, raise concerns, and express their views completely and correctly. Organizing productive communication is crucial at this stage.

3. **Norming**: In this stage, team members come to understand and accept their roles, respect the rules, and adopt appropriate teamworking behaviors. Achievements made at this stage can enhance the team's future productivity, which is why the complete and correct alignment of assumed roles is very important (for example, roles may be accepted and acknowledged, but not perfectly aligned with the project's objectives).

4. **Performing**: This is the stage where the team begins to address the key issues related to the task at hand. Usually, team members interact optimally and support each other to achieve common goals, and conflicts are resolved constructively. The group’s performance is optimal, and the team is fully adapted to the organizational structure. The leader's role in providing real feedback about the team's performance is essential at this stage.

5. **Adjourning**: This stage marks the conclusion of the team's mission and prepares for its dissolution. During the adjourning stage, team members generally feel disappointed that the team is breaking up, as this means the loss of relationships and/or pleasant work situations. The manager's role is to maintain the team's morale at a satisfactory level and encourage people to look forward to future joint projects.

4.4. Landmarks of a high-performing project team

A high-performing project team is one that collaborates efficiently to achieve the project's objectives, demonstrating a high level of competence, cohesion, responsibility, and results orientation.

Forming a high-performing team involves the manager paying special attention to a number of important aspects, such as: recruiting team members, applying effective team management procedures, ensuring the team's identity, establishing shared visions, promoting participatory management, maintaining focus on objectives and expected deliverables, using constructive approaches in conflict resolution, and conducting fair evaluations of results.

The recruitment and selection process for project team members varies from one organization to another and from one case to another. It is clear that individuals with the necessary knowledge/competencies must be selected based on the project's specifics. Additionally, other criteria must be considered, such as:

- The ability to identify and solve various problems that may arise during the project's implementation;
- Availability to become involved in activities at any time when necessary (part-time individuals may sometimes be unable to engage in certain situations, which can cause deficiencies);
- Theoretical and practical training;
- Credibility – the image and reputation of the individuals involved;
- Institutional relationships – it is beneficial to involve people who have good relationships with state institutions or various other organizations;
- Ambition, energy, initiative – these qualities are vital and can even compensate for a lack of competencies in certain situations.

Establishing effective processes for carrying out internal activities is another necessary condition for a team to function efficiently. In this regard, it is important to correctly and responsibly address the following aspects:

- Proper distribution of team members' roles and clear explanation of these roles;
- Specifying objectives, expected outcomes, and the content of the activities to be carried out;
- Stipulating team working rules;
- Identifying potential issues, constraints, or difficulties at the level of each of the parties involved;
- Ensuring that each team member is aware of the project's importance and its impact;
- Applying a fair and motivating reward system;
- Organizing appropriate working conditions for the team.

A large part of the aspects highlighted above should be addressed during the team's first meeting. Given that team members are typically not involved full-time in the project, one of the major challenges faced by the project manager is ensuring the team's identity. To achieve this, it is recommended to:

- Organize periodic meetings that not only allow for monitoring of activities but also energize and motivate team members for future efforts;
- Ensure a common workspace (at least for meetings, if not for joint activities);
- Establish traditions (e.g., marking certain successes within the project), etc.

Establishing a shared vision is another factor in the project's success. The vision refers to a global understanding of the group's role within the organization as a whole, its responsibilities, and the desired outcomes. It contributes to optimal performance from each team member. To achieve a shared vision, it must be realistic and challenging at the same time, evoke passion, and be communicated explicitly and convincingly.

An important factor in the success of a project is the application of a participatory management style, based on the active participation of each member in making decisions related to the project. The advantages of such a management style are numerous, including:

- More efficient decision-making (due to the possibility of examining several proposed options);
- Shared responsibility for decisions made collectively and, implicitly, for their implementation;
- Awareness of one's own role in the project;
- Increased group cohesion;
- Increased commitment;
- Improved cooperation climate, etc.

Maintaining the team's focus is another important factor in its performance, and this is achieved by continually concentrating on objectives and concrete results, avoiding unnecessary discussions, as well as activities that are not aligned with the project's objectives.

The operational resolution of conflicts is also a measure that must be taken to ensure the effectiveness of a project team. The quality of managerial efforts in addressing conflicts determines the extent to which the performance of a project will be affected, and sometimes even the project's viability.

To resolve conflicts that may arise during the course of a project, one can rely on one of the strategies highlighted in managerial theory and practice or combine various strategies, as shown in Figure 4.1.

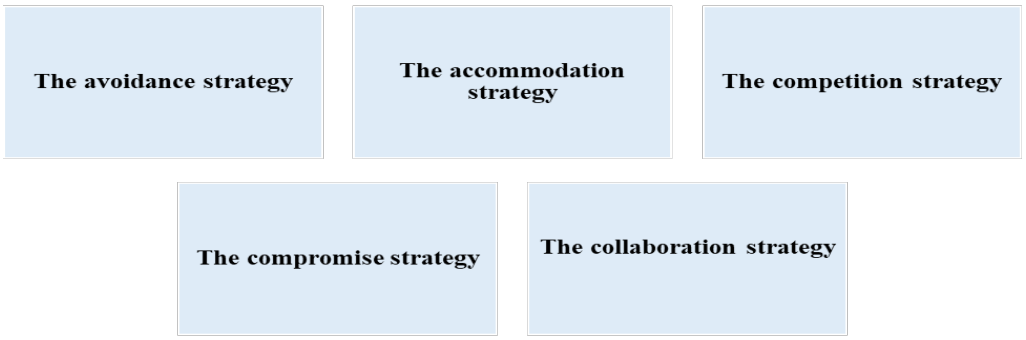


Fig. 4.1. Conflict Resolution Strategies:
Source: Developed by the author based on (Ionescu, p.18)

The avoidance strategy is characterized by the fact that, although the conflict is acknowledged by the parties, they do not wish to confront it. Opinions regarding the usefulness and relevance of this strategy vary. For example, there are specialists who consider that such a strategy reveals certain deficiencies in the team's functioning, namely: the conflicting parties have a reduced ability to impose their own interests; cooperation between team members is low or weak; the individuals involved in the conflict do not have enough confidence in their ability to handle a conflict due to a lack of necessary skills to resolve it, etc. However, there are also opinions that recognize the usefulness of this strategy in the following situations:

- The stakes of the result are not very high;
- The reasons for engaging in a confrontational conflict are not strong enough;
- Maintaining an amicable relationship is a priority at the moment;
- There are certain time constraints, which justify avoiding the conflict.

Nonetheless, the main disadvantage of the conflict avoidance strategy is ignoring the conditions (reasons) of the conflict. Thus, any potential relief from the tension may only be apparent, and the conflict is likely to "flare up" again in the near future.

The accommodation strategy is one in which the conflicting parties do not insist on their own point of view or interests but act to satisfy the needs of others. In other words, managers become cooperative, opting to maintain harmony in interpersonal relationships at any cost.

It is mentioned that the accommodation strategy is appropriate in the following situations:

- Its application can provide social credit in anticipation of more important future issues or when the situation is simply out of control;

- Through this strategy, the manager can demonstrate common sense in the face of aggressive behavior from others;
- Maintaining favorable relationships is a priority at the given moment;
- The conflict involves the subordinate-superior relationship, and this strategy represents the employee's only option towards their superior;
- The result is not of great significance;
- Problems need to be resolved in a very short period of time.

However, some of the basic disadvantages of this strategy include:

- Not supporting one's own interests may be perceived as a sign of weakness and can affect the quality of future interactions;
- The strategy can reduce conflict and, thus, may only be effective in the short term. In the long term, people are unwilling to sacrifice their interests just to maintain interpersonal relationships;
- This strategy may limit creativity, halt the generation of new ideas, and prevent the development of solutions to resolve conflicts.

The competition strategy is the complete opposite of the accommodation strategy and seeks to maximize the imposition of one's own interest and point of view at the expense of cooperation. This strategy involves achieving one's own interests and harming the other group or individual and is also referred to as a "win-loss," "winner-loser," or "win-lose" strategy. In other words, through this strategy, one party ignores the effect of their actions on others, with the absolute priority being given to their own objectives, facts, or procedures. This strategy is considered a power-oriented approach to conflict, in which any type of power is used to defend a position considered correct and winning at all costs. The competition approach to conflict is considered appropriate in the following situations:

- There is a lot of power and certainty regarding the facts;
- The situation is truly a "win-loss" type;
- The problems are very important, involve values and policies, and must be solved through firm, even unpopular, actions;
- There is a belief that the point of view is correct;
- Immediate and rapid decisions are needed;
- The relationship between superior and subordinate(s) is involved
- Maintaining a distant relationship is not a concern.

The main disadvantage of the competition strategy is its impact on cooperation and the quality of interpersonal relationships.

The compromise strategy lacks the disadvantage of the previously described strategy, as it imposes itself by combining cooperation and the satisfaction of others' needs with the imposition of one's own point of view. In other words, the conflicting

parties, realizing the risks of escalating the conflict, agree to a certain compromise between their own interests and those of the opponent. Through negotiation, a solution is adopted that leads to a small gain and a limited loss in terms of interpersonal relationships and objectives.

The compromise approach to conflict is appropriate in the following situations:

- The issues underlying the tension are complex and fairly important;
- There are no other available solutions;
- The parties' interests in the issue at hand are the same;
- The situation is appropriate for negotiation (e.g., negotiation between the project manager and team members to prevent potential delays in presenting the project's deliverables, which could cause problems related to the next funding tranche);
- When the parties are motivated to develop a lasting relationship.

The main disadvantage of this strategy is that, as a result, the parties' interests are not fully satisfied in the same proportion. Therefore, while it is acceptable for the temporary achievement of balance, this strategy is not always relevant and is particularly contraindicated in situations where conflicts arise from power asymmetry, and the weaker party may be disadvantaged.

The collaboration strategy represents an approach to conflict based on maximizing both the imposition of one's own interests and point of view, as well as cooperation and the satisfaction of others' needs. In other words, this strategy involves achieving an integrative agreement, finding solutions that optimally satisfy the interests of all parties involved in the conflict.

One of the basic advantages of the collaboration strategy is that it creates the premises for maintaining interpersonal relationships between the parties as a result of achieving their goals. A defining feature of this strategy is the acceptance of dialogue by the parties and the perception of the conflict as a challenge to their ability to resolve it.

