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MODULE IV

Project Management Seminar

Module IV – Agile and Scrum

What agile is, how it connects to the PMBOK process groups and how to work with Scrum, Kanban, XP and Lean.

Juan Mauricio Pérez Jaramillo · 2026

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Agenda

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AGILE

01 Where agile comes from

02 The Agile Manifesto: 4 values and 12 principles

03 How it connects to the PMBOK

04 Scrum in depth: accountabilities, events and artifacts

05 A full example, Sprint by Sprint

06 Kanban, XP and Lean: when to use each

07 Where agile is not the answer, and the module challenge

Agile or PMBOK?

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AGILE

WITH AI Ask it to compare your project in predictive and agile, phase by phase.

People ask it as if they were two rival teams. They are not.

PMBOK

Describes what has to happen in any project for it to succeed.

AGILE

Describes one way to make it happen when the problem can't be fully planned on day one.

Core idea of the module: process groups don't disappear in an agile project; they repeat, in miniature, inside every Sprint.

01 Where agile comes from

A 2001 manifesto that gave a common name to practices that already existed.

1. Where it comes from

WITH AI Use it to summarize the original sources, such as the Takeuchi and Nonaka article.

1986

“The New New Product Development Game”
Takeuchi and Nonaka (Harvard Business Review) compare the best product teams to a rugby team moving forward together, passing the ball.

1990s

Lightweight methods
Scrum and XP already existed and were used by software teams.

Feb. 2001

Snowbird, Utah
Seventeen people sign the Manifesto for Agile Software Development.

They invented nothing that weekend: they gave it all a common name and said what it had in common.

Source: Takeuchi and Nonaka, HBR (1986); Manifesto for Agile Software Development (2001).

02 The Agile Manifesto

Four values and twelve principles. It is a mindset, not a tool.

2. The four values

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WITH AI Describe how your team works and ask which manifesto value is being sacrificed.

We value	over
Individuals and interactions	processes and tools
Working software	comprehensive documentation
Customer collaboration	contract negotiation
Responding to change	following a plan

“While there is value in the items on the right, we value the items on the left more.” Agile doesn't say there is no plan, contract or documentation: it says what wins when you must choose.

Source: Manifesto for Agile Software Development (2001).

2. The twelve principles, in four groups

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WITH AI Have it turn the twelve principles into questions for the next retrospective.

Early and continuous value	People and collaboration	Pace and quality	Improvement
1. Satisfy the customer through early and continuous delivery. 2. Welcome changing requirements, even late. 3. Deliver frequently: from two weeks to two months. 4. Working results are the measure of progress.	5. Business and team together every day. 6. Motivated people, with environment, support and trust. 7. Face-to-face conversation. 8. Self-organizing teams.	9. A pace that can be sustained indefinitely. 10. Technical excellence and good design. 11. Simplicity: maximizing the work not done.	12. At regular intervals the team reflects and adjusts how it works.

Principle 11: the agile question is not “how do we do this faster” but “what of this doesn't need doing.”

Source: Principles behind the Agile Manifesto (2001).

2. From manifesto to practice: three layers

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WITH AI Ask it to sort what in your team is practice, framework and mindset.

MINDSET

Agile Manifesto: 4 values and 12 principles. Answers why and by what criteria.

FRAMEWORKS

Scrum | **Kanban** | **XP** | **Lean**

PRACTICES

User stories · visual board · work-in-progress limits · relative estimation · continuous integration · retrospectives

The costliest mistake: buying the third layer believing you bought the first. A board on the wall doesn't change how decisions are made.

Source: Agile Manifesto (2001); Scrum Guide (2020); Kanban Guide (2025).

03 How it connects to the PMBOK

The same five process groups, walked through differently.

