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IT Projects Management 1100-ZPOUEN - Winter Semester 2023/2024
Introduction to project Management & Fundamental Elements

- ✓ Understanding the project management
- ✓ Project Management Growth
- ✓ Concepts and Definitions

1. Fundamental Elements

Project management is one of the most critical components of a successful business. It affects revenues and liabilities, and it ultimately interacts with customer or client satisfaction and retention. In the past four decades project management has grown from a means to achieve small project or activity completion to a key element in strategic planning. The use of powerful tools, enterprise-wide methodologies, and processes to control activities and manage people and resources have become an accepted part of business management. The project life cycle, systems thinking, and the influence of project management processes on an organization's critical success factors have had a significant impact on overall organizational performance.

1.1. What is Information?

Information, as we know it today, includes both electronic and physical information. The organizational structure must be capable of managing this information throughout the information lifecycle regardless of source or format (data, paper documents, electronic documents, audio, video, etc.) for delivery through multiple channels that may include cell phones and web interfaces.

1.2. What is Information management (IM)?

Information management (IM) is the collection and management of information from one or more sources and the distribution of that information to one or more audiences. This sometimes involves those who have a stake in or a right to that information. Management means the organization of and control over the structure, processing, and delivery of information.

1.3. What is a Project Management System?

A project management system is a means of managing a project by planning, organizing, and managing its different required aspects. Depending on the sophistication of the project management system, it can include:

- Estimation activities
- Scheduling
- Cost control and budget management
- Resource allocation
- Quality management
- Risk management
- Change control

Project management systems fall into two very broad categories: general software applications and project management software applications.

1.4. General Software Applications

General software applications are software used for a broad variety of tasks, not necessarily project management related. Examples of general software applications include: Spreadsheets, Word processing, Graphics editing, Databases.

1.5. Types of project management systems

The project management system can be broken down into the following six subsystems:

- i. **Facilitative organizational**
This subsystem is used to organize project team members into reporting hierarchies. There is a matrix structure in many organizations where project members report to a functional head and a project head. This subsystem deals with creating the organizational structure and placing people within it.
- ii. **Project planning**
This subsystem deals with the planning of projects, programs, and portfolios.
- iii. **Project control**
This subsystem includes all the processes and procedures for controlling project execution.
- iv. **Project management information**
This subsystem encompasses the principles and procedures for managing information, including everything from communication plans to knowledge databases.
- v. **Techniques and methodology**
This subsystem consist of all the management science techniques used in project management. Some examples include CPM (critical path modeling), PERT (program evaluation and review technique), and Monte Carlo simulation.
- vi. **Cultural ambience**
This subsystem handles the organization's culture around project management and how it is viewed and carried out. For example, do functional employees who are not directly involved with projects understand and support project management? Are they aware of projects occurring within the organization that affect them?

1.6. Project management system software uses

Project management technology can be used for many aspects of the project, including the following:

- Creating estimates for activities
- Creating, updating, and reporting schedules
- Tracking costs and budgets
- Allocating resources
- Recording and managing risks
- Controlling project changes
- Sharing project information and updates

1.7. Program Management vs Project Management

Program management deals with a group of related projects, while project management only involves one project. Programs tend to be larger, more general and the driving strategy is long-term. Programs are created from a business high-level view, while projects are much more specific. Programs are meant to achieve strategic goals and business objectives of organizations. They have flexible deadlines

and seek long-term benefits. On the contrary, projects have strict deadlines and seek quality control, timeliness, and cost effectiveness to produce deliverables. The major difference between program management and project management is that the scope of a program is much broader and more adjustable, while a project is defined by its deliverables. Programs are a persistent exercise, while projects have defined start and end dates, which are specified in the project plan. Achieving the strategic plan and strategic vision of an organization usually requires long-term programs that consist of various individual projects. The program governance and program management plan define how those projects will be executed. Large organizations usually need to execute several programs at a time, which is referred to as a program portfolio

1.8. Some Fundamental Differences Between Projects and Programs

- Projects vary in duration, while a program is generally of longer duration, since the start of the program will be the start of its first project, and the end of the program will be the end of its last project.
- Projects focus on desired results or outputs, where programs focus on desired outcomes or benefits.
- The efficiency and effectiveness of the project can be measured based on metrics like budget, schedule, quality, etc. However, the efficiency and effectiveness of the program will be measured in terms of the benefits realization of the program. Such differentiation allows one to measure the success of both the project and program management, even though the projects will exist within the program.
- A project fulfills project objectives (“Why” the deliverable/s is/are required), and the program generally focuses on generating organizational benefits.
- Projects have defined objectives, and scope is iteratively developed; programs have a scope that encompasses the scope of the collection of projects.
- Project managers expect change and implement processes to keep change managed, where program managers accept and adapt to change to optimize the delivery of benefits.
- Success is measured within projects through product and project quality, timeliness, budget compliance, and customer satisfaction; success in a program measured by the program’s ability to deliver its intended benefits to the organization.

