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PMP® Exam Prep Course

PMP®

Instructor-Led Project Management Professional (PMP)® Exam Prep Course

Integrated Planning: Method, Plan, Schedule, Quality, and Procurement

Lesson 6



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Lesson Introduction

In this lesson, we will explore the following tasks, as outlined in the Project Management Professional (PMP)® Certification Exam Content Outline:

ECO 2.1	**Developing an Integrated Project Management Plan and Plan Delivery**
ECO 2.8	**Planning and Managing the Schedule**
ECO 2.7	**Planning and Optimizing the Quality of Products and Deliverables**
ECO 2.5	**Planning and Managing Procurement**



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Developing an Integrated Project Management Plan and Plan Delivery

PMP ECO
Task 2.1



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Strategic Alignment and Business Management Skills

Do you:

- Know your organization's strategic plan?
- Understand how project goals matter to an organization's long-term vision and mission?
- See a high-level overview of the organization?
- Have a working knowledge of business strategy?
- Have pertinent product and industry expertise?

Can you:

- Explain the essential business aspects of a project?
- Work with subject matter experts (SMEs) and a project sponsor to develop an appropriate project delivery functions?
- Implement strategy to maximize the business value of a project?



STRATEGIC PLAN

A high-level business document that explains an organization's vision and mission plus the approach that will be adopted to achieve this mission and vision, including the specific goals and objectives to be achieved during the period covered by the document.

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Assessing Project Needs, Complexity, and Magnitude

PMP ECO 2.1.1



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Performing a Needs Assessment

A needs assessment is a systematic process used to identify and analyze a current problem or opportunity within an organization or project.

The primary goal is to ensure that decisions and solutions align with business needs, objectives, and strategies while delivering value to stakeholders.

In some organizations, a dedicated business analysis team might take the lead, especially during the early stages of project initiation.



Project Management Institute. (2023). Business analysis for practitioners: A practice guide (2nd ed.). Newtown Square, PA: PMI.

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PMP ECO 2.1.1

Business Documents

- Are developed prior to project start (typically by a business analyst or key project stakeholder)
- Contain information about the project objectives and contributions to the business goals
- Help the business determine whether a project is worth the required investment of time, money, and resources
- Review the business documents periodically



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PMP ECO 2.1.1

Business Case

A documented economic feasibility study used to establish validity of the benefits to be delivered by a portfolio component, program, or project.

- Business case: justifies project and establishes boundaries
- Cost-benefit analysis
- Business need
- Quality specifications
- Schedule or cost constraints
- Acceptance of the business case typically leads to creation of the project charter.
- Assumptions, constraints, and risks

This is a business document, **not part of the project management plan.**



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Benefits Management Plan

The documented explanation defining the processes for creating, maximizing, and sustaining the benefits provided by a program or project.

The benefits management plan should include:

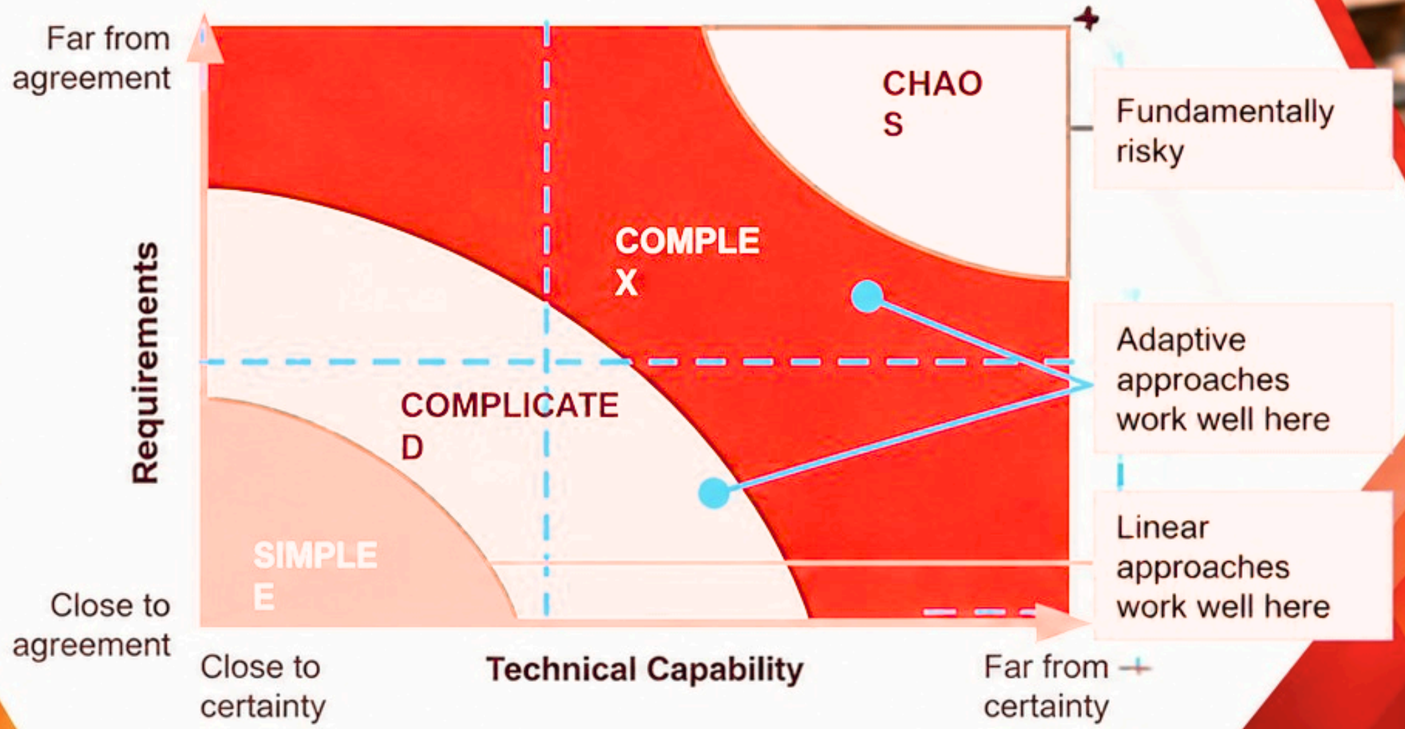
- Processes for creating, maximizing, and sustaining project benefits
- Timeframe for short- and long-term benefits realization
- Benefits owner or accountable person
- Metrics
- Assumptions, constraints, and risks

This is a business document, **not part of the project management plan.**



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Assessing Complexity:
The Stacey Complexity Model



Stacey, R. D. (1996). Strategic management and organizational dynamics: The challenge of complexity. London: Pitman Publishing.

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Recommending a Project Management Approach

Assess Project Context
Consider project needs, complexity, magnitude, constraints, and stakeholder expectations.

Evaluate Available Approaches
Analyze predictive, adaptive, hybrid, or other approaches to determine the most suitable option.

Recommend the Approach
Define and justify the project management approach based on the project's unique characteristics and organizational environment.

Gain Alignment
Engage with the sponsor, stakeholders, and subject matter experts (SMEs) to validate and finalize the recommended approach.



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Understanding How and Why Approaches Differ

- Changing **perceptions of value**—e.g., sustainability, customer-centricity
- Dynamic and perpetual **global change**
- Increasing **complexity and risk**
- Need to **innovate** and be **dynamic**

Which project management **approaches** do you use?
Do you have a **preference?**



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Project Management
Developmental Approaches

Approach	Characteristics	Certainty About Requirements	Change and Risk
Predictive approach	A development approach in which the project scope, time, and cost are determined in the early phases of the life cycle.	High, from beginning	• Change possible, but controlled • Risks carefully studied and managed
Adaptive (Agile) approach	A development approach in which the requirements are subject to a high level of uncertainty and volatility and are likely to change throughout the project.	Unclear or customer driven, so needs further discovery	• Built on assumption of high degree of change • High tolerance of risk with guardrails for risk management
Hybrid approach	Tailored development approach, combining these elements.		



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What Can Be Tailored?

- Project life cycle
- Development life cycle components
- Way of working
- Knowledge management
- Change management
- Project governance
- Benefits management



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Tailored Developmental Approaches

- Support dynamic work environments.
- Discover value delivery requirements early.
- Put stakeholders and the team in close collaboration.

Advantages:

- Provide better feature or capability assessment—continuous improvement and quality.
- Improve organizational tolerance for change.



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Creating an Integrated Project Management Plan

- Maintaining an Integrated Project Management Plan
- Collecting and Analyzing Data to Make Informed Project Decisions

PMP ECOs 2.1.5, 2.1.8, and 2.1.9



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Planning Starts With a Project Management Plan

The document that describes how the project will be executed, monitored and controlled, and closed.

It includes:

- Subsidiary plans
- Baselines
- Additional components

Enables project managers to ...

- Execute
- Monitor and control
- Close

Establishes guardrails to maintain controls, so ...

Teams can tailor their way of working and act quickly and flexibly!



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Planning Across Life Cycles

Aspect	Predictive	Hybrid	Adaptive
Requirements	Defined in specific terms before specification development	Elaborated periodically during delivery	Elaborated frequently during delivery
Outcome(s)	Delivered at the end of the project	Can be divided into pieces (incremental)	Delivered after each iteration according to stakeholder-desired value
Change	Constrained as much as possible	Incorporated at periodic intervals	Incorporated in real time during delivery
Stakeholder involvement	At specific milestones	Regularly	Continuously
Risk and cost controls	Through detailed planning of mostly known considerations	Through progressive elaboration of plans	Done as requirements and constraints emerge

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Project Management Plans Components

SUBSIDIARY MANAGEMENT PLANS

- Scope management plan
- Requirements management plan
- Schedule management plan
- Financial management plan
- Quality management plan
- Resource management plan
- Change management plan
- Communications management plan
- Configuration management plan
- Risk management plan
- Procurement management plan
- Stakeholder engagement plan

BASELINES

- Scope baseline
- Schedule baseline
- Cost baseline

ADDITIONAL COMPONENTS

- Performance measurement baseline
- Project life cycle
- Development approach
- Reviews



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Project Documents (1 of 2)

Any documents that are prepared in support of a project—for example, requirements, specifications, contracts with vendors, design documents, test plans, and publications that will be delivered to the client along with the final product.

Some documents are project artifacts, which need to be maintained and then archived at the end of the project.

They are not components of the project management plan.



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Project Documents (2 of 2)

- Basis of estimates
- Activity attributes
- Activity list
- Assumption log
- Change log
- Cost estimates
- Cost forecasts
- Duration estimates
- Issue log
- Lessons learned register
- Physical resource assignments
- Project calendars
- Project communications
- Project schedule
- Project schedule network diagram
- Project scope statement
- Project team assignments
- Quality control measurements
- Quality metrics
- Quality report
- Requirements traceability matrix
- Resource breakdown structure
- Resource calendars
- Resource requirements
- Risk register
- Risk report
- Schedule data
- Schedule forecasts
- Stakeholder register
- Team charter
- Test and evaluation documents



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Resources: People and Equipment

Empower internal human resources.



Material equipment includes:

- Materials
- Supplies
- Facilities
- Infrastructure
- Software



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Planning and Managing the Schedule

PMP ECO Task 2.8



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Preparing the Schedule

Based on Approach

PMP ECO 2.8.1



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Schedule Management Plan Components

Hybrid Projects	Discuss how the schedule management plan can be a beneficial tool in hybrid projects. Who would it benefit?
Methodology/Tool for Schedule Development	Methodology/tool for schedule development
Project Schedule Model	Project schedule model
Maintenance Planning	Includes maintenance planning, including status updates and progress during execution
Accuracy	Acceptable range used to determine realistic activity duration estimates
Risk Contingency	May include risk contingency
Units of Measure	Defined for each resource—e.g., staff hours, days, and weeks
Organizational Procedural Links	Use of work breakdown structure to help ensure consistency with estimates and schedules
Control Thresholds	For monitoring schedule performance before taking action—e.g., escalation/reviews Expressed as percentage deviations from the baseline—e.g., percentage ahead or behind schedule
Rules	Performance measurement—e.g., earned value management (EVM) rules
Reporting	Frequency and formats for schedule-related reports
Process Descriptions	Describes how schedule management processes are documented



