EWC-301

Project Planning and Construction Management

Project Life Cycle

We discussed in the last class:

- Organization of Ministry of Planning.
- Structure, Role and Functions of Planning Commission.
- **What is ADP?**
- NEC and ECNEC.
- **Formulation ADP.**
- **Approval of Development Projects**
- **IMED & CPTU**

What we are going to discuss today?

- What is **Project Life Cycle**?
- **Importance and stages** of Project Life Cycle.
- **Uses** of Project Life Cycle
- **Concurrent Engineering** in Project Life Cycle.
- Basic **Pattern of Project** Life Cycle

What is a project?



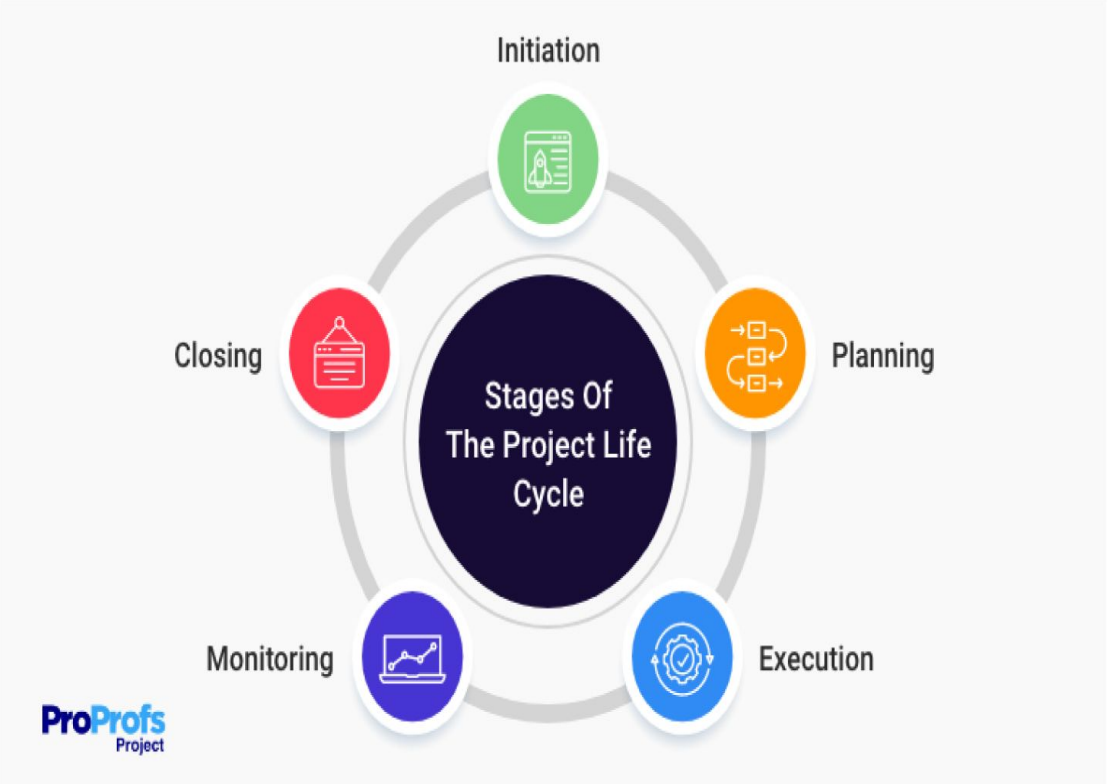
- A project is defined **as a specific, finite activity** that produces **an observable and measurable result** under certain **preset requirements.**

What is Project Life Cycle?

•A project life cycle is the **sequence of phases** that a project goes through from its **initiation** to its **closure**.

•**Project lifecycle can be defined and modified** as per the needs and aspects of the organization.

Even though every project has:
•a definite **start and end**,
•the particular **objectives**,
•**deliverables**, and
•**activities** vary widely.



Importance:

- Lifecycle provides the **basic foundation of the actions** that has **to be performed** in the project, irrespective of the specific work involved in different phases.

- **Phases** have a **definite start, end,** and **control points** that **are constrained** by time.