3. Two ways to walk the same groups

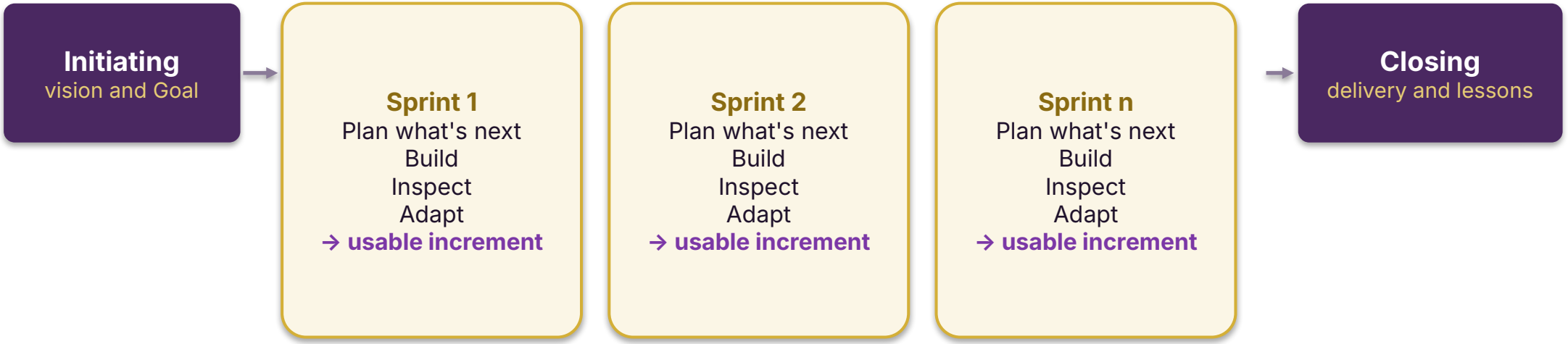
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AGILE

WITH AI Have it split your predictive plan into Sprints and show what is planned in each.

PREDICTIVE · ONE PASS



AGILE · A REPEATING CYCLE



Planning, executing and monitoring and controlling live inside every Sprint. Initiating and closing are still done once. Agile doesn't plan less: it plans more often, with better information.

Source: Own work based on the PMBOK Guide (6th and 8th ed.) and the Scrum Guide (2020).

3. The mapping, group by group

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AGILE

WITH AI Ask which predictive document matches each Scrum artifact in your company.

Process group	In a predictive project	In Scrum
Initiating	Charter, stakeholders	Product vision, Product Goal, who the Product Owner is
Planning	Full plan: scope, WBS, schedule, costs	Ordered Product Backlog and Sprint Planning every Sprint: progressive planning
Executing	Work according to plan	The Sprint's work, done by the Developers
Monitoring and controlling	Variances against the baseline, change control	Daily Scrum, Sprint Review and burndown chart; change enters through the backlog
Closing	Formal acceptance, lessons learned	Every Increment meets the Definition of Done; the Retrospective is a lesson learned every Sprint

Source: PMBOK Guide, 6th ed. (2017); Scrum Guide (2020).

3. What PMI says today

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WITH AI Use it to summarize changes between PMBOK editions, and check against the source.

6th edition 2017	7th edition 2021	8th edition Nov. 2025
A process guide organized by groups and knowledge areas. This seminar was built on it.	Moves to principles and performance domains. Agile goes to the Agile Practice Guide (PMI and Agile Alliance).	Brings processes back, non-prescriptively, in five focus areas matching the same groups, for predictive, adaptive and hybrid approaches.

The standard itself stopped treating “PMBOK” and “agile” as mutually exclusive.

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Source: Project Management Institute (pmi.org/standards).

04 Scrum in depth

Three accountabilities, five events and three artifacts with their commitments.

4. What Scrum is

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WITH AI Have it explain Scrum in three sentences for your executive committee.

“Scrum is a lightweight framework that helps people, teams and organizations generate value through adaptive solutions for complex problems.”

THREE PILLARS

- **Transparency**
- **Inspection**
- **Adaptation**

FIVE VALUES

- **Commitment**
- **Focus**
- **Openness**
- **Respect**
- **Courage**

The official guide is under twenty pages: Scrum is purposefully incomplete. It says what must exist, not how to do each thing.

Source: The Scrum Guide, Ken Schwaber and Jeff Sutherland (November 2020).

4. The three accountabilities

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WITH AI Ask it to spot who in your org chart could be a Product Owner with real authority.

Product Owner	Scrum Master	Developers
Accountable for maximizing the value of the product. Owns the Product Backlog and writes the Product Goal. One person, not a committee.	Accountable for Scrum working as defined: coaches, removes impediments, helps the organization. Not the boss or the Daily's secretary.	Build the increment, whether programmers, analysts, designers or lawyers. Create the Sprint plan and meet the Definition of Done.

Scrum Team: ten people or fewer, no hierarchies or sub-teams. In PMBOK terms, the Product Owner takes much of the manager's role on scope and stakeholders; the Scrum Master, on the team.

Source: The Scrum Guide (2020).

4. The five events

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AGILE

WITH AI Have it prepare each event's agenda and take notes; the team makes the commitments.