To apply such a strategy, managers must share certain beliefs:

- For every conflict, there is a mutually acceptable solution, meaning that even if the objectives are different, an acceptable way to achieve them for both parties can be identified;
- Differences in opinion can and should exist, being useful for generating new viewpoints and stimulating creativity. The opinions of others must be supported, and the influence of hierarchical status differences should be minimized to prevent degeneration into win-lose strategies;
- Trust in the conflict partner is important: a trusting attitude attracts trust in return;

- Cooperation is preferred over competition, with differences of opinion being an important part of cooperation. Only an incompetent manager who lacks self-confidence will feel constantly in competition. Despite the fact that competition stimulates performance, interdependence should take priority, as very few tasks or activities can be completed without cooperation.

The collaboration approach to conflict is relevant in the following situations:

- The issues involved have reached a critical point;
- Maintaining a long-term relationship is a very important stake;
- There are no time constraints for resolving the conflict;
- The conflict involves individuals with different hierarchical positions.

Each of the mentioned strategies can be suitable for certain conflict situations.

Continuous and correct evaluation of the project team's results is another factor in the project's success. Thus, performance monitoring brings many benefits:

- Timely identification of problems or deviations from the activity plan and quality standards;
- Evaluation of the quality of cooperation between team members;
- Identification of unexploited opportunities, etc.

For the evaluation to be most effective, it must meet the following requirements:

- It should be continuous;
- It should include self-evaluation;
- It should be objective and impartial;
- It should be perceived by all team members as a constructive, corrective activity, not as a blame-oriented control;
- It should be transparent;
- It should focus on activities, not on individuals;
- It should be performance-oriented.

PRACTICAL APPLICATIONS

Practical Assignment. Create a list of skills required by a project manager to create and maintain an effective project team.

Case Study. As a manager, you are tasked with mobilizing the team to make some interventions in an international project that has been underway for some time. Each team member is well-versed in their role, has already completed most of the tasks, and is convinced that there is little work left until the project is finished. However, since the client has requested a modification to the initial concept, more than half of the completed tasks need to be revised. Specify what managerial tools you will use to optimally mobilize the team to resolve this issue.

SELF-EVALUATION QUESTIONS

1. Specify the areas of involvement of project management.
2. Highlight the core roles of the project manager.
3. Characterize the skills that form the potential of a project manager.
4. Describe the essence of a team.
5. Outline the specific traits of a project team.
6. Describe the characteristics of an effective project team.
7. What categories of competencies are required by the members of the project team?
8. Specify the rules the project manager must follow to increase the team's efficiency; argue the significance of adhering to these rules.
9. Characterize the stages in the evolution of a project team.
10. Argue the necessity of certain interventions by the project manager at different stages of the project team's evolution.
11. Perform a comparative analysis of conflict resolution strategies in terms of their advantages and disadvantages.
12. Characterize the aspects of project team management that are benchmarks of a high-performing team.

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5. FINANCIAL MANAGEMENT OF THE PROJECT

Content Units:

5.1 The concept of financial management and its responsibilities
5.2 Financial forecasting within the project
5.3 Project cost management
5.4 General aspects of financial reporting
5.5 Financial evaluation of project variants

Skills

- defines the financial management of the project, financial forecasting, cash flow, cost management;
- distinguishes the attributions of the financial management of the project;
- characterizes the components of the financial forecast;
- argues the significance of observing the basic rules in the process of developing a project budget,
- draws up the project budget;
- argues the significance of monitoring project costs;
- describes the methods of monitoring project costs;
- describes the components of financial reporting within a project;
- evaluates investment project options based on the criteria: investment recovery period, accounting profit rate, net present value, profitability index, internal rate of return.

Responsibility and autonomy

The graduate autonomously plans the budget of a project and monitors its execution.

Terms of Reference:

Financial Management – a set of principles, methods, techniques, tools, and actions through which financial decisions are substantiated in the context of achieving organizational objectives.
Financial Forecasting of the Project – the process of estimating the revenues and expenses that will arise during the implementation of a project.
Revenue and Expenditure Budget – reflects the estimated revenues and expenditures of the project over a certain period of time (corresponding to the project duration), with details provided by year if the project exceeds one year in duration.
Cash Flow – the inflows and outflows of cash.

Project Cost Management – the entirety of procedures for forecasting, monitoring, and controlling the costs of a project.
Financial Reporting – a tool for monitoring financial operations.
Investment Efficiency in the Project – obtaining outcomes that exceed the efforts undertaken.

5.1. The Concept of "Financial Management" and Its Responsibilities

Financial management represents a set of principles, methods, techniques, tools, and actions through which financial decisions are substantiated in the context of achieving organizational objectives (Savin, Ghițu, 2013, p. 70).

Financial management is a key element in the project implementation process. From this perspective, the success of a project is directly linked to proper budget planning and the strict execution of the planned activities in accordance with the allocated financial resources (Veveriță et al., 2015, p. 70).

Financial management fulfills a series of responsibilities:

- Determines the financial resources needed for carrying out the planned activities;
- Ensures the necessary capital at the right time, in the required amount, and at minimal cost;
- Monitors the efficient use of capital;
- Ensures the financial balance of the organization;
- Pursues the achievement of the expected financial result;
- Allocates income to various usage destinations.

Based on the above, we conclude that financial management involves the following functions:

- Financial forecasting;
- Financial organization;
- Financial monitoring and control;
- Financial reporting.

Each of these functions is carried out using specific tools. For instance, financial forecasting involves conducting feasibility studies, budgeting, cash flow forecasting, etc. Financial organization is achieved in part through a rational information system. Control (both operational and final) is an important tool for monitoring the proper use of financial resources and for estimating financial outcomes. Through reporting, managers are kept informed in a timely manner about capital management. Specific tools for this component of financial management include evaluation reports, budget monitoring reports, cash flow reports, audit reports, and others.

5.2. Financial Forecasting within the Project

Financial forecasting of a project refers to the process of estimating the revenues and expenditures that will occur during the implementation of a project, with the purpose of assessing its financial viability and ensuring efficient resource management.

The financial forecasting process is primarily reflected in the project's budget and cash flow statement. General aspects regarding the preparation of a project budget were addressed in Content Unit 3. Accordingly, two types of project budgets can be distinguished:

a) **Revenue and Expenditure Budget**, which reflects the estimated revenues and expenditures of the project over a period corresponding to the project's duration, with annual breakdowns if the project exceeds one year.

b) **Capital Budget (Investment Budget)**, which reflects short-term commitments related to investment projects foreseen within the project (Savin, Ghițu, 2013, p. 72).

Following this, several recommendations for rationalizing the budget are outlined (Bârgăoanu, p. 65-66):

- The budget must be **feasible**, meaning it should ensure the execution of activities. To achieve this, all necessary expenses must be included to avoid needing to request additional funds or revise the budget (both actions are generally disapproved by funders).
- Budget items must **precisely correspond** to the planned activities.
- All regulations regarding **maximum allowable amounts** for certain expenses must be strictly followed (if such regulations exist).
- If the funder **sets a maximum project amount**, it is recommended not to request the exact maximum amount, but a lower sum.
- Evidence of **co-financing** should be presented, ideally in a higher amount (or percentage) than required by the funder. A larger contribution demonstrates the applicant's commitment. Additionally, if project activities start before the funder's disbursement, these can be financially supported from own sources.
- Since funder contributions are usually disbursed in **installments**, it is recommended that own contributions be scheduled likewise, ensuring continuity in project implementation.
- Budgeting should account for **changes over time** in prices, exchange rates, and other economic conditions. This ensures that financial flows can cover actual costs.

Cash flow refers to the inflows and outflows of cash. The **project's projected cash flow statement** highlights receipts and payments, detailed in shorter time periods than a year (typically monthly). This document helps identify critical

moments when cash availability becomes insufficient to meet payment obligations. In such cases, appropriate actions may include:

- Requesting an early release of funds from the funder;
- Delaying the payment of certain invoices;
- Postponing some project activities;
- Taking out a short-term loan.

Accurate cash flow forecasting and timely intervention are essential due to the **medium- and long-term negative effects** these actions might cause (Savin, Ghițu, 2013, p. 74):

- Deterioration of relationships with suppliers due to delayed payments;
- Failure to meet contractual project deadlines as a result of postponed activities;
- Increased costs due to borrowing, etc.

At the same time, situations of **cash surpluses** may arise, which can be used to generate additional income.

To prepare the **cash flow statement**, the following are needed:

- The project activity plan (a detailed list of activities);
- Cost estimation;
- The project budget.

Accordingly, the cash flow lines (sources of inflows and directions of outflows) must correspond to the detailed budget, and the numerical indicators (amounts) in the document must match the collected (inflows) and paid (outflows) sums.

Most payments and receipts can be forecasted based on the following typical patterns:

- **Salary payments** occur at predefined intervals;
- **Utility bills** are paid monthly;
- **Rent** is paid according to contract terms;
- Payments for goods and services, and receipt of receivables, are made in accordance with contracts, etc.

To **optimize cash flow**, the following measures are recommended (Project Management Best Practices Guide, 2015, pp. 56–57):

- Keep a **rigorous inventory** of cash flows;
- Monitor **invoicing** carefully;
- Avoid **overexpansion** of activities; allow expansion only when financially supported;
- Maintain a **reserve fund** (to handle unforeseen situations and prevent insolvency);
- Avoid immediate payments and **negotiate discounts**;
- Monitor **price increases**. Check competitor pricing and align the organization's prices with market rates.
-

5.3. Project Cost Management

Project cost management represents the entirety of procedures for forecasting, monitoring, and controlling a project's costs. As previously stated, accurate and relevant cost forecasting is a decisive factor in the quality of the project's budget. However, it is equally necessary to carry out diligent cost monitoring and ongoing control to minimize deviations between actual costs and the forecasted ones.

The basic elements of project cost management are illustrated in **Figure 5.1**.