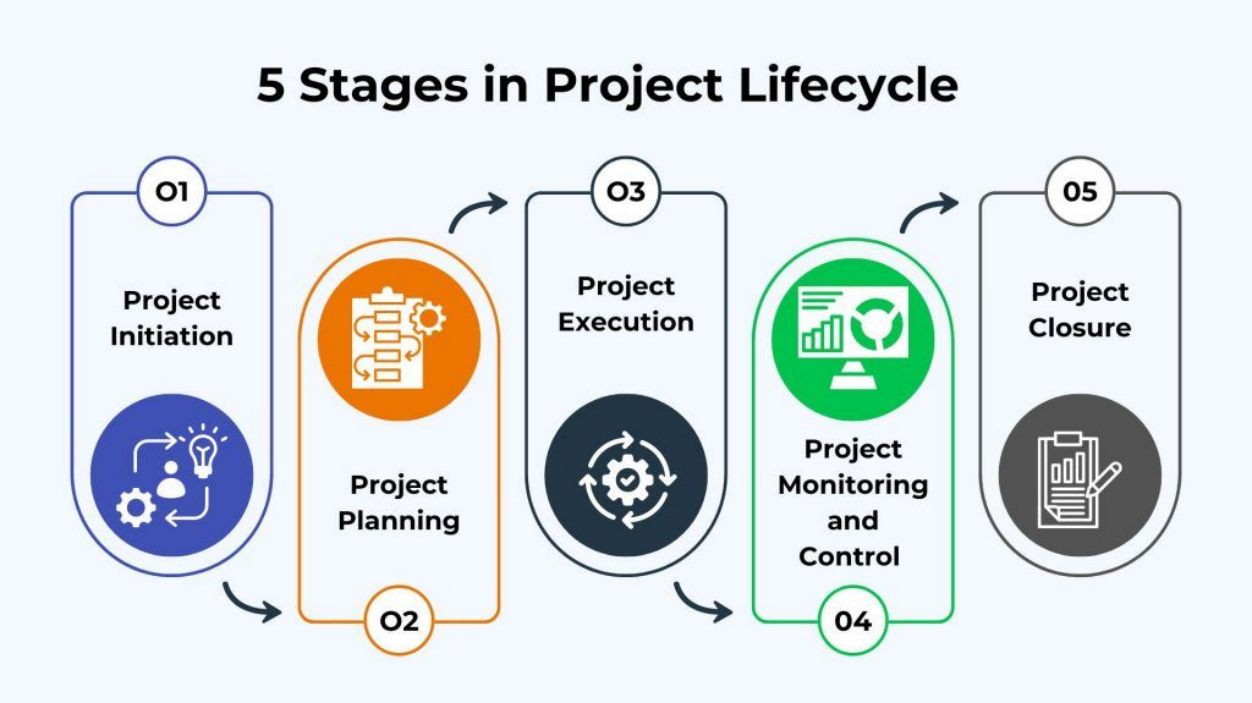
How many phases of Project Life Cycle will be in a Project?

Number and sequence of Phases **of the project life cycle are determined by the management** and **various other factors**:

- **needs** of the organizations involved in the project
- **nature** of the project, and
- its **area** of application.

Broad Phases of Project Life Cycle

- **Initiation Phase:** Starting of the project, **get authorization**
- **Planning Phase:** Organizing and Preparing, **prepare detailed road map**.
- **Execution Phase:** Carrying out **planned work**.
- **Monitoring and Control Phase:** Continuous monitoring and controlling**, tracking progress**.
- **Closure Phase:** Closing the project **formally.**



Uses of Project Life Cycles

- Are the **control systems and decision stages** of the project at which the position of the project is **revised.**

- Form the convenient **milestones** of the project from the **progress of payment** and **reporting** to top management**.**

- Top management can **take the decision** whether to **abort** the program or to provide further **funding**.

Concurrent Engineering in Project Life Cycle:

- In case of certain design and construction contracts, the interface of the phases of the **project life cycles overlap**, where **construction starts before the design is finished.**

- Concurrent engineering are often employed **to reduce duration** of **the overall project progress.**

Basic pattern of Project Life Cycle

Pattern of project life cycle–medium to large project: (CFEA-ICOT)

- **Concept**: basic ideas, business case, statement of requirement, scope etc.
- **Feasibility**: test for technical, commercial, financial viability etc.
- **Evaluation**: application of fund, static risks etc
- **Authorization**: approval, permits etc.
- **Implementation**: develop design, procurement, installation, commissioning etc.
- **Completion**: performance test, handover, post project appraisal etc.
- **Operation**: production, maintenance, revenue, earning period etc.
- **Termination**: close down, decommissioning, disposal etc

Types Project Life Cycle

Normal project life cycle:

• In a project, where the **project ends with the issuance of an acceptance certificate**, after **performance tests** have been successfully completed (ie completion of project).

