

Introduction to Project Management

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Key concepts, phases, tools, and best practices

1. What Is Project Management?

Aspect	Description
Definition	The discipline of planning, executing, monitoring, controlling, and closing work to achieve specific goals within defined constraints (time, cost, scope, quality).
Goal	Deliver a unique product, service, or result that satisfies stakeholder expectations. • Scope – What will be delivered • Time – Schedule and deadlines
Core Elements	• Cost – Budget and resources • Quality – Standards and acceptance criteria • Risk – Uncertainties and mitigation • Stakeholders – People affected or influencing the project

2. Project Management Lifecycle (Phases)

Phase	Primary Objectives	Typical Deliverables
1. Initiation	Define the project’s purpose and feasibility.	• Project charter • Stakeholder register • High-level business case
2. Planning	Detail how the project will be executed, monitored, and controlled.	• Scope statement & WBS (Work Breakdown Structure) • Schedule (Gantt, network diagram) • Budget & cost baseline • Risk register & mitigation plan • Communication plan
3. Execution	Perform the work defined in the plan.	• Completed work packages • Updated status reports • Change requests (if any)

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Phase	Primary Objectives	Typical Deliverables
4. Monitoring & Controlling	Track performance, compare with plan, and take corrective actions.	• Performance metrics (Earned Value, CPI, SPI) • Issue log • Updated risk register
5. Closing	Formalize acceptance, document lessons learned, release resources.	• Final product/service acceptance • Project closure report • Lessons?learned register • Archive of project documents

Note: Phases often overlap; monitoring & controlling runs throughout execution.

3. Key Roles & Responsibilities

Role	Main Responsibilities
Project Sponsor	Provides funding, champions the project, resolves escalated issues.
Project Manager (PM)	Leads planning, execution, and control; communicates with stakeholders; manages risk, scope, schedule, and budget.
Project Team	Performs tasks, delivers work products, reports progress.
Stakeholders	Provide requirements, feedback, and approvals; may be internal (departments) or external (clients, regulators).
Functional Managers	Allocate resources, oversee technical quality within their domains.

4. Fundamental Tools & Techniques

Category	Tools / Techniques	Typical Use
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Planning	• Work Breakdown Structure (WBS) • Gantt chart / Network diagram • Critical Path Method (CPM) • Resource leveling	Break work into manageable pieces; schedule activities; identify bottlenecks.
	• Earned Value Management (EVM) • Cost-Benefit Analysis	
	• Risk register • Probability-Impact matrix • Monte Carlo simulation	
	• Six Sigma, PDCA (Plan-Do-Check-Act) • Checklists, inspections	
Cost Management	• Stakeholder analysis • R	Measure performance against budget; justify investment.
Risk Management		Identify, assess, and mitigate uncertainties.
Quality Management		Ensure deliverables meet standards.
Communication		