

Introduction to Project Management

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What will this course cover?

- 1 Fundamentals of Project Management
- 2 Specificity of Tech & AI projects
- 3 Agile Vs Traditional
- 4 The Scrum Framework

What we will be seeing today...

- 1 What is Project Management?
- 2 The project life cycle
- 3 Why projects fail/succeed?

How will this course be evaluated?

-  In Class Activities - Individual & Groups
-  Case Studies - Groups
-  Final Exam

What is a project?

A project is a temporary endeavour undertaken to create a unique product or service.

It usually includes a set of deliverables and has a defined beginning and end.

It is:

- Performed by people
- Constrained by limited resources
- Planned, executed and controlled

Task or project?

A task or set of work assignments may be done by one or more persons using a simple “to do” list

A task can become a project when the characteristics of a project begin to dominate and overwhelm individuals

⇒ *Unable to meet deadlines, budgets and corporate expectations*

Some examples...

- Developing a new product or service
- Effecting change in a structure, staffing or style of an organisation
- Designing a new transportation vehicle
- Developing or acquiring a new or modified information system
- Constructing a building or facility
- Planning a party or wedding
- Organizing the Olympic games

Project features

TEMPORARY

- A project has a definite beginning and definite end
- The duration of a project is finite
- The project team - as a team - seldom outlives the project. Most projects are performed by a team created for the sole purpose of performing the project

UNIQUE RESULT

- Projects involve doing something that has not been done before in the same environment

PROGRESSIVE ELABORATION

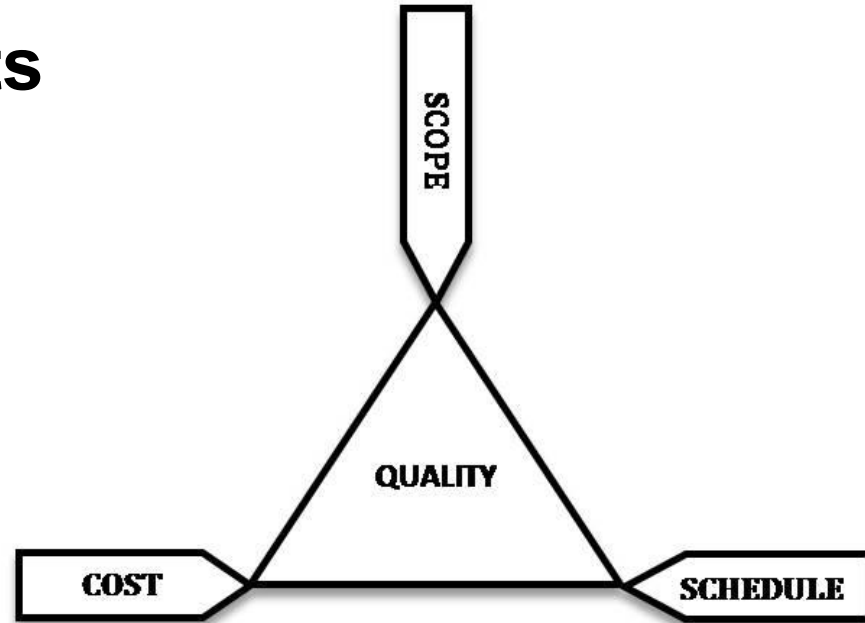
- A project occurs step by step to define the product or service, in a so called “progressive elaboration” process

Operations and projects compared

- Operations reflect an organization's day-to-day activities, which generally follow similar patterns and objectives. Projects are one-off investments designed to achieve a specific objective.
- Operations are repetitive and easily automated. They operate according to a yearly budget and are staffed with dedicated team members. Projects are restricted in terms of time and budget and are staffed with temporary team members.
- After a project is completed, the end deliverables or outputs are often transferred to the operations side of the business, where the anticipated benefits of the project must be successfully achieved and sustained.