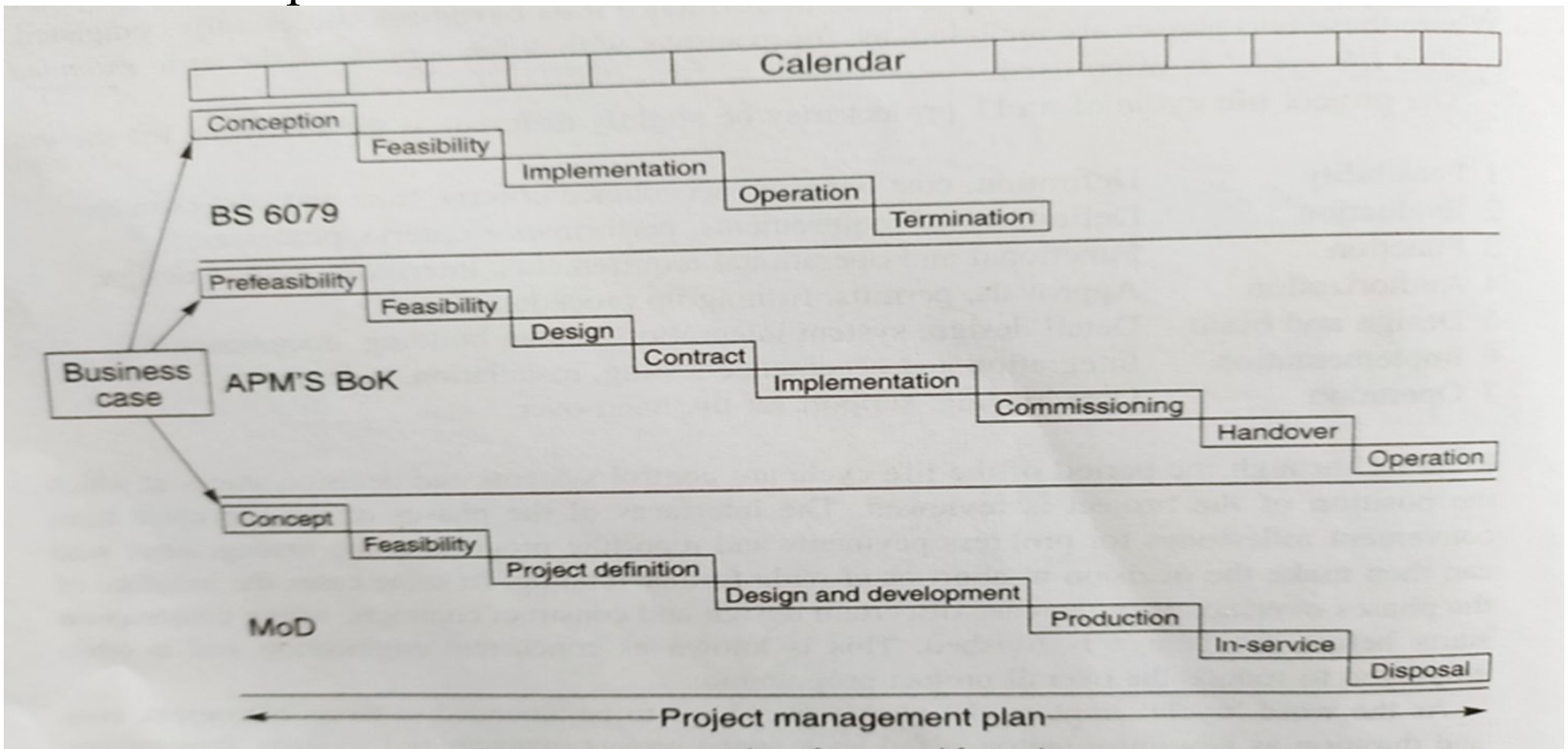
Extended project life cycle:

•In defense related projects under MoD, **two additional phases** like **operation** (ie **uses, maintenance in service**) and **termination** (ie **decommissioning, disposal**) included in the project life cycle.

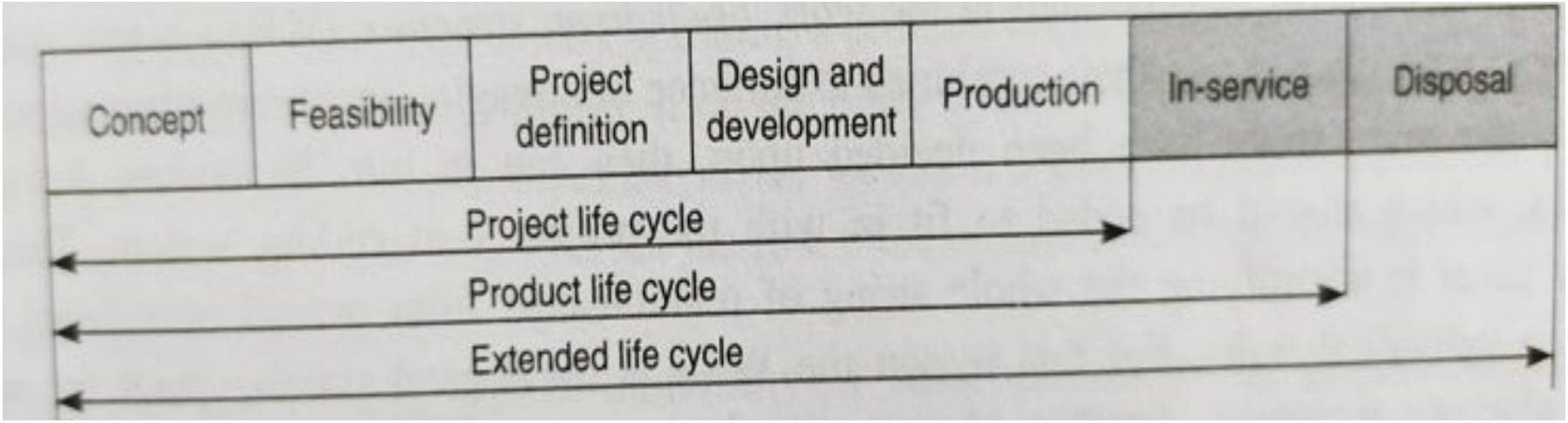
•This called ‘extended project life cycle.

