

MODULE  
4

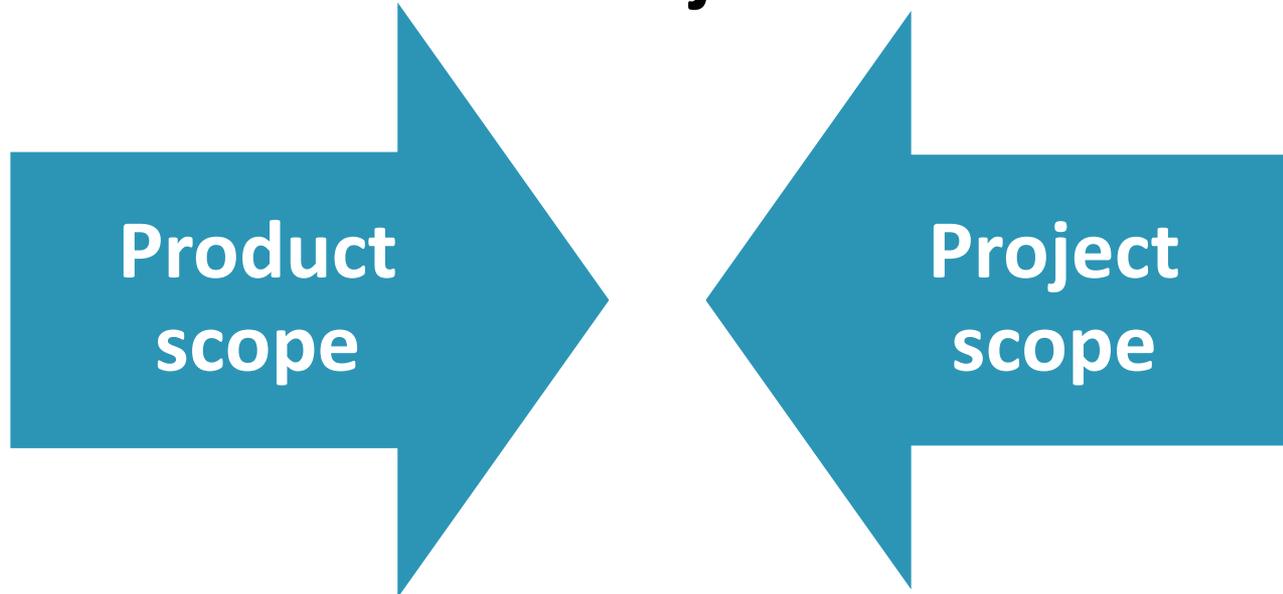
Process—  
Primary Constraints

CHAPTER

2

Scope

# Distinction Between Project and Product Scope



**Set of “features and functions** that characterize a product, service, or result”

*Measured against product requirements*

“The **work performed** to deliver a product, service, or result with the specified features and functions”

*Measured against project management plan or release criteria/backlog deemed in scope*

# Scope

- All the work to be completed before a project can be closed—what is **in scope** and what is **out of scope**
- Goal against which project success can be measured
- Objective reference for acceptance of deliverables

# Predictive: Project Scope Management

| KNOWLEDGE AREAS                 | PROCESS GROUPS |   |           |   |         |
|---------------------------------|----------------|---|-----------|---|---------|
|                                 | Initiating     | Planning  | Executing | Monitoring and Controlling  | Closing |
| <b>Project Scope Management</b> |                | <ul style="list-style-type: none"> <li>• Plan Scope Management</li> <li>• Collect Requirements</li> <li>• Define Scope</li> <li>• Create WBS</li> </ul> |           | <ul style="list-style-type: none"> <li>• Validate Scope</li> <li>• Control Scope</li> </ul> |         |

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- Threshold to analyze the impact of changes
- Basis for all other Planning processes

# Agile Project Scope Management

- Scope needs continued refinement.
- Stakeholders highly engaged:
  - Feedback on working deliverables.
  - Ensure that backlog priority reflects actual customer needs.
- Plans will change, but planning is indispensable.
- Strategic: Tee-shirt sizing, roadmap.
- Tactical: Backlog grooming.

## Each iteration:

- Collect requirements: Discuss/clarify stories.
- Define scope: Pick tasks in backlog for iteration.
- Validate scope: Backlog preparation and grooming.
- Control scope: Agile ceremonies.

# Predictive: Plan Scope Management



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- Yields **two** planning documents for how scope will be defined and controlled:
  - Scope management plan
  - Requirements management plan

# Output: Scope Management Plan

## *How to:*

- Prepare a scope statement.
- Format the work breakdown structure.
- Validate deliverables.
- Document customer acceptance of deliverables.
- Ensure that the plan is current.

# Output: Requirements Management Plan

- How stakeholder requirements will be collected, analyzed, documented, and managed
- How fulfillment will be measured
- Requirements traceability matrix structure
- Continuity in phased projects
- Configuration management