Event	Purpose	Maximum length
Sprint	Container for everything else; produces at least one increment	One month or less, always the same
Sprint Planning	Why the Sprint is valuable, what will be done and how	8 hours
Daily Scrum	Inspect progress toward the Sprint Goal and adapt the plan	15 minutes
Sprint Review	Show stakeholders what was achieved and decide what's next	4 hours
Sprint Retrospective	Review how the team worked and pick what to improve	3 hours

- **The Daily is not a status report for the boss:** it is by the Developers and for the Developers.
- **The Sprint Review is not a presentation:** it is a working session with stakeholders in front of the working increment.

Source: The Scrum Guide (2020). Maximum durations for a one-month Sprint.

4. The three artifacts and their commitments

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WITH AI Ask it to check whether your Definition of Done is verifiable.

Product Backlog	Sprint Backlog	Increment
Commitment: Product Goal	**Commitment: Sprint Goal**	**Commitment: Definition of Done**
The ordered list of everything the product might need, and the future state it aims for.	What was selected for this Sprint, the plan to deliver it and a single goal that gives it coherence.	Each concrete step toward the Product Goal. Anything “almost done” goes back to the backlog.

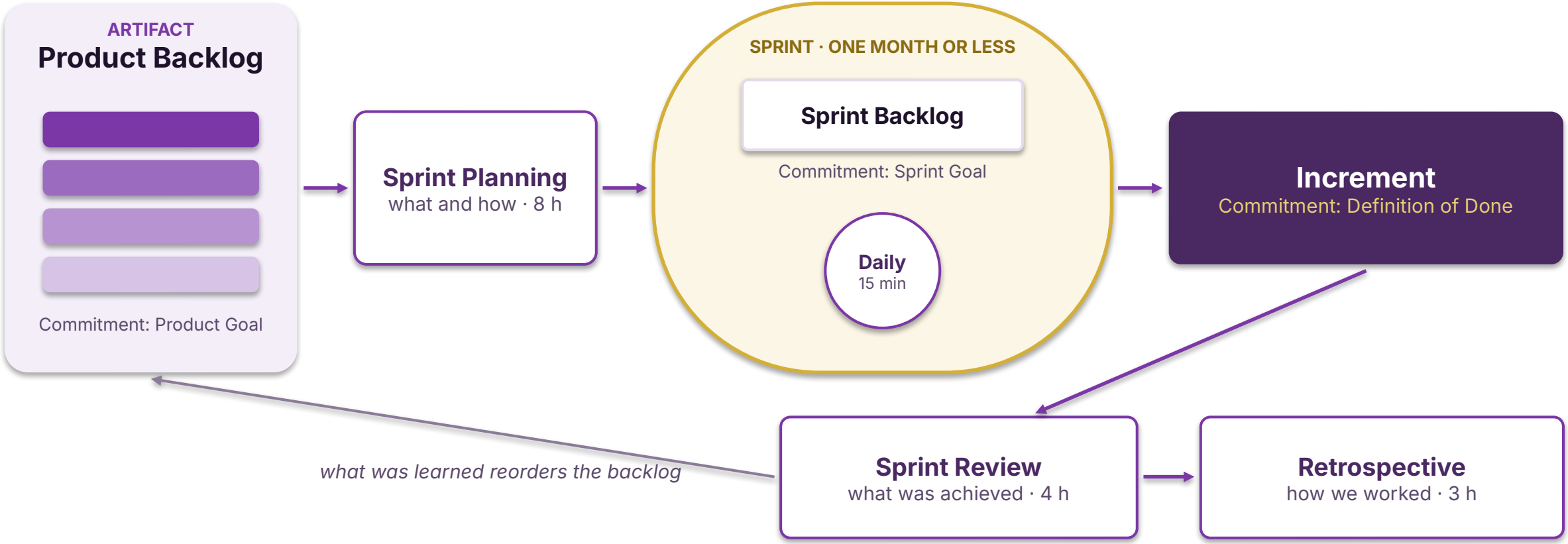
Refinement is not an event: it is an ongoing activity to break big items into small ones until they fit in a Sprint.

Source: The Scrum Guide (2020).

4. Scrum on one page

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WITH AI Have it turn this page into a checklist for your first Sprint.



Scrum Team (10 people or fewer): Product Owner (value) · Scrum Master (effectiveness) · Developers (increment)

Source: The Scrum Guide (2020). Maximum durations for a one-month Sprint.

05

A full example

Fictional case: a bakery chain with twelve stores.

5. Project start

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WITH AI Have it draft the Product Goal from your vision notes.

PRODUCT GOAL

“A business customer can place, pay for and track an order without calling.”

Product Owner
The sales manager.

Team
Six people: two developers, a designer, one person from the plant, one from collections and a Scrum Master.

Cadence
Two-week Sprints.