Example: In typical **weapon system** project under MoD, where phases of :

- **Concept**, **Feasibility**, **project Definition** are the responsibility of **MoD**;
- **Design and Development** and **Production** are carried out by the **Manufacturer**; and
- **In Service Maintenance and Decommissioning** and **Disposal** are the phases when weapons are in the hand **of Armed Forces**.



Life Cycle of MoD Project

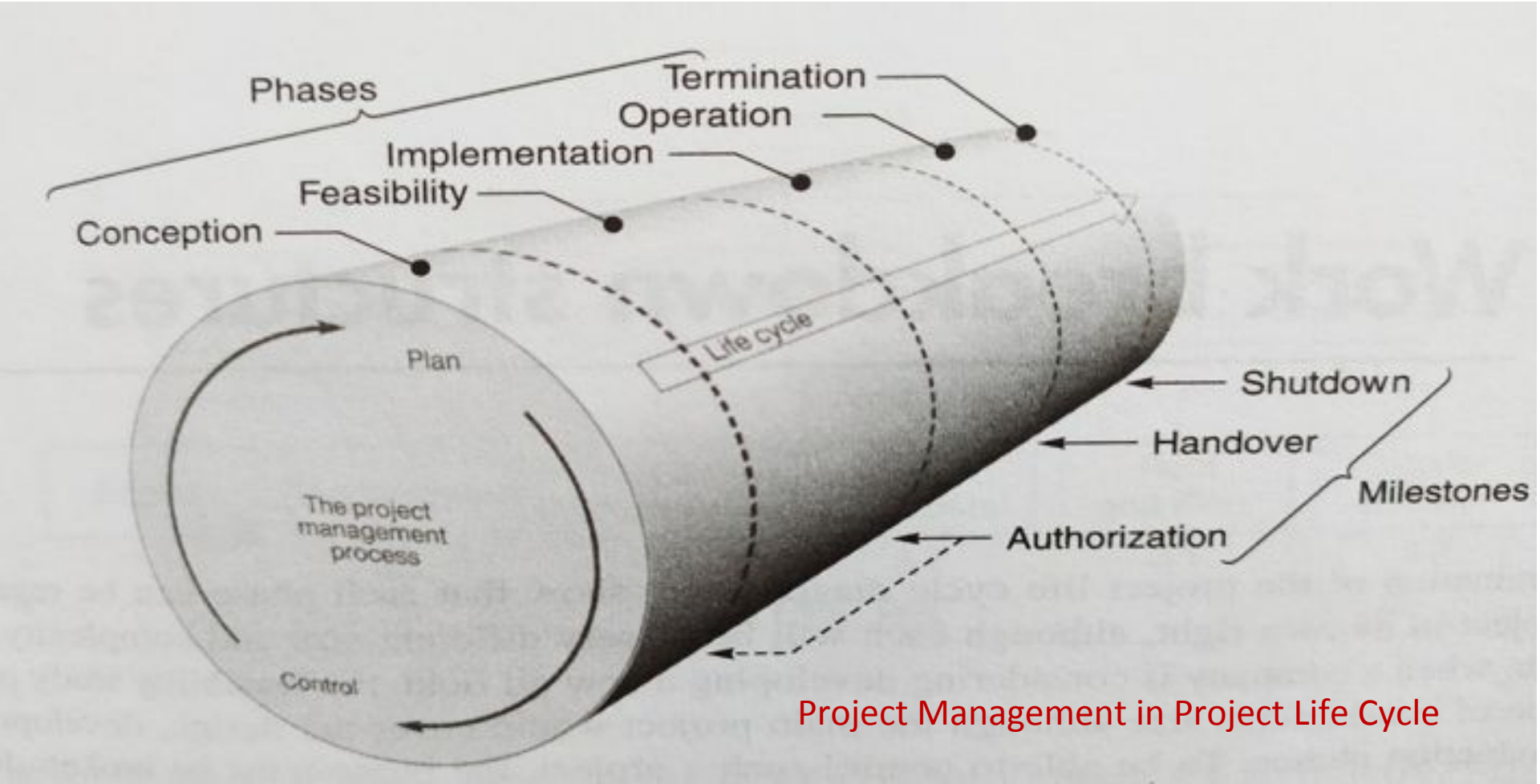


Life Cycle of MoD project can be split into:

- **Project life Cycle-** Phases under the control of project team ie. **Concept to Production.**
- **Product life Cycle-** Phases of interest to the sponsor, which includes **in-service**.
- **Extended Life Cycle-** which includes **disposal**.