Project constraints

- Cost
- Scope
- Quality
- Time



The Triple Constraint — also known as the
Iron Triangle

Project constraints

- **Scope:** The scope of a project refers to the work that needs to be completed in order to deliver the project's deliverables.
- **Time:** The time constraint refers to the amount of time available to complete the project, as well as any specific deadlines that must be met.
- **Cost:** The cost constraint refers to the budget available for the project, as well as any specific cost targets that must be met.

Project constraints: Additional parameters

- **Quality:** In some cases, achieving a high level of quality may require additional time or resources, which can impact the time and cost constraints.
- **Risk:** Identifying and mitigating risks can help ensure the success of the project, but it may also impact the time and cost constraints.
- **Stakeholder expectations**
- **Resource availability:** such as skilled personnel, equipment, or materials...

Technical projects

- **Complexity:** Technical projects often involve complex systems or processes, involving a large number of components that need to be integrated and tested, and may require specialized knowledge and skills to design and implement.
- **Dependency on specialized knowledge and skills:** such as programming or engineering expertise.
- **Strict timelines and budgets:** which can be especially challenging in cases where the scope of the project is large or complex, as there may be a significant amount of risk involved in delivering the final product or system.

Technical projects

- **Risk of technical issues:** such as the possibility of technical failures or issues with software or hardware.
- **Need for thorough planning and testing:** in order to ensure that the final product or system is reliable and meets the required specifications. This may involve conducting prototyping and pilot testing, as well as implementing robust testing and quality assurance processes.

What is Project Management?

Project Management is the application of knowledge, skills, tools, and techniques to meet the project requirements and achieve the desired outcome.

- Tools/techniques
- Processes and methodology
- More than time, cost and scope
- Hard and soft skills

It is valuable to businesses because it helps ensure that a project delivers the expected outcomes.

What is Project Management?

Projects and project management are about people and teamwork

- Who does what?
- Who takes what risk?
- Who else is involved or interested/affected?

Project management has existed as long as humans have worked together to achieve goals and takes place in all industries

Value of Project Management

- Improve project/program/firm performance as measured by efficiency, effectiveness
- Competitive advantage through competency
- Be more “Successful”
- Root out ill-conceived, directionless projects
- Increase visibility by providing roadmaps

The Project Manager

The project manager is responsible for planning, organizing, managing tasks, budgeting, controlling costs, and other factors to help keep the project within budget and on time

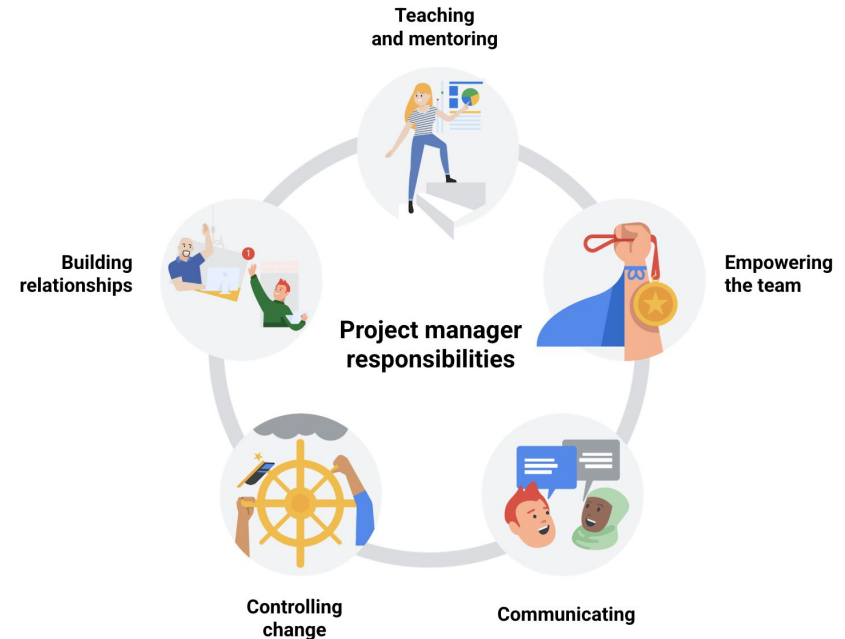
What does that mean?