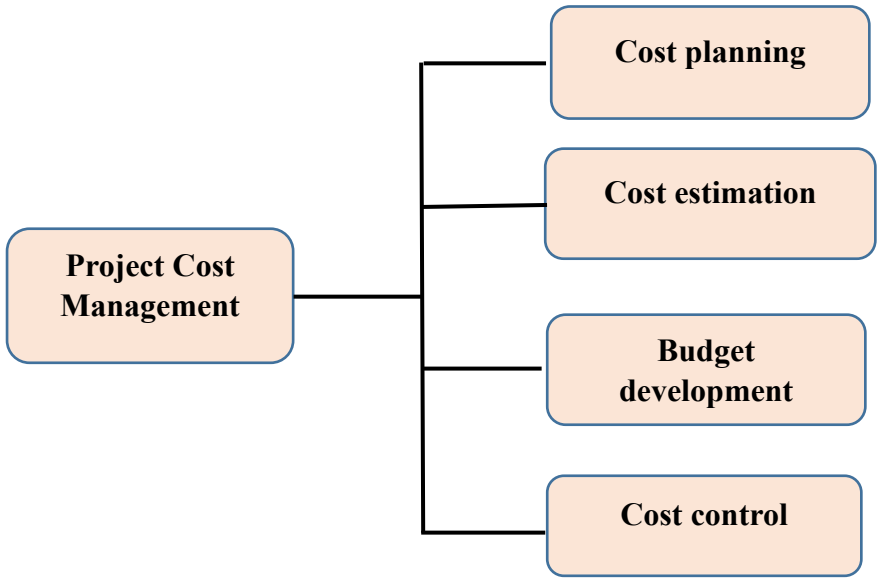


Fig. 5.1. Structure of Project Cost Management
Source: (Opran et al., 2002, p. 190)

If the method for cost planning—so that they are reflected as accurately as possible in the project budget—was previously presented (in content unit 3), the following focuses on cost control as an essential element of cost management.

Cost control refers to the evaluation of how project costs and expenditures are carried out, as well as the analysis and verification of changes that may occur in the budget during the project's implementation (Savin, Ghițu, 2013, p. 75).

Typically, cost control procedures are carried out at the request of the funder through tools such as the **budget execution report** and the **cash flow report**. At the same time, a rigorous day-to-day management of costs is necessary, based on two fundamental requirements:

- **Eligibility** of costs
- **Cost level**

Cost eligibility conditions must be studied and respected starting from the planning phase and throughout cost management. General conditions of cost eligibility include:

- Payments can only be made starting from the date the financing contract/order comes into effect, unless exceptions are stipulated in the contract.
- Payments must be made solely for the execution of project activities.
- Costs must be included in the project's estimated budget.
- All costs must be supported by **justifying documents**.
- All costs must be reflected in the accounting records of both the beneficiary and the partners.
- Financial operations must comply with national and EU legislation.

Controlling the level of costs involves continuously tracking the actual costs in relation to the planned ones. This entails the creation and regular updating of management tables that include both planned costs (broken down by activities or budget lines) and actual expenditures (as discussed in content unit 2).

By recording and continuously analyzing costs, deviations from the project budget can be promptly identified, allowing timely intervention when needed.

According to practitioners, actual costs often exceed planned costs due to the following reasons (Bărgăoanu, p. 65):

- The budget was designed too "optimistically" to appear more attractive to funders.
- Delays occur in both activities and cash operations—due to objective or subjective reasons.
- Risks arise that were either not anticipated or underestimated.

To **avoid disruptive cost factors** such as those mentioned above, the following rules should be observed:

- Even at the risk of appearing less attractive to potential funders, the budget must be prepared with great accuracy, reflecting revenues and costs as realistically as possible. It's important to remember that once funding is approved, the actual project implementation begins.
- Each activity must be carefully monitored to ensure deadlines are met. When delays occur due to objective reasons (e.g., changes in procurement regulations), the team must maximize efforts to reduce the impact of delays and recover lost time.
- Risk management must be carried out with utmost diligence. The better the risks are anticipated, the more adequate and relevant the planned activities will be for mitigating their negative effects.

5.4. General Aspects of Financial Reporting

At certain stages of the project, there is an obligation to submit reports to the financer.

Financial reporting is a tool for monitoring financial operations. Depending on the project requirements, the reports may be monthly, semi-annual, annual, after each deliverable, interim, or final. The financial reporting periods are clearly established in the agreement signed between the project beneficiary and the financer.

The financial report is signed by the project manager and the accountant.

The financial report is completed using the standard forms set by the financer and is based on the approved project budget. If equipment has been purchased within the project, the beneficiary must also submit a report on the usage of the equipment purchased or received for use from the grant funds. This must be accompanied by an extract from the fixed asset register, certified by the chief accountant, containing the following information: inventory number, description, registration number, and the value of the equipment. Along with the completed forms, a series of supporting documents, such as invoices, payment orders, timesheets, travel tickets, etc., must be submitted.

5.5. Financial Evaluation of Project Variants

The decision to implement one project over another in order to obtain funding often involves the need to financially evaluate each possible alternative, considering their economic effects. Thus, alongside the analysis of technical, commercial, and other important parameters, it is also necessary to evaluate the possible project options in terms of the investment's efficiency for the organization. This aspect is particularly important in the case of repayable projects.

The economic meaning of investment efficiency consists in obtaining outcomes that exceed the efforts made. Of course, after the implementation of an investment project, a detailed analysis is carried out. However, the data obtained in such a case can only serve the organization for future investment decisions, without allowing for interventions in a project that has already been completed. Therefore, in the investment activity of an organization, its ability to make the right choice is of particular importance, especially when it must select an investment project from several options, in order to ensure maximum efficiency as a result of implementing the chosen project.

The main classical quantitative criteria used in evaluating investment projects—when future cash flows can be forecasted with reasonable accuracy—are:

1. **Payback Period (PP)**
2. **Accounting Rate of Return (ARR)**

3. **Net Present Value (NPV)**
4. **Profitability Index (PI)**
5. **Internal Rate of Return (IRR)**

All investment project evaluation criteria are grouped into two categories:

- **Discounting-based criteria**
- **Efficiency evaluation criteria without discounting** (also known as statistical methods of investment project evaluation).

From the above-mentioned criteria, the first two (PP and ARR) belong to the second group, while the others fall into the first group, as they involve discounting cash flows.

According to some views, the **payback period** is the length of time required to recover the initial investment through the net cash flows generated by the project during that period. It is determined by dividing the initial investment amount by the annual net cash flow (Covaliov, 2005; Nederiţă et al., 2000; Gruzinov, 2002, etc.). According to other views, the payback period can also be determined by dividing the investment amount by the average annual profit obtained from the project implementation (Ciornii, Blaj, 2003), or by the average annual net income or net output generated as a result of project implementation (Minacov et al., 2004).

Let us suppose that an organization needs to select one investment project out of three options using the **payback period** criterion. The initial data is presented in **Table 5.1**.

Table 5.1. Initial Data for Comparative Analysis of Investment Projects A, B, and C

Specification	***Project A***	***Project B***	***Project C***
Initial Investments, thousand lei	1600	1300	1000
Net Cash Inflows, thousand lei:			
• First year	400	500	200
• Second year	400	400	200
• Third year	400	300	200
• Fourth year	400	250	200
• Fifth year	400	200	200
• Sixth year	400		200

The payback period for Project A is 4 years (1600:400 = 4). Project C will be recovered in 5 years (1000:200 = 5). In the case of Project B, the annual cash inflows differ, therefore the payback period will be calculated as follows: in the first 3 years, 1,200 thousand lei will be recovered from the total investment amount (500 + 400 + 300 = 1,200). The remaining balance of 100 thousand lei will be recovered in 0.4 years (100:250 = 0.4). Consequently, the total payback period for Project B is 3.4 years. By summarizing the results obtained, we can deduce that, based on the PP criterion, the organization should choose Project B.

The comparative evaluation of investment projects based on the payback period criterion is justified by the simplicity of the calculations, which is the main advantage of this method. At the same time, when applying this criterion—regardless of the indicator used (net annual cash flow, annual profit, or net annual income)—certain disadvantages can be noted, such as:

- It does not take into account the net cash flows, profits, or net incomes that will be generated after the payback period ends. For example, by selecting an investment project with a shorter payback period, the organization might reject a more advantageous one with a longer recovery period that yields economic benefits over a longer term.
- As previously mentioned, this method assesses the project without discounting the expected future amounts. As a result, cumulative revenues from various projects are viewed equally, regardless of how they are distributed over the years. In reality, organizations tend to favor projects that provide higher cash inflows in the early years, since those sums can be reinvested to generate additional income.
- This method lacks additivity, meaning it does not support evaluating the possibility of implementing multiple projects simultaneously if the organization has the necessary financial resources. Therefore, instead of selecting a single project based on the "payback period" criterion, the organization might choose two other projects—initially excluded based on this criterion—which together could generate significantly higher returns.

For a more objective evaluation of investment project alternatives using the payback period criterion, it is recommended to determine the ratio between the payback period and the project's total duration. By calculating this ratio, the decision will take into account not only the payback period but also its proportion within the total project duration. The project with the smallest proportion of payback period to total duration will be selected (Table 5.2).

Table 5.2. Determination of the Ratio Between Payback Period and Project Duration

	Project A	***Project B***	***Project C***
Payback Period, years	4	3,4	5
Project Duration, years	6	5	6
Payback Period/Duration	0,66	0,68	0,83

The calculations presented in Table 5.2 allow us to conclude that Project A has the lowest ratio of payback period to total duration.

The Payback Period (PP) criterion was widely used in evaluating investment projects before the emergence of computers. At present, this criterion is more often used by managers to assess the risks associated with implementing investment projects. Additionally, to increase the relevance of calculations, cash flows are discounted (the discounting procedure will be detailed later in the respective content unit).

The Accounting Rate of Return (ARR), also known as the investment efficiency coefficient, unlike the Payback Period criterion, allows for an evaluation of the profitability of the investment project by considering its entire duration. It is calculated as the percentage ratio between the average annual net profit and the capital used:

$$ARR = \frac{\text{Average Annual Profit}}{I_o} \times 100, \qquad (5.1)$$

where I_o is the value of the investment.

The steps for calculating the accounting rate of return are as follows:

1. Determine the total net cash flow (over the entire duration of the project).
2. Determine the total profit from the project (the difference between the total net cash flow and the investment amount).
3. Calculate the average annual profit (the ratio of total profit to the duration of the project in years).
4. Calculate the Accounting Rate of Return (ARR).

The results of the ARR calculations for Projects A, B, and C from the previous example are shown in Table 5.3.