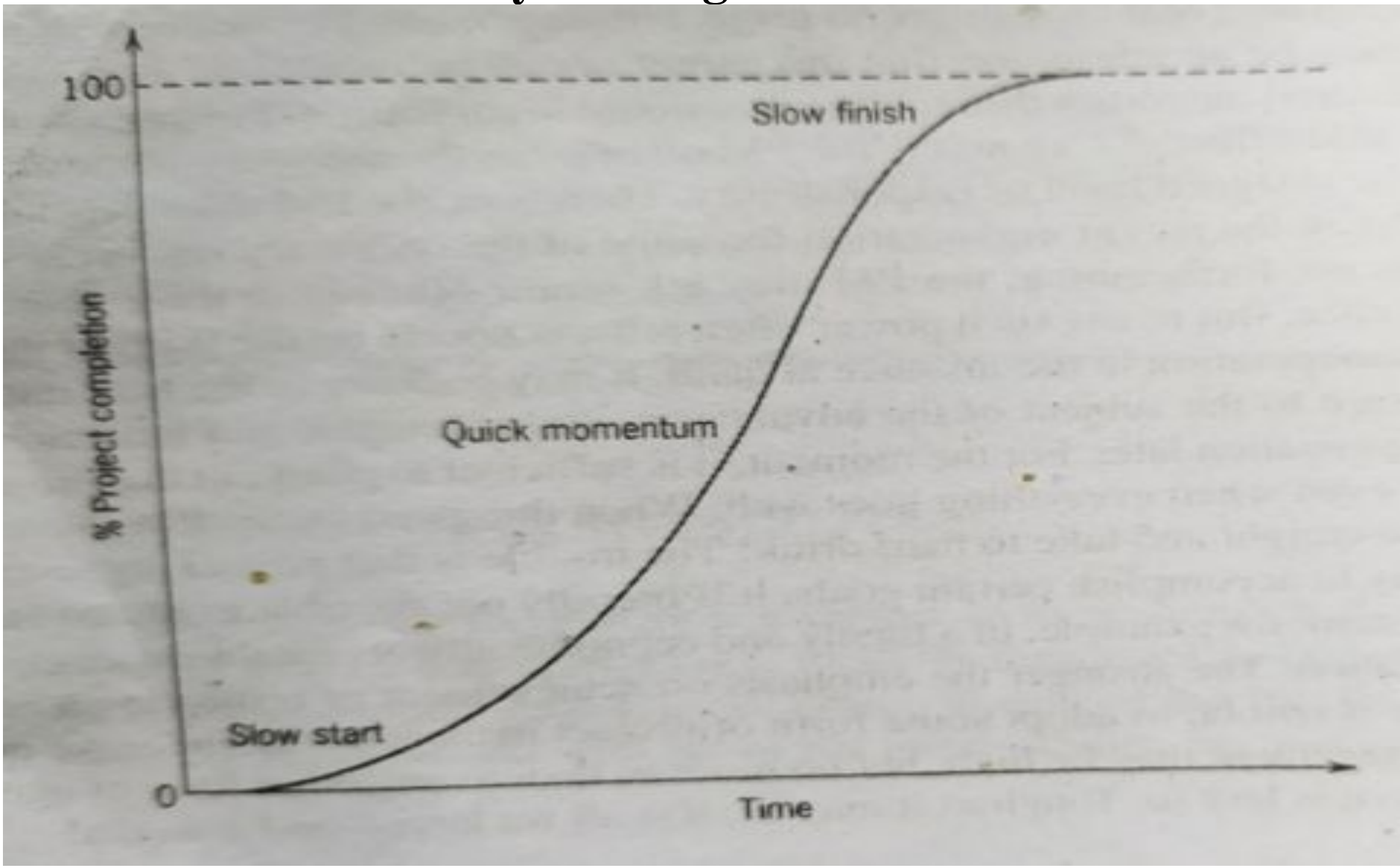
Project Management in Project Life Cycle in Project Management process:

- Life cycle which shows the **decision points** or **milestones**; sometimes called '**trigger points**' or **go or no go gates** relate to the phase of a project life cycle.



Project Management in Project Life Cycle

Life Cycle Progress Curve



Stretched – S: Project Progress Life Cycle

Life Cycle Progress Curve

- Most projects go through **similar stages on the path** from origin to completion shown the diagram.

Slow Start: Project is **born**, **start-up phase**:

- a **manager is selected**,
- **project team and initial resources are assembled** and
- the **work program** is **organized.**

Quick Momentum: Works get under way:

- **momentum quickly build**;
- progress is made and
- continues until the end in sight.

Slow Finish:

- **Completing the final tasks**,
- **seems to take longer time**, partly due to a **lot of works that must come together**, and partly due to **team members 'drag their feet'** for various reasons & try to **avoid final steps**.