1.9. What is the difference between a project and a product?

A project has a defined beginning and end in time and is unique in that it is not a routine operation, but a specific set of operations designed to accomplish a singular goal and often includes people who don’t usually work together. At the end of a project, the team is usually disbanded and assigned to new projects with new team members.

On the other hand, a product is a good, service, platform, application, system, etc. that is created, maintained and supported by solving problems and providing benefits to specific customer and business needs. Products tend to be maintained by a stable group of individuals who do work together regularly and who bring in others as needed.

1.10. Informal Project Management

Informal project management is any approach to planning and executing a project that does not fit a reasonable definition of formal project management. Informal project styles are commonly used on very small projects, and when projects are to be completed by small teams who are familiar with both the work to be done and with each other’s style of working.

Informal project management rarely involves a project manager or specialized project management technology. Instead, project management activities are usually shared among the people who are

doing the work, and who use whatever combination of online and offline tools they prefer in order to keep track of their own tasks and progress.

2. Introduction to project Management

2.1. What is project management?

Project management is not the entire operation of your company. It's just one segment, a specified project with a detailed plan as to how you and your business are going to achieve that goal. It's a plan detailed in a series of steps, each of them as important as the others. You must achieve one to properly move on to the next.



Project management is the application of processes, methods, skills, knowledge, and experience to achieve specific project objectives according to the project acceptance criteria within agreed parameters. Project management has final deliverables that are constrained to a finite timescale and budget.

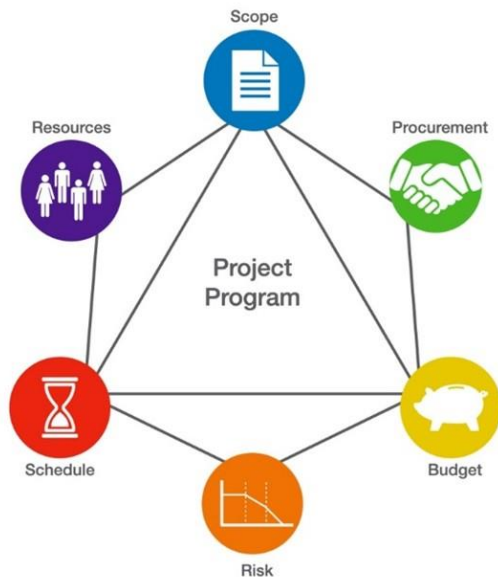
2.2. What is a project?

A project is a unique, transient endeavor, undertaken to achieve planned objectives, which could be defined in terms of outputs, outcomes or benefits. A project is usually deemed to be a success if it achieves the objectives according to their acceptance criteria, within an agreed timescale and budget. Time, cost and quality are the building blocks of every project.

- Time: scheduling is a collection of techniques used to develop and present schedules that show when work will be performed.
- Cost: how are necessary funds acquired and finances managed?
- Quality: how will fitness for purpose of the deliverables and management processes be assured?

2.3. The elements of a project

A successful project manager must simultaneously manage four basic elements of a project. These elements are interrelated.



Scope: This involves the project's size, goals, and requirements.

Resources: You'll need people, equipment, and materials in place.

Time/Schedule: This doesn't just address how much time the project will take overall. It must be broken down into task durations, dependencies, and critical path.

Money/Budget: Have a firm grasp on costs, contingencies, and profit.

Risk: an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives" (such as scope, schedule, cost, and quality).

Procurement: A procurement management plan matters to the organization to save money, time and effort.

2.4. What is a project team?

The project team is the group of people responsible for executing the tasks and producing deliverables outlined in the project plan and schedule, as directed by the project manager, at whatever level of effort or participation defined for them. Project team members may or may not be involved during the entire life cycle of the project and may or may not be full time to the project. Project teams are comprised of many different roles such as project manager, subject matter experts, business analysts, and other stakeholders.

2.5. How do I define who should be on the project team?

Individuals responsible for doing the work associated with a project will be members of the project team. The project team will include a number of defined roles such as project manager (PM), subject matter expert (SME), and business analyst (BA). A project team for an IT project will likely include technical representation, functional/business representation, and vendor representation (if applicable).