Table 5.3. Calculation of the Accounting Rate of Return

	Project A	***Project B***	***Project C***
1. Total net cash flow, thousand lei	2400	1650	1200
2. Initial investments, thousand lei	1600	1300	1000
3. Total profit, thousand lei (row 1 - row 2)	800	350	200
4. Project duration, years	6	5	6
5. Average annual profit, thousand lei (row 3 ÷ row 4)	133	70	33
6. Accounting rate of return, % (row 5 ÷ row 2 × 100)	8,31	5,3	3,3

Therefore, the investment efficiency coefficient expresses the annual profit obtained per unit of investment and, in fact, represents the profitability of the investment. In the analyzed example, the most profitable is Project A, which will yield 8.31 cents annually for each leu invested.

Like the previous criterion, the ARR (Accounting Rate of Return) is sufficiently accessible. However, the nominated criterion is not without a series of drawbacks, including the following:

- When applying the ARR criterion, there is no distinction between projects with equal average annual profits but with variations across years.
- Similarly, there is no distinction between projects with equal average annual profits but with different durations.

The Net Present Value (NPV) criterion is free from the drawbacks mentioned above. The core idea of this method is to estimate future cash inflows (profit, dividends, etc.) from the perspective of the present time. Therefore, when investing funds in a project, the investor considers the following circumstances:

1. The permanent devaluation of money.
2. The rate of changes in the prices of raw materials, goods, etc., may differ from the inflation rate.
3. It is advisable to achieve a minimum level of income periodically.

The Net Present Value (NPV) for a project, with a duration of **t** years, is determined by the following formula:

$$NPV = -I_0 + \sum_{t=1}^{n} \frac{CF_t}{(1+r)^t}, \quad (5.2)$$

where: CF_t – the expected cash flow from investments in period **t**;

r – the discount rate (the relative size of the return required by the investor). When determining it, two factors are considered: the level of guaranteed profitability of investments provided by the state bank for deposits or securities transactions, and the risk premium.

If the NPV is negative, it would indicate the project's unprofitability; if the NPV is zero, the project will neither generate profit nor incur losses (such projects can be accepted for the purpose of expanding the organization). At the same time, a positive NPV indicates the cash surplus that will be obtained after offsetting the investment amount.

Next, we will examine the method of applying the NPV criterion for Project A (Tab. 5.4).

Table 5.4. Calculation of the Net Present Value (NPV) of Project A

Year	Cash Flow (thousand lei)	Discount Factor FM2 (10, n)	Discounted Cash Flow (thousand lei)
1	400	0,909	363,6
2	400	0,826	330,4
3	400	0,751	300,4
4	400	0,683	273,2
5	400	0,621	248,4
6	400	0,564	225,6
Total Discounted Cash Flow (thousand lei)			1741,6
Initial Investment (thousand lei)			1600
Net Present Value (NPV) (thousand lei)			141,6

The discount rate was determined as follows: in the first year, knowing that, for example, r=10 and n=1, the discount rate will be:

$$FM2(10,1) = \frac{1}{(1+0,1)^1} = 0,909$$

For the second year, the discount rate will be:

$$FM2(10,2) = \frac{1}{(1+0,1)^2} = 0,826$$

Thus, the net present value (NPV) of project A is positive and amounts to 141.6 thousand lei. The sum of 141.6 thousand lei represents the updated cash surplus that the organization is expected to generate as a result of implementing project A.

The profitability index (PI) expresses the ratio between the net present value (NPV) and the initial investment:

$$PI = \frac{\sum_{t=1}^{n} CF_t \times FM2}{I_0} \quad (5.3)$$

Thus, the respective indicator will express how many lei of total updated cash flow will be obtained for each leu invested in the specific investment project. If the project involves not only an initial investment but also subsequent investments,

then the total updated investment will be indicated in the enominator of the formula above. In the case of Project A, for example, the profitability index will be:

$$PI = \frac{141,6}{1600} = 0,09$$

Therefore, this project will ensure the generation of 0.09 lei of updated cash flow for each leu invested.

The Internal Rate of Return (IRR) represents the rate of discount at which the Net Present Value (NPV) of the project equals zero, meaning that the updated cash inflows and outflows are equal.

$$NPV = -I_0 + \sum_{t=1}^{n} \frac{CF_t}{(1+IRR)^t} = 0 \quad (5.4)$$

Taking into account that the initial investments represent the cash outflows at time t=0, the formula can be rewritten as follows:

$$NVP = \sum_{t=1}^{n} \frac{CF_t}{(1+IRR)^t} = 0 \quad (5.5)$$

To determine the internal rate of return (IRR) for investments, the approximation method is used.

Next, we will examine the method for calculating the internal rate of return for project A. In the case where the discount rate rrr is 10%, the net present value (NPV) of the project is positive. Therefore, it is necessary to successively determine the net present value of the project by considering higher values of the discount rate.

Initially, we will calculate the net present value of project A assuming a discount rate of 20% (Table 5.5).

Table 5.5. Calculation of the net present value for project A with a discount rate of 20%

Year	Cash inflows, thousand lei	The discount coefficient FM2 (20%,n)	Updated value of cash inflows, thousand lei
1	400	0,833	333,2
2	400	0,694	277,6
3	400	0,579	231,6
4	400	0,482	192,8
5	400	0,402	160,8
6	400	0,335	134
Total present value of future cash inflows, thousand lei			1330
Initial investments, thousand lei			1600
Net present value, thousand lei			-270

Since a negative net present value was obtained when using the discount rate of 20%, the next attempt will be made using a lower discount rate of 16% (Table 5.6).

Table 5.6. Calculation of the net present value of Project A with a discount rate of 16%

Year	Cash inflows, thousand lei	The discount coefficient FM2 (16%,n)	Updated value of cash inflows, thousand lei
1	400	0,862	344,8
2	400	0,743	297,2
3	400	0,641	256,4
4	400	0,552	220,8
5	400	0,476	190,4
6	400	0,410	164
Total present value of future cash inflows, thousand lei			1473,6
Initial investments, thousand lei			1600
Net present value, thousand lei			126,4

Therefore, the net present value of Project A will be obtained with a discount rate within the range of 16% to 20%. The approximate value of the discount rate for which the net present value of the project is zero can be calculated by interpolating between 16% and 20%. If we denote r1 as the discount rate when the NPV is positive, and r2 as the discount rate when the NPV is negative, the internal rate of return will be calculated using the formula:

$$IRR = r_1 + \frac{NPV(r_1)}{NPV(r_1) - NPV(r_2)} x(r_2 - r_1) \quad (5.6)$$

$$IRR = 16 + \frac{126,4}{126,4 - (-270)} x(20 - 16) = 17,28\%$$

Thus, the internal rate of return for Project A, required to equal the present value of cash inflows with the present value of cash outflows, is approximately 17.28%. Therefore, if the project is financed, for example, by a bank loan offered at an interest rate lower than 17.28%, it will be profitable for the organization. If the interest rate for the borrowed capital exceeds 17.28%, the project cannot be accepted.

To obtain more accurate results, it is recommended that the interval between the minimum and maximum values of the discount rate be as small as possible, and the calculations be carried out on a computer using specialized software.

The internal rate of return is considered the most significant indicator that expresses the efficiency of an investment project. At the same time, a disadvantage of this project selection criterion is the somewhat unrealistic assumption of constant reinvestment in the same organization and at the same internal rate of return for future cash flows.

PRACTICAL APPLICATIONS

Case Study. It is necessary to decide which of three project alternatives is more convenient for the organization, considering the following circumstances: There is a very attractive opportunity for the organization to get involved in a project that will ensure consistent benefits. However, this project will be initiated in 4 years. At the current moment, there are available resources that could be invested in such a way that they would generate some income.

The data regarding the possible project alternatives are presented in **Table 1**.

Table 1. Initial Data for the Comparative Analysis of Investment Projects A, B, and C

Specification	*Project A*	*Project B*	*Project C*
Initial Investments, thousand lei	3200	1900	1800
Net Cash Inflows, thousand lei:			
• First year	800	800	300
• Second year	800	700	300
• Third year	800	600	300
• Fourth year	800	500	300
• Fifth year	800	400	300
• Sixth year	800		300
• Seventh year			300

Select and apply the project evaluation method that you consider most suitable for the given situation. Identify the optimal project variant from the three possible ones.

Practical Assignment. Based on the data presented in Table 2, identify the project variant that will ensure the highest accounting rate of return.

Table 2. Initial data for the comparative analysis of investment projects A, B, and C

Specification	*Project A*	*Project B*	*Project C*
Initial Investments, thousand lei	3200	1900	1800
Net Cash Inflows, thousand lei:			
• First year	800	800	300
• Second year	800	700	300
• Third year	800	600	300
• Fourth year	800	500	300
• Fifth year	800	400	300
• Sixth year	800		300
• Seventh year			300

Practical Assignment. Determine the net cash flow of project A by discounting the cash flows, with the predetermined interest rate being 10%. The initial data is presented in Table 3.

Table 3. Calculation of the net cash flow of project A

Year	Cash inflows, thousand lei	The discount coefficient FM2 (10,n)	Updated value of cash inflows, thousand lei
1	400	0,909	
2	400	0,826	
3	400	0,751	
4	400	0,683	
5	400	0,621	
6	400	0,564	
Total present value of future cash inflows, thousand lei			
Initial investments, thousand lei			1600
Net present value, thousand lei			

Determine the Profitability Index (PI) of project A.

SELF-ASSESSMENT QUESTIONS

1. Explain the concept of "financial management."
2. List the duties of financial project management.
3. Clarify the basic rules that must be followed when developing a project budget.
4. Explain the essence of cash flow statements.
5. Argue the significance of preparing cash flow statements.

6. Explain the essence of project cost management.
7. List the elements of project cost management.
8. Reveal the concept of "cost control."
9. What are the general eligibility conditions for costs?
10. Clarify the rules, the compliance with which would help avoid the disruptive factors of project costs.
11. Present the concept of "financial reporting."
12. How can the efficiency of an investment be defined?
13. What are the most commonly used criteria for evaluating investment efficiency?
14. Explain the methodology for applying the investment efficiency evaluation criteria:
    a) Payback period;
    b) Accounting rate of return;
    c) Net present value;
    d) Profitability index;
    e) Internal rate of return.
15. Perform a comparative analysis of investment efficiency evaluation criteria in terms of their advantages, disadvantages, and relevance in specific situations.

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6. RISK MANAGEMENT WITHIN THE PROJECT

Content Units:

6.1. General notions of risk management in projects

6.2. Identifying risks

6.3. Developing risk response strategies

6.4. Risk control

6.5. Conceptualizing risk as an opportunity

Skills

- defines risk, uncertainty, risk management;
- analyzes the types of risks related to projects;
- identifies the components of risks;
- describes the techniques for identifying risks and strategies for reducing them;
- argues for the need to comply with specific rules for risk management;
- explains the procedures for controlling project risks;
- argues for the relevance of approaching risk as an opportunity.