Basically, the project manager is responsible for tracking the day-to-day details of the project, but also has an opportunity to step back and see the bigger picture of the overall project.

The Project Manager

Project Managers need to have strong:

- Understanding of the project environment: Cultural, social, political, international, physical
- Management knowledge and skills
- Interpersonal skills: Communication, influence, leadership, motivation, negotiation and problem solving



Project Manager skills: Leadership

- **Setting clear goals and expectations:** It is important to clearly communicate the goals and objectives of the project, as well as the roles and responsibilities of each team member. This helps to ensure that everyone is working towards the same objectives and understands their role in the project.
- **Providing guidance and support:** This may involve providing training or resources, as well as offering help and advice when team members encounter challenges or roadblocks.

Project Manager skills: Leadership

- **Delegating tasks effectively:** in a way that is efficient and maximizes their skills and abilities. This involves assigning tasks that are challenging but achievable, and providing the necessary resources and support to help team members complete their tasks successfully.
- **Empowering team members:** to take ownership of their work and make decisions on their own. This involves giving them the autonomy to make decisions and solve problems within their areas of responsibility, as well as providing them with the resources and support they need to succeed.

Project Manager skills: The human dimension

- **Building and maintaining relationships** with team members, stakeholders, and other key individuals. This involves effectively communicating with team members and stakeholders, and being open and approachable.
- **Addressing conflicts and issues:** This may involve mediating conflicts between team members, or working with stakeholders to resolve issues that may be impacting the project.
- **Effective communication:** This involves being able to clearly and accurately convey information to team members and stakeholders, as well as being able to listen actively and understand the perspectives and needs of others.

How project managers impact organizations



Focusing on the customer



Building a great team



Fostering relationships and communication



Breaking down barriers

The Project Life Cycle

The **project life cycle** is the **path** for your project **from start to finish**. Each project phase builds toward the subsequent phase and helps to create a structure for the project.

The main phases of the project life cycle are: initiating the project, making a plan, executing and completing tasks, and closing the project.



Initiate the project

In this phase, you will be defining the foundation for the project: what problem needs solving, who will be involved, and what will be done.

- Who are the stakeholders?
- What are the client's or customer's goals? What is the purpose and mission of the project?
- What are the objectives for the team?
- When does this project need to be completed?
- What skills and resources will the project require?
- What will the project cost? What are the benefits?

Initiate the project

Who are the stakeholders?

They are people, groups or organizations that could impact or be impacted by the project's activities or outcomes, who will contribute resources (people, space, time, tools, and money), and who will use and benefit from the project's output.

It is important to identify stakeholders, analyze their expectations and their impact on the project, and develop appropriate management strategies for effectively involving them in project decisions and execution.

Initiate the project

What are the client's or customer's goals? What is the purpose and mission of the project?

- Problem/opportunity statement: A concise statement of how the project's deliverables will contribute to organizational objectives
- Description of the preferred solution
- Main project Requirements, assumptions and constraints
- Alignment with organizational objectives

Initiate the project

What are the objectives for the team?



Initiate the project

- Relationship of project to business objectives is key
- Make a Project Charter that includes the stakeholder list!
- Completion of Project Initiation is the signal that the project has approval to proceed to the project planning phase.

Make a plan

In this phase, make a plan to get your project from start to finish.

- Create a detailed project plan. What are the major milestones? What tasks or deliverables make up each milestone?
- Build out the schedule so you can properly manage the resources, budget, materials, and timeline. Here, you will create an itemized budget.



Make a plan - Tasks and Milestones

- **A project task** is an activity that needs to be accomplished within a set period of time and is assigned to one or more individuals for completion. The work of a project is broken down into many different project tasks.
- **A project milestone** is an important point within the project schedule that usually signifies the completion of a major deliverable. Milestones are significant checkpoints in your project, and keeping track of them helps ensure that your project is on schedule to meet its goals.