Business customers are offices, schools and hotels that order by phone today.

Source: Fictional case for educational purposes.

5. The initial Product Backlog

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WITH AI Ask for user stories with acceptance criteria; the Product Owner decides the order.

#	User story	Size
1	As a business customer, I want to see the catalog with my contract prices, so I can order without asking	5
2	As a customer, I want to build and send an order for the next day, so I don't have to call	8
3	As the plant, I want to receive consolidated orders at 6 p.m., so I can schedule production	5
4	As a customer, I want to pay by bank transfer or PSE, so I don't wait for the invoice	8
5	As a customer, I want to see my order status, so I know when it arrives	3
6	As collections, I want to block orders from customers in arrears, so debt doesn't grow	5
7	As a customer, I want to repeat a previous order with one click	3

Size is relative, not in hours: it helps order the work and know how much fits in a Sprint, not to control people.

Source: Fictional case for educational purposes.

5. Sprint 1, start to finish

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WITH AI Have it summarize the Review and prepare the Retrospective with the Sprint's data.

Sprint Planning	Daily Scrum	Sprint Review	Retrospective
Goal: “A pilot customer can place a real order for the next day.” Stories 1, 2 and 3 are in (18 points).	On day 4 the team learns the plant needs the order printed by route. The team adjusts story 3 within the Sprint: the goal doesn't change.	The pilot asks: “I need my boss to approve the order.” It enters as a new story, above payment.	Operations found out late. Agreement: the plant person reviews every story that affects them before the Sprint.

Agile in one line: the plan changed because information appeared that didn't exist before showing something working. In predictive, that approval would have surfaced at acceptance testing, as a scope change with a cost and a date.

Source: Fictional case for educational purposes.

06 Kanban, XP and Lean

Each framework solves a different problem. Scrum vs. Kanban is not a fight.

6. When to use each framework

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WITH AI Describe your work and ask which framework fits, with arguments for and against.

Framework	What it solves	Use it when
Scrum	Building a complex product with frequent learning, in fixed Sprints of one month or less	There is a product, a clear owner and requirements yet to be discovered
Kanban	Making continuously arriving work flow, without iterations	Work arrives unannounced: support, maintenance, internal requests
XP	Software technical quality under constant change	The risk is in the code: testing, integration, design
Lean	Eliminating waste and shortening lead time across the value stream	The problem is waiting, not execution

Many teams use Scrum for the product and Kanban for supporting that same product.

Source: Scrum Guide (2020); Kanban Guide (2025); Beck (1999).

6. Kanban

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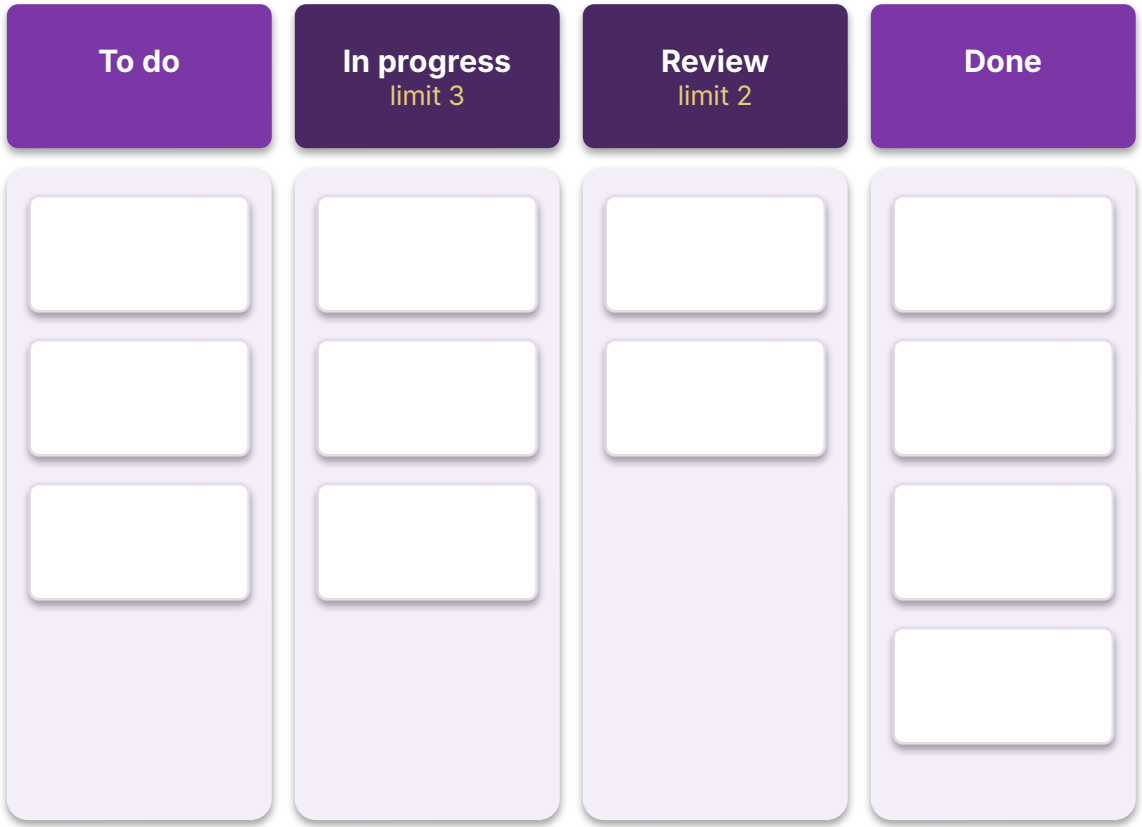
WITH AI Give it your board's cycle times and have it point out where work piles up.