Responsibility and autonomy

The graduate autonomously plans and applies project risk management.

Terms of Reference:

Risk – the state in which the probability of an event and its consequences are known;

Risk Management – the totality of methods and means by which risks are managed;

Identification of project-related risks – a systematic search for all possible risks that may arise, regardless of their likelihood, scope, or intensity;

Risk control – a continuous process of monitoring as well as identifying new risks within the project.

6.1. General Notions of Risk Management in Projects

Given the flexible conditions under which any activity is currently carried out, it is very important to correctly assess and efficiently manage risks. The concepts of "uncertainty" and "risk" are often mistakenly considered synonymous. Risk refers to a situation where the probability of an event and its consequences are known. Probability estimation can be performed based on statistical analysis of past data (e.g., number of accidents), through expert assessment, or laboratory research. If the probability and consequences of an event cannot be estimated, the term "uncertainty" is used.

Unlike many other terms derived from military, psychological, or scientific vocabulary, the concept of risk originated in business. The pioneers of this term are considered to be **Harry M. Markowitz** and **James Tobin**, Nobel Prize laureates, whose work focused on the concept of efficient portfolios (a portfolio that ensures the highest return for a given level of risk or, equivalently, the lowest level of risk for an expected return). Later, the concept of risk expanded into various fields and structures, and scientific methods of risk assessment became increasingly sophisticated. Risk management refers to the totality of methods and means by which risks are managed. Project risk management includes those processes through which project-specific risks are identified, analyzed, and avoided/mitigated.

The **key word** in risk management is *systematic*, because only an extremely rigorous and consistent approach at all levels of project implementation can lead to effective control over project activities and the reduction of risk factors. At the same time, it is important to recognize the **complexity of risk management**, which should not be viewed merely as a standalone chapter within the broader project management process. Instead, it belongs to the elite category of interdisciplinary sciences that generally require the integration of knowledge from several fields: economic, technical, legal, statistical, and psychological (Project Management Best Practices Guide, 2015, p. 69). Projects may face a wide range of risks, which are presented in **Figure 6.1**.

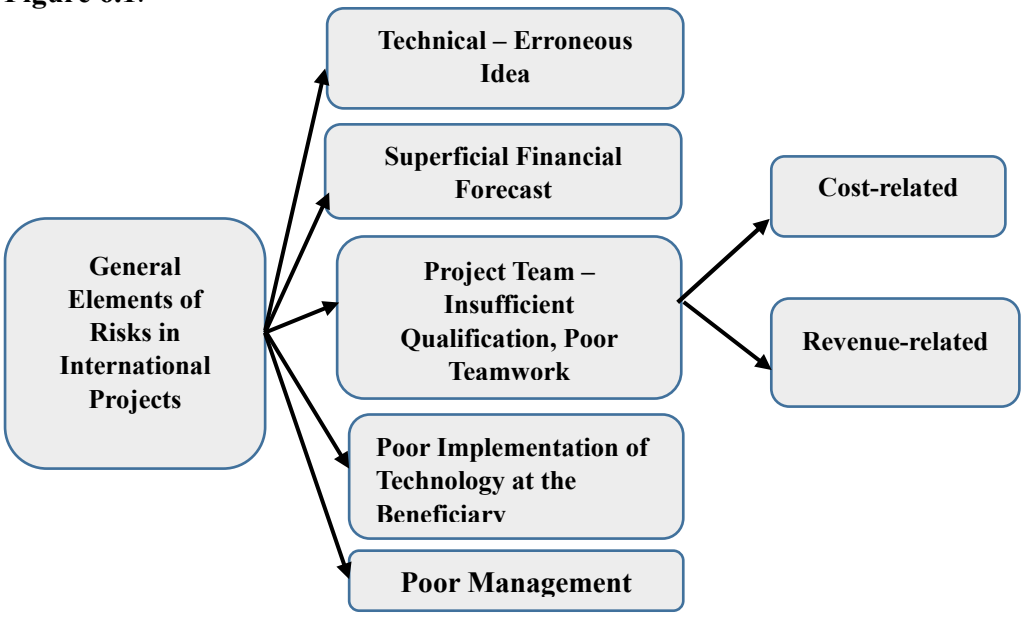


Fig. 6.1. General Classification of Risks in International Projects

Source: (Opran et al., p. 132).

Although the authors (Opran et al., 2002) refer to international projects in their presentation of the general elements of risks (Figure 6.1), the listed elements are also specific to national projects, only manifesting with different intensity. For example, when forecasting revenues and costs in national projects, it will not be necessary to account for fluctuations in exchange rates (unless foreign currency purchases are planned), but inflation rates, price level changes, etc., must still be considered. Therefore, risks related to financial forecasting exist nonetheless. Incorrect risk evaluation often leads to the rejection of the project by financiers.

The erroneous starting assumptions for each risk element that leads to the rejection of the project are presented in **Table 6.1**.

Table 6.1 Risk-Generating Ideas that Lead to Project Rejection

Risk Element	Content of the Erroneous Starting Idea
Technical Risks	The project objectives do not align with those of the program for which the funding request is being made.
	The target groups described as beneficiaries of the project's final technology are not included among those explicitly stated as eligible in the funding program of the financer or international organization.
	The technology intended to be developed within the project does not meet the applicable international standards.
	The activities planned within the project extend over a longer period than that expressly stated by the financer for that type of project.
Financial Forecast	The incorrect construction of a budget by the project manager (too large or too small) compared to the maximum ceiling allowed by the funding institution.
	The unbalanced distribution of allocated funds across budget categories, which could lead to compromising the entire budget.
	Faulty financial forecasting for the project (underestimated estimates of activities to be carried out within the project), which, even if the project is approved, leads to the inability to carry it out due to insufficient resources.
	The project brings long-term benefits that are difficult to predict or evaluate, thus creating an uncertain picture of its final outcome.

Project Team	The inability to carry out the activities outlined in the project for each partner, due to insufficient qualifications (if involvement is at an individual level) or the partner institution's lack of capacity to execute the set objectives (if involvement is at a collective level).
	Failure to comply with the responsibilities established by the project manager for each of the partner institutions within the Consortium.
	The research team presents a high degree of heterogeneity, generating frequent conflicts and generally being difficult to manage.
Poor Implementation of Technology at the Beneficiary	Non-compliance with technical conditions regarding the procurement of materials or equipment (where applicable within a funding project), generally reflecting the idea of "this is not what I would want to buy."
	The introduction of the new technology into the manufacturing flow would incur enormous costs or lead to massive reorganization of the sector, causing economic imbalance within the company.
	The quality of the final products, obtained with the support of the purchased technology, does not match the quality forecasted within the project.
Poor Management	The project manager does not have sufficient professional competencies to optimally manage the entire execution of the project's stages.
	The project manager does not fully adhere to the project's objectives or the activities outlined in the funding request.
	The project manager is unable to effectively manage conflict situations within the partner consortium or crisis situations arising during the project’s implementation.
	The project manager takes on unacceptable risks in the project's execution, which could lead to its failure or the bankruptcy of the company they lead.

Source: Elaborated by the author based on: (Opran et al., p. 132-133; Project Management Best Practices Guide, 2015, p. 69-70)

In general, risk management during the project development stage involves adhering to the following rules (Opran et al., p. 133-134):

- **In defining the project**, both its objectives and constraints must be reflected. These should then be clarified into a set of project rules that, when followed, will ensure the project's success.
- **The analysis of the estimated final results**, the environment, and the project's activities must be carried out from the critical perspective of risk management in order to identify the project's weaknesses.
- **Establishing risk management strategies based on the project rules**, as well as the action plan for implementing the activities. These activities should be presented in the responsibility matrix, the communication plan, and the tasks included in the work packages.
- **Developing the structure of the risk management process.** In this final phase (considered the most important), the project manager will identify major risks from the beginning and then, through iterative methods, determine major risks that will arise later during the project's execution.

An effective risk management process requires a specific profile for the project manager, consisting of exceptional competencies, relevant experience, flexibility, and openness to new methods and technologies.

6.2. Identifying Risks

The process of identifying risks related to a project represents a systematic search for all possible risks that could occur, regardless of their likelihood, magnitude, or intensity. The essential advantage of this process is documenting the existing risks, as well as acquiring the knowledge and skills necessary for the project team to anticipate events.

To identify risks, every project manager should ask the following questions:

- What does risk represent for the ongoing project?
- What does risk represent for a specific activity of the project?
- What are the potential risks that may arise, and what is the likelihood of their occurrence?

The techniques for identifying risks include (Opran et al., p. 136):

- Creating a list of potential risks.
- Brainstorming sessions.
- Individual interviews with project participants.
- Using a risk profile, etc.

The process of creating a list of potential risks (also referred to as a "risk map" (Bărgăoanu, p. 34) is the result of studying best practices for solving problems in

similar projects, consulting experts in the relevant field, and discussing with people involved in the project to identify factors that could negatively influence the project's outcomes. This process can be carried out through various methods, including discussions, interviews, and brainstorming sessions.

Brainstorming sessions are considered the most relevant methods for generating ideas to identify potential risks that may arise in a project. Experts recommend applying two brainstorming techniques:

a) Creating a list with as many significant ideas as possible regarding risks that could occur in the project;

b) Grouping similar risks and ordering them by magnitude and likelihood of occurrence.

Subsequently, risks with low impact on the outcomes and a low probability of occurring are eliminated.

Individual interviews with domain experts and people involved in the project are structured interviews (containing pre-defined questions) aimed at gathering broad opinions on the project's potential risks.

Using a risk profile involves developing and applying a questionnaire targeting the main areas of uncertainty in the project: the project team, clients, and the technology used.

When moving to the stage of identifying risks related to a project, the following aspects are recommended (Bărgăoanu, p. 34):

- Studying issues that have arisen in similar projects and how they were resolved.
- Consulting as many experts as possible in the relevant field.
- Formulating risks in precise terms (e.g., not “material delivery may be delayed,” but “material delivery may be delayed by x weeks”).

The risk identification process will be more effective when conducted using well-thought-out methods and procedures, applied responsibly. It is recommended to combine various methods to arrive at the most accurate final product. Thus, the success of a project largely depends on the quality of risk identification during the project planning stage, allowing for the simultaneous design of actions to be taken to manage those risks. However, it is erroneous to consider that risk identification only applies to this stage: as mentioned earlier, the "risk map" must be continuously updated, as only this way can effective risk management be exercised.