# Types of Requirements

**Project managers must consider all types of requirements during this project process.**

Business

Stakeholder

Solution

Transition

Project

Quality

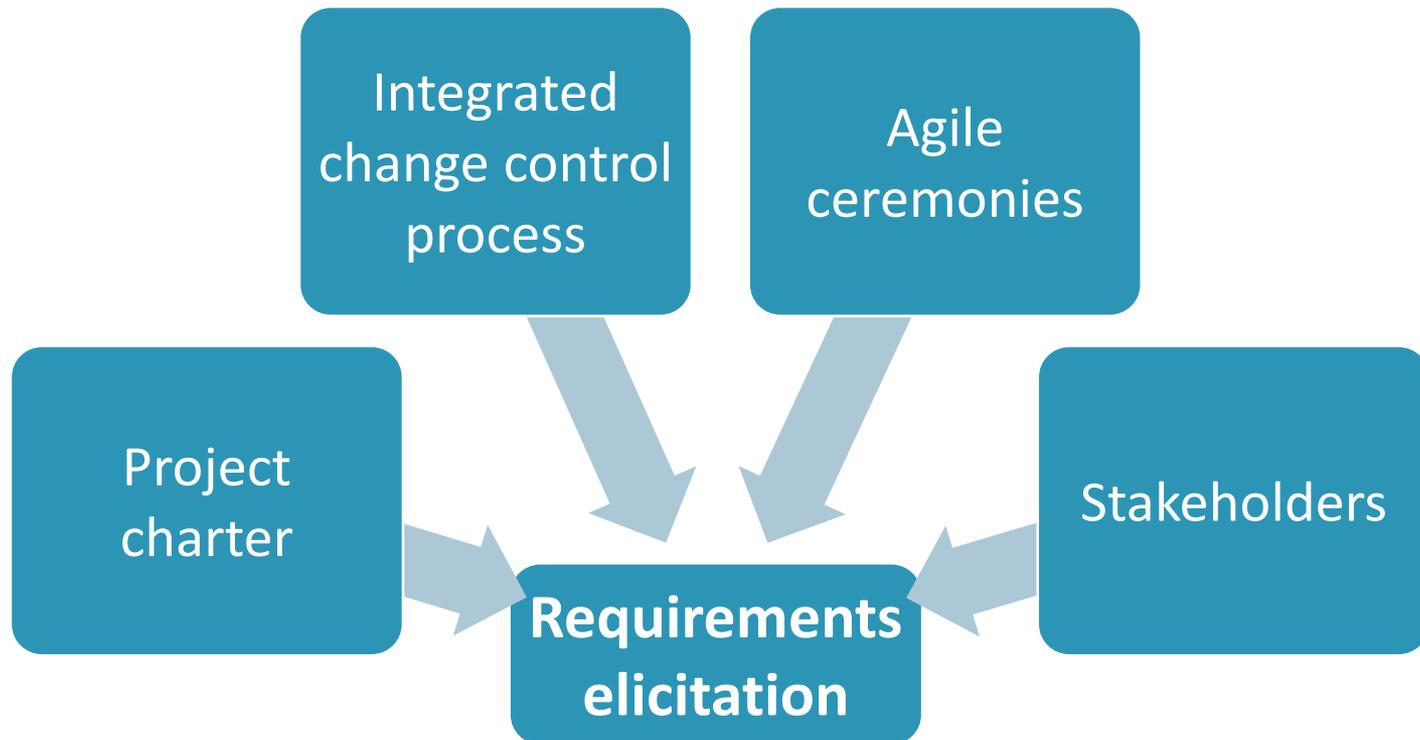


## Discussion Question

What type of requirement is “Project team must coordinate with affected function heads”?

