What is project management ?

Project is temporary endeavour undertaken to produce unique output where output can be result, product or service.

Project management is act of planning, executing and managing specific project from beginning to end. It involves defining project goals, creating a project plan, allocating resources, tracking progress, managing budgets, identifying risks and issues, communicating with stakeholders, and ensuring that the project is completed within the specified timeframe and budget, while meeting the expected quality standards. Depending on complexities of project it would be manage by individual or team.

Importance→

1) Helps to save time, cost, money.
2) To make better decision making
3) Better PM always leads to better project.
4) If project is managed by team then it helps to improve internal communication.
5) To reduce complexities of the project.

Necessity of PM

- Strategic Alignment

Project management is important because it ensures what is being delivered, is right, and will deliver real value against the business opportunity. Project management provides a structured approach to planning, executing, and controlling projects. This ensures that the project is completed within the specified time, budget, and scope, and that the desired objectives are achieved.

- Leadership

Project management is important because it brings leadership and direction to projects.

- Clear Focus & Objectives

Project management is important because it ensures there's a proper plan for executing on strategic goals.

- Quality Control: Project management is important because it ensures the quality of whatever is being delivered, consistently hits the mark.

- Risk Management: Project management involves identifying and managing risks associated with the project, thereby reducing the likelihood of unexpected delays or failures.

- Managing and Learning from Success and Failure: Project management is important because it learns from the successes and failures of the past.

- Improves project efficiency: Project management helps to optimize the use of resources, including time, money, and personnel, which can result in improved efficiency and productivity.

- Facilitates teamwork: Project management promotes collaboration and teamwork, ensuring that all team members are working towards the same goals and objectives.

Project Vs Operations :

Project :
A project is a temporary which is undertaken to produce a unique output where output can be a product, service or result.

Operations :
Operations are the ongoing execution of activities and they follow an organization's procedures to produce the same result or a repetitive service.

Example :
Consider a school, construction of classroom is project while conduction of lecture is operation.

Key difference between Project and Operation :

Projects	Operations
Projects are unique and temporary.	Operations are ongoing and permanent with repetitive output.
Projects have a fixed budget.	Operations have to earn a profit to run the business.
Projects are executed to start new business and terminates when it is achieved.	Operation does not produce anything new and is ongoing.
Projects create a unique product, service or result.	Operations produce the same product, aim to earn a profit and keep the system running.
There are more risk in project as they are usually done for first time.	There are fewer risks in operations as they are repeated many times.

Triple constraints :

Increase scope = Increase time + increase cost
Tight time = increase cost + reduce scope
Tight budget = Increase time + reduce scope

The triple constraints in project management are time, cost, and scope. These three constraints are interrelated and affect each other, and managing them effectively is crucial to the success of any project.

1. Time: This refers to the duration or timeline of the project. It is essential to complete the project within the specified timeframe, and any delay in completing the project can have serious consequences, such as missed opportunities, increased costs, and decreased stakeholder satisfaction.

2. Cost: This refers to the budget allocated for the project. It is important to manage the project within the allocated budget, and any cost overrun can lead to financial losses, reduced profitability, and decreased stakeholder satisfaction.

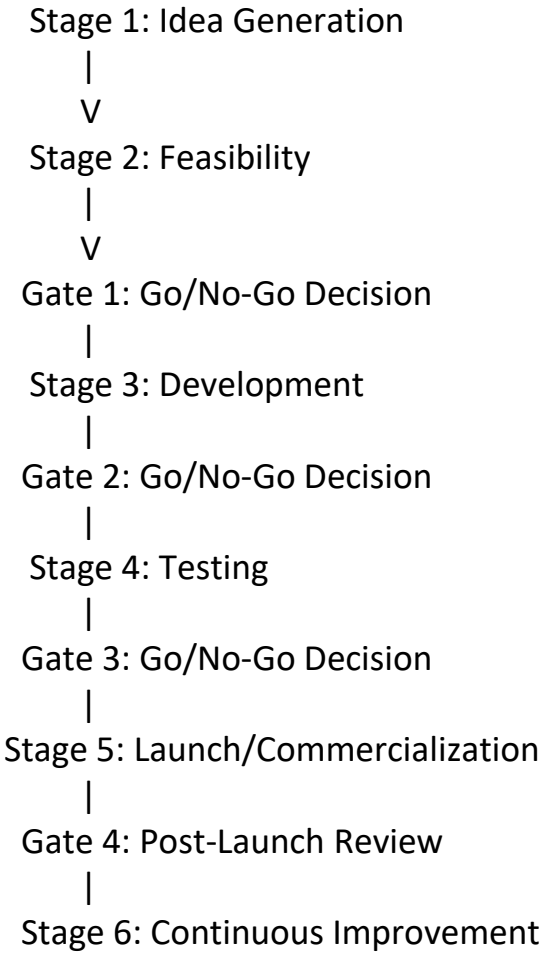
3. Scope: This refers to the specific deliverables and objectives of the project. It is important to define the project scope clearly, and any change in scope can have an impact on time and cost.