All identified risks should undergo a rigorous analysis process. To achieve this, various qualitative and quantitative analysis methods are employed. Using these methods helps solve several significant issues in risk management, such as estimating the probability of risk occurrences, evaluating the impact of different risk

factors, determining acceptable risk levels for the project, and identifying the means to establish when the agreed-upon risk levels are exceeded.

6.3. Developing Risk Response Strategies

Risk response strategies are based on defining risks as well as analyzing the conditions and potential consequences of these risks. Experts highlight a series of risk reduction strategies, which are presented in Figure 6.2.

1. **Risk Acceptance Strategy** is acceptable only in situations where the project manager understands the risk, including the probability of occurrence and the estimated consequences, and both the probability and the consequences are insignificant. As a result, risks are accepted without scheduling any specific interventions.

2. **Risk Avoidance** involves making certain changes to the project (such as revising objectives, modifying activities, etc.) to minimize risks with a high probability of occurrence that could substantially affect the project outcomes.

3. **Risk Monitoring and Preparation for Unforeseen Situations** occurs by establishing a set of indicators and tracking their evolution throughout the entire duration of the project. Concurrently, response strategies to potential risks (financial, technological, etc.) are designed by developing action plans for unforeseen situations. The ultimate goal of these plans is that, in the event of major risk situations occurring, the management team will already have a viable response alternative capable of preventing the blocking or even collapse of the entire project.

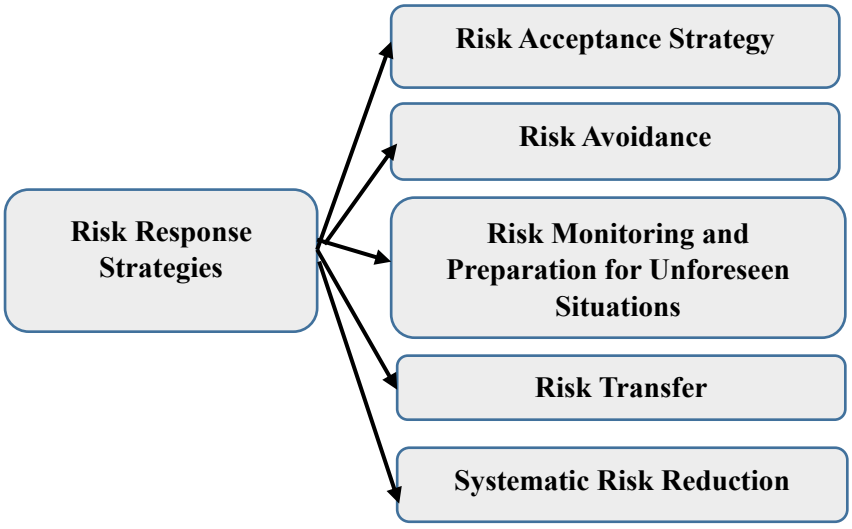


Fig. 6.2. Main Risk Reduction Strategies
Source: (Opran et al., p. 139)

4. **Risk Transfer** occurs through the following methods:

a) **Direct Transfer**, through calling upon specialized insurance institutions (e.g., when the project involves very expensive equipment).

b) **Indirect Transfer**, by hiring an expert within the project to evaluate or monitor the execution of certain activities.

c) **Using Service Contracts** within the project (especially when sophisticated and/or expensive machinery or equipment is involved). This helps monitor technological risk and ensures the proper functioning of the entire system.

5. **Systematic Risk Reduction** represents a set of methods and strategies aimed at systematically reducing risks to an acceptable threshold for the project. It involves the prior development of a risk reduction plan for each stage of the project.

The risk monitoring activity will have maximum effects when various strategies are combined, thus leading to the development and implementation of complex and appropriate strategies.

Along with the strategies described earlier, there are also a number of strategies that are frequently applied but do not yield results:

- **The Ostrich Strategy** – Risks are ignored, and it is pretended that they do not exist.
- **The Prayer Strategy.**
- **The Denial Strategy** – It is acknowledged that certain problems may arise, but the idea that they could occur in this specific project is not accepted.

6.4. Risk Control

Risk control is a continuous process of monitoring and identifying new risks in the project. Managerial practice demonstrates that risk monitoring and control activities occur in parallel with project monitoring.

Risk monitoring and control strategies include (Opran et al., p. 141):

a) identifying the magnitude of the risks based on probabilistic calculations;

b) recording them;

c) periodically inspecting their evolution through routine checks.

The risk monitoring and control system involves adhering to the following rules:

- There must be a person responsible for each category of assumed risk in the project;
- The risk recording system must be based on counting (fixing) risks according to their severity and probability of occurrence. Therefore, risks will be recorded according to their prior classification and the developed response strategies;

- The data included in the risk management system must be continuously updated through routine checks. This will allow monitoring the evolution of risk factors in different phases of project implementation.

As outlined in the definition of risk control above, it involves applying a strategy for the continuous identification of new categories of risks that may arise during the project execution process to prevent or minimize them. In this case, the reference points are the results of monitoring the achievement of objectives set for work packages and each individual activity carried out within these packages. As a result, new risks can be identified quickly as they arise. In this sense, modern theories recommend identifying risks at regular intervals to ensure the proper rigor of statistical forecasts and to identify risk factors before they reach a critical phase.

6.5 Conceptualizing Risk as an Opportunity

Regardless of the quality of risk management, risk cannot be entirely eliminated. Moreover, the risk analysis process should precede the initiation of the project, and if major risk factors (unacceptable risks) are identified, the project may be abandoned, and other project themes should be considered.

Current theories dedicated to risk can be classified into two categories:

1. **Traditional approaches**, which primarily focus on actions to counteract risks.
2. **Modern approaches**, which are focused on anticipating risk.

According to the *Dicționarul explicativ al limbii române* (Explanatory Dictionary of the Romanian Language), the term "counteraction" is interpreted as: “to thwart someone’s plans, intentions, actions, etc., to neutralize,” “to oppose someone’s will or action, to hinder someone’s plans; to stand in the way,” “to make fail; to thwart; to hinder; to defeat” (https://dexonline.ro).

In contrast, according to the second approach, risk is not entirely negative, encompassing both positive and negative aspects. As Roger Scoy (1992) mentions: “...risk is not entirely negative in itself; risk plays an essential role in progress, and failure is often part of the learning process. However, we must know how to maintain the balance between the potential negative consequences of risk and the possible benefits that transforming risk into opportunity can bring.”

Currently, the understanding of risk as an opportunity is increasingly being incorporated into the management practices of large companies. Transforming risks into opportunities is also an area of growing interest among risk management researchers. For example, Ivașcu and Cioca (2014) mention that the success of the risk management approach depends on the correct and realistic identification of responses to both risk and opportunity. The authors refer to a systematization of responses to risk and opportunity, as presented in Table 6.2.

Table 6.2 Keys to Successful Risk and Opportunity Management

Risk Response	Opportunity Response
Avoidance: changing the approach to the problem.	**Capture**: aligning activities with resources and including opportunities in deliverables.
Transfer: risk insurance or transferring the risk to third parties.	**Transfer**: assigning the opportunity to the team and including the opportunity in the results.
Acceptance: accepting the risk is a passive strategy that allows any outcome to occur without interfering with the project's execution cycle.	**Ignorance**: an opportunity with no further positive actions and no change in the organization.
Mitigation: involves actions that should take place to reduce the probability or impact on the organization.	**Research**: an opportunity that increases the probability of occurrence.
Sharing: connotations of sharing with third parties.	**Maximization**: added value through maximizing resources.

Surce: (Scoy, 1992).

By generalizing what has been presented, we deduce the complexity of the risk management system of a project, as well as the significant importance of its quality in ensuring the project's success.

PRACTICAL APPLICATIONS

Case Study. In the ecological project you are working on, it is anticipated that expensive and highly sophisticated equipment will be purchased. According to the project objectives, the equipment will be used to test the quality of drinking water in a region of the country. These are listed as deliverables of the project, alongside recommendations for improving water quality.

a) Identify the possible risks in this specific case.

b) Describe the strategy/strategies that could be applied to reduce the risks.

Case Study. You are the manager of an international project focused on developing digital skills in children with disabilities from the central region of Moldova. The project is in the phase of implementing Work Package 3: creating online courses for digital skills training with target groups (groups of children with visual, hearing, and motor disabilities) and evaluating the results. (The evaluation methods for the results include: surveying beneficiaries, operational monitoring of

the training courses, monitoring of the learning resources developed, and monitoring the quality of equipment purchased within the project).

1. Specify who could be surveyed at this stage of the project to identify and assess the associated risks.

2. Develop a risk monitoring and control questionnaire that can be addressed to one of the parties you identified in the previous question.

SELF-EVALUATION QUESTIONS

1. Explain the concept of "risk."
2. Clarify the differences between the terms "risk" and "uncertainty."
3. Summarize the essence of risk management.
4. How can the essence of project risk management be presented?
5. How are project risks classified?
6. Explain the erroneous starting ideas that generate the appearance of different types of risks.
7. List the basic components of risk management in projects.
8. Explain the essence of risk identification in projects.
9. What specific rules of risk management must be followed at the project development stage?
10. Describe the techniques for identifying project risks, and justify their significance.
11. Describe the strategies for reducing project risks.
12. Define risk control.
13. Explain the rules that must be followed in the process of monitoring and controlling risks.
14. Explain the essence of the approach to risk as an opportunity.

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7. PROJECT QUALITY MANAGEMENT

Content Units:

7.1. The essence and components of project quality management
7.2. Project quality planning
7.3. Project quality assurance
7.4. Project quality control

Skills

- defines project quality, quality management, control, project quality audit;
- analyzes the historical evolution of the concern for quality;
- identifies the components of project quality management;
- analyzes the components of the project quality planning, assurance and control processes;
- argues the significance of project quality management.

Responsibility and autonomy

The graduate autonomously plans and applies a project quality management system.

Terms of Reference:

Quality Management System – A formalized system that documents processes, procedures, and responsibilities for achieving quality policies and objectives.

Project Quality Management – A set of processes required to ensure that the project will meet the requirements for which it was initiated.

Project Quality Planning – The identification of relevant quality standards for the project and the determination of ways to satisfy them.