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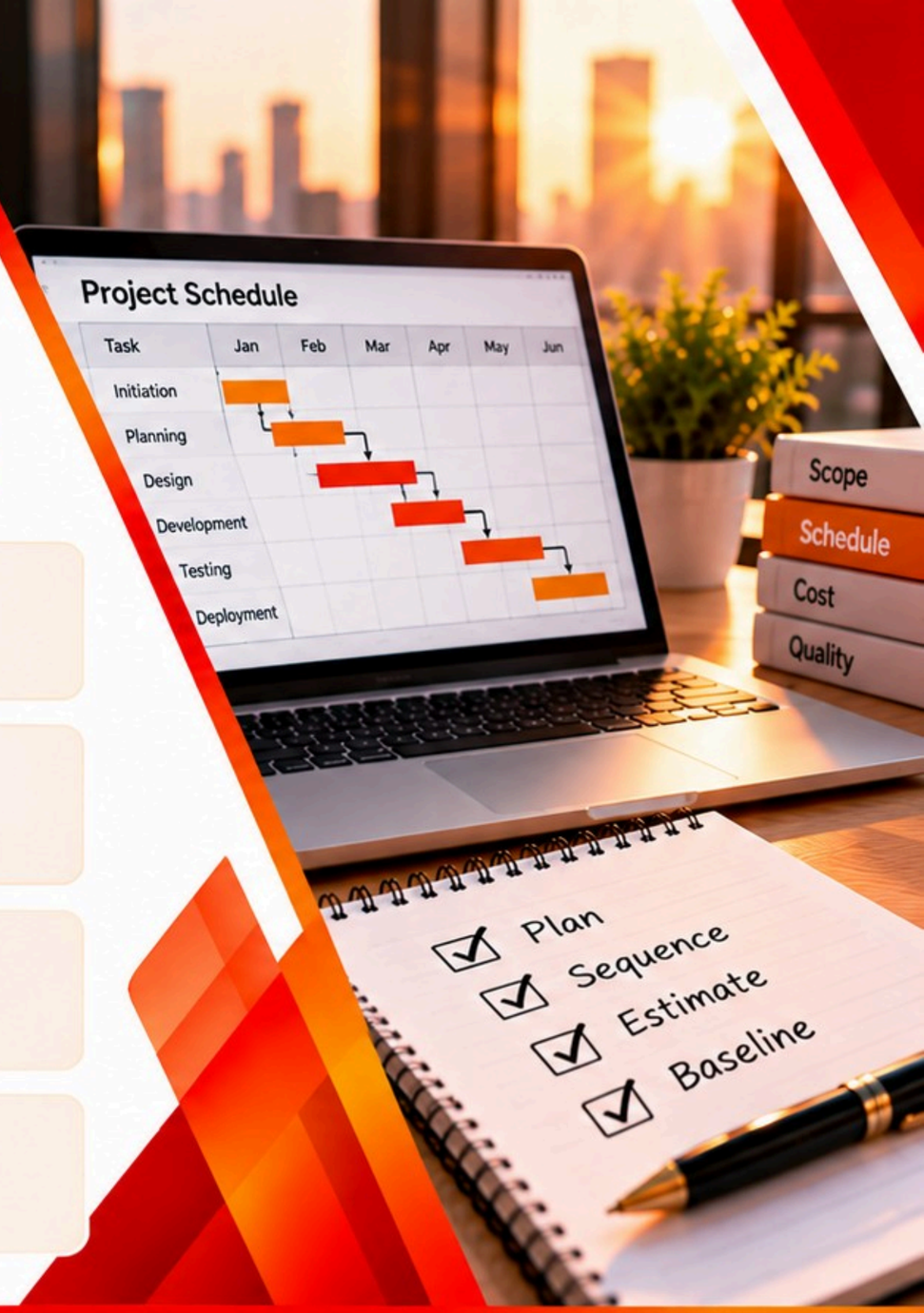
Predictive Approaches

01 The scheduling process is highly structured and involves **detailed up-front planning.**

02 Tasks are sequenced in a linear fashion, with **clear dependencies** outlined.

03 You **estimate durations and resources** for all tasks at the start of the project.

04 A **baseline schedule** is established against which project performance is measured.



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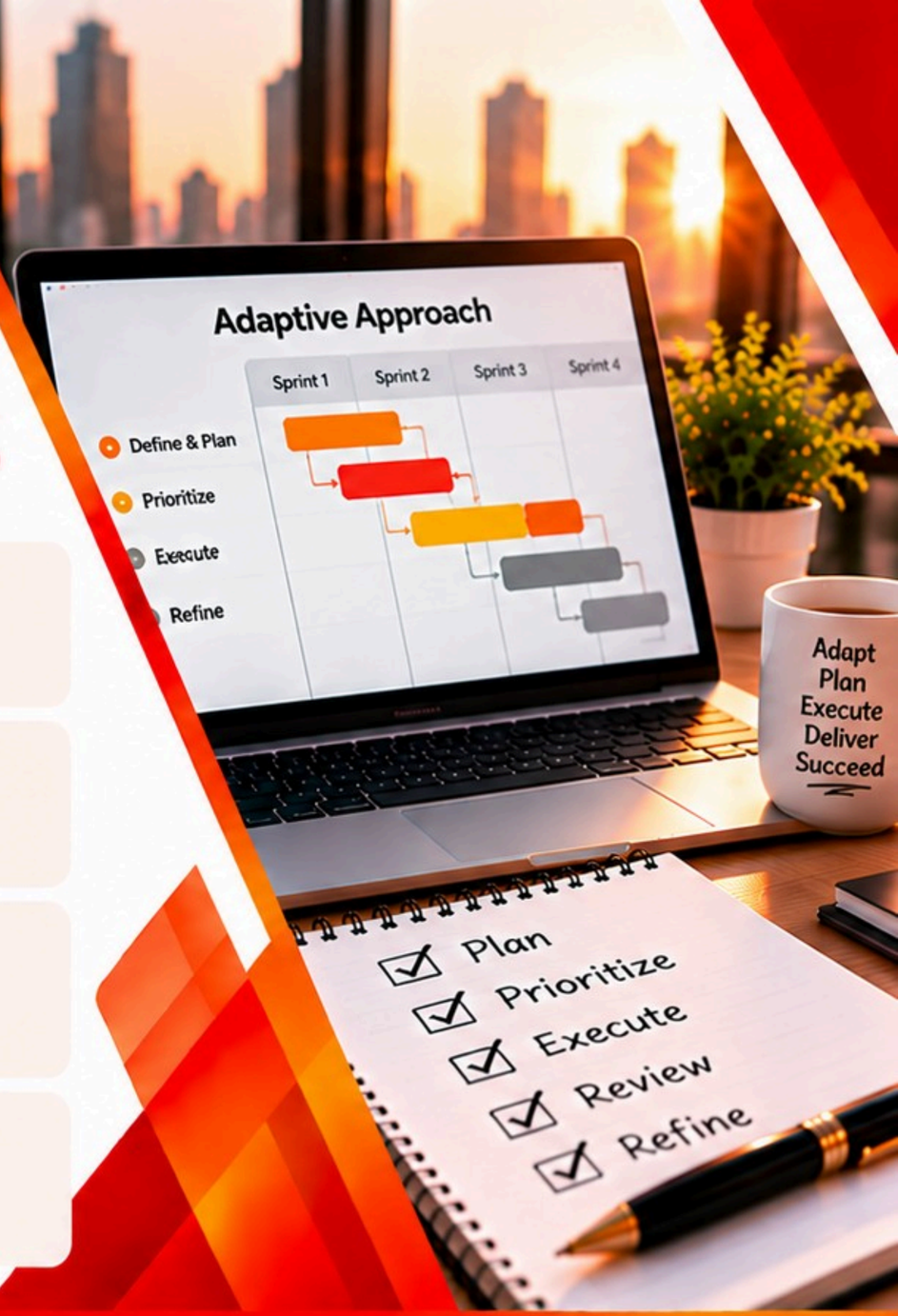
Adaptive Approaches

01 Adaptive approaches involve creating a high-level roadmap with **flexible scheduling.**

02 Scheduling is **more fluid.**

03 Activities are **prioritized** and resources are **allocated dynamically.**

04 The schedule is **continuously refined.**



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Hybrid Approaches

01 Hybrid approaches combine elements of both **predictive** and **adaptive** approaches.

02 This provides **flexibility** to accommodate different **project needs** and **complexities.**

03 Like adaptive, resources may be allocated **incrementally** or **planned and booked** as in predictive approaches.

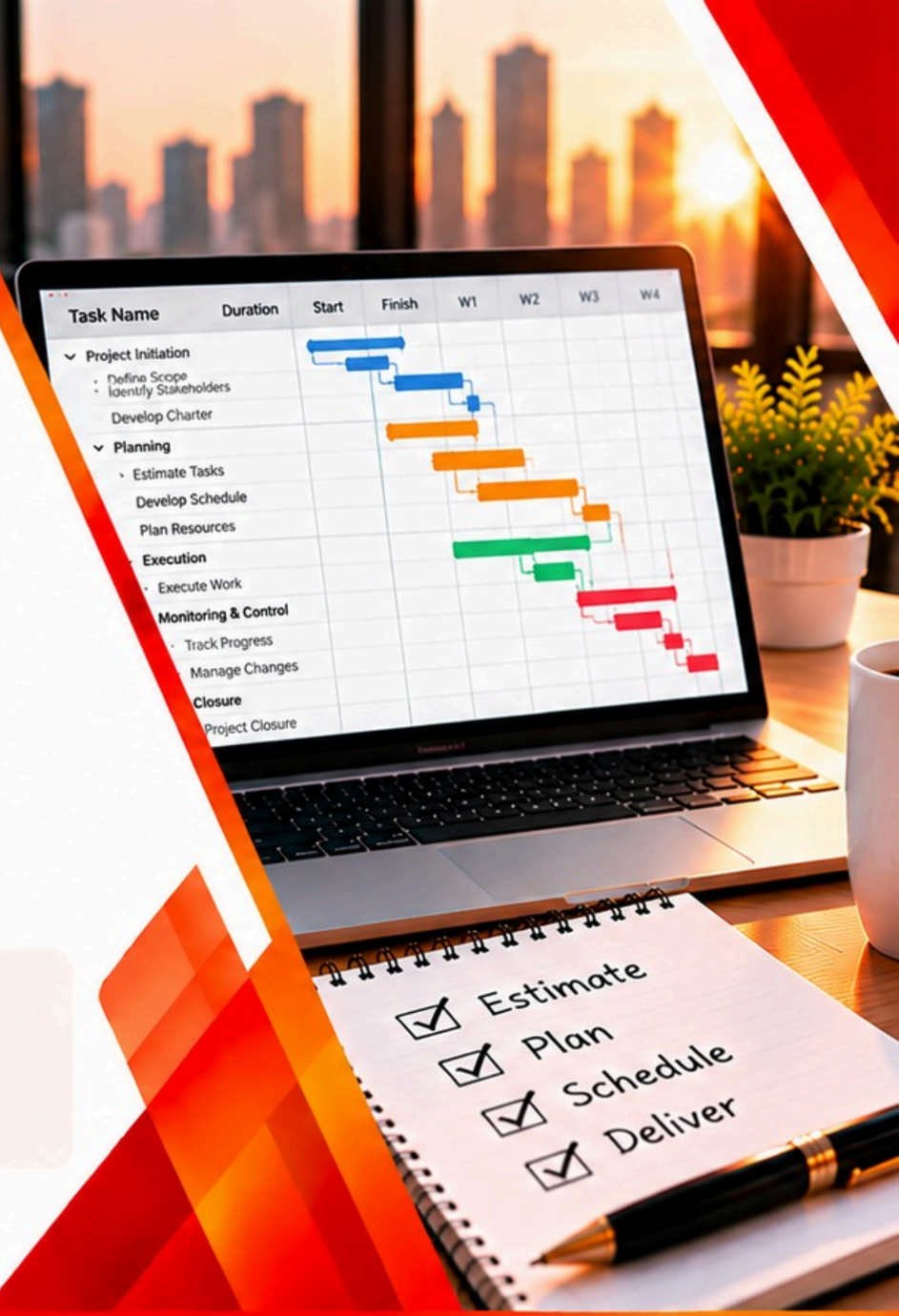
04 Each project component is handled with the approach that **best suits its characteristics.**



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Estimating Project Tasks and Creating a Project Schedule

PMP ECO 2.8.3, ECO 2.8.4, and ECO 2.8.5



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Product Roadmaps

01 Envisions and plans the **big picture.**

02 Displays the **product strategy, direction,** and **value to be delivered.**

03 Leads with the **overarching product vision** and uses **progressive elaboration** to refine the vision.

04 Uses **themes (goals)** to provide structure and associations.

05 Provides **short-term** and **long-term** visualization.

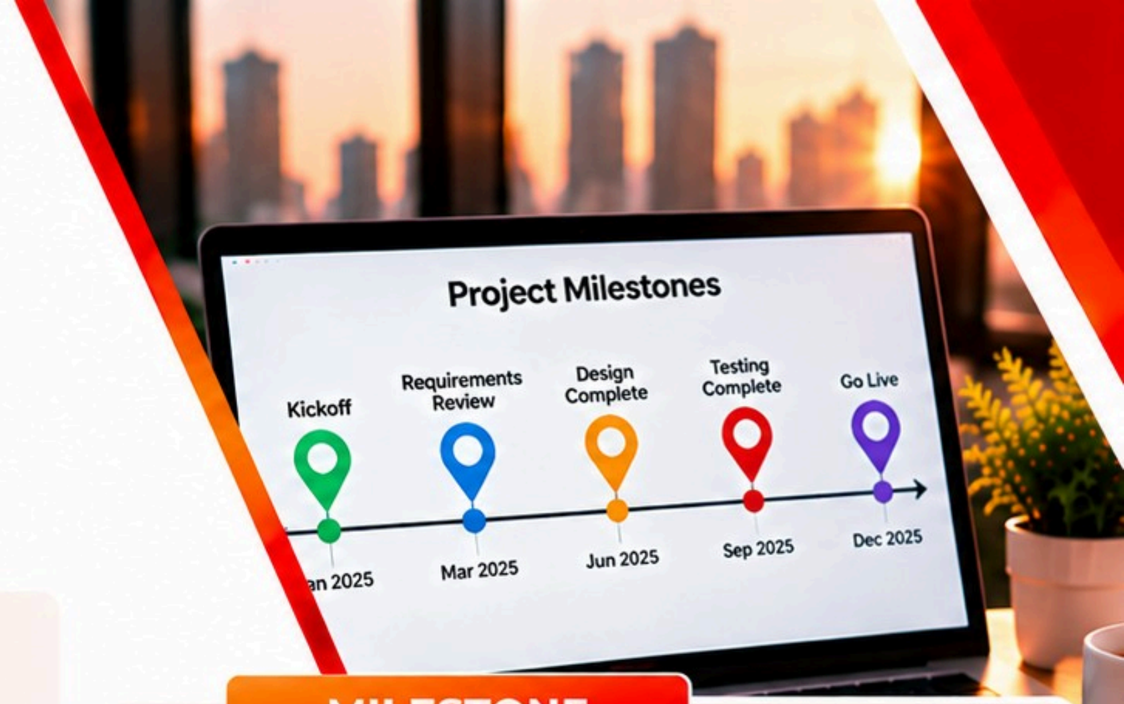


PRODUCT ROADMAP

A high-level visual summary of the product or products of the project that includes **goals, milestones, and potential deliverables.**

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Milestones



01 Markers for **big events, reviews, due dates, payments,** or **decision-making.**

02 Prompts for **reporting requirements** or sponsor or **customer approval.**

03 Created by **project managers, customers,** or **both.**

MILESTONE LIST

A milestone list identifies all milestones and indicates, which are:

- **Mandatory**—required by contract.
- **Optional**—estimated on historical information.