These three constraints are often represented as a triangle, with each constraint forming one of the three sides. The triangle is used to illustrate the relationship between the three constraints - a change in one constraint will impact the other two constraints. Therefore, project managers must balance these constraints effectively to ensure the success of the project.

Stage gate process :

The stage gate process is a project management methodology that involves dividing a project into distinct stages, with each stage having a gate that must be passed before the project can proceed to the next stage. The stage gate process ensures that the project progresses in a controlled and structured manner, with decisions being made at each gate based on the results of the previous stage.

Here is a diagram of the stage gate process:



1. Idea Generation: The project idea is generated, and a preliminary assessment is made of the project's feasibility.
2. Feasibility: The project's feasibility is evaluated in more detail, and a preliminary project plan is developed.
3. Development: The project plan is developed in detail, and the project is executed.
4. Testing: The project is tested to ensure that it meets the specified requirements and quality standards.
5. Launch/Commercialization: The project is launched, and the product or service is introduced to the market.
6. Continuous Improvement: The project is continuously evaluated and improved to ensure that it remains competitive and meets the changing needs of the market.

At each gate, a Go/No-Go decision is made based on the results of the previous stage. If the decision is Go, the project can proceed to the next stage. If the decision is No-Go, the project may be terminated or sent back to a previous stage for further development or improvement. The stage gate process helps to ensure that the project is progressing as planned and that decisions are being made based on data and analysis rather than assumptions or guesses.

Project Life cycle :
A project life cycle is a framework that outlines the stages of a project from initiation to closure. There are several project life cycle models, but most follow a similar pattern of stages:

Typical :

The typical project life cycle follows a sequence of stages that are well defined and commonly used across different industries and organizations.

1. Initiation: This stage involves identifying and defining the project, including the business case, project objectives, and stakeholders.
2. Planning: This stage involves developing a project plan that outlines the scope, schedule, budget, and resources required for the project.
3. Execution: This stage involves implementing the project plan, including executing tasks, managing resources, and communicating with stakeholders.

4. Monitoring and Control: This stage involves tracking progress, identifying and managing risks, and making adjustments to the project plan as needed to ensure that the project stays on track.
5. Closure: This stage involves bringing the project to a close, including delivering the final product or service, conducting post-project reviews, and documenting lessons learned.

On the other hand, an atypical project life cycle is a project that does not follow a standard sequence of stages, and it requires a unique approach for its management. These types of projects are often complex, high risk, and may involve uncertain or evolving requirements. For example, research and development projects, product development, and software development projects may require a non-standard approach.

An atypical project life cycle may include stages such as:

1. Concept Development: The project concept is developed, and a feasibility study is conducted.
2. Prototyping: The project team develops prototypes of the product or service.
3. Testing: The project team conducts testing and evaluations of the prototypes.
4. Iteration: The project team makes changes to the product or service based on feedback received from testing.
5. Launch: The final product or service is released to the market.

An atypical project life cycle requires a flexible and adaptive approach to project management, and the project manager needs to be skilled in managing uncertainty and change. The project team needs to be capable of adapting to evolving requirements and making rapid changes to the project plan.

Project Phases :

Project phases are a way to organize and break down a project into manageable parts. Each phase represents a distinct stage in the project lifecycle and has its own objectives, deliverables, and outcomes. While the number of phases and their names may vary depending on the project and industry, some common project phases include:

1. Conceptualization: This is the initial phase of a project, where the idea for the project is generated, and a feasibility study is conducted to determine if the project is viable.
2. Planning: During this phase, the project plan is developed, including a detailed scope, schedule, budget, and risk management plan.
3. Execution: This is the phase where the project work is performed, and the deliverables are produced. The project team is responsible for managing resources, monitoring progress, and implementing the project plan.
4. Monitoring and Control: This phase involves monitoring project progress, measuring performance against the project plan, identifying and managing risks, and making adjustments to the project plan as needed.
5. Closure: This is the final phase of the project, where the project deliverables are delivered to the client or end-user, and the project is closed out. This phase also includes a post-project review and the documentation of lessons learned.