In partnership with the sponsor, the PM will negotiate with functional managers for their resources' time on the project, targeting the resources who are most qualified (skills and ability) for the specific project needs. The PM will want to acquire commitment and time from resources who are knowledgeable about the work that needs to be done, are able to represent the stakeholders, and will work both independently on their tasks as well as in partnership with the project team towards the final deliverable(s). As a group, the project team should represent the diversity of skills and knowledge necessary, in the proportion required, to successfully complete the project and represent stakeholders. Project team members should support the project objectives and be willing to work together towards that common goal.

2.6. What are the project team responsibilities?

Project team members may have a specific role on the project (such as PM, SME, BA). If so, the responsibilities of that member include those identified for their role. The project team is responsible for contributing to the overall project objectives and specific team deliverables, by contributing towards the planning of project activities and executing assigned tasks/work within the expected quality standards, to ensure the project is a success.

The project team will:

- Provide information, estimates and feedback to the PM during project planning
- Provide business and/or technical expertise to execute project tasks (work)
- Liaise with stakeholders to ensure the project meets business needs
- Analyze and document current and future processes and systems (functional and technical)
- Identify and map information needs
- Define and document requirements
- Support and provide end user training
- Report issues and status to PM
- Work collaboratively with other team members towards achieving common project goals/objectives

2.7. Classification of Projects (Types of projects in project management)

Every Project is different from one another. Projects can be classified based on several different points. The classification of projects in project management varies according to several different factors such as complexity, source of capital, its content, those involved and its purpose. Projects can be classified based on the following factors. Here are some of the most common classification criteria used by companies:

- schedule
- budget
- complexity
- business value
- service type
- framework used etc.

According to Schedule

The project duration is a good indicator for the size and impact. Longer duration correlates with more resources being needed, higher expenses, more room for error and consequently greater risk of failure.

According to Budget

Probably the most important criterion. Usually used in combination with project duration (schedule) because a long schedule does not necessarily tell you about the budget volume (although schedule and budget are correlated). Cost is what management is most concerned about after the actual project goal. For good reason because a series of unsuccessful projects can quickly drain the financial resources of a business.

According to complexity:

I highly recommend you use some key figure for project complexity. It is the complexity of a project that determines the level of risk and greater risk requires more oversight and control.

The question you probably ask yourself is: How can you measure project complexity?

There are many ways to measure complexity. At my previous company we simply looked at the number of functions involved in the project. Was it just IT that was involved or were other departments like accounting, sales, or logistics also part of the team? The longer the list of stakeholders, the higher the presumed complexity of a project.

Easy: A project is classified as easy when the relationships between tasks are basic and detailed planning or organizations are not required. A small work team and a few external stakeholders

and collaborators are common in this case. The tasks of the projects can be undertaken by a small team.

Complicated: The project network is broad and complicated. There are many task interdependencies. With these projects, simplification where possible is everything. The task of executing this type of project requires proper planning. Cloud-based apps such as 'Sinnaps' will immensely help to simplify complicated projects by automatically calculating the project's best work path and updating any changes introduced through its use of different types of project management tools.

According to Business value

Another useful classification factor is the level a project contributes to your company's finances or its competitive position. Some projects don't contribute much in terms of business value and can therefore be deprioritized, for example if you need to trim the project portfolio. Other projects have a significant positive impact on the cash flow situation and thus should receive full attention.

According to Framework used

Agile, waterfall or hybrid: The project management framework (or methodology) being used determines what steps and guidelines a project must follow and how it must be staffed. Classic projects work in pre-defined phases and with fixed milestones. Agile projects work in iterative cycles, and you need an experienced agile coach or Scrum master to facilitate the process. By using a classification by methodology, you can easily see what projects fall into which delivery framework.

According to the source of capital

- **Public:** Financing comes from Governmental institutions.
- **Private:** Financing comes from businesses or private incentives.
- **Mixed:** Financing comes from a mixed source of both public and private funding.

According to Project content

- **Construction:** These are projects that have anything to do with the construction of civil or architectural work. Predictive methods are used along with agile techniques. Furthermore, construction is an engineering project and the process of planning its execution must be painstakingly done to achieve the desired outcome.
- **IT:** Any project that has to do with software development, IT system, etc. The types of project management information systems vary across the board, but in today's world are very common.
Business: These projects are involved with the development of a business idea, management of a work team, cost management, etc., and they usually follow a commercial strategy.
- **Service or product production:** These are projects that involve the development of an innovative product or service, design of a new product, etc. They are often used in the R & D department.