Make a plan - Set tasks to identify milestones

Setting tasks can help you clearly define milestones. You can do this in two ways:

- **Top-down scheduling:** In this approach, the project manager lays out the higher-level milestones, then works to break down the effort into project tasks. The project manager works with their team to ensure that all tasks are captured.
- **Bottom-up scheduling:** In this approach, the project manager looks at all of the individual tasks that need to be completed and then rolls those tasks into manageable chunks that lead to a milestone.

Make a plan - Work Breakdown Structure

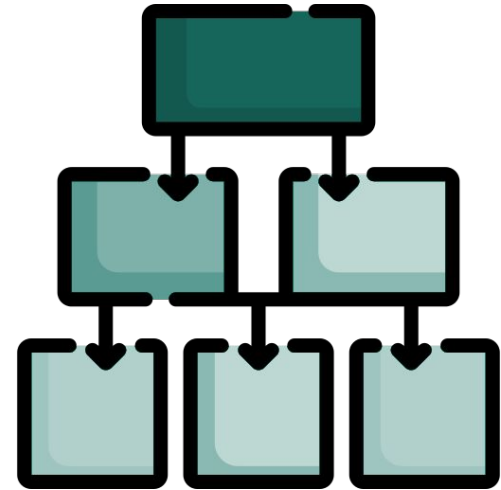
A **Work Breakdown Structure - WBS** - is a deliverable-oriented breakdown of a project into smaller components. It's a tool that sorts the milestones and tasks of a project into a hierarchy, in the order they need to be completed.

A thorough WBS gives you a visual representation of a project and the tasks required to deliver each milestone. It makes it easier to understand all of the essential project tasks, such as estimating costs, developing a schedule, assigning roles and responsibilities, and tracking progress.

Make a plan - Work Breakdown Structure

Steps to build a WBS:

- Start with the high-level, overarching project picture. Brainstorm with your team to list the major deliverables and milestones.
- Identify the tasks that need to be performed in order to meet those milestones.
- Examine those tasks and break them down further into sub-tasks.



Make a plan - Work Breakdown Structure

- Use the WBS to plot out the tasks sequence by determining which ones are critical.
- Assign each task a deliverable and use deliverables to create a schedule with realistic due dates.
- Identify bottlenecks that could upset the schedule and determine ways to remove them, or build in extra time to get around them.
- Establish control and communication systems for updating and revising the schedule.
- Keep all stakeholders involved in and informed of the project's progress and any schedule modifications.

Make a plan

Management plans—such as the change management plan, risk management plan, and communication plan—are all integral to keeping a project organized and on track and should be linked in your project plan.

Project **scope** and **goals**, the **Work Breakdown Structure (WBS)**, the **budget**, and **management plans** are all important components of your project plan. They help define how basic project plan elements—including tasks, milestones, people, documentation, and time—will be structured and utilized in your project. However, no one project plan will be the same.

Execute the project

In this phase, put all of your hard work from the first two phases into action.

- Monitor your project team as they complete project tasks.
- Break down any barriers that would slow or stop the team from completing tasks.
- Help keep the team aware of schedule and deliverable expectations.
- Address weaknesses in your process or examine places where your team may need additional training to meet the project's goals.
- Adapt to changes in the project as they arise.

Execute the project - Change Control

Changes may affect:

- The scope
- A planned process
- The schedule

The project manager should ensure they have developed a change control process during the project planning phase

Close the project

In this phase, close out the project

- Identify that your team has completed all of the requested outcomes.
- Release your team so they can support other projects within the company.
- Take time with your team to celebrate your successes!
- Pass off all remaining deliverables and get stakeholder approval.
- Document the lessons you and your team learned during the project.
- Reflect on ways to improve in the future.

Major Causes of Project Failure

Projects fail for the following reasons:

- The project is a solution in search of a problem
- Only the project team is interested in the result
- No one is in charge
- There is no project structure
- The plan lacks detail

Major Causes of Project Failure

Projects fail for the following reasons:

- The project has insufficient budget and/or resources
- Lack of team communication
- Straying from original goal
- The project is not tracked against the plan



Thank you!