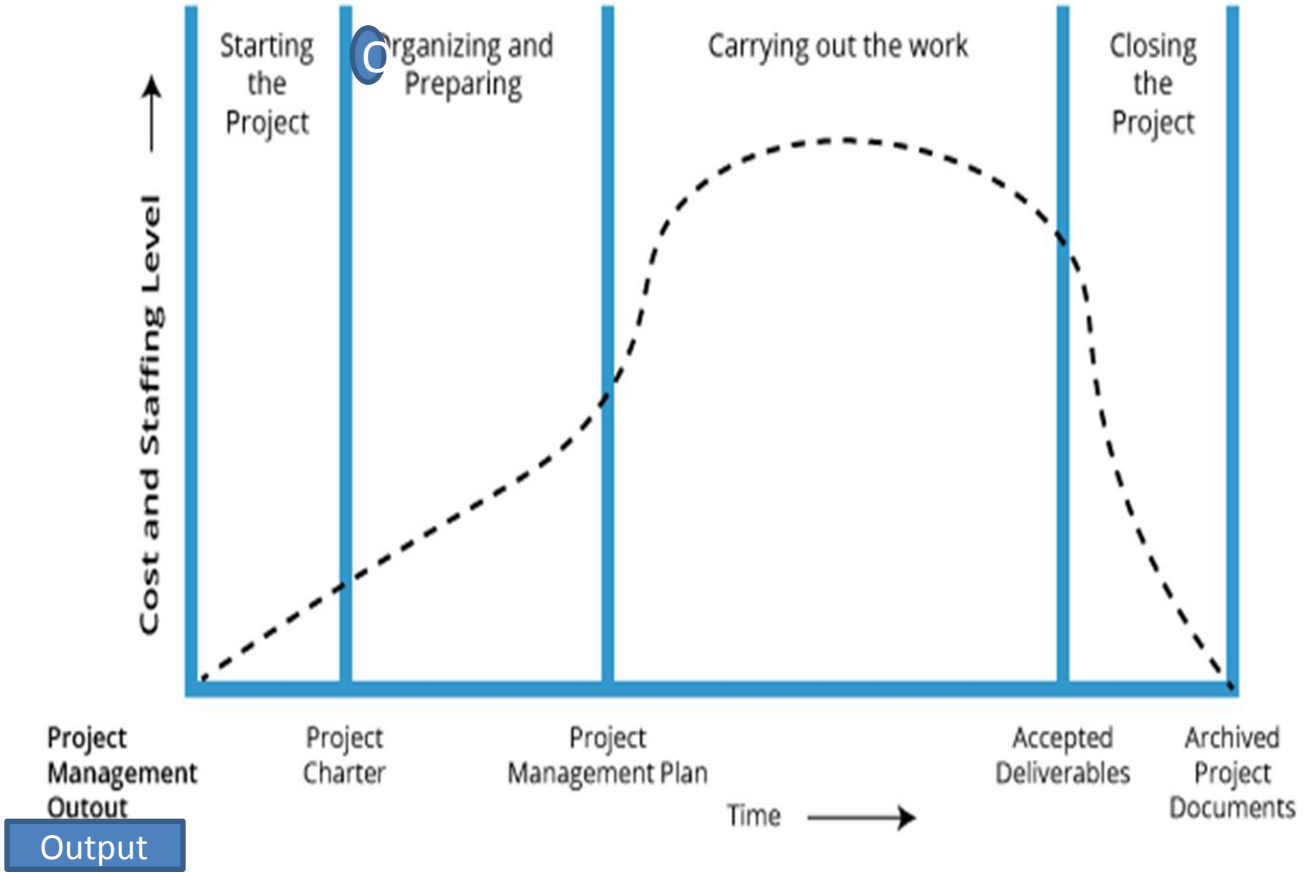
Generic Project Life Cycle with output (time) cost & staffing level

Commonly exhibits the following characteristics:

- At the start, **cost and staffing levels are low** and reach a peak when the work is in progress.