Some projects may have additional phases, such as design, testing, or commissioning, depending on the nature of the project. The key to successful project management is to understand the objectives and deliverables of each phase, and to ensure that the project team has the necessary resources and support to execute each phase effectively.

Role of Project Manager :

The role of a project manager is to lead a project team to successfully deliver a project within the defined scope, budget, and schedule. The project manager is responsible for planning, executing, monitoring, and controlling all aspects of the project from start to finish. The following are some of the key responsibilities of a project manager:

1. Project Planning: Develop a comprehensive project plan that includes the scope, schedule, budget, and resources required to deliver the project.
2. Stakeholder Management: Identify and manage all stakeholders, including the project team, clients, suppliers, and external partners, to ensure that their needs are met.
3. Resource Management: Allocate resources, such as personnel, materials, and equipment, to ensure that they are utilized effectively and efficiently.
4. Risk Management: Identify, analyze, and mitigate risks that could impact the project's success.
5. Project Execution: Direct and manage the project team to deliver the project scope, ensuring that tasks are completed on time, within budget, and to the required quality standards.
6. Monitoring and Control: Monitor project progress, compare actual performance to the project plan, and take corrective actions as needed.
7. Communication: Communicate regularly with stakeholders to keep them informed of project progress, risks, and issues.
8. Closure: Ensure that the project is closed out effectively, including delivering project deliverables, conducting a post-project review, and documenting lessons learned.

The project manager plays a critical role in ensuring that the project is delivered successfully, and they must have a combination of technical and leadership skills to manage the project team and stakeholders effectively. They must be able to balance competing demands, adapt to changing project requirements, and drive the project team towards achieving project goals.

Negotiations and resolving conflict :

Negotiations and conflict resolution are critical skills for a project manager to possess. Project managers need to be able to negotiate with stakeholders, team members, and vendors to achieve project goals and resolve conflicts that may arise during the project lifecycle. The following are some tips for successful negotiations and conflict resolution :

1. Active Listening: Listen actively to all parties involved in the negotiation or conflict. This includes understanding their concerns, needs, and objectives.

2. Collaborative Approach: Take a collaborative approach to problem-solving, seeking a win-win outcome for all parties involved.
3. Clear Communication: Communicate clearly and effectively with all parties involved, ensuring that expectations are clearly defined and understood.
4. Flexibility: Be open to new ideas and be willing to compromise to reach an agreement that is mutually beneficial.
5. Problem-Solving Skills: Use problem-solving skills to identify the root cause of conflicts and find creative solutions.
6. Emotional Intelligence: Use emotional intelligence to manage your own emotions and understand the emotions of others involved in the negotiation or conflict.
7. Mediation: Use mediation techniques, such as identifying common ground, reframing issues, and encouraging open communication to help resolve conflicts.
8. Decision Making: Make informed and objective decisions, weighing the pros and cons of each option, and considering the potential impact on all parties involved.

Effective negotiation and conflict resolution skills can help project managers build stronger relationships with stakeholders, promote collaboration among team members, and maintain project momentum towards achieving project objectives.

Project management in various organization structure :

Project management can be implemented in various organizational structures, and the type of structure can have an impact on how projects are managed. The following are some examples of organizational structures and how they impact project management :

1. Functional Organizations: In functional organizations, employees are grouped by their functional areas, such as marketing, finance, or engineering. Project management is typically centralized within the functional departments, with project managers assigned from within the departments. This structure can lead to conflicts between functional departments, and project managers may have limited authority and resources to manage projects effectively.
2. Projectized Organizations: In projectized organizations, employees are organized by projects, and project managers have full authority and control over project resources. This structure can promote efficient project management, but may lead to duplication of effort and limited knowledge sharing between projects.
3. Matrix Organizations: Matrix organizations combine elements of functional and projectized structures, with employees reporting to both functional departments and project managers. This structure can promote resource sharing and collaboration across departments, but may lead to conflicts between functional departments and project managers over resource allocation and priorities.
4. Hybrid Organizations: Hybrid organizations combine elements of different structures to meet the needs of specific projects or business units. This structure can be flexible and adaptable, but may require additional management and coordination efforts to ensure that resources are allocated effectively.

Ultimately, the success of project management in any organizational structure depends on clear communication, strong leadership, and effective collaboration between stakeholders and team members. Project managers must be able to adapt their project management approach to fit the specific needs and constraints of the organizational structure in which they are working.

PM knowledge area as per PMI

Project Management Institute :

USA Based NPO for Project Management.
- Provides services such as development of standards, research, education, providing
accreditation, …
- Created the PMBOK Guide.

