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MODULE II

Project Management Seminar

# Module II – Project Life Cycle, Part I

Constraints, life cycle types, and how to choose one; formal project initiation and scope planning: requirements, scope, and WBS.

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# Agenda

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LIFE CYCLE

01 Project constraints

02 The five process groups and the types of life cycle

03 How to choose the life cycle

04 Initiating process group: project charter and stakeholders

05 Planning process group: requirements, scope, and WBS

06 Module challenge

# The module question

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LIFE CYCLE

**WITH AI** Describe your project and ask it to reason about how stable the requirements are, not to pick a side.

*“Do you work in waterfall or are you agile?”*

**THE USUAL QUESTION**

Frames life cycles as camps you pick out of conviction.

**THE RIGHT QUESTION**

How clear are the requirements, and when does the business need to receive value?

**Core idea of the module:** the life cycle is not chosen; it is deduced from requirements and delivery. And before the life cycle comes authorization.

01

# Project constraints

Scope, time, and cost move together; quality sits at the center.

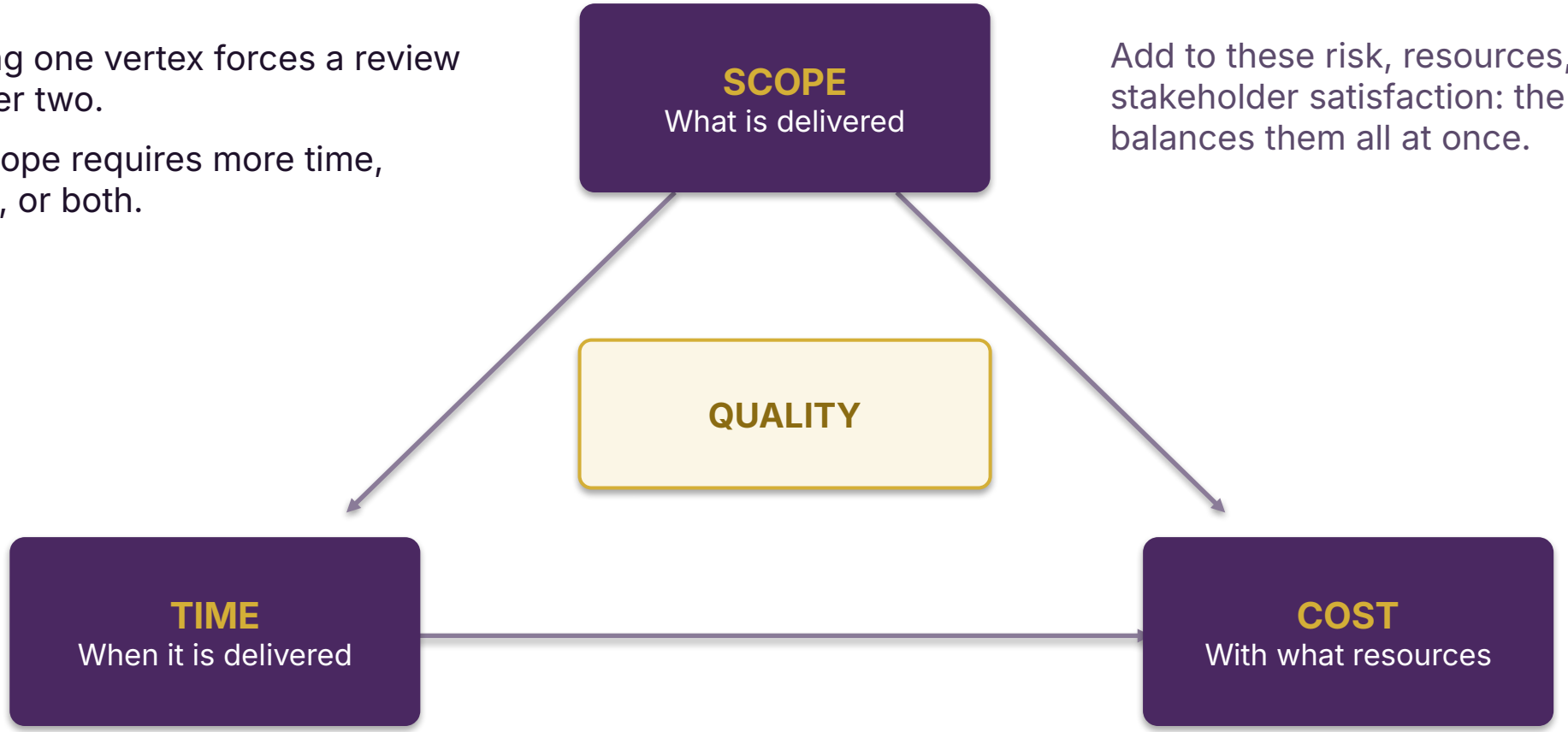
# 1. The triple constraint

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LIFE CYCLE

**WITH AI** Pose a scope change and ask it what questions to raise about time, cost, and quality.

- Changing one vertex forces a review of the other two.
- More scope requires more time, more cost, or both.




Add to these risk, resources, and stakeholder satisfaction: the manager balances them all at once.

Source: PMBOK® Guide, 6th ed. (2017).

# 02 Process groups and life cycles

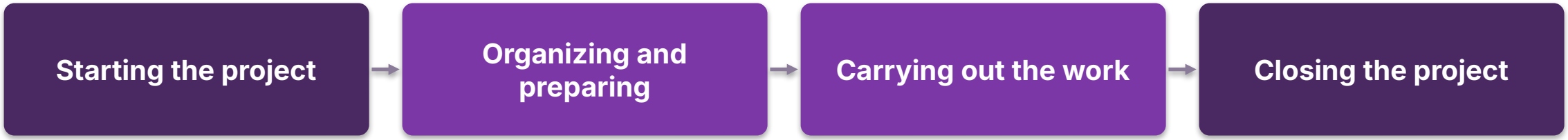
Five points on one scale, not five rival schools.

# 2. The project life cycle

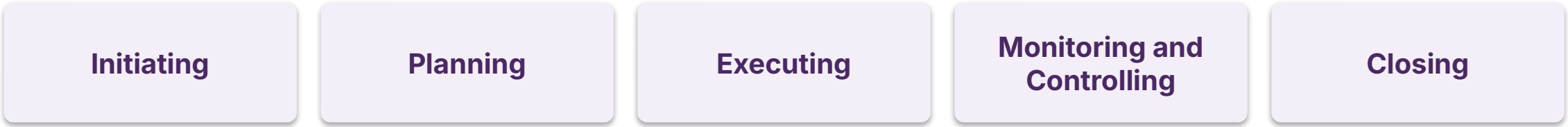