MILESTONE

A **significant point** or **event** in a portfolio, program, or project.

MILESTONE LIST

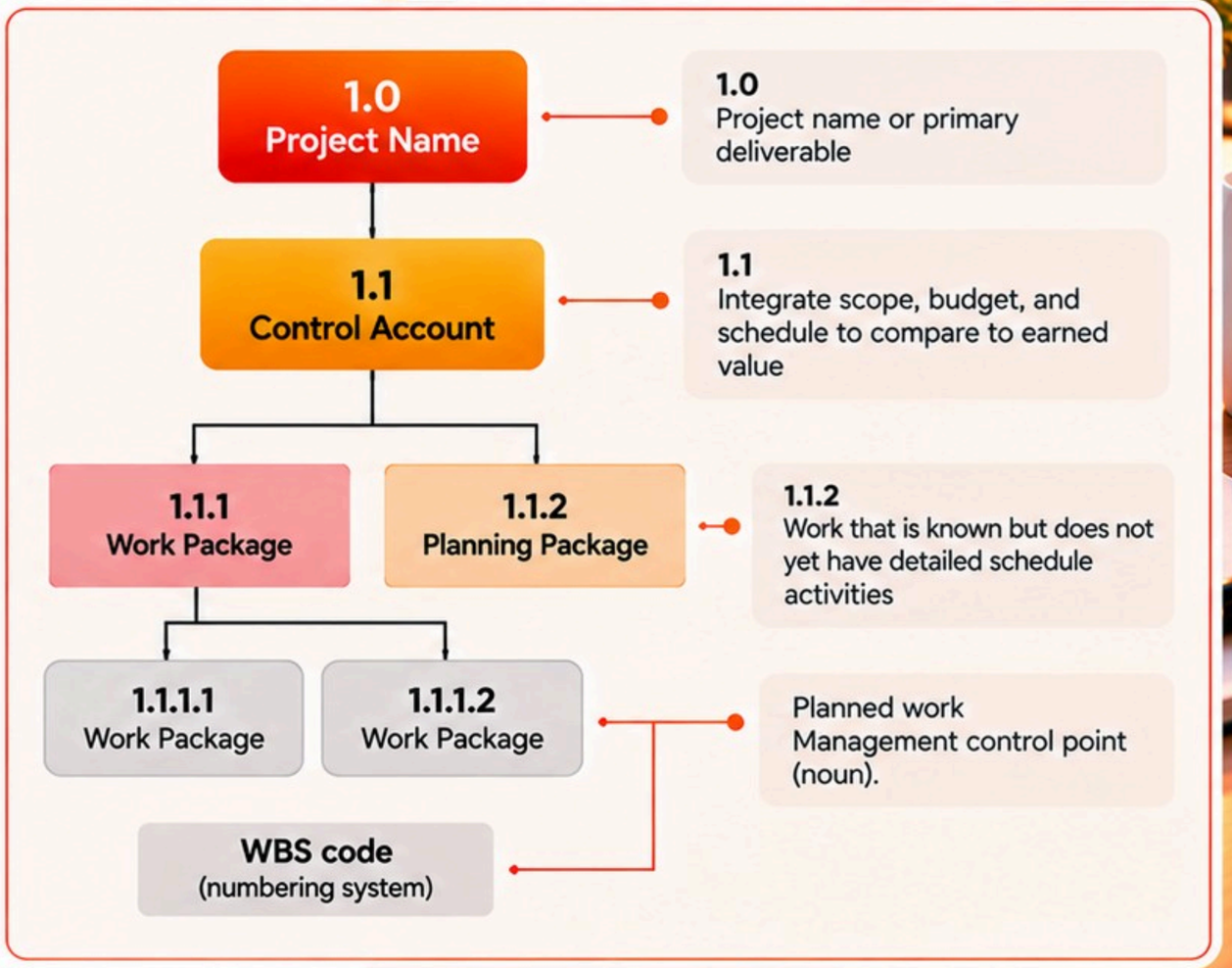
A milestone list identifies all of the project milestones and indicates whether the milestone is **mandatory**, such as those required by contract, or **optional, such as** those based on historical information. Milestones have **zero duration** because they represent a significant point or event in a project.

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Breaking Down Project Activities



01	Top of work breakdown structure.
02	Break down project work packages into activities.
03	Enter activities into the activity list using a verb statement.
04	Use the activity list to develop the project schedule.
05	Group scheduled and estimated activities.
06	Include duration for every activity.



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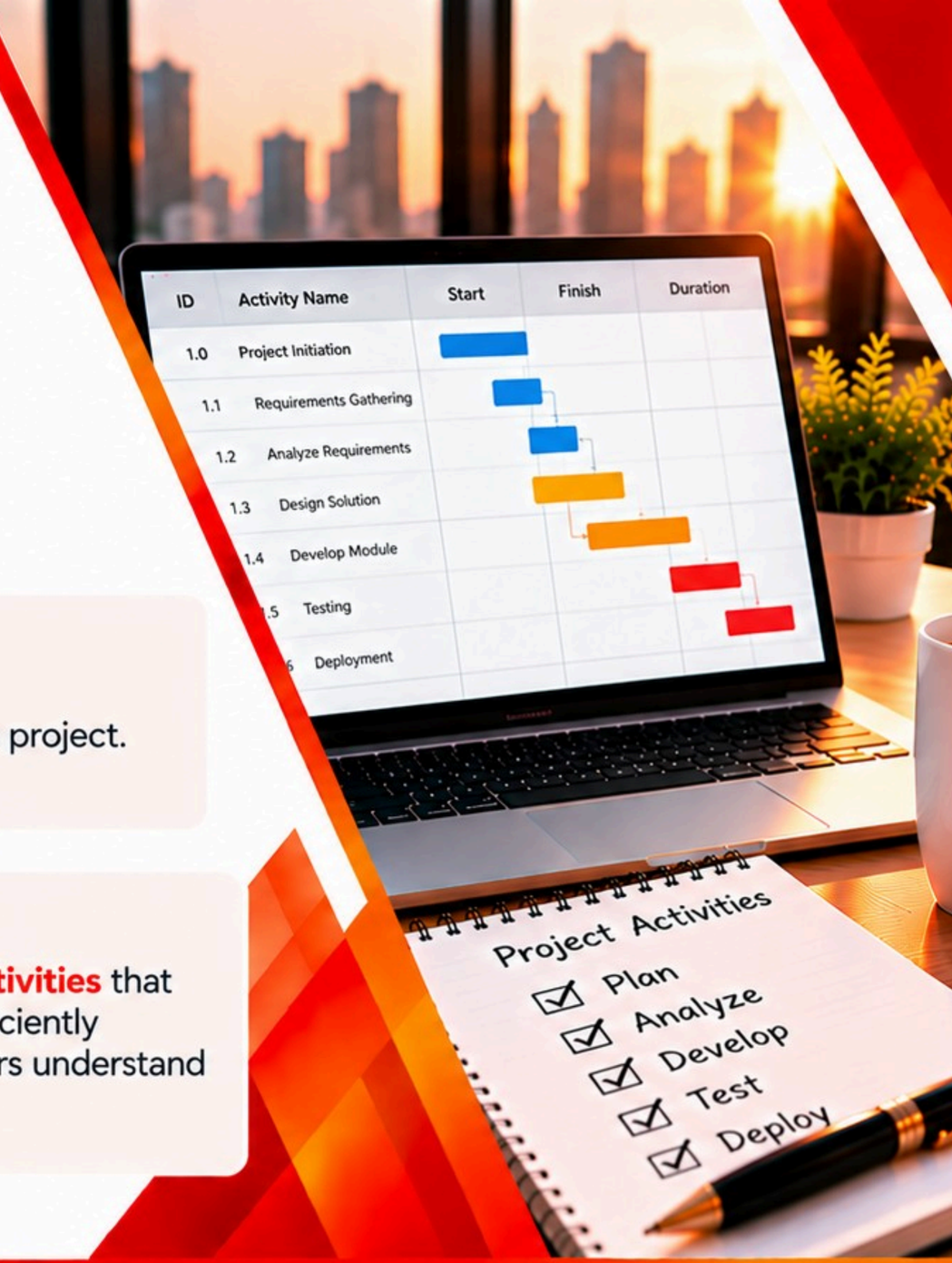
Definitions

PROJECT ACTIVITY

A **distinct, scheduled portion of work** performed during a project.

ACTIVITY LIST

An activity list is a **documented tabulation of schedule activities** that shows the activity description, activity identifier, and a sufficiently detailed scope of work description so project team members understand what work is to be performed.



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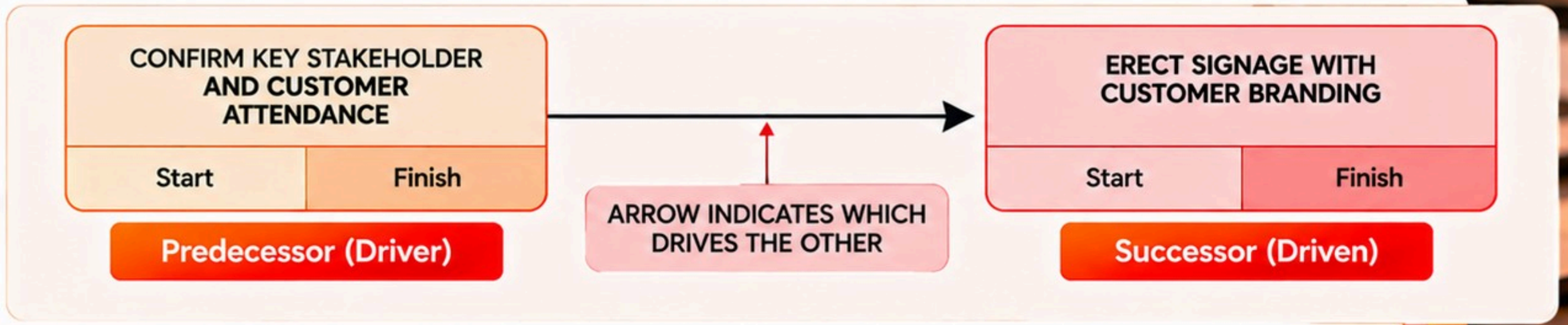
Activity Dependency Types

Dependency Type	Meaning	Action by Project Manager
Mandatory	Contractually required or inherent in the nature of the work	Must schedule it—No way around this sequence
Discretionary	Established because of good practices or a specific sequence is desired	Can be modified as needed, if replaceable with a better sequence, or if schedule compression is required
External	Activities performed outside the project team's work	Limited or no control
Internal	In project work, contingent on inputs	Has control



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Precedence Relationships





Dependencies determine **precedence relationships** and the order in which activities are performed.

Show these using the **precedence diagramming method (PDM)**

- Precedence indicates which **activity drives** the relationship.
- Predecessor usually **occurs earlier** in time than successor.

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Another Definition



PRECEDENCE RELATIONSHIPS

A technique used to **create the network diagram.** It constructs a schedule model in which activities are represented by **nodes** and are **graphically linked** by one or more **logical relationships** to show the sequence in which the activities are to be performed.

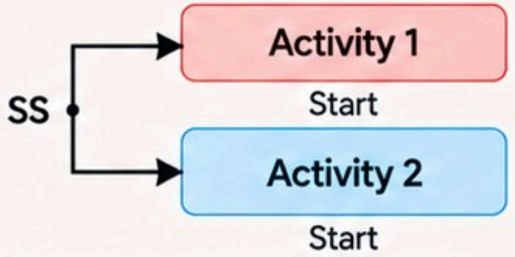
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Precedence Relationship Types

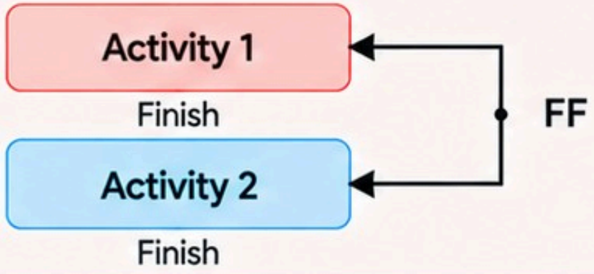
01 Finish-to-start dependency



02 Start-to-start dependency



03 Finish-to-finish dependency



04 Start-to-finish dependency

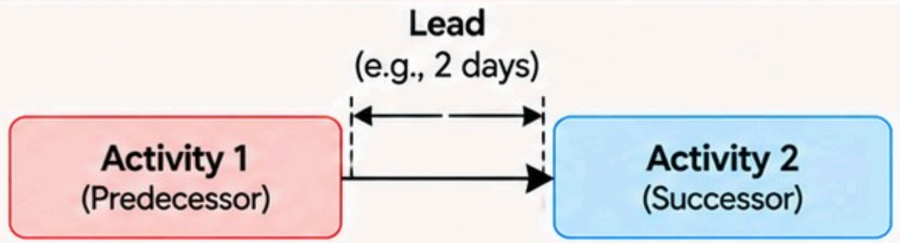


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Defining Lead and Lag

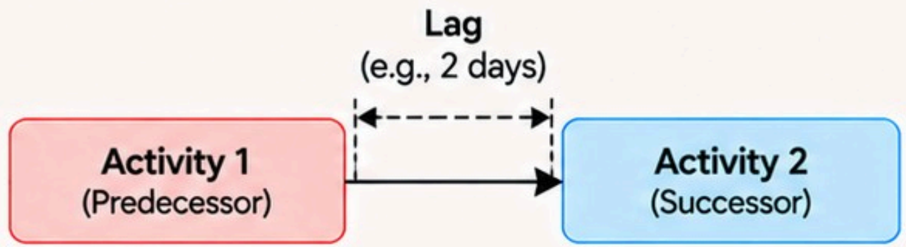
LEAD

The amount of time a successor activity **can be advanced** with respect to a predecessor activity.