- A. Business
- B. Stakeholder
- C. Solution
- D. Project

# Where Do Requirements Come From?

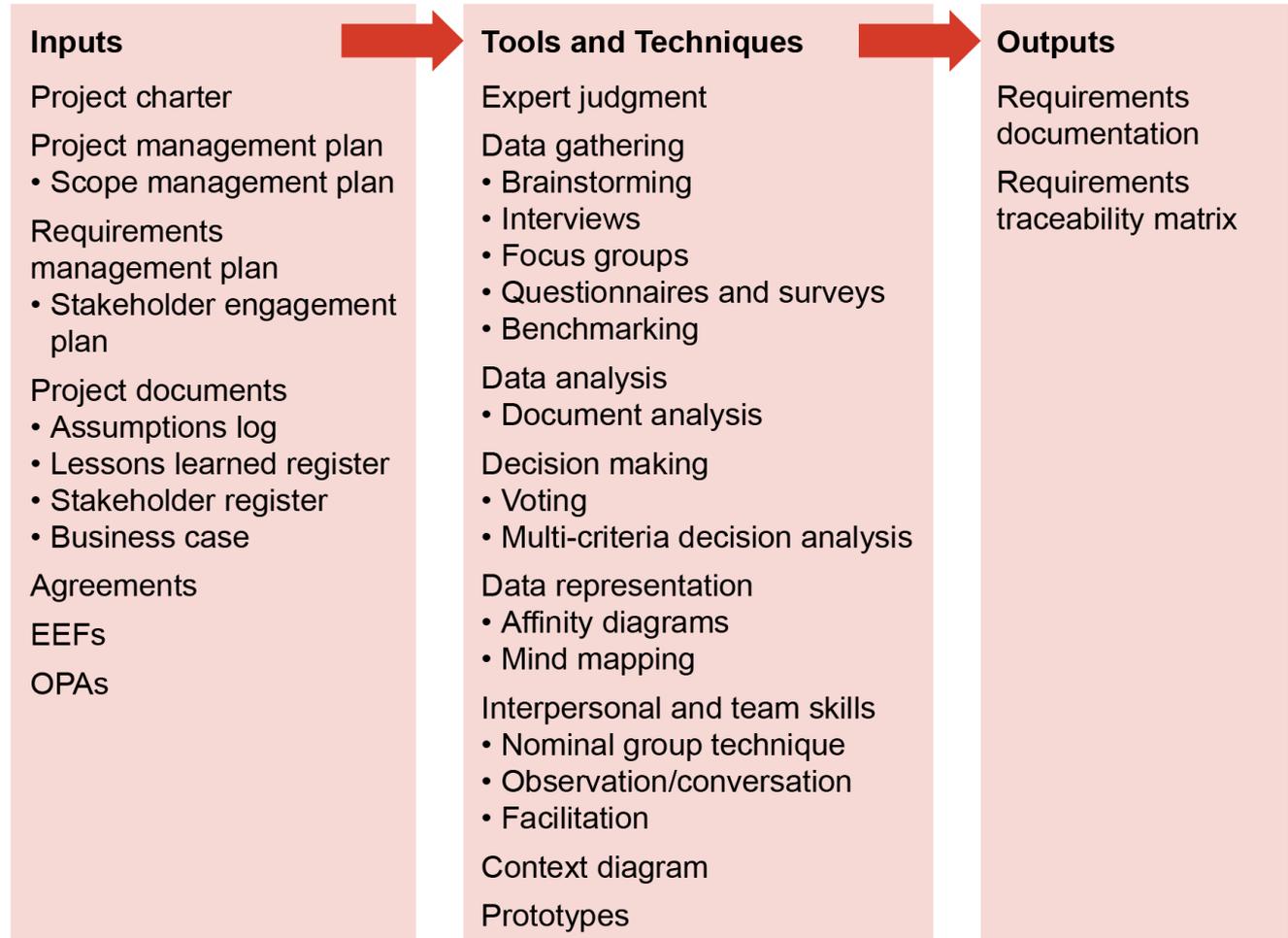


# Agile/Hybrid Requirements Elicitation/Prioritization

- 
- Lightweight documentation.
  - Never ends until project ends.
  - Collaborative discussion, progressive elaboration.
  - Product owner takes lead.
  - Capture “what,” not “how,” in stories, defects, epics, and spikes.
  - “How” from team and feedback. (Be solution-agnostic.)
  - Backlog grooming is prioritization.

# Predictive: Collect Requirements

- Eliciting and documenting requirements from all stakeholder groups



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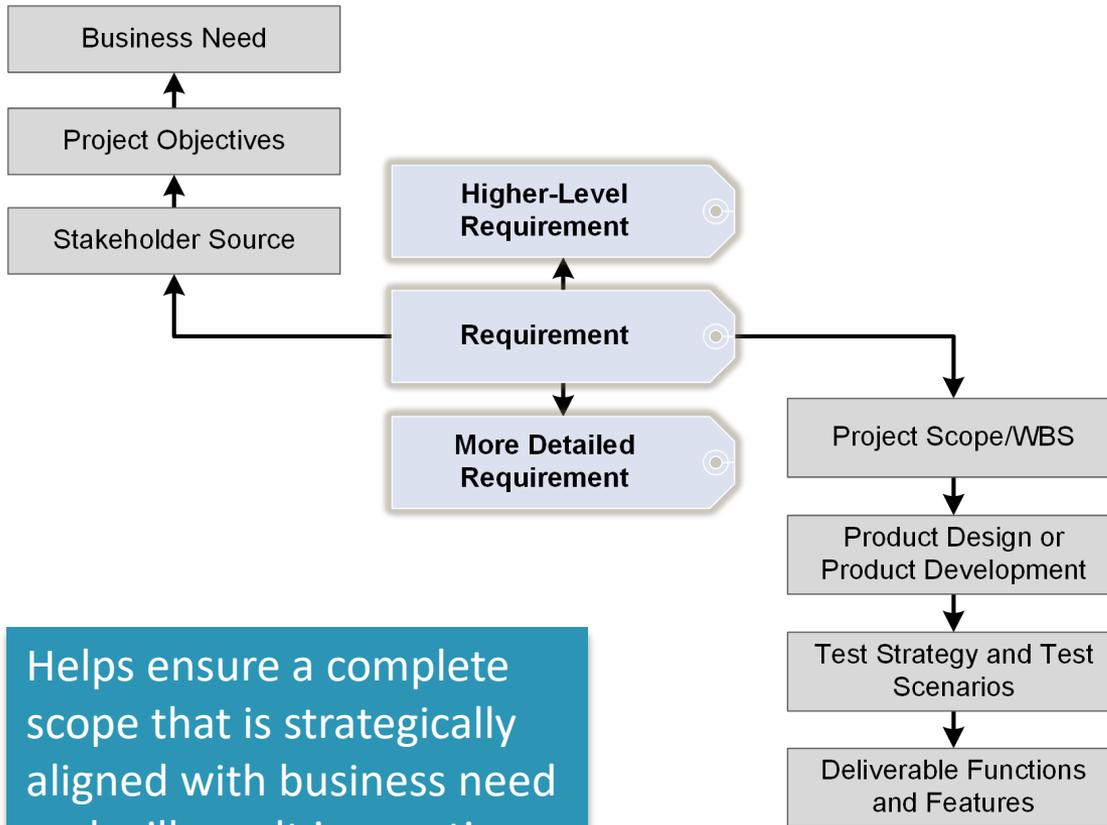
# Requirements Documentation

*“A record of product requirements and other product information, along with whatever is recorded to manage it.”*  
(PMBOK® Guide—Seventh Edition)

## Requirements must be:

- Unambiguous.
- Traceable to sponsor/customer needs.
- Complete.
- Internally consistent and free of conflicts.
- Acceptable, based on agreed decision-making method.

# Requirements Traceability Matrix



Spreadsheet that lists for each requirement:

- A unique identifier.
- Description.
- Owner.
- Priority.
- Status.