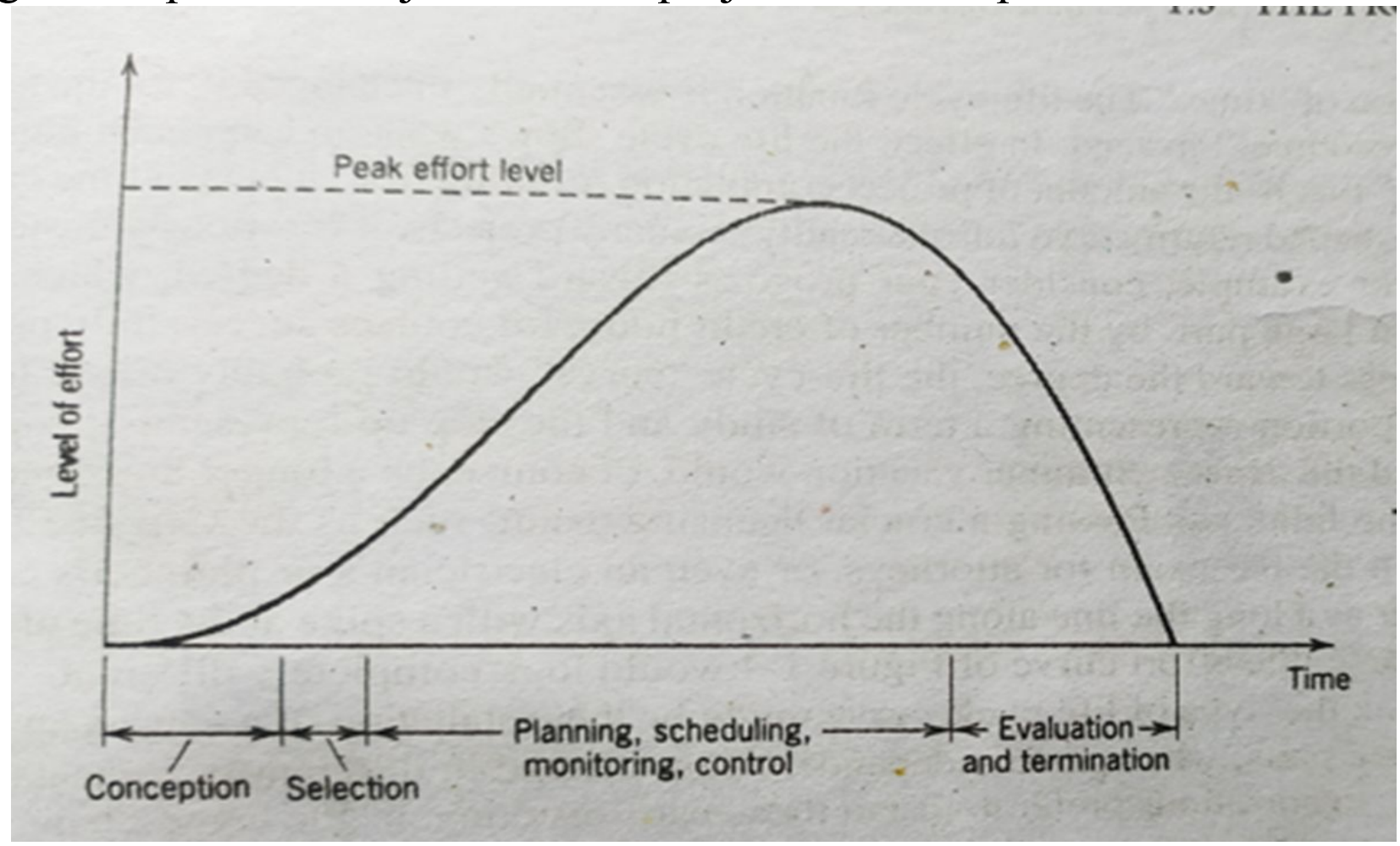
- It again **starts to drop rapidly** as the project begins to halt.

- **Considerable expenses** are required to secure essential resources early in its life cycle.



Time Distribution of Project Effort:

- **Diagram shows the project's Level of efforts**, usually in terms of persons hour or resources expended per unit of time.
- **Time is broken up** into several phases of project life.
- **Minimal effort** is required at the beginning, when the project concept is being developed and subjected to the project selection process.