LAG

The amount of time a successor activity **will be delayed** with respect to a predecessor activity.



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Leads and Lags in Precedence Relationships

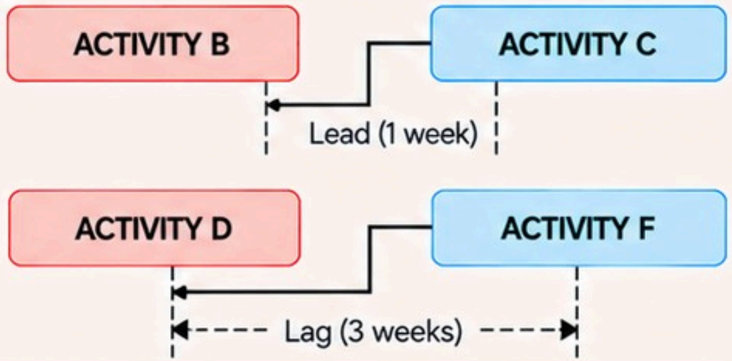
Add lead and lag times of **up to 3 weeks** to activities.

Document activities and **related assumptions**.

1 Finish-to-Start



2 Start-to-Start



Activity List

A	Obtain occupancy permit from the Oasestown building department.
B	Confirm tour guide.
C	Confirm key stakeholder and customer attendance.
D	Complete landscaping and decoration.
E	Identify finished spaces for the tour.
F	Erect signage.

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Activity Duration Estimate Terminology

Activity Duration Estimate

The quantitative assessment of the likely **number of time periods** required to complete an activity.

Elapsed Time

The **actual calendar time** required for an activity from start to finish.

Effort

The number of **labor units** required to complete a scheduled activity or work breakdown structure component, often expressed in hours, days, or weeks.

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Estimating Techniques

	Description	Advantages	Disadvantages
Analogous	• Uses historical data from a similar activity or project to estimate duration (or cost). • Also known as "top-down estimating." • Used when project information is limited.	• Less costly and time-consuming.	• May be inaccurate, depending on quality of historical information.
Parametric	• Uses an algorithm to calculate duration (or cost) based on historical data and project parameters. • Durations can be quantitatively determined — multiply quantity of work to be performed by the number of labor hours per unit of work.	• Can produce higher levels of accuracy, depending on sophistication of data from the model. • Scalable and linear.	• Does not account for a learning curve — i.e., work gets easier as the team becomes more expert. • Uniform units of work are not typical in projects.
Three-Point	• Defines an approximate range of an activity's duration, using most likely, optimistic, and pessimistic estimates. • Used when historical data is insufficient or subjective.	• May improve accuracy of single-point estimations by including risk and uncertainty factors.	• Requires detailed resource information. • Requires expert knowledge to subjectively estimate tasks.
Bottom-Up	• Uses aggregates of the estimates of the lower-level components of the work breakdown structure.	• Very accurate and gives lower-level managers more involvement.	• May be very time-consuming. • Can be used only after the components of the work breakdown structure have been defined.

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Three-Point Estimating: Examples

Triangular Distribution (average)

FORMULA

$$E = (O + M + P) / 3$$

- **O** Optimistic = 3 weeks
- **M** Most Likely = 5 weeks
- **P** Pessimistic = 10 weeks



EQUATION

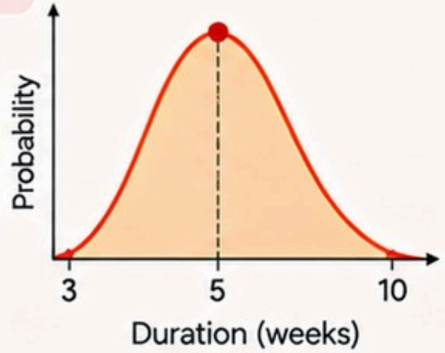
$$(3 + 5 + 10) / 3 = \mathbf{6\ weeks}$$

Beta Distribution (PERT average)

FORMULA

$$E = (O + 4M + P) / 6$$

- **O** Optimistic estimate = 3 weeks
- **M** Weighted most likely estimate = 5 weeks
- **P** Pessimistic estimate = 10 weeks



EQUATION

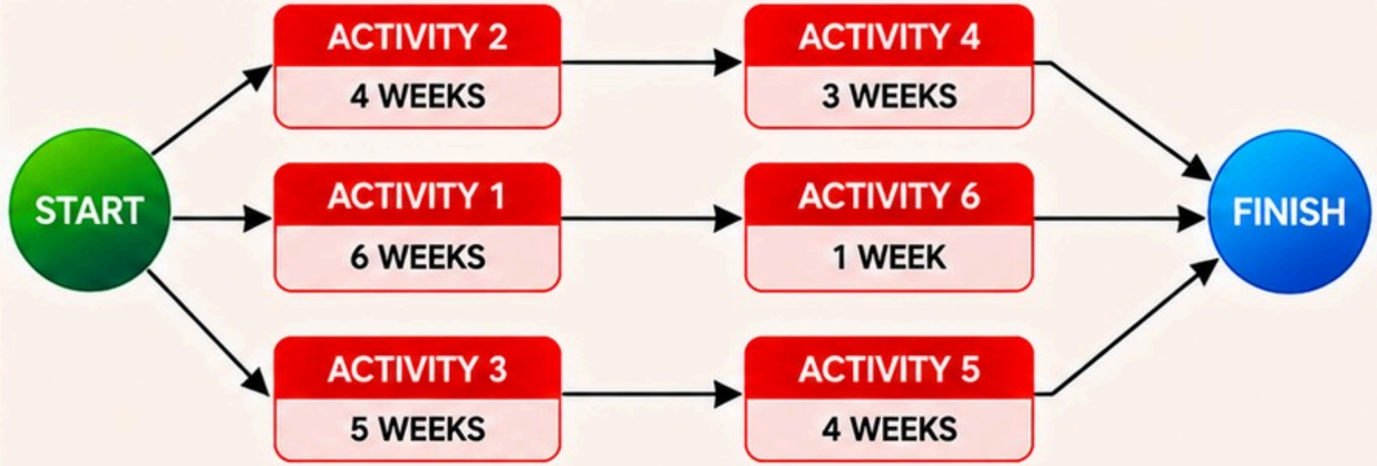
$$[3 + 4\ (5) + 10] / 6 = \mathbf{5.5\ weeks}$$

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Critical Path Method

A method used to estimate the **minimum project duration** and determine the amount of **schedule flexibility** on the logical network paths within the schedule model.

Sequence mandatory critical path activities to find the **longest path** through a project and to determine the **shortest possible project duration** and the amount of flexibility in the schedule.



1. 1[6w] + 2[4w] + 4[3w] + 6[1w] = **14 weeks**
2. 1[6w] + 3[5w] + 5[4w] + 6[1w] = **16-week critical path**

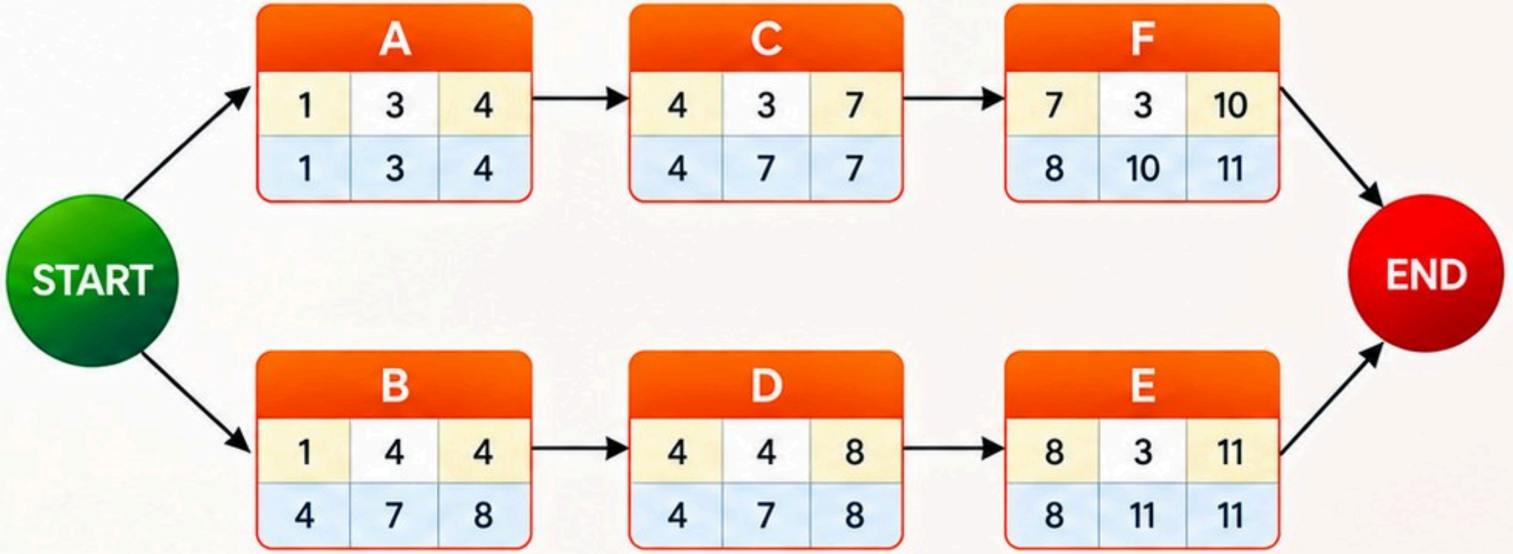
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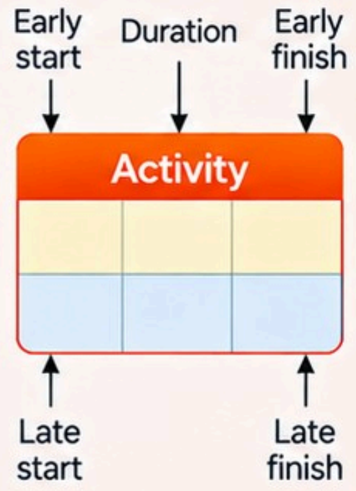
Network Diagram With Dates and Dependencies

Calculate:

1. Critical path
2. Forward pass
3. Backward pass
4. Float



KEY



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Network Diagram With Dates and Dependencies

FLOAT

- The difference between the early and late dates.
- Total float is within an activity; free float is between two activities.

Total float is

- The amount of time that a schedule activity can be delayed or extended from its early start date without delaying the project finish date or violating a schedule constraint.

Free float is

- The amount of time that a schedule activity can be delayed without delaying the early start date of any successor or violating a schedule constraint.

EARLY FINISH DATE

- The earliest possible point in time when the uncompleted portions of a schedule activity can finish based on the schedule network logic, the data date, and any schedule constraints.

LATE FINISH DATE

- The latest possible point in time when the uncompleted portions of a schedule activity can finish based on the schedule network logic, the project completion date, and any schedule constraints.

EARLY START DATE

- The earliest possible point in time when the uncompleted portions of a schedule activity can start.

LATE START DATE

- The latest possible point in time when the uncompleted portions of a schedule activity can start based on the schedule network logic, the project completion date, and any schedule constraints.

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The Project Schedule

- Includes start and finish activities
- Uses specific dates and in a certain sequence
- Sets dates for project milestones
- Coordinates activities to help ensure on-time project completion
- Tracks project progress based on schedule performance and provides visibility of project status to upper management and project stakeholders



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Starting With Benchmarks and Historical Data

Benchmarking

- Compares the current project schedule with a similar product or service schedule
- Provides a good starting point for estimation before detailed analysis
- Assesses feasibility in the initial stage of scheduling

Historical data

- Lessons learned from completed projects in the organization



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Schedule Presentation Formats

Select the type of schedule to suit your project!

Roadmap



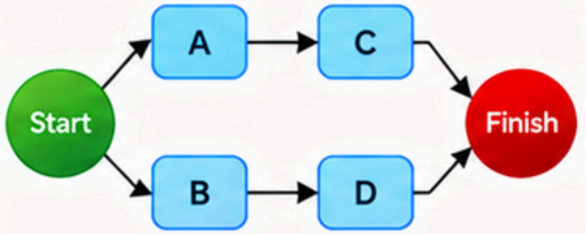
Gantt chart

Task Name	Jan	Feb	Mar	Apr	May
Task 1					
Task 2					
Task 3					
Task 4					
Task 5					

Milestone chart



Project schedule network diagram



Do you remember the name of the tool we used for scheduling activities in a project management plan?

Hint: The output is a project schedule network diagram.

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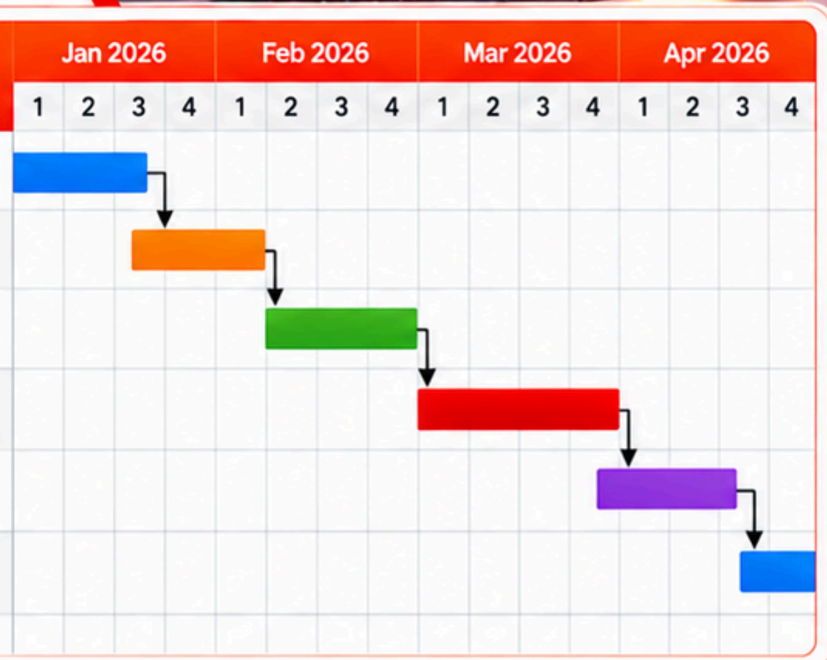


Gantt Charts

Visualize and track the project over a timeline.