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LIFE CYCLE

**WITH AI** Ask it which management deliverables each phase produces in a project like yours.




## THE FIVE PROCESS GROUPS




Phases describe the project's path over time. Process groups describe what type of management work is done. Monitoring and controlling spans all the others: it is not a phase but an ongoing activity.

Source: PMBOK® Guide, 6th ed. (2017).

# 2. The five types of life cycle

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LIFE CYCLE

**WITH AI** Have it give you an example from your industry for each type of life cycle.

| Predictive<br>Waterfall | Iterative<br>Its question is what | Incremental<br>Its question is when | Adaptive<br>Agile | Hybrid<br>Combined |
|---|---|---|---|---|
| Scope, time, and cost are fixed up front. One deliverable at the end and strict change control. | Repeats cycles on the same product to better understand what must be built. | Delivers successive working parts, each one usable. | Requirements elaborated in short cycles, with stakeholders engaged throughout. | Different workstreams of the same project, each with its own approach. |

**PREDICTIVE** ◀—— **the same scale** ——▶ **ADAPTIVE**

Source: PMBOK® Guide, 6th ed. (2017).

# 2. Iterative and incremental are not synonyms

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LIFE CYCLE

**WITH AI** Ask it whether your plan iterates, increments, or both, and why.

| Iterative: aims to get it right | Incremental: aims to deliver early |
| --- | --- |
| Scope is defined early, but time and cost adjust as the team better understands the product.<br><br>Prototype, test, and adjust before building. | What to build is known, and it is delivered in parts, adding features on preset timelines.<br><br>Each increment is useful from day one. |

**The adaptive approach combines both: short cycles that learn and deliver at once.**

Source: PMBOK® Guide, 6th ed. (2017).