According to those involved

- **Departmental:** When a certain department or area of an organization is involved.
- **Internal:** When a whole company itself is involved in the project's development.
- **Matriarchal:** When there is a combination of departments involved.
- **External:** When a company outsources external project manager or teams to execute the project. This is common in digital transformations, process improvements and strategy changes, for example.

According to its objective

- **Production:** Oriented at the production of a product or service taking into consideration a certain determined objective to be met by an organization.
- **Social:** Oriented at the improvement of the quality of life of people. This can be in the form of rendering corporate social responsibility (CSR) to the people.
- **Educational:** Oriented at the education of others. This is always done to make them better.
- **Community:** Oriented at people too, however with their involvement.
- **Research:** Oriented at innovation and the gaining of knowledge to enhance the operational efficiency of an organization.

Do not make the classification too complicated and define clear thresholds where everybody understands what category their project falls into, and which subcategories apply for them.

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KEY TERMS AND DEFINITIONS TO REVIEW AND REMEMBER

- ❖ **General Systems Management** A management technique designed to cross many organizational disciplines. For example: finance, manufacturing, engineering, and marketing.
- ❖ **Mature Project Management** The implementation of a standard methodology and accompanying processes that creates a high probability of repeated successes.
- ❖ **Product Scope** The features and functions that characterize the deliverable. This includes dimensions, features, and physical characteristics.
- ❖ **Program** A group of related projects managed in a coordinated way to obtain benefits and control that is not available from managing them individually. Programs may include elements of related work outside the scope of the discrete projects in the program.
- ❖ **Program Management:** Is the application of program management skills, techniques, and tools to plan, execute and control programs.
- ❖ **Milestone:** Marks the beginning or end of a phase in an individual project, usually around related deliverables. Helps track progress.
- ❖ **Stakeholder:** Anyone with a vested interest in the project or program. In business, a stakeholder is any individual, group, or party that has an interest in an organization and the outcomes of its actions. Common examples of stakeholders include employees, customers, shareholders, suppliers, communities, and governments. Different stakeholders have different interests, and companies often face trade-offs in trying to please all of them.
(Ex: Employees, Suppliers, Customers, Competitors etc.)
- ❖ **Baseline:** Used to measure performance by capturing the schedule, cost, and scope of a project plan. Then actual progress can be compared against this.
- ❖ **Triple Constraint:** Three areas that impact any project or program, being time, scope, and cost, which must be balanced to maintain progress. Quality is often included as the fourth point on this triangle.
- ❖ **Program Governance:** Refers to all the different actions that are taken to monitor and control the success of a program at every stage of its life cycle, such as meetings, reporting, risk management, change management among other elements of governance.
- ❖ **Program Plan:** Is the set of documents that are developed to guide the program execution and monitoring. It is also known as the program management plan.
- ❖ **Program management framework:** Encompasses every component, participant, process, tool and methodology required for a program.

- ❖ **Program portfolio:** Is a group of programs and related activities that can be executed collectively to meet strategic goals and business objectives. Program portfolio management refers to the actions taken by management to successfully handle program portfolios.
- ❖ **Program life cycle:** Made up of five stages, formation, organization, deployment, appraisal, and dissolution.
- ❖ **Foundation stage:** Iterative process that defines the program's expected benefits by analyzing the expectations of stakeholders.
- ❖ **Organization stage:** Creating the program's business case, program management plan, program governance, operational procedures, etc.
- ❖ **Deployment stage:** Delivering capacities of the program's projects on a cyclical basis.
- ❖ **Appraisal stage:** Assessing program benefits and evaluating whether they meet expectations, done repeatedly throughout the program life cycle.
- ❖ **Dissolution stage:** Agreement among stakeholders that it's time to close out the program.
- ❖ **Roadmap:** Gantt chart timeline that gathers all the projects in a program and charts them together down to the task level.
- ❖ **Risk management:** A way to identify potential issues that can arise in a program and have a plan in place to reduce their impact if they do occur.
- ❖ **Business plan:** Describes goals of a project or program and the strategies to achieve them.
- ❖ **Program work breakdown structure:** Defines the work and results necessary to complete the program. It differs from a project work breakdown structure because it's produced from a broader, program-level perspective.
- ❖ **Change management:** Method to manage change, whether internal or external, a formalized process involving identifying, planning, tracking, etc.
- ❖ **Project execution.** **Project execution** (or implementation) is the phase in which the plan designed in the prior phases of the **project** life is put into action. The purpose of **project execution** is to deliver the **project** expected results (deliverable and other direct outputs).

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Reference:

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