- Displays project activities along a timeline
- Shows start and finish dates and activity durations
- Illustrates dependencies between activities
- Helps monitor progress and manage the schedule

ID	Task Name	Start Date	Finish Date	Duration
1	Project Initiation	Jan 02	Jan 15	2 wks
2	Requirements Analysis	Jan 16	Feb 05	3 wks
3	Design	Feb 06	Feb 28	3 wks
4	Development	Mar 01	Mar 31	4 wks
5	Testing	Apr 01	Apr 21	3 wks
6	Deployment	Apr 22	Apr 30	1 wk



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Milestone Schedules

Present milestones with planned dates.

ID	Task Name	April						May					June					July			
		3/14	3/21	3/28	4/4	4/11	4/18	4/25	5/2	5/9	5/16	5/23	5/30	6/6	6/13	6/14	6/20	6/27	7/4	7/11	7/18	7/25
30	Begin Phase 1																					
31	Deliverable A																					
32	Deliverable B																					
33	Phase Gate Review																					
34	Begin Phase 2																					
35	Deliverable C																					
36	Deliverable D																					
37	Phase Gate Review																					

Remember that milestones have **zero duration.**

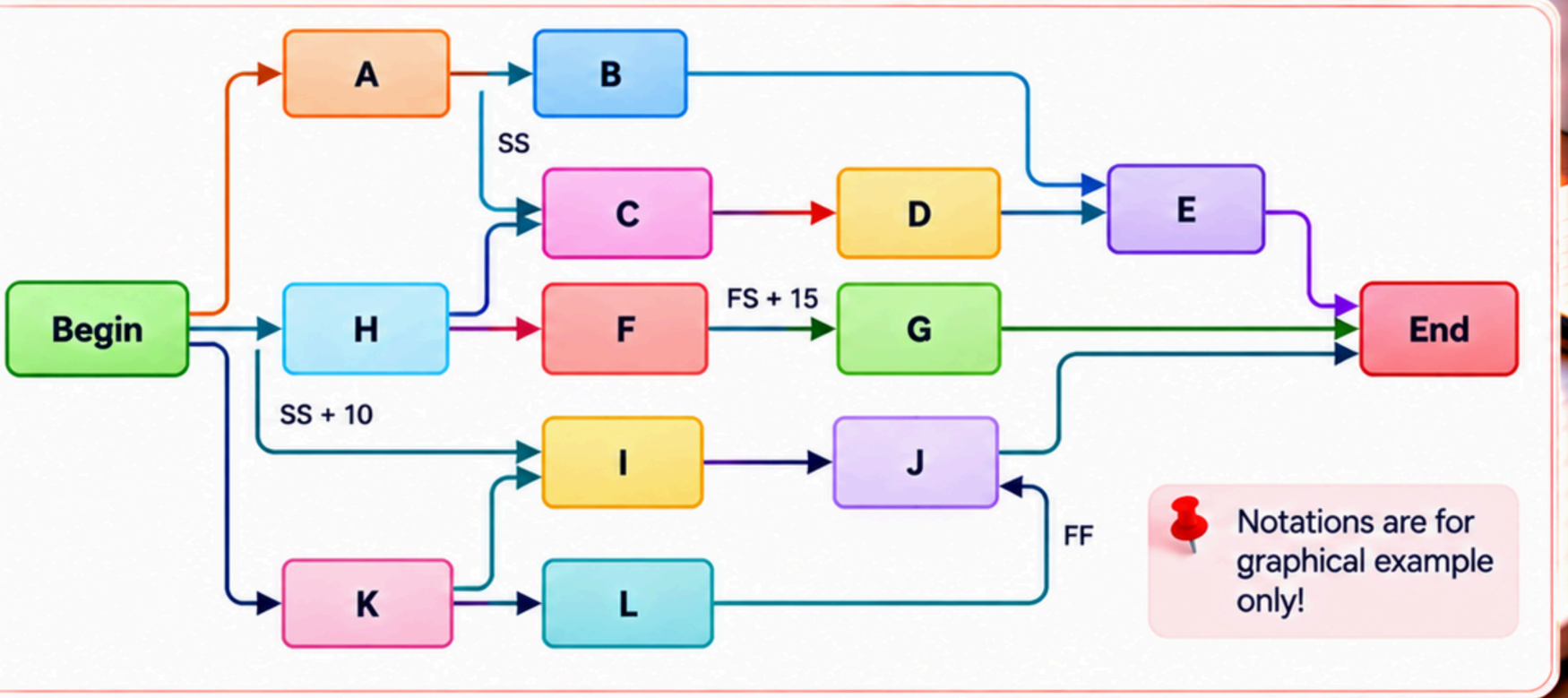
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Project Schedule Network Diagrams

Visualize interrelationships of activities.

- Shows the sequence of activities
- Illustrates dependencies between activities
- Helps identify the critical path
- Provides a visual representation of the project schedule



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Resource Optimization

Smoothing

- Adjusts the activities within predefined resource limits and within free and total floats
- Does not change the critical path or delay the completion date
- Method may not be able to optimize all resources



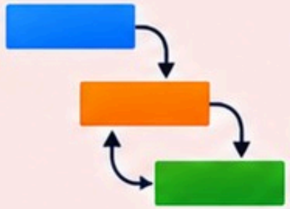
Leveling

- Adjusts start and finish dates based on resource constraints
- Aims to balance demand for resources with supply
- Use when shared or critically required resources have limited availability or are overallocated
- Can change the critical path



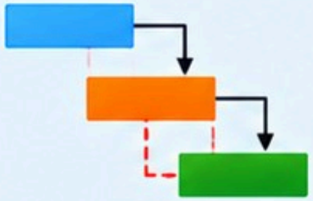
RESOURCE SMOOTHING

A resource optimization technique in which free and total float are used without affecting the critical path.



RESOURCE LEVELING

A resource optimization technique in which adjustments are made to the project schedule to optimize the allocation of resources, which may affect the critical path.



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Schedule Compression Techniques

Fast tracking

- Performs activities in parallel to reduce time
- May result in rework, increased risk, and increased cost
- Does not always produce a viable alternative and may result in increased risk and/or cost



Crashing

- Shortens schedule duration for the least incremental cost by adding resources
- Works only for activities on the critical path



FAST TRACKING

A schedule compression technique in which activities or phases typically done in sequence are performed in parallel for at least a portion of their duration.

CRASHING

A schedule compression technique used to shorten the schedule duration for the least incremental cost by adding resources.

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Schedule Baseline



01 Complete schedule planning activities.

02 Add the schedule baseline to the project management plan.

03 Ideally, this happens before the project starts.

04 Compare actual progress to the baseline while the team works.

05 Use the formal Manage Change process to make changes to the baseline.

SCHEDULE BASELINE

The approved version of a schedule model that can be changed using formal change control procedures and is used as the basis of comparison with actual results. It is one of the main project documents that should be created before the project starts.



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Special Intervals

Negotiate how and when

Negotiate how and when required scheduled “down” time intervals will take place.



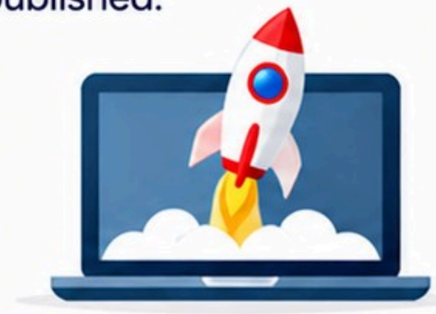
Blackout times:

Suspending changes reduces risks as the solution is released to customers.



Go live:

Activities are suspended as the deliverable is piloted or published.



HARDENING ITERATION/ITERATION H

Specialized increment/iteration/sprint dedicated to stabilizing the code base so that it is robust enough for release. No new functionality is added. Primarily used for refactoring and/or technical debt.

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Schedule Management in Adaptive Environments:

Guidelines

01 Depends on team composition and life cycle.

02 The project team works with the product owner to decide.

03 Develop the roadmap to show release functionality and timeframes.

04 Choose an approach:

05 Project team selects activities for delivery within an iteration (or sprint).

06 Teams produce increments of value for delivery and feedback.

Choose an approach:

Timeboxed scheduling with backlog



On-demand, continuous scheduling



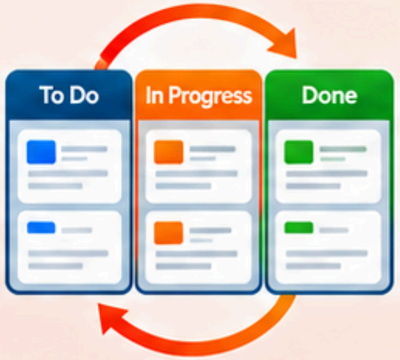
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Adaptive Scheduling Approaches

On-Demand (Kanban/Lean Based)

- Allows individual requests to be addressed
- Levels out work of team members
- Best when activities are divided equally
- Allows changes at any time during the project
- Does not work well in projects with complex dependency relationships



Prioritize requests to determine start sequence then sequence stories individually through completion.

Team pulls work from queue.

Provides incremental business value.

Timeboxed/Iterative

- Uses progressive elaboration (rolling wave planning) to schedule activities
- Uses a specific work interval—e.g., 2 weeks
- Define requirements with user stories then prioritize stories.



Define requirements with user stories then prioritize stories.

Select work based on priority and timebox; add remaining stories to backlog; reintroduce stories later, based on priority.

Delivers business value early and incrementally.

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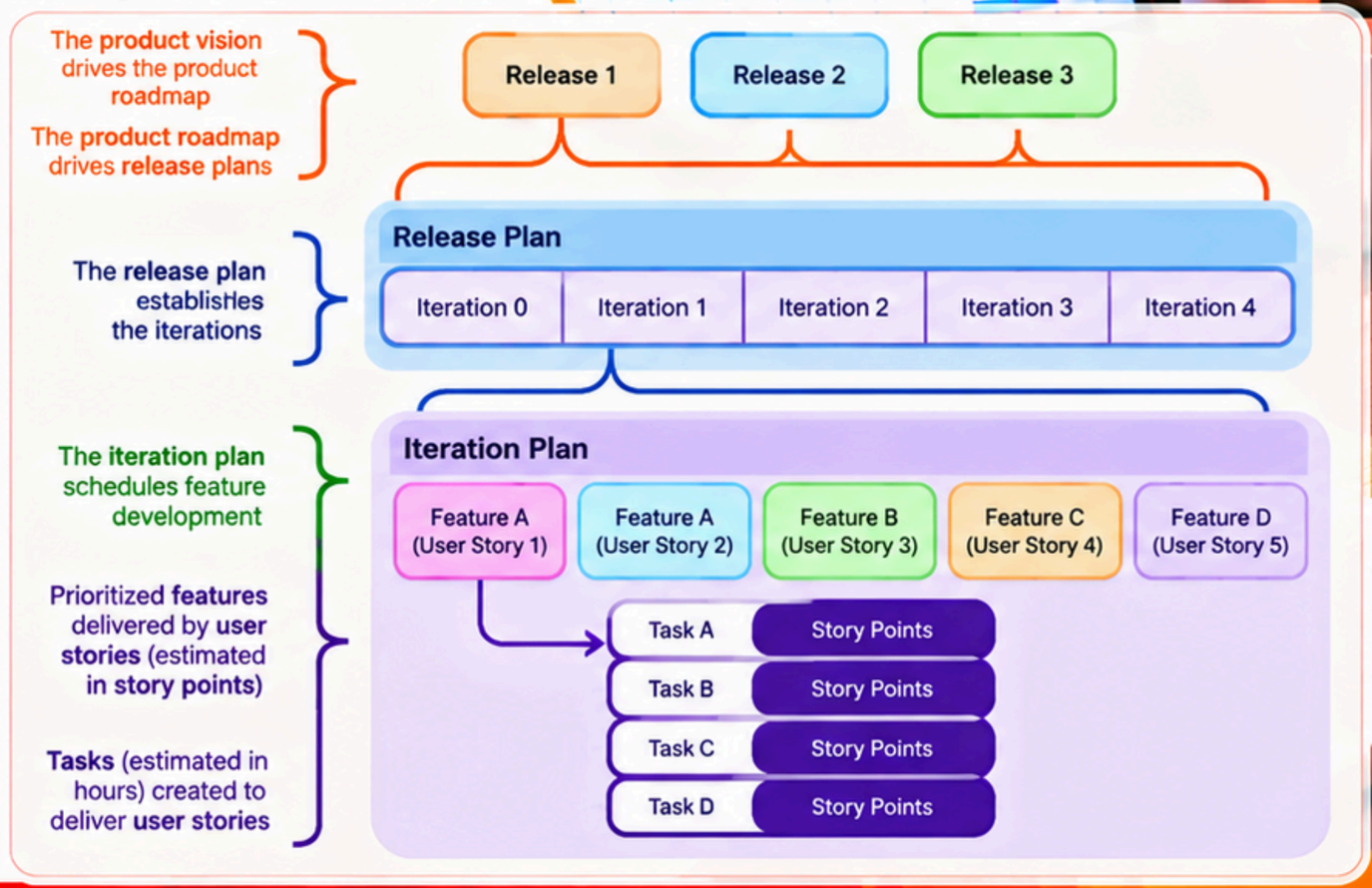
Adaptive Planning Overview

