IT Project Management (Mids) - Jaish Khan

Project Management

Managing projects is a timeless and well-regarded human achievement.

> It is the application of knowledge, skills, tools, and techniques to project activities to satisfy stakeholder needs and expectations.

Project management is as much an art as it is a science, requiring a blend of strong interpersonal skills (“soft skills”) and structured management capabilities (“hard skills”).

Project

> A project is an undertaking where human, financial, and material resources are structured in a distinct manner to carry out a specific scope of work, adhering to cost and time limitations, in order to achieve beneficial change defined by quantitative and qualitative goals.

Types of Projects → There are four distinct types of projects.
engineering and construction, *manufacturing*, *management*, *pure research*

Characteristics of a Project

1. **Start and Finish** → A project has a defined start and finish.
2. **Lifecycle** → A project follows a life-cycle, progressing through a series of distinct stages.
3. **Budget** → A project operates within a budget and associated cash flow.
4. Unique Activities → The activities within a project are unique and non-repetitive.
5. **Resources** → A project draws on resources from various departments, necessitating coordination.
6. **Single Point of Responsibility** → A project has a single point of responsibility, typically a project manager.
7. **Goals** → A project has clearly defined objectives.
8. **Tasks and Subtasks** → A project is divided into tasks and subtasks.
9. **Risk** → A project inherently involves uncertainty and risk.
10. **Stakeholders** → A project involves stakeholders, individuals or entities with an interest in its outcome.

Project Life-Cycle

The overall project life-cycle can be broken down into five phases: **Definition**, **Planning**, **Execution**, **Control**, and **Termination**.

1. *Definition* → Identifying the need or opportunity that the project will address and defining the project's objectives, goals, and deliverables. Also, includes an initial estimation of the resources needed to complete the project and identifying potential risks.
2. *Planning* → Project tasks are defined in detail, including the evaluation of project costs and timelines. The order of tasks is determined, critical tasks are identified, and a feasibility study and risk assessment are conducted. This phase also includes assigning a project manager and team, and allocating resources.
3. *Execution* → Focuses on carrying out the planned tasks and producing the project deliverables. It involves decision-making on the proposed solution and managing the project team.
4. *Control* → Involves monitoring the project's progress and taking corrective actions if necessary. This includes defining the project management style, establishing control tools, analyzing project graphs, and implementing changes.
5. *Termination* → Marks the completion of the project, with the confirmation and delivery of the final deliverables to the customer. Includes clearance and acceptance of the project, final payment, evaluation of project performance, and gathering feedback from the customer.

Project Success and Failure

> Project success is the achievement of the project's objectives and the satisfaction of its stakeholders' needs and expectations.

Factors that can influence the success or failure of a project are *purpose*, *scope*, *organization*, *time*, *cost*, and *quality*. [Approximately **80%** of all projects fail.]

Key Dimensions of Project Success

1. *Internal factors* → time-cost-performance
2. *Customer-related factors* → satisfaction and actual utilization
3. *Organization-related factors* → financial and market benefits

Challenges in Defining Project Success → *Subjectivity*, *Measuring Success*, *Long-Term Impact*.

It's important to differentiate between project success and the success of project management. Effective project management can greatly contribute to project success but can't guarantee it, as external factors can always lead to failure.

Project Manager

Project managers are required for the success of a project. They need to be able to lead a team of experts and non-experts towards a common goal. They must also balance trade-offs between time, cost, and performance requirements.

> They serve as the direct link to the client and must manage expectations, ensuring alignment between client desires and what is practically achievable.

Roles of Project Manager

Project manager has 2 roles: **Facilitator** and **Mentor**.

Facilitator	***Mentor***
A project manager conveys information clearly, manages conflicts, and ensures a continuous flow of resources for project completion.	A project manager demonstrates ideal team behavior, professional conduct, and organizational practices, fostering an environment conducive to the professional growth of all team members.

Roles in a Software Development Team

Software is typically built by a team with a diverse set of roles including:

1. *Business analysts*/*Requirements analysts* who gather information from stakeholders and users.
2. *Designers*/*Architects* who plan the technical aspects of the solution.
3. *Programmers* who write the code.
4. *Testers* who ensure the software meets requirements and works as expected.

Vision and Scope Document

A project manager's tool to demonstrate to the stakeholders that the project team understands their needs and will address them in the software.

This document should include

1. **Problem Statement** → includes the *background* of the project, the *stakeholders* involved, the *users*, the *risks*, and any *assumptions* that are being made.
2. **Vision** → includes the vision *statement*, a *list of features*, the *scope* of each phased release, and any *features* that will not be developed.

Project Plan

The project plan defines all the work that will be done on a project and who will do it.

- **Statement of Work (SOW)** → Describes all the products that will be produced, including a list of features, a description of each deliverable, and an estimate of the effort involved for each product.
- **Resource List** → A list of all people, hardware, rooms, and anything else required for the project with an indication of availability and cost.
- **Work Breakdown Structure (WBS), Estimates, and Project Schedule** → A hierarchical breakdown of all the tasks needed to produce the deliverables, with effort estimates for each task, and a schedule of when each task will be completed.
- **Risk Plan** → A list of all the risks that could threaten the project, the probability of them occurring, the impact they would have, and a plan to mitigate them.

Project Stakeholders

> They are individuals or groups actively involved in the project, or whose interests could be positively or negatively affected by the project's execution or completion.

They can also exert influence over the project and its outcomes.

- *External stakeholders* → the government and competitors, exert influence from outside the project's immediate sphere.
- *Internal stakeholders* → suppliers of goods and raw materials, contractors, subcontractors, end-users, and intermediate users.

A **user** is someone who will actually use the software to perform tasks.

Stakeholder Mapping

A process that helps to identify, analyze, and manage the expectations and influence of various stakeholders.

Done by brainstorming to identify stakeholders, grouping them based on their needs or project impact, clarifying their roles (decision-maker, influencer, etc.), gauging their project inclination (for or against), and finally generating a stakeholder list.

Not Important

1. PMIT (Project Management Institute Tools)
2. The 9 project management knowledge areas are → management of:
    - integration, scope, cost, quality, time, risk, human resource, communications, procurement.

Professional Project Management Organizations

1. IPMA: *International Project Management Association* (1965) → A global network of 37 National Associations representing 35,000 members in Europe, Africa, and Asia.
    - It promotes professionalism in project management and publishes the "International Journal of Project Management" (IJPM) bimonthly.
    - Certification Levels → Certified Project Management Associate (D), Certified Project Manager (C), Certified Senior Project Manager (B), Certified Projects Manager (A).
2. PMI: *The Project Management Institute* (1969) → boasts a membership of 100,000 individuals spanning 125 countries.
    - It mission is to advance the state-of-the-art in effective and appropriate project management practices and principles and publishes the "Project Management Journal" (PMJ) quarterly.
    - Certification Levels → Certified Associate in Project Management (CAPM) and Project Management Professional (PMP).