Helps ensure a complete scope that is strategically aligned with business need and will result in meeting customer expectations

# Defining Scope in Agile/Hybrid Projects

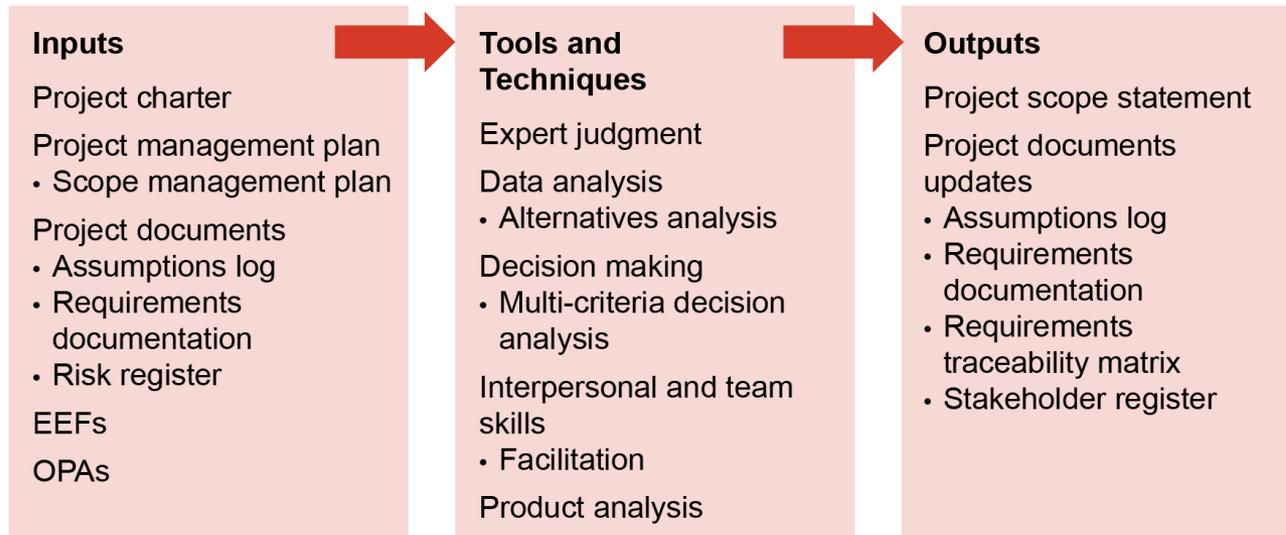
Tee-shirt sizing for overall project (example)

| Size | Required Team Size      | Rough Cost<br>(-25% to +75%) | Rough Schedule<br>(-25% to +75%) |
|------|-------------------------|------------------------------|----------------------------------|
| XS   | 1 person                | \$10,000                     | 1 month                          |
| S    | 2–5 persons             | \$30,000                     | 2 months                         |
| M    | 6–9 persons             | \$700,000                    | 6 months                         |
| L    | 2 teams of 6–9 persons  | \$3,000,000                  | 12 months                        |
| XL   | 3+ teams of 6–9 persons | \$7,000,000                  | 18 months                        |

# Defining Scope in Agile/Hybrid Projects

- Agile roadmap and minimum viable product (MVP)
- Issues with defining MVP for first release
  - Unclear vision: Keep at level of themes, epics.
  - Minimum viable versus valuable? Smallest feasible may not be most valued. Don't compromise on quality.
  - Technical debt: Fast way may not be best for long term. May be a strategy, be unavoidable, or be from incompetence. Accumulates interest (e.g., time spent on workarounds).
  - Numerous dependencies.
  - Contract flexibility: Don't limit minimizing initial scope.
  - Creative work inherently difficult to estimate.

# Predictive: Define Scope



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- Process of sorting collected requirements to see which align with the intent of the project charter and project constraints

# Moving from Requirements to Scope

## Facilitated workshops

- Sort requirements.
- Identify mandatory ones.
- Establish priorities.
- Create stakeholder consensus.

## Product analysis

- Industry-specific process:
  - Product breakdown
  - Systems engineering
  - Value engineering

## Alternatives generation

- Different ways to achieve goal.
- Uses idea-generation techniques (e.g., brainstorming, lateral thinking).

# Project Scope Statement

Project scope  
description

Acceptance  
criteria

Deliverables

Project  
exclusion

Constraints

Assumptions

***First of three pivotal scope documents***

# Breaking Down Scope on Agile/Hybrid Projects

## Backlog preparation

- Columns used.
- Rules for moving.
- Definition of “done.”
- Backlog evolves over project.
- Like WBS, is 100% complete in regard to what can be known now.