Quality Assurance – A set of preventive activities aimed at systematically ensuring the correctness and effectiveness of planning, organizing, coordinating, and controlling quality activities, in order to guarantee the achievement of the desired quality level of process results or products.

Project Quality Control – The monitoring of specific project results to ensure their compliance with reference quality standards and regulations.

7.1. The Essence and Components of Project Quality Management

The term "quality" or "qualitas" originates from the Latin word "qualis," meaning "kind of being." The concept of quality has been known since ancient times when its meaning was associated with perfection or excellence (Mândru L., Mândru E.). It is believed that this term first appeared in the works of Cicero. In antiquity, individual craftsmen were the creators of quality, having full control over the quality

of their products, from the design phase to the final product for sale. During the Middle Ages, with the emergence of guilds (12th century), these guilds began to establish quality rules. Craftsmen who deviated from the established quality requirements were sanctioned or even excluded from the guild. According to the established regulations, each craftsman had to take an oath to practice their craft correctly. At the same time, emblems were introduced to identify products, which provided an opportunity to increase the reputation of guilds that produced high-quality goods.

The focus on quality grew with the rise of colonial empires (14th-16th centuries) and the development of trade. In the 19th century, changes were made in the compensation system by setting wages based on the quantity of parts produced, leading to the emergence of so-called ctc workers, who separated good products from poor-quality ones, which became the benchmark for wages.

The first to associate the concept of quality with product specifications were those at Ford Motor Company (early 1900s). Later, in 1914, the Royal Flying Corps' Aeronautical Inspection Department introduced a certification system to ensure product compliance with specified requirements. Thus, the company became a pioneer in introducing a quality system. As a pioneering example, in 1920, Western Electric Co created a quality department subordinate to the general manager.

In 1947, ISO (International Organization for Standardization) was created. Also, in this year, J. Juran provided the following definition of quality: "Quality involves the product's performance and the absence of deficiencies." Later, in 1974, Juran defined quality with the term "fitness for use" (adequate for its intended use, Mândru L., Mândru E.).

The first standardized definition of quality was given by the ISO standard in 1987 (ISO 9000): "A set of characteristics of an entity that gives it the ability to satisfy expressed and implied needs."

Currently, organizations in all fields of activity are focused on implementing effective quality management systems. A Quality Management System (QMS) is defined as a formalized system that documents processes, procedures, and responsibilities for achieving quality policies and objectives (https://asq.org/quality-resources/quality-management-system).

As stated on the official website of the International Organization for Standardization (https://www.iso.org), quality management systems serve multiple purposes, including:

- Improving processes;
- Reducing scrap;
- Reducing costs;
- Facilitating and identifying training opportunities;

- Engaging personnel;
- Setting direction at the organization level.

Project management must focus on quality alongside other management systems. Implicitly, this highlights the need to promote project quality management as a significant aspect of the overall project management system.

Project Quality Management represents a set of processes necessary to ensure that the project will meet the requirements for which it was launched.

The Project Quality Management System (Fig. 7.1) includes the following core processes:

- Quality planning;
- Quality assurance;
- Quality control.

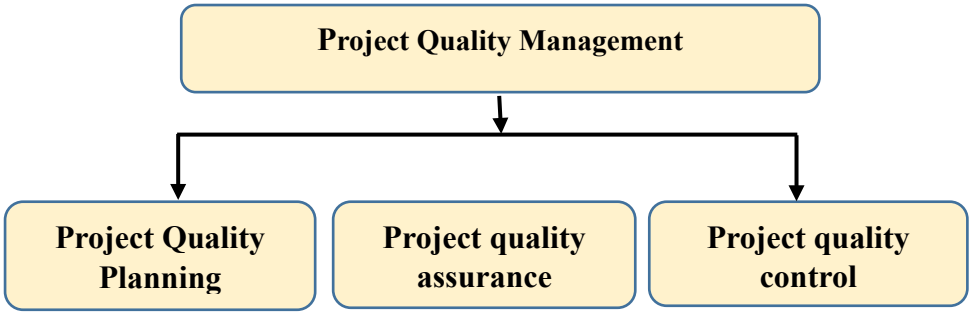


Fig. 7.1. Project Quality Management Processes

Source: (Opran et al., p. 177).

7.2. Project Quality Planning

Project quality planning involves identifying relevant quality standards for the project and determining how to satisfy them (Opran et al., p. 180). Project quality planning is a key process that must be integrated into the more complex process of project planning. The project quality planning process involves a series of inputs, as shown in Figure 7.2.

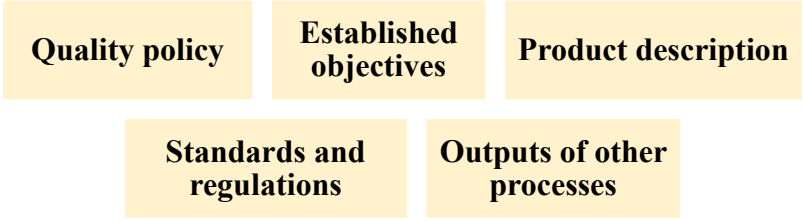


Fig. 7.2. Inputs of the Project Quality Planning Process

Source: Developed by the author based on: (Opran et al., p. 180)

The **quality policy** refers to the intentions and general directions of quality management established at the organizational level. Thus, when developing a project, the quality policy promoted by the beneficiary organization will be reflected in the quality management processes stipulated in the respective project. If the project is developed at the consortium level, a specific quality policy for the project will be created, and this policy will be assumed by all partners.

The **establishment of objectives** is considered the key input in the quality planning process. These objectives should align with the needs of the beneficiaries, including in terms of the quality of deliverable products.

The **product description** provides information primarily about the technical characteristics of the offered products.

Standards and regulations must be considered by the project team to prevent the quality of products from being compromised.

The **outputs of other processes** refer to the outputs from other processes within the project, such as, for example, the purchase of equipment. In such cases, it is necessary to specify concrete quality requirements for the items to be purchased, which will be proposed to suppliers.

The **project quality planning process** is carried out using a set of tools and techniques, which are presented in Figure 7.3.

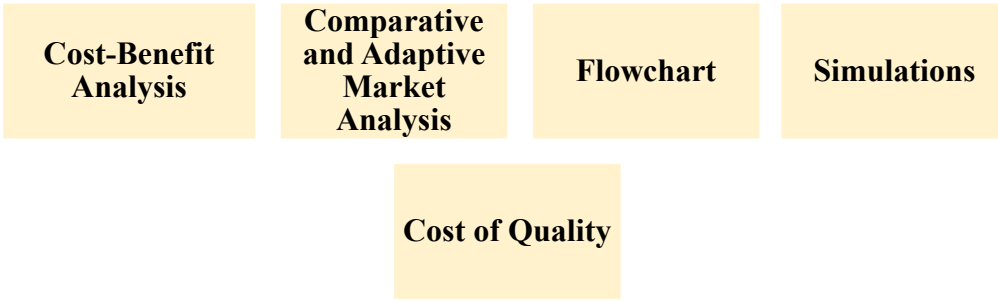


Fig. 7.3. Tools and Techniques of the Project Quality Planning Process

Source: Developed by the author based on: (Opran et al., p. 180-181)

Cost-Benefit Analysis involves a comparative analysis of the benefits versus the costs involved, with the results being important for evaluating alternatives and identifying the optimal project option. Among the tools that can be used in cost-benefit analysis, those described in the context of financial project management can be mentioned:

- Payback Period (PP)
- Accounting Rate of Return (ARP)
- Net Present Value (NPV)
- Profitability Index (PI)

- Internal Rate of Return (IRR)
- Modified Internal Rate of Return (MIRR)

Comparative and Adaptive Market Analysis involves comparing the current project option with similar practices from other types of projects carried out by both the given organization and other external actors.

Flowchart represents a graphical tool that clarifies the variation over time of the resource system used. One of the most frequently used techniques for creating flowcharts is the cause-and-effect diagram, also known as the "fishbone diagram" or "Ishikawa diagram" after its creator, Japanese professor Kaoru Ishikawa. This diagram, created in 1943, allows for identifying, organizing, and displaying possible causes of specific problems or quality characteristics (Mândru L., Mândru E.).

Simulation is a statistical method used to identify factors that can influence specific project variables. The technique is mainly applied to the project product.

Cost of Quality refers to the total cost of efforts to achieve product quality and covers the costs of all activities ensuring both compliance and non-compliance of the product.

The **Cost of Quality** includes three types of costs:

- Prevention Costs
- Appraisal Costs
- Costs due to omissions

The **quality planning process** results in a series of outputs (concrete results), as indicated in **Figure 7.4**.



Fig. 7.4. Outputs of the Project Quality Planning Process

Source: Developed by the author based on: (Opran et al., p. 181)

The **Quality Management Plan** reflects the methods for implementing the quality policy and must be aligned with the existing quality management system, which includes: organizational structure, responsibilities, procedures, processes, and the resources necessary for implementing quality management. Depending on the specific requirements of the project, the quality management plan can be formal or informal, detailed or just schematic.

Quality Specifications describe, in specific terms, the areas and limits of the quality control process. For example, when describing the quality control procedure for the development of a project product (e.g., a guide), the concrete deadlines for

performing the control (not just the time period), the people involved, the quality evaluation criteria, etc., will be specified.

Checklists are used to verify whether a set of items in a specific activity has been completed. They serve as a reminder of what needs to be done and ensure that what was done is checked off the list. Checklists can be simple or complex, depending on the specifics of the project, and they link past results with future outcomes. In this way, they serve as a tool for evaluating and correcting project performance.

By its nature, the project quality planning process identifies the need for other project management activities. In this way, quality planning provides inputs for these activities.

7.3. Project Quality Assurance

The **quality assurance process** is a complex one and refers to a set of preventive activities aimed at systematically ensuring the correctness and effectiveness of planning, organizing, coordinating, and controlling quality activities in order to guarantee the achievement of process or product results at the desired quality level.

All activities included in the **project quality management plan** are an integral part of the quality assurance system. This system involves both internal quality assurance (by specialized departments within the organization or the internal project team), external assurance (by clients, funders, external partners), and a combination of both.

Quality assurance is reflected in a series of inputs, which are shown in **Figure 7.5**.



Fig. 7.5. Inputs of the Project Quality Assurance Process
Source: Developed by the author based on: (Opran et al., p. 182)

From **Figure 7.5**, we can deduce the complexity of the quality assurance process, which involves elements of quality planning as well as its control. Quality assurance is carried out using the tools and techniques of quality planning (described earlier), as well as quality audits.