01 A release schedule typically lasts from 3 to 6 months.

02 Timeboxed iterations or sprints typically last 1 to 4 weeks.

03 Assign story points to tasks to determine the amount of work.

04 Velocity—the capacity of the team to complete work.



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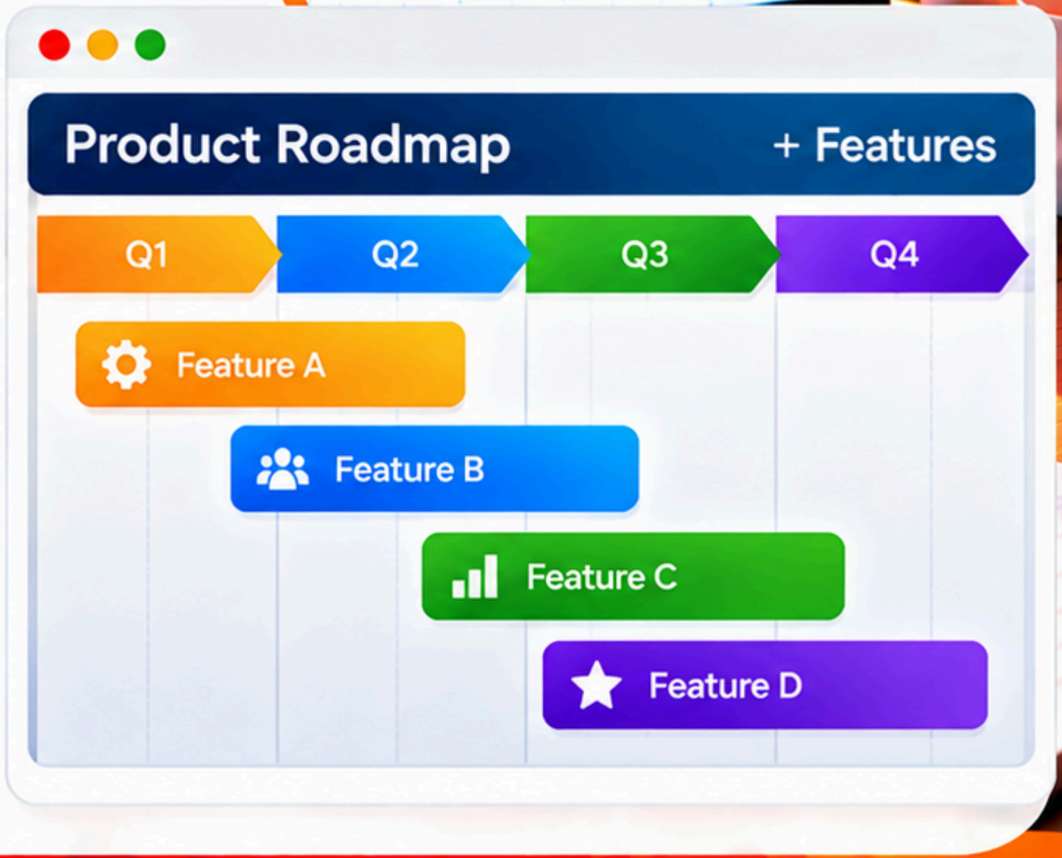
Working With Features

01

Scheduling aligned to features helps ensure associated work is coordinated.

02

Associating features with the product roadmap offers visibility of when blocks of functionality can be released to the business and end users.



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Adaptive Release Planning: Story Mapping

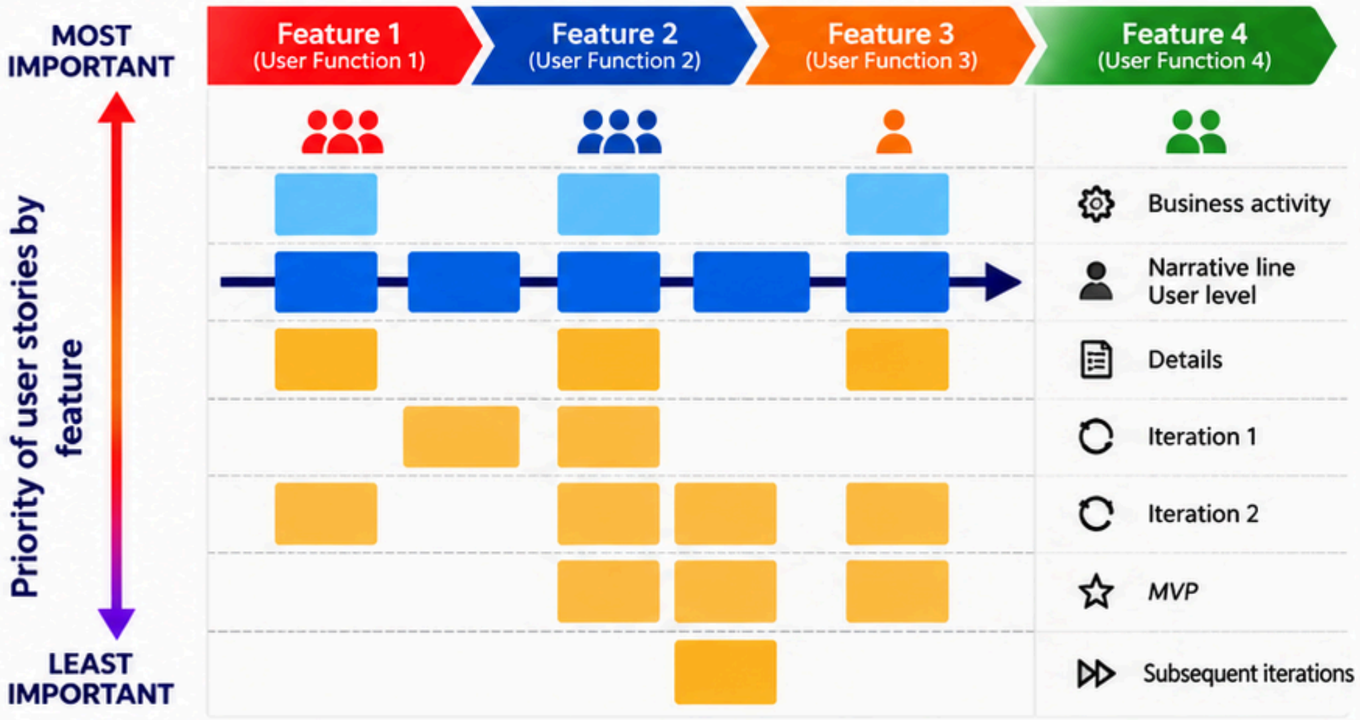
01 Sequence of features needed in a release.

02 Group stories by sequence and priority.

03 Prioritize user stories in the release backlog and associate them with features and functions.

04 Sequence features and functions for the release.

Story Mapping Example



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Measure Effort, Not Time

01



Relative sizing

- Compares effort of multiple user stories through assignment of values (XS, S, M, L, XL).
- Use common t-shirt sizes to assign values to user stories.



02



Story points

- Uses a relative measure—e.g., numbers in the Fibonacci sequence—to identify the level of difficulty or complexity of a user story or task.



03



Planning poker

- Estimates effort or relative size of development effort.
- Uses a deck of cards with modified Fibonacci numbers to vote on user stories.



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Coordinating With Other Projects and Operations

PMP ECO 2.8.2



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Coordinating With Other Projects and Operation

01 Projects operate within a broader ecosystem that includes programs, portfolios, and operations.

02 Coordinating within this ecosystem helps identify dependencies, resource needs, and opportunities for alignment.

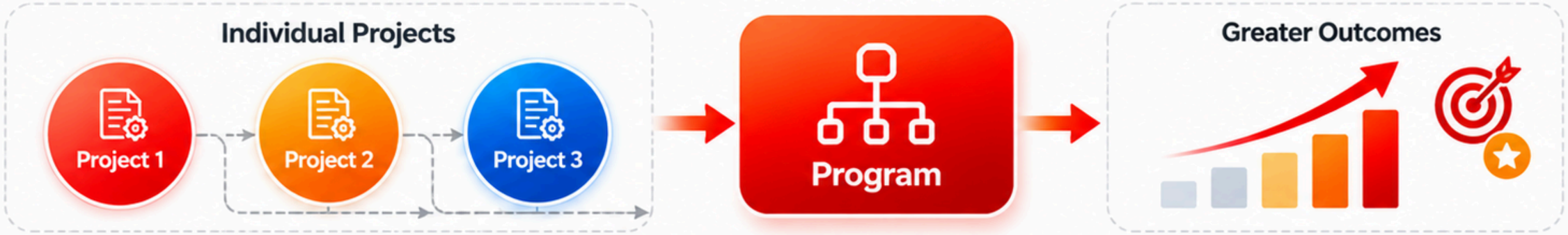


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Managing Projects in a Coordinated Way

Grouping related projects into a program enables coordinated management to achieve greater outcomes than individual projects alone.



Align projects and resources strategically to create synergies.

Drive significant organizational change.

Improve efficiency and deliver value.

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Aligning Projects, Programs, and Operations

Some organizations manage multiple the programs, projects, and operations within a portfolio. A portfolio enables a holistic view that enables leaders to:

Prioritize and manage initiatives based on strategy, objectives, and obligations.

Coordinate across programs, projects, and operations to maximize value.

Align projects and operations with organizational goals.

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Achieving Successful Coordination

Portfolio, program, and project managers should work collaboratively with operations leaders to balance:

01 Resource allocation

02 Stakeholder engagement and support



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Baselining Your Project Schedule

PMP ECO 2.8.6



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Baselining Your Project Schedule



Benchmark for comparison

Serves as a benchmark for comparing actual project performance.

Performance measurement

Used to measure schedule performance and identify variances.

Change control

Any adjustments or changes require formal change control procedures.

Project evaluation

Evaluate whether the project is on track, ahead, or behind schedule.

Component of Plan

Part of the baseline within the overall project management plan.

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Executing the Schedule Management Plan

PMP ECO 2.8.7



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Executing the Schedule Management Plan

The schedule management plan is a component of the program or project management plan that **establishes the criteria and the activities for developing, monitoring, and controlling** the schedule.



The schedule management plan may be **formal or informal** and **highly detailed or broadly framed** based on the needs of the project. The plan also includes appropriate **control thresholds.**



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Key Steps to Executing the Schedule Management Plan



01 Reference the Approved Schedule Baseline

02 Identify and Manage Variances

03 Communicate Activity Start and Finish Dates

04 Apply Schedule Control Responses

05 Use Tools to Track Work Progress

06 Update Stakeholders

07 Compare Actuals to the Baseline

08 Document Changes and Lessons Learned

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Analyzing Schedule Variation

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Understanding Schedule Variance



A measure of schedule performance expressed as the difference between the **earned value** and the **planned value**.

SV = EV – PV

SV	= Schedule variance
EV	= Earned value
PV	= Planned value

Interpreting the results:

- **Positive** = Ahead of schedule
- **Neutral** = On schedule
- **Negative** = Behind schedule

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Analyzing Schedule Variance



- Determine the **root cause**.
- Assess **trends**.
- Explore **alternatives**.
- Recommend **corrective actions**.

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Measuring Schedule Performance: Methods

Gantt charts:
Schedule performance tracking over time.

Earned value (EV):
Cost and effort performance tracking against planned value (PV).

Quality metrics:
Track quality deliverables, defects, and acceptable output.

Variance analysis:
Shows where the project is against where it should be.

Compare work delivered
and accepted to estimations for the current iteration/sprint.

Review completed work in regular sprint demos.

Determine production, validation, and acceptance rates for deliverables in retrospectives.

Conduct scheduled reviews to record retrospective discoveries.



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Some Definitions

EARNED VALUE (EV)

A measure of work performed expressed in terms of the budget authorized for that work.

QUALITY METRICS

Quality metrics specifically describe project or product attributes and how the Manage Quality Assurance process will verify compliance with them.

VARIANCE ANALYSIS

A technique for determining the cause and degree of difference between the baseline and the actual performance.



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Schedule Management Tools

Adjust the schedule to reflect resource supply and demand.

Use **smoothing and leveling**.

Use schedule compression techniques, including fast tracking and crashing.



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Planning and Optimizing the Quality of Products and Deliverables

PMP ECO Task 2.7



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Gathering Quality Requirements for Project Deliverables

PMP ECO 2.7.1



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Quality

The degree to which a set of inherent characteristics fulfill requirements.

Include:

- **Stakeholder expectations** and end user satisfaction
- **Compliance with standards** and regulations
- **Continuous improvement**



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Cost of Quality



Money spent during the project to avoid failure because of failures

Prevention costs
(Build a quality product)

- Training
- Document processes
- Equipment
- Time to do work right the first time—resources, infrastructure expenses

Appraisal (quality assessment)

- Testing
- Inspections

Money spent during and after the project because of failures

Internal failure costs

- Rework
- Scrap

External failure costs

- Liabilities
- Warranty work
- Lost business

Crosby, P. B. (1979). Quality is free: The art of making quality certain. McGraw-Hill.

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Stakeholder and Customer Quality Expectations



PRODUCT or DELIVERABLE

Identify quality requirements during requirements elicitation; create a quality management plan.

PROCESSES

Ongoing observation and checking of processes stated in quality management plan; overseen by a quality policy.

Your organization should have a **quality policy** that applies to all projects. If your organization does not have a quality policy, then your project team may need to create one.

QUALITY MANAGEMENT PLAN

A component of the program or project management plan that describes how an organization's policies, procedures, and guidelines will be implemented to achieve the quality requirements.

QUALITY POLICY

The basic principles that should govern the organization's actions as it implements its system for quality management.

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Planning Quality Tools and Techniques

Planning for quality involves:
Selecting the right tools and techniques that help ensure both the project processes and deliverables meet established requirements.

Two key aspects:

- Quality assurance (QA)
- Quality control (QC)



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Quality Assurance

Quality assurance is a proactive, process-oriented approach that focuses on preventing defects by ensuring quality is built into the processes used to create project deliverables.