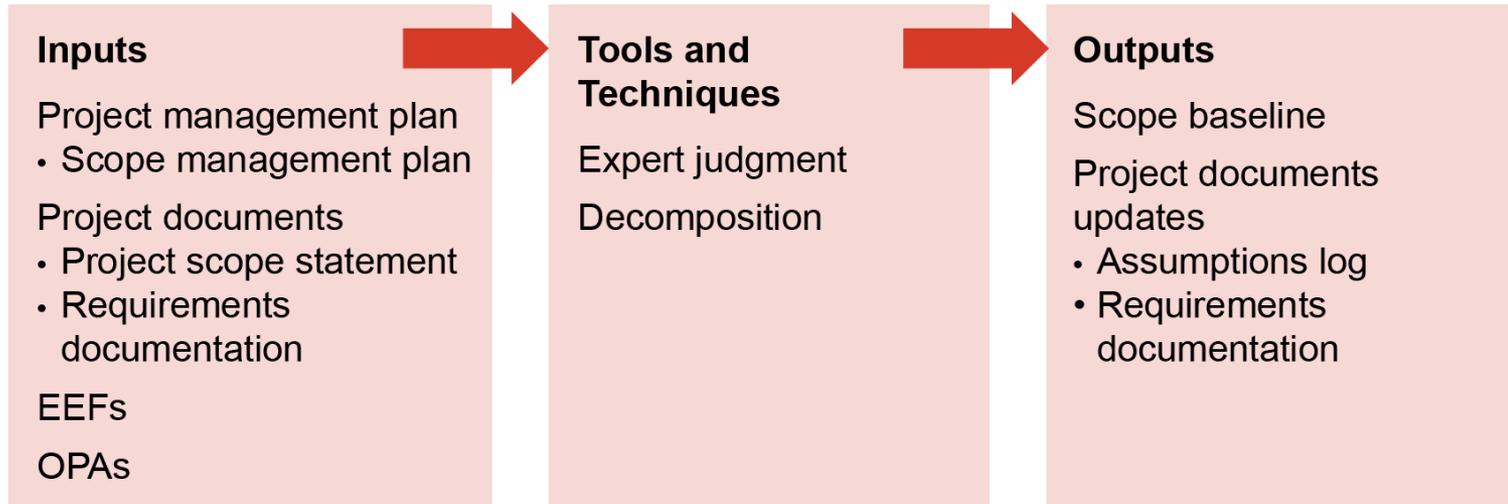
## Personas: archetype user (fictional)

- Who will want it (demographics).
- Why they will want it (goals).
- How they will use it (use case).
- How they will benefit.
- Pains they want to avoid.
- How needs differ from other personas.

## Creating themes and epics

- Broadly defined user stories.
- To be decomposed, but wait until last responsible moment.
- Themes categorize.
- Rolling wave planning.
- Start with vision.

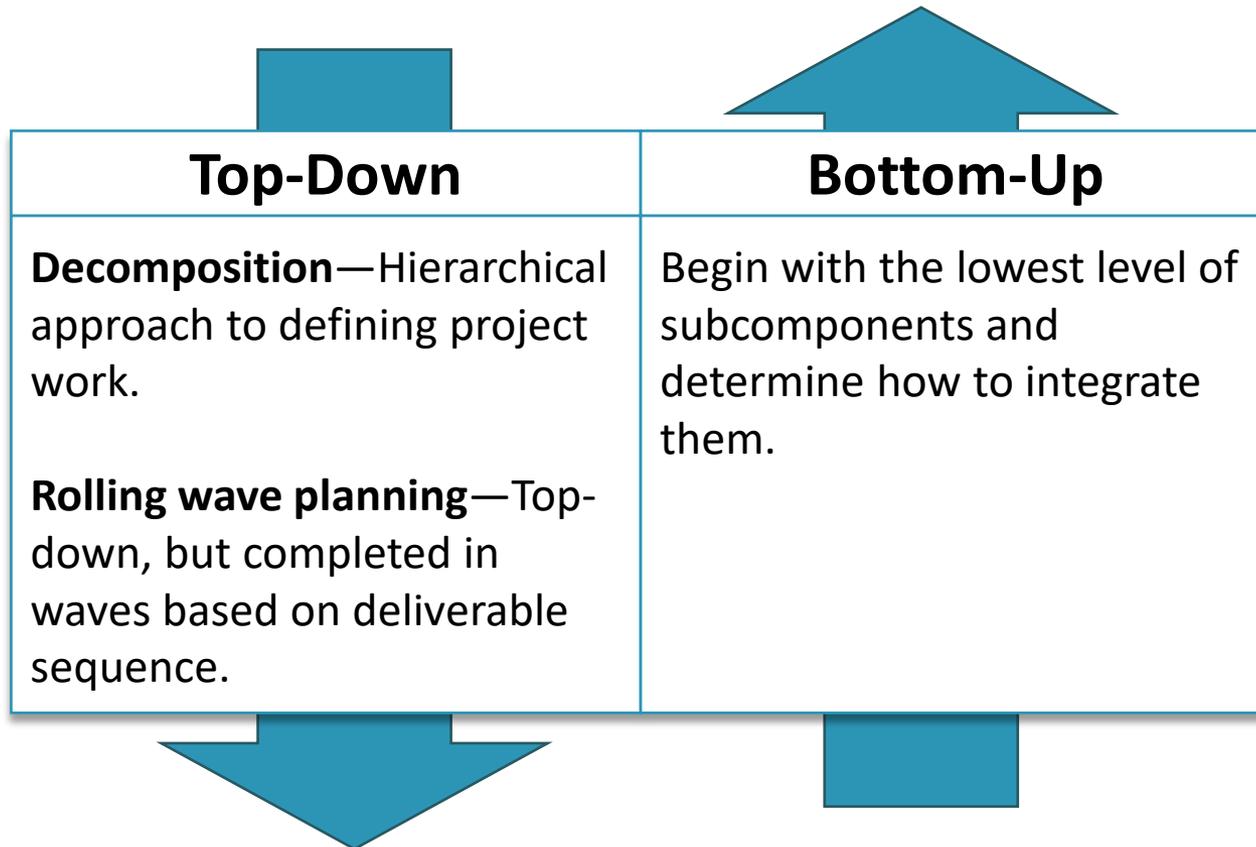
# Predictive: Create Work Breakdown Structure (WBS)