Quality Audit represents an evaluation of quality management activities aimed at enhancing the performance of the current project. It can be planned or performed whenever necessary. Quality audits can be internal or external and can be carried out whenever required.

As an output of the project's quality assurance process, the increase in its quality is reflected in the improvement of predefined quality indicators.

7.4. Project Quality Control

Project quality control involves monitoring the specific results of the project to ensure their conformity with the reference quality standards and regulations. Project quality control is based on the following principles:

- **Planned nature**
- **Continuity**
- **Corrective nature** (it must contribute to identifying ways to eliminate the causes of nonconformity).

Quality control is carried out by the project team, but specialized departments of the organization to which the team belongs may also be involved, as well as clients, partners, and funders.

The inputs of the quality control process are presented in **Figure 7.6**.



Fig. 7.6. Inputs of the Project Quality Control Process

Source: Developed by the author based on: (Opran et al., p. 183)

The results of quality control represent a set of values presented in a comparable format, obtained from the quality control activities, and refer to both the performance of the product and the quality and outcomes of the project management. Therefore, the subject of control includes both the products obtained in the project and the project management process itself.

The quality control process is carried out using a series of tools and techniques, which are presented in **Figure 7.7**.

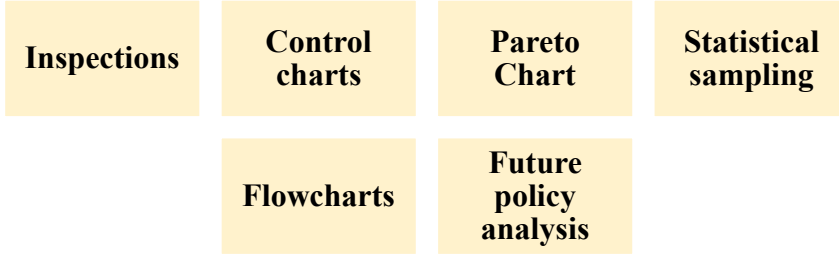


Fig. 7.7. Tools and Techniques for Project Quality Control

Source: Developed by the author based on: Opran et al., p. 183-184

Inspections include activities such as examining, testing, and measuring the results of the project to determine their conformity with the pre-established requirements. Inspections can be operational, evaluating intermediate results, as well as final inspections, where the finished product(s) of the project are evaluated.

Control charts allow for graphical visualization of the results of the product or processes over time, as well as other implicit elements (e.g., costs). Their use helps to estimate trends in the evolution of the analyzed indicators, deviations from reference (standard) levels, and allows for prompt intervention when problems are detected.

The **Pareto Chart** is a column (bar) chart where the horizontal axis represents the categories of interest (most often "defects"), and the vertical axis represents their values or frequencies of occurrence. The Pareto Chart was developed by Joseph M. Juran in 1945 and was named after the 19th-century Italian economist Vilfredo Pareto, who stated that 80% of the world's wealth is held by 20% of the population (Mândru L., Mândru E.).

Pareto analysis is a rigorous and pragmatic activity, especially effective for group activities. It helps to identify the main categories of causes and each one's contribution to the overall problem, thus indicating the areas where efforts should be concentrated to maximize results. Pareto's Principle states that, in many cases, a small proportion of elements of interest or items explains a large percentage of the variable related to those items. The elements of interest (items) can be categories of defects, the most frequent causes of defects, defective products, repairs, accidents, etc. Another formulation of Pareto's Principle is: 80% of effects are caused by 20% of causes, although in reality, this ratio is rarely exactly 80%/20%.

Pareto charts can be applied in the evaluation of measurable processes and help to make interventions in a methodical manner to address emerging issues.

Statistical sampling involves selecting representative categories of activities or processes from the complete list for inspection. The selection process is based on criteria such as:

- The contribution of the activity to the final result;
- The scale of the activity (number of people involved, duration, associated costs, etc.);
- The stage of the activity (activities at the initial stage are prioritized, as interventions can be made if necessary to improve the quality of their execution).

The main objective of statistical sampling is to reduce the costs of quality control.

Flowcharts (previously described) help to identify and analyze the causes of dysfunctions.

Trend analysis (future policy analysis) is performed using mathematical techniques and focuses on strictly quantitative developments of results. These analyses are based on extrapolating past data into the future, monitoring technical performance (in terms of the number of errors or defects identified and how many remain uncorrected), costs, and the scheduling of activities.

The outputs of the project quality control process are presented in **Figure 7.8**.

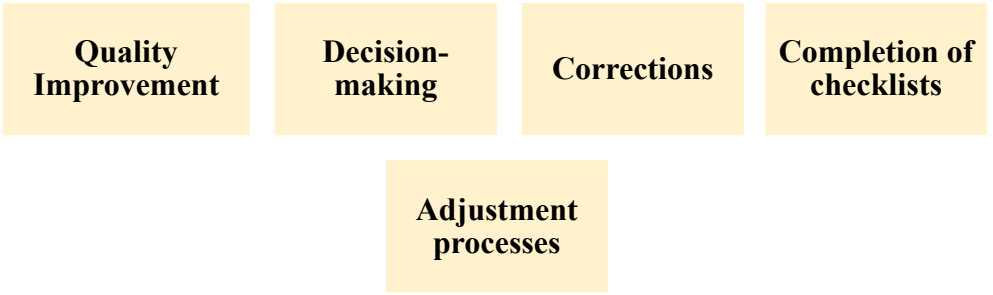


Fig. 7.8. Outputs of the Project Quality Control Process
Source: developed by the author based on: Opran et al., p.184

Decision-making, as an output of the quality control process, involves determining a set of measures to eliminate nonconformities.

Corrections refer to the actual actions taken to eliminate nonconformities. These are considered unplanned activities and represent one of the most common causes of project schedule delays. Therefore, the project team must make efforts to minimize these types of activities.

Completion of checklists ensures the necessary record-keeping and information base for the project.

Adjustment processes are immediate preventive and corrective actions resulting from the outcomes of the quality control process, in some cases carried out simultaneously with the integrated project control processes.

PRACTICAL APPLICATIONS

Case Study. As a project manager, you are required to continuously monitor and control the quality of your project (the project idea is your own). After researching multiple sources, you became familiar with various quality control tools and noticed that there are many, each with its own advantages and disadvantages. Identify two quality control tools relevant to your project and justify your choice.

Practical Assignment. As a project manager, you are required to develop the quality plan for your project (the project idea is your own). Specify the inputs of the project quality planning process that will serve as a foundation for completing this task.

SELF-ASSESSMENT QUESTIONS

1. Define the essence of the concept of "quality."
2. Explain the historical evolution of concern for quality.
3. What is a quality management system?
4. Describe the essence of project quality management.
5. List the components of project quality management.
6. Explain the essence of project quality planning.
7. Characterize the inputs of the project quality planning process.
8. Describe the tools and techniques used in the project quality planning process and explain how they are applied.
9. Characterize the outputs of the project quality planning process.
10. Describe the essence of the project quality assurance process.
11. Characterize the inputs of the project quality assurance process.
12. Specify which tools and techniques are used in the project quality assurance process and explain how they are applied.
13. Explain the essence of quality auditing.
14. What qualifies as an output of the project quality assurance process?
15. Explain the essence of project quality control.
16. Clarify the principles on which project quality control should be based and explain their importance.
17. Characterize the inputs of the project quality control process.
18. Describe the tools and techniques used in the project quality control process and explain how they are applied.
19. Characterize the outputs of the project quality control process.

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STRATEGIES FOR EVALUATING THE ACADEMIC RESULTS

For the evaluation of the academic results within the course unit, the following is done:

1. **Ongoing Assessment** – conducted throughout the semester during lectures, seminars, consultations, and scheduled tests in accordance with the academic calendar. Ongoing assessment accounts for **60% of the final grade**.

2. **Final Assessment** – conducted via a written exam using the institutional test, which consists of **two subjects** with tasks structured on **three levels of complexity** (knowledge, application, integration). Alternatively, the final assessment may be conducted through the **MOODLE educational platform of USM** (www.moodle.usm.md). The exam grade represents **40% of the final grade** for the course unit.

3. **Evaluation of the Individual Study Product** – takes place outside direct contact hours, during consultation sessions or meetings of the scientific circle.

Teaching, learning, assessment, and guidance for individual study are conducted **face-to-face and/or online**.

The **final grade** for the course unit is calculated in accordance with the **Academic Performance Evaluation Regulations of USM**, as follows: **Final Grade = Semester Grade (60%) + Exam Grade (40%)**

The **semester grade** is determined based on the components of the ongoing assessment, using the following formula:

Semester Grade = (T_1 + T_2 + ACA + IS) / 4

Where:

- **T_1** – Mandatory Test 1
- **T_2** – Mandatory Test 2
- **ACA** – Average of current assessment, calculated as the simple arithmetic mean of grades obtained in seminars and lectures
- **IS** – Grade awarded for the final product of individual work

Minimum Requirements for Passing the Course Unit:

- Achievement of the minimum passing grade for the semester
- Achievement of the minimum passing grade on the final exam
- Completion and submission of the individual study product
- Attendance of **at least 70%** of total direct contact hours

REQUIREMENTS FOR THE COMPLETION OF THE INDIVIDUAL STUDY

No.	Expected product	Development strategies	Evaluation criterias	Completion date
1	**Product Type** An international project proposal aimed at obtaining non-reimbursable funding. Product Structure **Project idea in the context of the problem addressed** – 2–3 pages **Project beneficiaries and target groups** – 1 page **General objective and specific objectives of the project** – 2–3 pages **Project activity plan** – 2–3 pages **Expected results and performance indicators** – 2–3 pages **Project sustainability and impact** – 1 page **Project budget** – 2–3 pages **Bibliography** (minimum 5 sources) – 1–2 pages	**Implementation Strategies** Development of an international project proposal aimed at obtaining non-reimbursable funding. **Presentation Methods** Public oral presentation (delivered face-to-face or online, as appropriate), accompanied by a written version in either paper or electronic format.	The level of knowledge of theoretical aspects and best practices related to project development and implementation; the ability to search for, systematize, and process information, including the use of ICT tools; the ability to creatively apply theoretical and practical knowledge in concrete situations; the ability to justify one's own position; skills in analysis, synthesis, and generalization; an innovative mindset.	Penultimate week of the semester

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