Key aspects of quality assurance:

- **Preventive approach**
- **Process oriented**
- **Continuous improvement**
- **Cost reduction**



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Common Quality Assurance Tools and Techniques

- Process audits
- Cause-and-effect diagrams
- Process decision program charts (PDPC)
- Quality management methodologies:
- Total Quality Management
- Six Sigma



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Quality Control

Quality control is a reactive, product-oriented process that focuses on identifying defects in deliverables through inspection and testing.

Key aspects of quality control:

- Reactive process
- Inspection and testing
- Defect identification
- Standard compliance



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Common Quality Control Tools and Techniques

- Statistical sampling
- Inspection and testing
- Control charts
- Check sheets and histograms



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Quality Management Plan

Activities and resources that achieve the quality objectives

Formal or informal, detailed or broadly framed

Reviewed throughout the project



Benefits:

Sharper focus on the project's value proposition

Cost reductions

Mitigated schedule overruns from

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Compliance Requirements

Projects must be compliant with internal and external standards such as:

- Appropriate government regulations
- Organizational policies
- Product and project quality requirements
- Project risk

Compliance actions:

- Classify compliance categories.
- Determine potential threats to compliance.
- Analyze the consequences of noncompliance.
- Determine the necessary approach and actions to address compliance needs.



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Quality Standards and Regulations

Standard or regulation	Description	Example
Standards	Documents established as a model by an authority, custom, or by general consent.	Dictionary
Regulations	Requirements that can establish product, process, or service characteristics, including applicable administrative provisions with government-mandated compliance.	Language rules
De facto standards or regulations	Standards or regulations that are widely accepted and adopted through use, but not yet officially mandated.	Words are used widely in groups, like slang or jargon.
De jure standards or regulations	Standards or regulations mandated by law or approved by a recognized body of experts.	Word enters dictionary and becomes a defined word.

A number of international institutes and organizations are devoted to quality, including:

- ASQ — American Society for Quality (ASQ) – ISO 9000 Series
- The Chartered Quality Institute (CQI)
- ASTM International



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Planning Quality

Processes and Tools

PMP ECO 2.7.2



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Quality Metrics, Checklists, and Processes



Metrics measure desired quality attributes for your product or project through testing, use of tools, and processes.

Include a tolerance level that factors in what the customer will accept and describe the desired quality level in the acceptance criteria and definition of done.

Include checklists, templates, and quality artifacts in the quality management plan.

Adaptive teams use retrospectives and small batch cycles to help ensure quality.

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Quality Methods for Continuous Improvement

- **Six Sigma (also known as Lean Six Sigma)**—**DMAIC** framework (define, measure, analyze, improve, control)—focus on removing waste.
- **Kaizen**—“change for the better”
- **Plan–do–check–act (PDCA)**—Shewhart/Deming
- Adaptive approaches—Scrum, Kanban, Crystal approaches (software)



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Executing a Quality Management Plan

PMP ECO 2.7.3



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Quality Management Guidelines

- Assess quality of project approaches and activities.
- Evaluate deliverable quality through inspection and testing.
- Evaluate quality of project activities and processes through reviews and audits.
- Focus on detecting and preventing errors and defects.



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Evaluating Product Quality

The project manager uses Manage Quality Assurance process to:

- Verify that deliverables meet functional and nonfunctional requirements.
- Identify and suggest improvements.
- Verify alignment with compliance requirements.
- Give feedback on any identified variances.
- Identify potential approaches to cure defects or other noncompliance issues.
- And continuously monitor quality reports and recommendations.

The team, customer, and product owner are responsible for setting and meeting quality goals and metrics.
Feedback from iterations continuously monitors quality.

Measure performance of quality with:

- Service-level agreements (SLAs)
- Key performance indicators (KPIs)
- Contractual measures



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Ensuring Regulatory Compliance

PMP ECO 2.7.4



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Aligning With the Project Governance Framework

Understand
your organization's governance structure.

Help ensure
governance bodies receive the right information.

Follow
required stage gate or phase gate review processes.



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Facilitating Decision-Making and Escalation

Provide timely, accurate data to support stakeholder decisions.

Escalate issues, risks, or changes according to agreed-on protocols.

Document decisions and track action items.



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Supporting Compliance and Auditability

Make it as easy as possible to review your project:

- Follow internal policies, standards, and audit requirements.
- Help ensure traceability of key decisions and documentation.
- Prepare for audits or post-project reviews by keeping records complete and well-organized.



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Managing Cost of Quality and Sustainability

PMP ECO 2.7.5



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Cost of Quality Model

The cost of quality (CoQ) model helps find the right balance between investing in prevention and appraisal costs to avoid defects or product failures. It identifies four categories of quality-related costs:

Prevention costs

Appraisal costs

Internal failure costs

External failure costs



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Conducting Ongoing Quality Reviews

PMP ECO 2.7.6



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Quality Audits

Quality audits can be conducted regularly, on a schedule, or in ad hoc fashion.

Topics include:

- Quality management policy
- Collection and use of information
- Analytical methods
- Cost of quality
- Quality process design

QUALITY AUDIT

A structured, independent process to determine if project activities comply with organizational and project policies, processes, and procedures.



Use audits to **enhance or formalize** the quality management complement in adaptive development approaches.

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Control Quality Tools

Data gathering

- Checklists or check sheets
- Statistical sampling
- Questionnaires and surveys

Data analysis

- Performance reviews
- Root cause analysis

Data representation

- Cause-and-effect diagrams
- Scatter diagrams
- Control charts
- Histograms
- Pareto charts



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Managing Quality Assurance: Example

01

Use check sheets to collect data.



02

Plot data on a histogram.



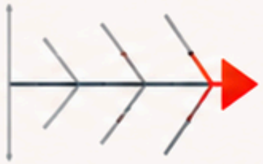
03

Understand the significant errors using the Pareto chart (80/20 rule).



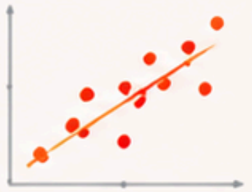
04

Use cause-and-effect analysis on the chosen problems and solutions.



05

Finally, perform a scatter analysis to understand the correlation.





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Helping Ensure Processes and Product Quality

Quality is closely linked to the **product acceptance criteria**, as described in the product scope statement or other design and initiating documents.

Update these criteria as **experimentation** and **prioritization** occur and then validate them as part of the acceptance process.



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Verifying Deliverables

The project team verifies deliverables based on quality standards and requirements:

- **Quality metrics**
- **Tolerance**

The verified deliverables are presented to and accepted (validated) by the customer, resulting in **accepted deliverables.**

Measure products and outputs against the project's quality standards.

Implement corrections and controls when quality standards are neither met nor within acceptable ranges:

- Iteration H (or hardening) in adaptive—quality assurance cycle
- Sprint/iteration review in Scrum



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Implementing Continuous Improvement

PMP ECO 2.7.7



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Continuous Improvement

Continuous improvement is an **ongoing process** that focuses on efforts to improve processes, products, systems, or services.

It involves **identifying, analyzing,** and **implementing incremental improvements.**

Continuous improvement can use approaches such as **plan-do-check-act (PDCA), Lean, Total Quality Management, Six Sigma, Five Focusing Steps (5FS),** and similar methods.



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Kaizen

改善

"Kai" Change | "Zen" Good

Continuous Small Changes for a **Greater Tomorrow**

IDENTIFY | IMPROVE | STANDARDIZE | SUSTAIN



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Assessing Current Continuous Improvement

Methods

How well are the team and organization equipped for continuous improvement?

LEAN SIX SIGMA

LEAN SIX SIGMA

A collaborative team method that provides an enhanced ability to target customer needs and measure performance during project execution and monitoring.

- Is the lessons learned register up-to-date?
- Is the team having regular retrospectives?
- Are team members certified in Lean Six Sigma or in an adaptive approach?
- Do they know about Kaizen, Lean, Crystal Methods, or Capability Maturity Model Integration (CMMI)?
- Also check the process improvement plan and the project management plan!

Use the **risk register** to assess current continuous improvement measures.

It includes how the team is prepared to act to **address threats to project quality**, so it can be a helpful way of assessing current continuous improvement measures.



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Reviewing and Improving Methods in a Retrospective

01 Prepare topics for inspiration.

02 Ask attendees to add items to these lists.

03 Allow each participant to identify the reason for the improvement.

04 Decide common items that need completion and mark them.

05 Narrow the list to improvement areas that will bring value in the next sprint.

06 Get team consensus on the plan improvement.

07 Update these tasks on the backlog after a discussion with the product owner.

08 Implement changes.



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Improving Improvement Methods

In addition to using the lessons learned register and retrospectives properly, try:

Experiments

- Use A/B testing and team feedback to identify improvements.
- Experiments provide a way to improve team efficiency and effectiveness.
- Apply controls—do them one at a time—to isolate the results.

Pareto chart, or the 80/20 rule

- Directs efforts where they can make the biggest impact.
- Takes a big problem and breaks it down into smaller pieces.



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Some Definitions



A/B TESTING

A marketing approach used to determine user preferences by showing different sets of users' similar services—an alpha and a beta version—with one independent variable.

PARETO CHART

A histogram that is used to rank causes of problems in a hierarchical format.

80/20 RULE

A general guideline with many applications: In terms of controlling processes, the 80/20 rule contends that a relatively large number of problems or defects, typically 80%, are commonly due to a relatively small number of causes, typically 20%.

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SOLUTIONS

Updating Processes and Standards

Use what you learned from **successful experimentation** to fashion and recommend continuous improvement steps.

Can lessons learned at the project level apply to the **organization's continuous improvement process?**

If so, escalate these lessons as an **opportunity for adoption** at the organizational level.



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SOLUTIONS

Leading With an Improvement Mindset

01 Educate yourself.

02 Encourage a “fail fast” mindset.

03 Identify material improvements, training, processes, or equipment.

04 Measure the effect of any change.

05 Then repeat!



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SOLUTIONS

PMP

Planning and Managing Procurement

PMP ECO Task 2.5



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SOLUTIONS

Planning Procurement

PMP ECO 2.5.1



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Defining Buyers and Sellers

Buyers

- Obtain the required products, services, or results from sellers.
- Define and communicate requirements.
- Evaluate seller proposals.
- Select the appropriate seller.
- Manage the contract and seller performance.

Sellers

- Provide the required products, services, or results to buyers.
- Respond to buyer requirements with proposals.
- Deliver according to the contract terms.
- Ensure quality, cost, and timely delivery.
- Support and maintain the agreed deliverables.



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Procurement Strategy Planning

Prerequisite organizational process assets (OPAs)

- Work with the organization's finance or procurement department.
- Use preapproved vendors before requesting a new vendor.

Acquisition method

- Observe purchase amount limits per signatory—i.e., contracts valued over a certain threshold must be cosigned.
- Use defined bidding process and templates.

Contract types

- Require requests for proposals (RFPs) for contracts valued over a certain threshold.
- Follow escalation procedures for approval of spending limits.

Procurement phases

- Pay contracts at a defined time—e.g., upon completion of work or at the end of a project, with net payment terms.



This material is being provided as part of a PMI course.

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Planning and Managing the Procurement Strategy

PMP ECO 2.5.9



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SOLUTIONS

Planning Your Procurement Strategy

Define the requirements for procurement.

Develop a detailed procurement strategy.

Prepare the necessary procurement documents.



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Managing Your Procurement Strategy

Initiate contract negotiations with selected vendors to finalize agreements.

Plan for managing the ongoing procurement process.

Monitor contract performance.



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Source Selection Criteria

Work with external resources whose values, skills, and attributes are aligned with those of your project.

- Overall or life cycle cost
- Understanding of need
- Technical capability
- Management approach
- Technical approach
- Warranty
- Financial capacity
- Production capacity and interest
- Business size and type
- Past performance of sellers
- References
- Intellectual property rights
- Proprietary rights



SOURCE SELECTION CRITERIA

A set of attributes, desired by the buyer, which a seller is required to meet or exceed to be selected for a contract.

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Selecting Preferred Contract Types

PMP ECO 2.5.3



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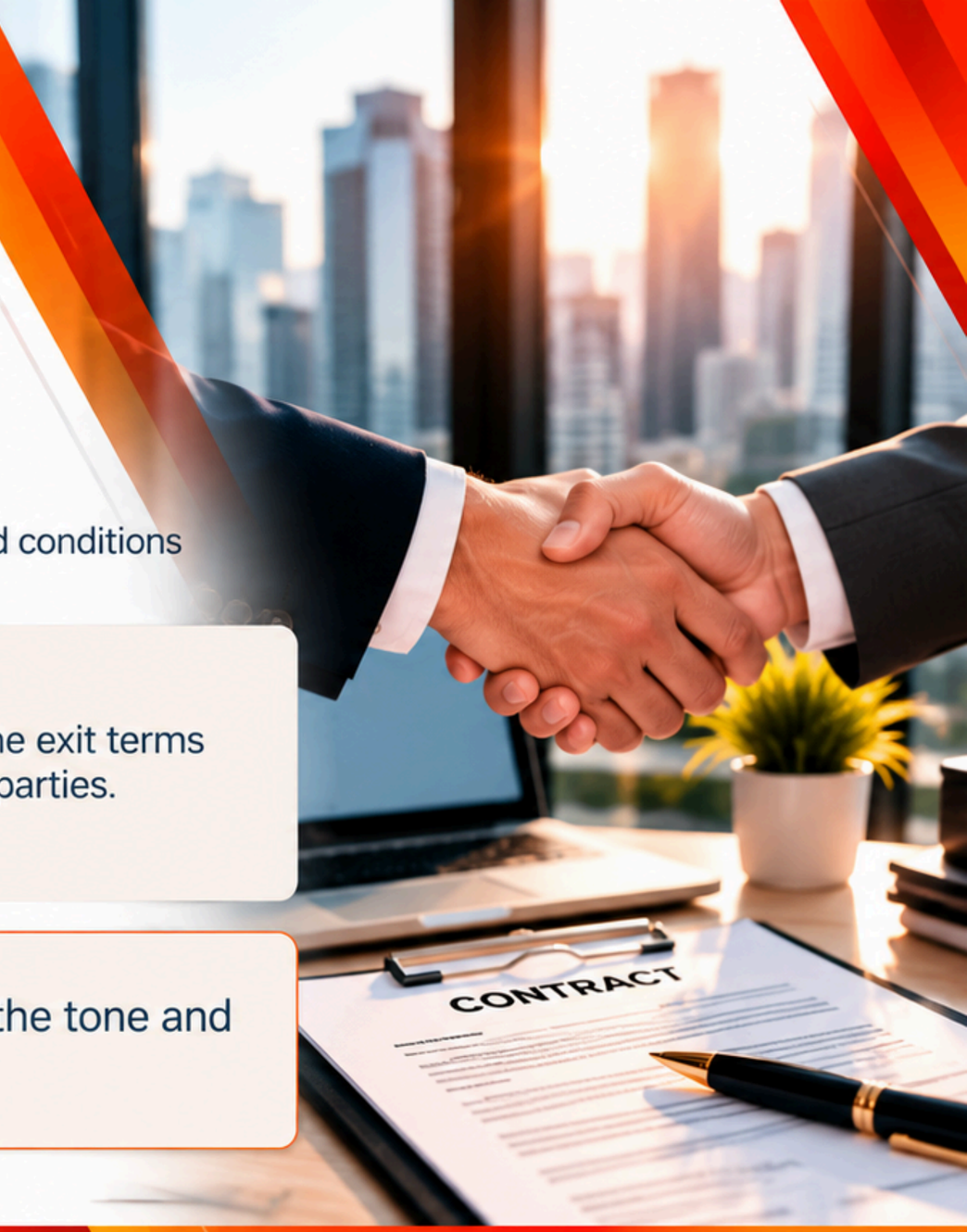
Managing Suppliers and Contracts

Contracts play a significant role in project management. They define the terms and conditions under which project work is performed with suppliers.