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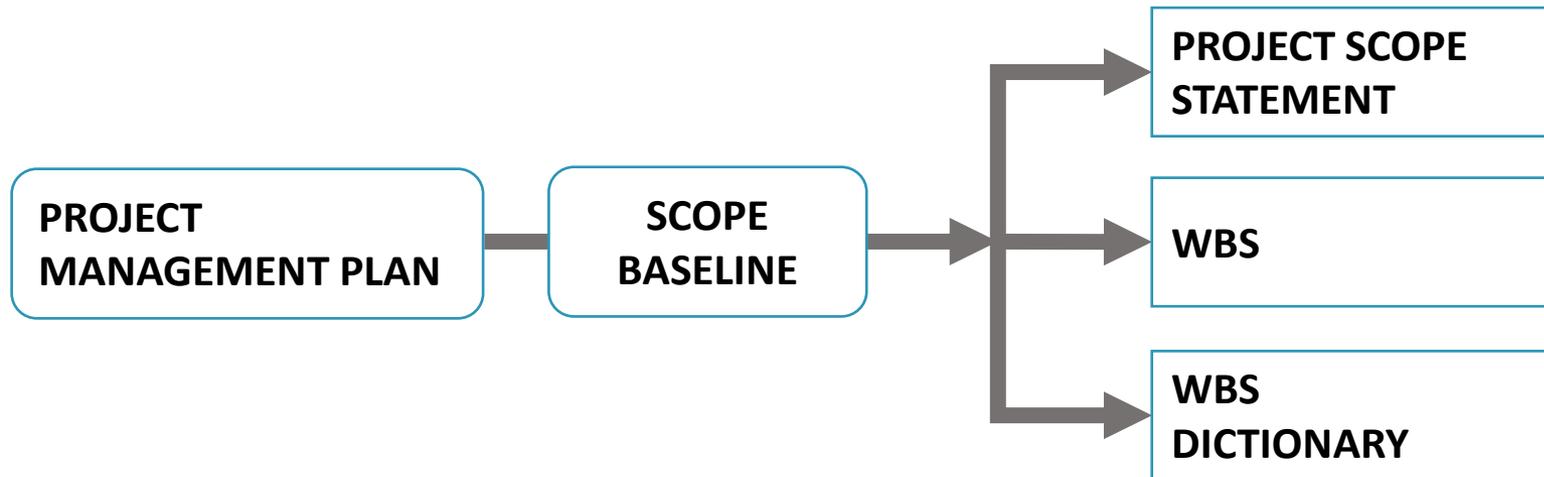
- Detailed, deliverable-oriented analysis of what work must be done—but not how—to achieve project objectives

# WBS Approaches



*Specific approach may be defined and supported through OPAs.*

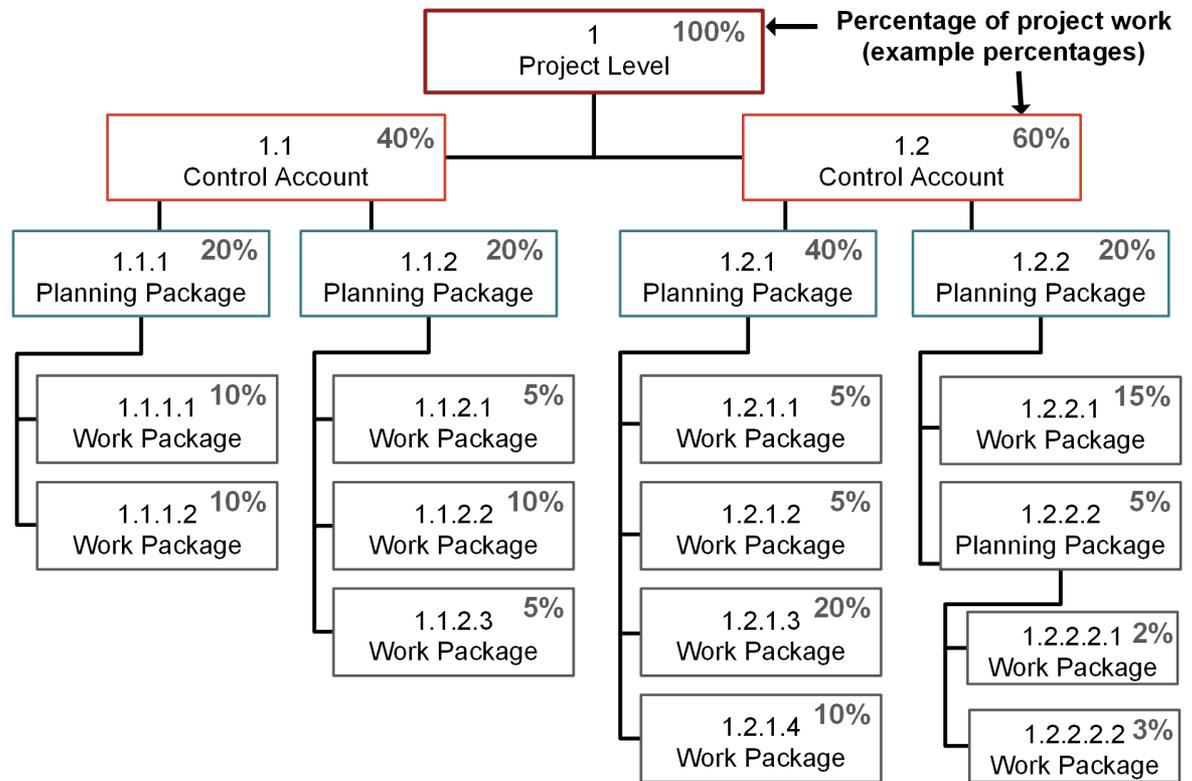
# Scope Baseline



**Once approved, these documents can be changed only through the integrated change control process.**

# Work Breakdown Structure (WBS)

- **Project level**
- **Control account**  
Optional point consolidating scope, budget, and schedule to support measurement
- **Planning package**  
Optional grouping of work packages
- **Work package**  
Smallest practical breakdown of work for estimation and management