# 2. Differences between life cycles

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LIFE CYCLE

**WITH AI** Have it fill in this table for your real project and show you where it doesn't fit.

| | Predictive | Iterative | Incremental | Adaptive |
|---|---|---|---|---|
| **Requirements** | Defined up front | Refined with prototypes | Defined; delivered in parts | Elaborated each cycle |
| **Deliverables** | One, at the end | At the end, after several versions | Several, usable | Frequent, with value |
| **Changes** | Restricted | Incorporated per cycle | Incorporated between deliveries | Expected and prioritized |
| **Stakeholders** | At specific milestones | At the end of each cycle | At each delivery | Continuously |
| **Risk and cost** | Detailed planning | Reduced through learning | Reduced through delivery | Controlled each cycle |

Source: Author's work based on the PMBOK® Guide, 6th ed. (2017).

# 03 How to choose the life cycle

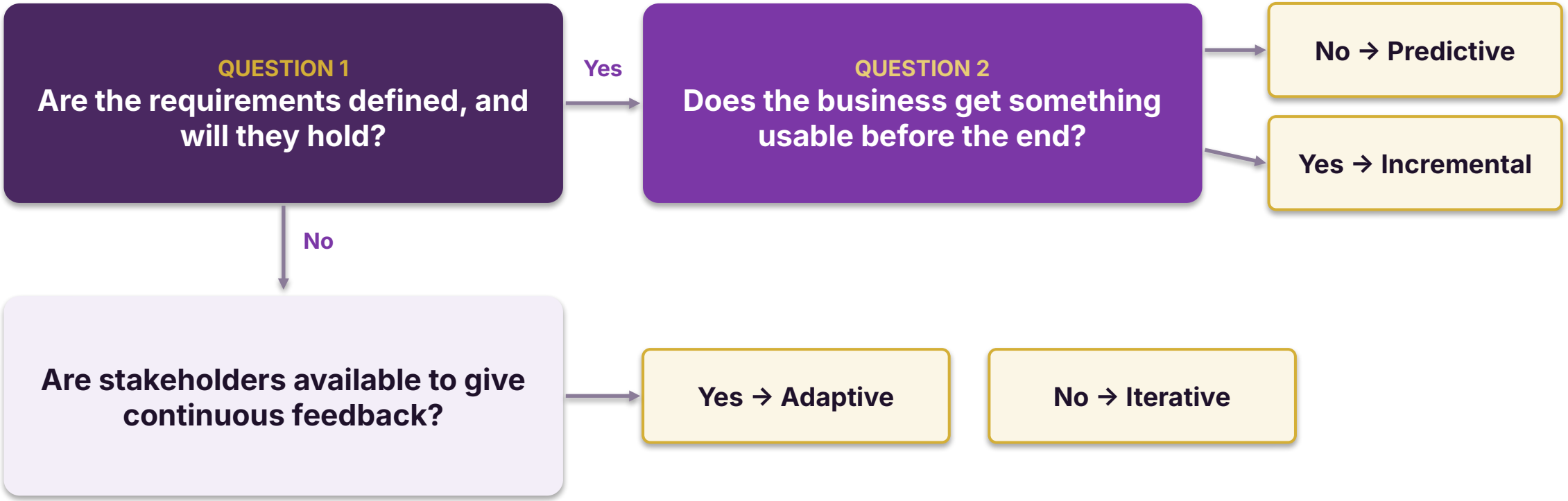
Two questions do almost all the work.

# 3. Two questions to decide

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LIFE CYCLE

**WITH AI** Answer both questions for it and ask for the written rationale, ready to paste into the charter.




When a regulation or a contract imposes the requirements, the answer to the first question is usually yes.

# 3. Why the real answer is usually hybrid

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LIFE CYCLE

**WITH AI** Ask it to propose the boundary between workstreams and the integration points to watch.

A project to modernize the corporate digital channel, with two workstreams under one budget:

| Regulatory workstream · predictive | User experience · adaptive |
| --- | --- |
| Tax reports, audit, and record cleanup.<br><br>The regulation requires logic defined, documented, and validated before any deployment. | Portal and app for approving corporate payrolls.<br><br>The screen is discovered through prototypes; performance and security matter. |

Hybrid does not fail at the extremes: it fails at the seam. From day one, write down where one workstream ends, where the other begins, and how they integrate.

