

Lecture 1 - Introduction

Comprehensive Note on Project Management Introduction

1. Understanding Projects

- **Definition:** A project is a temporary endeavor undertaken to create a unique product, service, or result.
- **Purpose:** Projects are initiated to achieve specific objectives by producing deliverables.
- **Objectives:** Outcomes, strategic positions, purposes, results, products, or services that work is directed toward.
- **Deliverables:** Unique and verifiable products, results, or capabilities required to complete a process, phase, or project. These can be tangible (e.g., a building) or intangible (e.g., knowledge from research).

2. Project Deliverables

- **Types:**
 - **Unique Product:** A component, enhancement, correction, or standalone item (e.g., fixing a defect).
 - **Unique Service:** A capability to perform a service (e.g., a business function supporting production).
 - **Unique Result:** An outcome or document (e.g., research determining a trend's existence).
 - **Combination:** Multiple elements like a software application with documentation and support services.
- **Examples:**
 - Developing a new pharmaceutical compound.

- Expanding a tour guide service.
- Merging organizations.
- Improving a business process.
- Installing new computer hardware.
- Exploring for oil.
- Modifying software.
- Researching new manufacturing processes.
- Constructing a building.

3. Project Lifecycle

- **Temporary Nature:** Projects have a definite beginning and end, though duration varies (not necessarily short).
- **End Conditions:** A project concludes when:
 - Objectives are achieved.
 - Objectives cannot be met.
 - Funding is exhausted or unavailable.
 - The need ceases (e.g., customer withdrawal, strategic shift, management directive).
 - Resources are unavailable.
 - Legal or convenience reasons terminate it.

4. Core Aspects of Project Management

- **Key Activities:**
 - Identifying requirements.
 - Addressing stakeholder needs, concerns, and expectations during planning and execution.
 - Establishing and maintaining active, effective, and collaborative communication among stakeholders.

- **Balancing Constraints:**

- Scope
- Quality
- Schedule
- Budget
- Resources
- Risks

5. Business Impact

- **Value Creation:** Projects enable business value, which can be:
 - **Tangible:** Monetary assets, stockholder equity, utility, fixtures, tools, market share.
 - **Intangible:** Goodwill, brand recognition, public benefit, trademarks, strategic alignment, reputation.
- **Strategic Role:** Links project outcomes to business goals, enhancing competitiveness and sustainability.

6. Risks of Inadequate Management

- **Consequences:**
 - Missed deadlines.
 - Cost overruns.
 - Poor quality.
 - Rework.
 - Uncontrolled scope expansion (scope creep).
 - Loss of organizational reputation.
 - Stakeholder dissatisfaction.
 - Failure to achieve objectives.

7. Strategic Importance

- **Strategic Competency:** Effective project management:
 - Ties results to business goals.
 - Enhances market competitiveness.
 - Sustains the organization.
 - Adapts to environmental changes by adjusting plans.

8. Hierarchical Management Structures

- **Projects:** Individual temporary initiatives.
- **Programs:** Groups of related projects managed together for coordinated benefits.
- **Portfolios:** Collections of programs and projects aligned with organizational strategy.
- **Operations:** Ongoing activities producing goods/services, distinct from projects but intersecting during product development or lifecycle transitions.

9. Portfolio Management Focus

- **Objectives:**
 - Guides investment decisions.
 - Selects optimal program/project mixes for strategic goals.
 - Ensures decision-making transparency.
 - Prioritizes resource allocation.
 - Maximizes return on investment (ROI).
 - Manages aggregate risk across components.

10. Operations Management

- **Definition:** Focuses on ongoing production of goods/services outside formal project management scope.

- **Goals:**
 - Ensures efficient operations using optimal resources.
 - Meets customer demands by managing transformation processes (inputs to outputs).
- **Intersection with Projects:** Occurs during new product development, upgrades, expansions, process improvements, product lifecycle end, or phase closeouts.

11. Key Project Management Processes

Collect Requirements

- **Inputs:**
 - Project charter.
 - Project management plan (scope, requirements, stakeholder engagement plans).
 - Project documents (assumption log, stakeholder register).
 - Business case.
 - Agreements.
 - Enterprise environmental factors.
 - Organizational process assets.
- **Tools & Techniques:**
 - Expert judgment.
 - Data gathering (interviews, focus groups, questionnaires).
 - Data analysis (document analysis, mind mapping).
 - Decision making (voting, multicriteria analysis).
 - Communication (affinity diagrams).
 - Prototyping.
- **Outputs:**

- Requirements documentation.
- Requirements traceability matrix.

Validate Scope

- **Inputs:**

- Project management plan (scope management plan, requirements management plan, scope baseline).
- Project documents (lessons learned register, quality reports, requirements documentation, traceability matrix).
- Verified deliverables.
- Work performance data.

- **Tools & Techniques:**

- Inspection.
- Decision making (voting).

- **Outputs:**

- Accepted deliverables.
- Work performance information.
- Change requests.
- Project document updates.

Plan Schedule Management

- **Inputs:**

- Project charter.
- Project management plan (scope management plan, development approach).
- Enterprise environmental factors.
- Organizational process assets.

- **Tools & Techniques:**

- Expert judgment.
- Data analysis.
- Meetings.
- **Outputs:**
 - Schedule management plan.

Sequence Activities

- **Inputs:**
 - Project management plan (schedule management plan, scope baseline).
 - Project documents (activity list/attributes, assumption log, milestone list).
 - Enterprise environmental factors.
 - Organizational process assets.
- **Tools & Techniques:**
 - Precedence diagramming method.
 - Dependency determination.
 - Leads and lags.
 - Project management information system.
- **Outputs:**
 - Project schedule network diagrams.
 - Project document updates.

Develop Schedule

- **Inputs:**
 - Project management plan (schedule management plan, scope baseline).
 - Project documents (activity list/attributes, assumption log, basis of estimates, duration estimates, lessons learned register, milestone list, network diagrams, team assignments, resource breakdown structure/calendars/requirements, risk register).

- Agreements.
- Enterprise environmental factors.
- Organizational process assets.
- **Tools & Techniques:**
 - Schedule network analysis.
 - Critical path method.
 - Resource optimization.
 - Data analysis.
 - Leads and lags.
 - Schedule compression.
 - Project management information system.
- **Outputs:**
 - Schedule baseline.
 - Project schedule.
 - Schedule data.
 - Project calendars.
 - Change requests.
 - Project management plan updates.

12. Work Breakdown Structure (WBS)

- **Definition:** A hierarchical decomposition of the total project scope into manageable work packages.
- **Examples:**
 - Organized by phase (e.g., planning, execution, closure).
 - Organized by major deliverables (e.g., product components).

13. Agile Planning

- **Relationship:** Connects high-level product vision to detailed plans:
 - **Product Vision:** Overarching goal or purpose.
 - **Release Planning:** Mid-level planning for incremental deliveries.
 - **Iteration Planning:** Short-term, detailed task planning within cycles (e.g., sprints in agile).

14. Project Charter Elements

- **Components:**
 - Project purpose/justification.
 - Measurable objectives and success criteria.
 - High-level requirements/description/risks.
 - Summary milestone schedule and budget.
 - Stakeholder list.
 - Approval requirements (conditions, decision-makers, sign-off).
 - Project manager assignment, responsibility, authority.
 - Sponsor/authorizer name and authority.
 - Scope description (progressively elaborated).
 - Acceptance criteria.
 - Deliverables.
 - Exclusions.