THREE PRACTICES

- Defining and visualizing the workflow
- Actively managing items in the workflow
- Improving the workflow

FOUR MINIMUM MEASURES

- **Work in progress**
- **Throughput:** items finished per unit of time
- **Work item age:** how long it has been open
- **Cycle time:** how long it took from start to finish



Without a work-in-progress limit, the board is just a colorful to-do list.

Source: The Kanban Guide, May 2025 version.

6. XP and Lean

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WITH AI In XP, AI helps with coding and testing, always with human review.

XP · Extreme Programming

Proposed by Kent Beck in the late nineties. Where Scrum says little about how to build, XP is specific:
tests before code · continuous integration · pair programming · small releases · simple design
It is the framework of technical excellence (principle 10).

Lean

It comes from the Toyota Production System. Its question: where is time lost between someone asking for something and receiving it.
waiting · approvals · rework · work nobody asked for
It is the basis of Kanban and the link to Lean Six Sigma.

Many teams: SAFe, LeSS, Disciplined Agile. Scaling a framework doesn't fix teams that don't yet work on their own.

Source: Beck, Extreme Programming Explained (1999).

07

Limits, mistakes and challenge

Where agile is not the answer, and what fake Scrum looks like.

7. Where agile is not the answer

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WITH AI Ask it to identify the parts of your project whose scope is fixed by regulation or contract.

Scope is set by regulation or a third party

Licensed construction, a regulatory change with a deadline, a fixed-price contract with closed deliverables.

Change is very expensive once done

Pouring a structure, printing a run, deploying to equipment that can't be updated.

No one can decide

Without a Product Owner with real authority, the backlog is everyone's wish list.

No one is dedicated to the team

People split across five projects don't do Sprints; they do interruptions.

In serious projects the answer is almost always hybrid: the regulatory part is fully planned; the part users must discover, in Sprints.

7. Mistakes that turn Scrum into a facade

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WITH AI Give it your Daily notes and have it say whether they are status reports or coordination.

Daily as a status report
If the team talks to the boss and not to each other, it is just another follow-up meeting.

Product Owner without authority
If every priority goes through a committee, it is a messenger.

Sprints without an increment
If nothing is usable at the end, there were two weeks of work, not a Sprint.

Velocity as a target
Comparing teams by points makes points inflate and stop being useful.

Skipping the retrospective
It is needed most precisely when there is a rush.

Changing the Sprint Goal
If it stops making sense, the Sprint is cancelled; the goal is not changed quietly.

7. Module challenge

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WITH AI Write the Product Goal yourself and ask it to critique it as a sponsor would.

Take a real project, yours or your company's, and write:

1. **The Product Goal in one sentence**
2. **The first ten user stories, in order**
3. **The first Sprint Goal and which stories are in**
4. **The Definition of Done**

If you can't write the Product Goal in one sentence, that is the finding: it's still unclear what you want to achieve.

Sources

- Manifesto for Agile Software Development and its twelve principles. Beck, K. et al. (2001). agilemanifesto.org
- The Scrum Guide, November 2020. Ken Schwaber and Jeff Sutherland. scrumguides.org (CC BY-SA 4.0)
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- “The New New Product Development Game.” Takeuchi and Nonaka, Harvard Business Review, January 1986
- Extreme Programming Explained: Embrace Change. Kent Beck, Addison-Wesley (1999)
- The bakery chain case is fictional, for educational purposes.



THANK YOU

The full seminar, with videos, articles and presentations:

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