Source: Illustrative case from the financial sector.

# 04 Initiating process group

Project charter and stakeholders: the point of no return.

# 4. The two initiating processes

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LIFE CYCLE

**WITH AI** The charter is not written from scratch: ask it to translate your business case into charter format.

| Develop Project Charter | Identify Stakeholders |
| --- | --- |
| Formally authorizes the project.<br><br>Gives the manager authority to use organizational resources. | People, groups, or organizations that may affect or be affected by the project.<br><br>Their expectations and influence are analyzed. |

**Once the charter is approved, the organization commits money and people. That is why it is debated before, not after.**

Source: PMBOK® Guide, 6th ed. (2017).

# 4. What the project charter must contain

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LIFE CYCLE

**WITH AI** Have it fill in the eleven fields with your case and flag as pending whatever it cannot find.

1. Project purpose
2. Measurable objectives and success criteria
3. High-level requirements
4. High-level description, boundaries, and key deliverables
5. Overall project risk
6. Summary milestone schedule
7. Preapproved financial resources
8. Key stakeholder list
9. Approval requirements: who decides success and who signs off
10. Exit or cancellation criteria
11. Assigned manager, sponsor, and authority levels

**Eleven elements, four questions →**

Source: PMBOK® Guide, 6th ed. (2017).

# 4. The four charter questions

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LIFE CYCLE

**WITH AI** Give it your charter and have it say which of the four questions is ambiguous.

**What will we achieve, and how is it measured?**
Objectives, success criteria.

**How far does the project go?**
Boundaries, deliverables, exit criteria.

**Who decides it is done right?**
Sponsor, approval requirements.

**What authority does the manager have?**
Level of authority over resources and decisions.

If the charter is ambiguous on any of the four, the project will argue the same point for its entire life.

# 4. Stakeholder management

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LIFE CYCLE

**WITH AI** Ask it for the roles people tend to forget. You assess influence and resistance.

**Identify**
Who affects or is affected.

→

**Analyze**
Interests, influence, and possible resistance.

→

**Engage**
Strategies to secure their participation.

→

**Monitor**
Adjust as they change.

**STAKEHOLDER REGISTER · SUGGESTED COLUMNS**

| Stakeholder | Area or role | Interests | Influence | Contribution | Resistance |
|---|---|---|---|---|---|
| **Stakeholder A** | Sponsor | Reduce process costs | High | Backing before the committee | Schedule |

**A stakeholder not identified in time does not disappear: they show up at the end, when change is already costly.**

Source: PMBOK® Guide, 6th ed. (2017).

# 05 Planning process group

Requirements, scope, and WBS: the raw material for everything that follows.

# 5. Three scope planning processes

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LIFE CYCLE

**WITH AI** Have it turn your interview notes into a requirements list with no duplicates.

1

**Collect Requirements**
Determine, document, and manage stakeholder needs.

2

**Define Scope**
Describe the project and the product in detail.

3

**Create WBS**
Break the scope down into manageable work packages.

In agile approaches, requirements become the backlog: epics, user stories, and acceptance criteria.

Source: PMBOK® Guide, 6th ed. (2017).

# 5. Five categories of requirements

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LIFE CYCLE

**WITH AI** Ask it to sort your requirements into the five categories and tell you which nonfunctional ones are missing.

| Category | What it describes | Example |
|---|---|---|
| **Business** | The organization's why | Increase corporate transaction volume by 25% |
| **Stakeholders** | The need of a specific group | What the legal team or the end user asks for |
| **Functional solution** | What the product does | Upload payroll CSV files to the portal |
| **Nonfunctional solution** | How it must behave | Response ≤ 1.5 s; auditable retention for 5 years |
| **Project** | Administrative conditions | The go-live date set in the contract |

**Nonfunctional requirements** are the most often forgotten and the most costly: security, performance, availability, retention.

Source: PMBOK® Guide, 6th ed. (2017). Illustrative examples.