# WBS Dictionary

## Detailed information about each work package in WBS:

- Code of account identifier
- Description of work
- Assumptions and constraints
- Responsible organization
- Acceptance criteria
- Technical references

## Living document using progressive elaboration:

- Schedule milestones and activities
- Required resources
- Cost estimates
- Quality requirements
- Agreement information (contracts)

# Agile/Hybrid Scope Monitoring/Validation

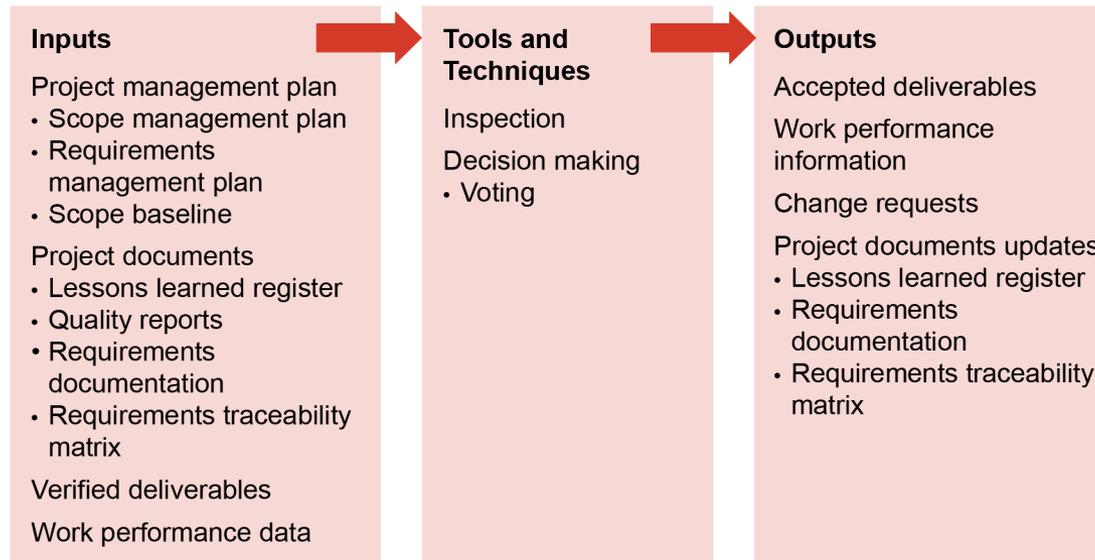
## Roadmap grooming

- If arranged like backlog, groom epics.
- Grooming = add, delete, modify, reprioritize.
- If timeline, rearrange epics.
- Must reflect:
  - Feedback.
  - New requirements.

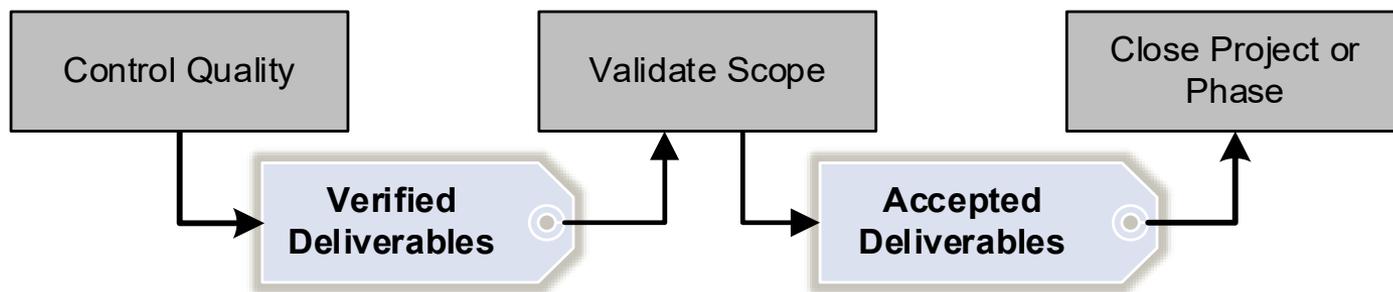
## Backlog grooming

- Create stories.
- Discuss stories, groom.
- Backlog scrubbing.
- Estimate story points.
- Demonstrations validate.
- Retrospectives monitor.
- Flow-based: JIT given WIP.
- Iteration-based: per timeboxed sprint.