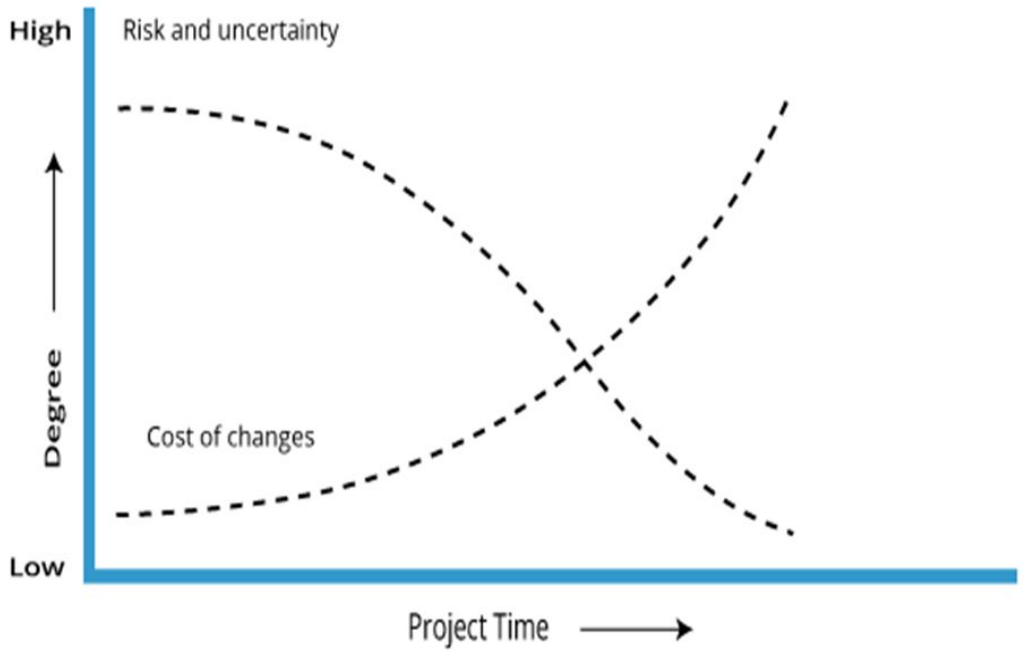


Project's Cost, Risk and uncertainty with time

- **Risk and uncertainty** are **at their peak** at the beginning of the project.
- These **factors drop over the lifecycle** of the project as decisions are reached, and deliverables are accepted.

- Ability to **affect the final product** of the project without impacting the cost drastically.

- It is clear that the cost of **making new changes and rectifying errors** **increases** as the project approaches completion.



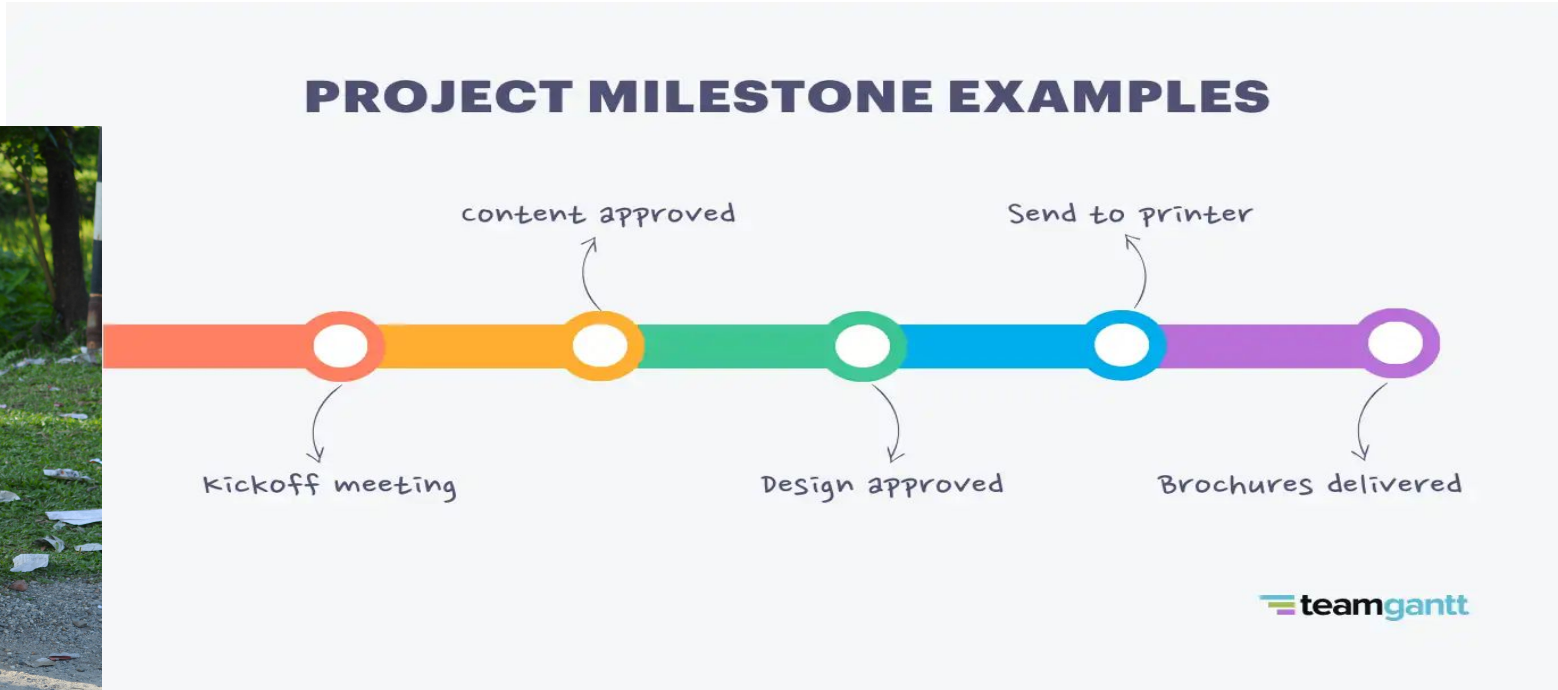
Project's Milestones

- Project milestones are **key checkpoints** or **significant events** **within a project timeline** that help **track progress** toward project completion.

- Help teams to **track progress**, **stay aligned**, and **manage complex work** by focusing on critical goals rather than daily tasks.

- **Act as signposts**, showing the start/end, approvals etc. often appearing as **zero-duration items** on schedules.





Thank You