# 5. How they are gathered and when they are ready

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LIFE CYCLE

**WITH AI** Give it each requirement and have it flag any that is not unambiguous, measurable, or traceable.

## Elicitation techniques

- Brainstorming
- Interviews
- Focus groups
- Benchmarking
- Prototyping and observation

## Quality criteria

- Unambiguous
- Measurable
- Traceable
- Consistent
- Accepted by stakeholders

**“The system must be fast” meets none of the five criteria.**

# 5. Scope: four processes and one rule

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LIFE CYCLE

**WITH AI** Give it your scope paragraph and have it point out what it lacks to be SMART.

**Plan**
How it will be defined, validated, and controlled.

**Define**
Detailed description of the project and the product.

**Validate**
Formal acceptance of deliverables.

**Control**
Monitor and manage changes to the baseline.

## WELL-WRITTEN SCOPE IS SMART

| S | M | A | R | T |
|---|---|---|---|---|
| Specific | Measurable | Achievable | Relevant | Time-bound |

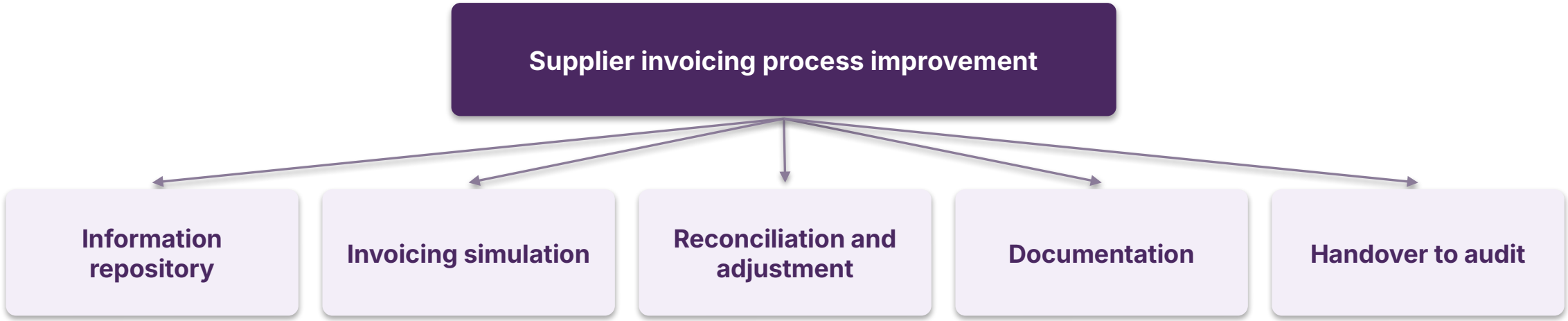
The rule: the project includes all the work required, and only the work required. The first half keeps things from being missed; the second, keeps the project from growing on its own.

Source: PMBOK® Guide, 6th ed. (2017).

# 5. The WBS: deliverables, not tasks

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LIFE CYCLE

**WITH AI** Ask it for a deliverable-based WBS, not a task list, and then which typical deliverables are missing.




- **Work package:** the lowest level, where work can be estimated, scheduled, and controlled.
- **"Work" means deliverables:** the WBS is not a schedule or a task list. Activities are derived from it later.
- **It is the map** of what will exist when the project ends.

Source: PMBOK® Guide, 6th ed. (2017). Illustrative example.

# 5. Module challenge

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LIFE CYCLE

**WITH AI** Build each piece yourself and use AI to find the gaps.

Take a real project, yours or your company’s, and build:

1. **The stakeholder register**
2. **The project charter**
3. **Requirements, by category, and deliverables**
4. **The scope statement in SMART format**
5. **The WBS down to work packages**

Then decide the life cycle with the two questions. If the project has two workstreams, draw the boundary.

# Key takeaways

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LIFE CYCLE

**WITH AI** AI drafts and reviews; deducing the life cycle and negotiating scope is your job.

### The life cycle is deduced

From how clear the requirements are and when the business needs value.

### Hybrid is designed

Its risk lies in the boundary between workstreams; write it down from the start.

### The charter authorizes

It answers what is achieved, how far, who approves, and with what authority.

### The WBS is about deliverables

All the work required, and only the work required.

# Sources



- A Guide to the Project Management Body of Knowledge (PMBOK® Guide), 6th edition. Project Management Institute (2017)
- The 7th edition (2021) moved from processes to principles and performance domains; the five life cycles still apply. When citing the standard, check the edition.
- Agile Practice Guide. Project Management Institute and Agile Alliance (2017)
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