# Predictive: Validate Scope



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## Discussion Question

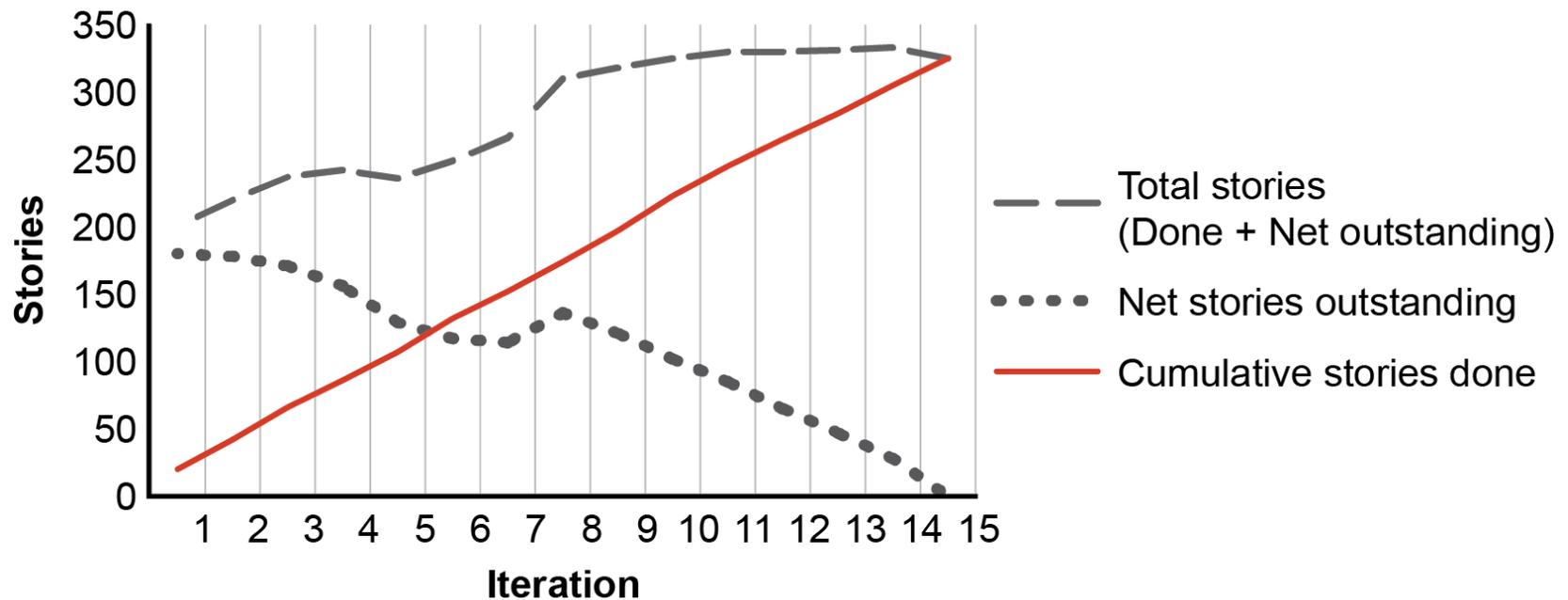
A deliverable has passed internal quality control, but the customer refuses to accept it because the quality is not at the expected level. What will happen next?

- A. The contract will be referred to the legal department.
- B. Control Quality will be repeated.
- C. Manage Quality will be repeated.
- D. The project manager will facilitate further discussions with the customer.

# Controlling Scope on Agile/Hybrid Projects

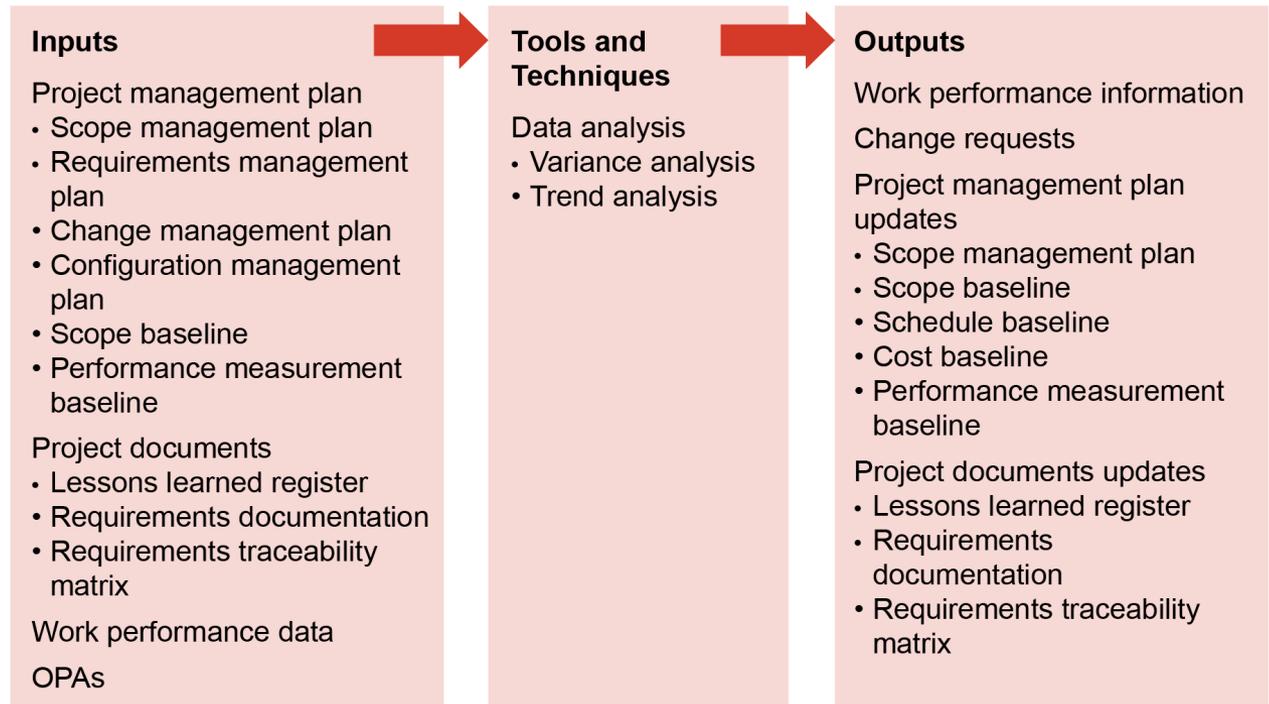
- Roadmap/backlog grooming.
- Product owner approves scope per iteration.

Story Chart (Burnup and Burndown)



# Predictive: Control Scope

- Measuring against scope baseline
- Using integrated change control to maintain realistic and accurate scope baseline



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