PM Knowledge Areas

The Project Management Knowledge Areas describe project management knowledge and practice in terms of their component processes.

These processes have been organized into nine knowledge areas:

- Project Integration Management
- Project Scope Management
- Project Time Management
- Project Cost Management
- Project Quality Management
- Project Human Resource Management
- Project Communication Management
- Project Risk Management
- Project Procurement Management

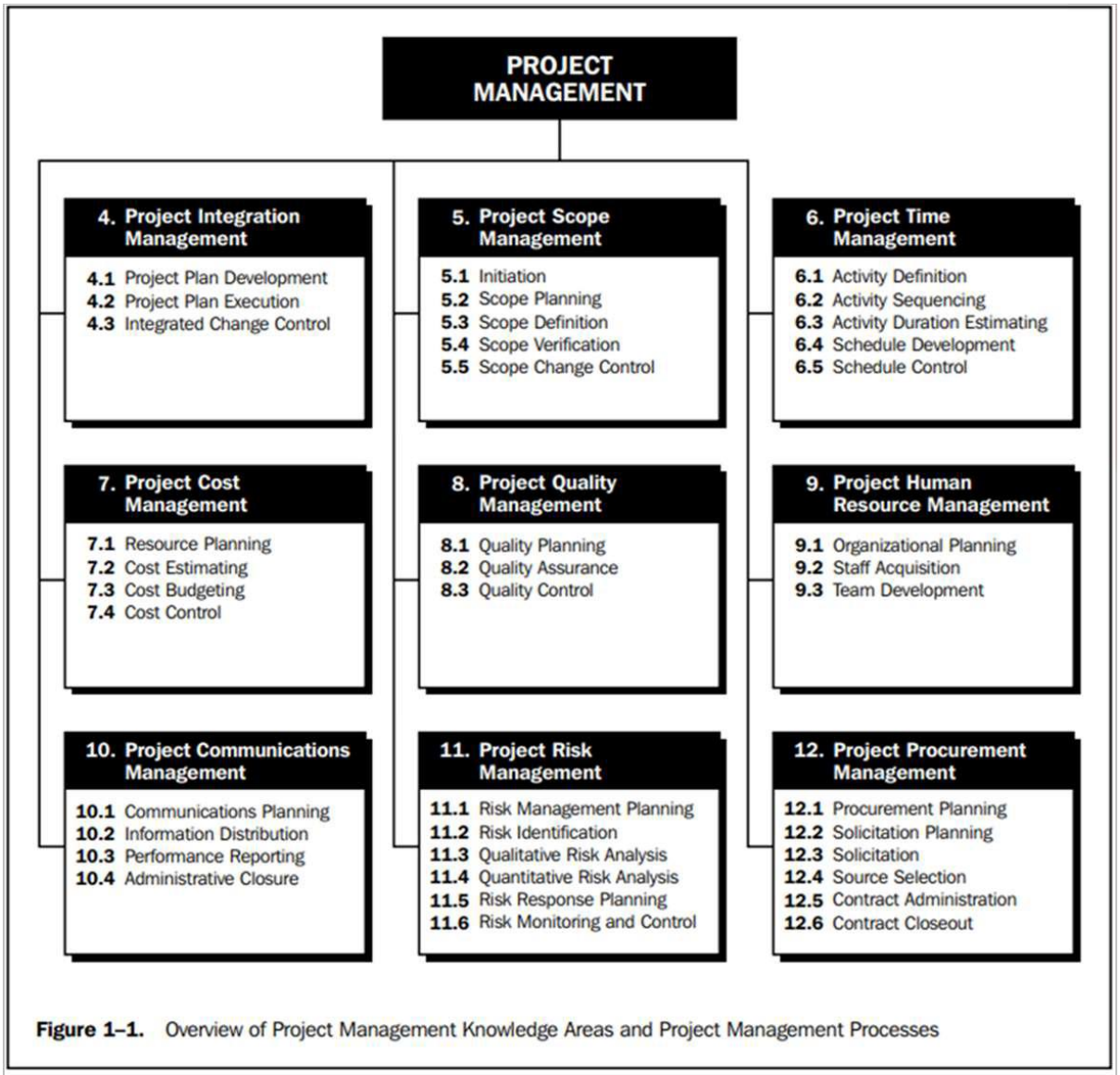


Figure 1–1. Overview of Project Management Knowledge Areas and Project Management Processes

A Guide to the Project Management Body of Knowledge (PMBOK® Guide) 2000 Edition