Influence the ties among project managers, vendors, and suppliers.

Define the exit terms for both parties.

The contract your organization negotiates can set the tone and **success of the vendor relationship.**



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Contracts: Negotiating Productive Relationships



- **Legalize** working agreements.
- **Give structure** to working relationships.
- **Further collaborate** with partners.
- **Consider risks** associated with contract types.
- **Deliver benefits** to the buyer (different benefits by type).
- **Tailor** for the partnership.

CONTRACT

A mutually binding agreement that obligates the seller to provide the specified project, service, or result and obligates the buyer to pay for it.

DETERMINATION OF NEED › **REQUEST PROPOSAL** › **CONTRACT**

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Broad Types of Contracts

- Fixed-price contracts
- Cost-reimbursable contracts
- Hybrid contracts
- Adaptive contracts



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Fixed-Price Contracts



Firm fixed price

The price of goods or services is set at the beginning and won't change unless the scope changes.

Fixed-price-incentive-fee

Give the buyer and seller some flexibility by allowing for financial incentives tied to achieving agreed-on metrics.

Fixed-price-with-economic-price-adjustment

Allow for adjustments to the contract price due to conditions such as inflation or cost increases for specific commodities.

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Cost Reimbursable Contracts

Cost-plus-fixed-fee

Reimburse the seller for all allowable costs as a set percentage of the initial estimated project cost.

Cost-plus-incentive-fee

Reimburses the seller for allowable costs, plus an incentive fee if the seller meets specified performance criteria.

Cost-plus-award-fee

Reimburse the seller for all legitimate actual costs, plus an award fee representing the seller's profit.



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Time and Material Contracts



Time and materials agreements

The buyer agrees to pay the seller based on the time spent by the seller's employees and the materials used in the project.

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Other Contract Types

- Graduated
- Multi-tiered structure
- Time-and-materials
- Emphasize value delivered
- Early cancellation option
- Dynamic scope option
- Fixed-price increments
- Team augmentation
- Not-to-exceed
- Time and materials



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Key Elements to Include in Contracts

In collaboration with legal teams, vendor contracts should cover:

- Liability
- Warranties
- Waivers
- Breach of contract
- Contingencies



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PMP ECO 2.5.10

Developing a Delivery Solution



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Understanding Your Clients' Definition of Success

Start by **engaging with your clients** to understand their definition of success and expectations.

Engage with **your stakeholders** throughout your project to understand their requirements and adjust the delivery plan accordingly.



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SOLUTIONS

Creating a Comprehensive Delivery Plan

Develop a **detailed plan** that outlines your project's scope, objectives, responsibilities, assumptions, and a project schedule.

Customize your project delivery methods based on the specific challenges and needs of your project.

Concentrate on **delivering value** to the client rather than just fulfilling contractual obligations.



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Feedback, Risks, and Communication

Establish mechanisms for **regular feedback** from stakeholders and team members.

Identify **potential risks early** in the project and develop mitigation strategies.

Maintain **open lines of communication** with the project team and stakeholders.



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Participating in Agreement Negotiations



Determine a **Negotiation Strategy**



PMP ECOs 2.5.6 and 2.5.7



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SOLUTIONS

The Purpose of Negotiations in Projects

Negotiation is a **key project management skill** that improves with experience.

It helps reach agreements on **resources, timelines, deliverables**, or external contracts.

It defines the **terms, responsibilities, and obligations** of each party.

The outcome is a **signed contract** or **formal agreement**.



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The Project Manager's Role in Agreement Negotiation

Procurement leads negotiations and signs contracts.

The project manager may:

- Provide technical input.
- Clarify project requirements.
- Represent stakeholder interests.

Active participation helps align the agreement with project goals.



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Analyzing Negotiation Situations

You often need to achieve results without direct authority, making negotiation a critical skill.



Secure people and resources

This is crucial when securing team members, equipment, and other resources.

Manage Stakeholder expectations

Align expectations with goals to help ensure their satisfaction.

Resolve conflict

Reach mutually acceptable solutions that keep your project on track.

Negotiate contracts

Helps ensure you get the best value and terms for your project.

Adjust scope and budget

Reach an agreement with stakeholders and sponsors, helping ensure your project remains viable.

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Negotiation Models and Outcomes



Win-win

Both parties are satisfied, their interests are aligned, and the result is recognized by all as optimal.

Win-lose or lose-win

This approach reflects a competitive mindset where one party benefits at the other's expense, creating an imbalance.

Lose-lose

Competition overrides collaboration, leading to mutual loss, conflict, and missed opportunities for alignment.

Covey, S. R. (1989). The 7 Habits of highly effective people: powerful lessons in personal change. New York: Free Press.

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SOLUTIONS

Selecting a Negotiation Model That Builds Value

An effective procurement negotiation model should help:

- **Create value for both parties,** not just reach an agreement.
- **Build trust and reduce risk** through the right strategy.
- **Achieve win-win outcomes** that support strong partnerships and project success.



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Executing the Procurement Management Plan

Implement Procurement Activities

Carry out the procurement activities as defined in the procurement management plan.

Manage Contracts

Administer contracts, ensure compliance with terms, and coordinate with sellers and vendors.

Monitor and Communicate

Track progress, resolve issues, and maintain clear communication with stakeholders to ensure successful delivery of procurement objectives.



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Procurement Management Plan

- Specifies the types of contracts that will be used
- Describes the process for obtaining and evaluating bids
- Mandates standardized procurement documents
- Describes how providers will be managed

Your organization's **procurement function** will be involved in developing this plan. **Work with them closely** and use the correct procurement documents to avoid problems.



PROCUREMENT MANAGEMENT PLAN

A component of the **project or program management plan** that describes how a project team will acquire goods and services from outside the executing organization.

PROCUREMENT DOCUMENTS

All of the **documents used in signing, or executing, and closing an agreement**. This may include documents predating the project. This documentation contains the complete supporting records for administration of the procurement processes.

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Procurement Documents: Bid and Proposal



Statement of work (SOW):
Details of work required

Request for quote (RFQ):
Bid/tender or quotation, including only cost

Invitation for bid (IFB):
Buyer requests expressions of interest in work

Request for information (RFI):
Buyer requests more information from seller

Request for proposal (RFP):
Buyer-issued statement of work required

Expression of interest (EOI):
Seller-issued expression of interest in work

STATEMENT OF WORK (SOW)

A document used to describe project work. The
SoW identifies requirements, deliverables, scope, project details, and timelines for delivery.

REQUEST FOR PROPOSAL (RFP)

A type of procurement document used to request proposals from prospective sellers of products or services.

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Formal Procurement Processes

Requests for Proposals and Bidder Conferences

Formal procurement processes are usually used by organizations in highly regulated industries or governments. They may also be used when a project needs specialist work or wants to find the best quality available.

The process uses requests for proposals (RFPs), bidder conferences, and formal processes to help ensure all prospective vendors have a clear and common understanding of the procurement.



Work closely with
the procurement officer or department.

BIDDER CONFERENCES

Meetings with prospective sellers prior to the preparation of a bid or proposal to ensure all prospective vendors have a clear and common understanding of the procurement. Also known as contractor conferences, vendor conferences, or pre-bid conferences.

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SOLUTIONS

Managing Suppliers and Contracts

Manage Supplier Performance

Monitor supplier performance to ensure deliverables meet contractual requirements.

Manage Contracts

Administer and oversee contracts to ensure compliance with terms, resolve issues, and manage changes.

Build Strong Relationships

Maintain effective communication and collaboration with suppliers to support project success.



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Contract Change Control System

A contract change control system is a structured, documented process.

Track, approve, and manage changes to the contract throughout its life cycle.

Help ensure any changes to **scope, cost, schedule, or terms** are reviewed, documented, and authorized.



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Importance of a Contract Change Control System

A contract change control system is important for several reasons.

Prevents scope creep
Unapproved work will not slip in.

Authorizes only valid changes
Safeguards legal and financial interests.

Reduces misunderstandings
Clarity in documentation prevents disputes.

Supports transparency and accountability
Every change is traceable and auditable.



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Contract Amendments and Change Control

Amend agreements as needed

Changes are allowed with mutual consent before contract closure.

Apply the change control process

Changes must follow agreed-on procedures.

Document all amendments

Written records help ensure clarity and accountability.



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Contract Closure Activities

Contract Closure Tasks

- Confirm seller's work is accepted.
- Finalize open claims.
- Update procurement records.
- Archive contract documents.



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Evaluating Vendor Performance

Assess Performance

Evaluate whether the vendor has met contractual requirements for quality, cost, schedule, and service.

Use Defined Criteria

Evaluate using agreed-upon criteria, metrics, and performance indicators.

Support Future Procurement Decisions

Performance evaluations help identify reliable vendors and support lessons learned for future projects.



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Qualified Vendors

- Are **preapproved** by the organization
- Have a **history of work** with the organization
- Are often **“preferred”** because they are **proven** and their accounts are already set up.
- Look in the **lessons learned repository** to find historical data about vendors.



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SOLUTIONS

Evaluating Vendor Performance

As a project manager, evaluating vendor performance is essential to:

- Managing **procurement risks**
- Maintaining **quality**
- Protecting the project **schedule and budget**

The process is both **strategic** and **data driven**, typically guided by the procurement management plan and contractual agreements.



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Approaches to Evaluating Vendor Performance

- Use **formal evaluation** techniques.
- Conduct **performance reviews.**
- **Monitor** performance regularly.
- **Document and archive** performance data.
- Define **performance criteria** early.
- Evaluate as you **close procurement.**



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Defining Performance Criteria

Start by helping ensure performance metrics are defined in the procurement documentation and contract. The common metrics are:

- **Timeliness**
- **Compliance**
- **Quality**
- **Responsiveness and communication**
- **Cost control**
- **Innovation and value add**

Use **service-level agreements (SLAs)** or **key performance indicators (KPIs)** for clarity.



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Monitoring Performance

Monitor performance regularly by using tools such as:

- **Performance reports**
- **Work performance data** and work performance reports
- **Site inspections or audits**
- Earned value (EV) **analysis**
- **Milestone reviews**

Track these against **baseline metrics** and **contract terms.**



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Using Formal Evaluation Techniques

Apply structured methods to assess vendor output such as:

- **Scorecards**
- **Weighted decision matrix**
- **Benchmarking**
- **Surveys or stakeholder feedback**



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Conducting Performance Reviews

Set regular checkpoints:

Hold review meetings with the vendor to discuss performance, issues, and continuous improvement.

Document discussions and action items.



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Managing Vendor Issues Proactively

If performance is below standard:

- **Refer to contract terms** for remedies.
- **Work collaboratively** with the vendor to resolve issues when possible.
- **Escalate only as necessary,** following your issue and risk escalation procedures.



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Documenting and Archiving Performance Data

Maintain a record of:

- **Performance metrics**
- **Communications**
- **Improvement plans**
- **Formal evaluations**

This data feeds into:

- **Lessons learned**
- **Contract** closeout procedures
- **Future vendor** selection decisions



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Evaluating as You Close Procurement

At the end of the contract:

- Conduct a **procurement performance review.**
- Assess **contract compliance** and overall contribution to **project objectives.**
- **Formally accept or reject** final deliverables.
- Update the **organizational process assets (OPAs)** with vendor performance data.
- Make **final payments.**



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Verifying That Procurement Agreement Objectives Are Met

- **Review the procurement agreement** objectives and requirements.
- **Compare actual vendor performance** against the agreed objectives.
- **Confirm that deliverables, quality, cost,** and timelines have been achieved.
- **Document the results and any gaps** for contract closeout and lessons learned.



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SOLUTIONS

Verifying Objectives Have Been Met

Step 1
Review the Procurement Agreement

Step 2
Review Performance Data

Step 3
Check Contractual and Legal Compliance

Step 3
Document Formal Acceptance

Step 5
Assess Deliverables Against Acceptance Criteria

Step 6
Gather Stakeholder Feedback

Step 7
Confirm Completion of Financial Obligations

Step 8
Conduct a Procurement Performance Review



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End of Lesson 6



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THANK YOU!