Shifting the paradigm for women in IT sector

2. Agile's frameworks: Kanban and Scrum

(7 hours)

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Summary

2.1 Kanban and Scrum compared (1.5 hours)

2.2 Agile in ‘non-development’ processes (2.5 hours)

2.3 Roles and rituals (2 hours)

2.4 Focus on Scrum Master certifications (1 hour)

2.1 Kanban and Scrum compared (1.5 hours)

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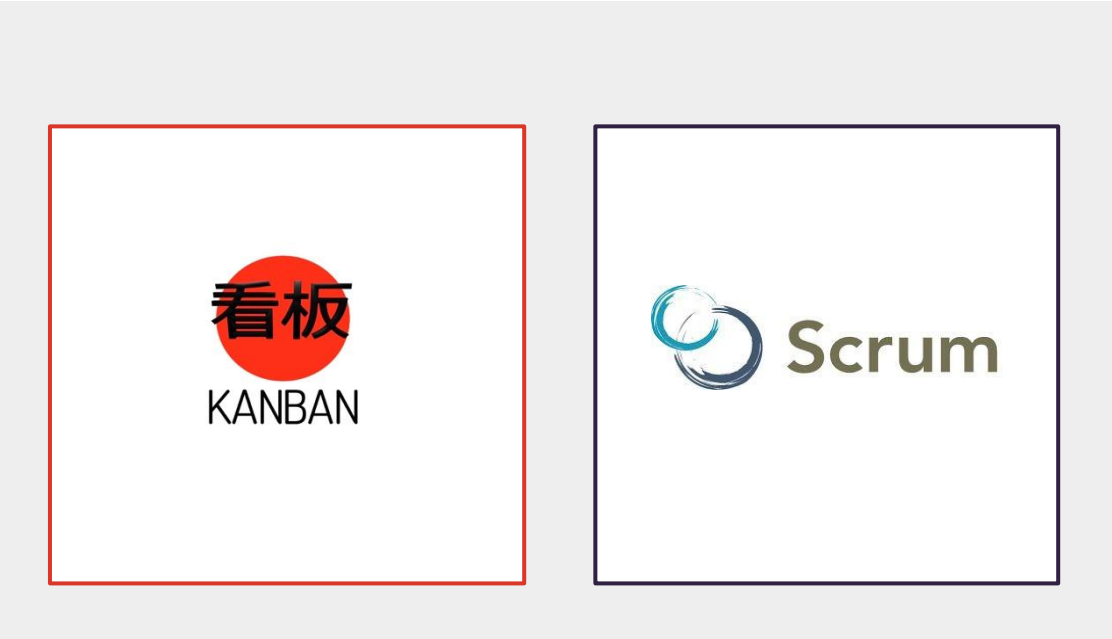
Kanban VS Scrum

Within the Agile approach there are two different 'frameworks' (also called 'methods' or 'methodologies') that are fundamental: Kanban and Scrum



Commonalities between Kanban and Scrum

1. Both are known for their material display: the 'Board'

Commonalities between Kanban and Scrum

2. Both Kanban Boards and Scrum Boards use the famous 'post-its' (cards) to communicate the progress of work

Commonalities between Kanban and Scrum

3. Progress is indicated by 'Columns' through which the different cards pass, from left to right

Commonalities between Kanban and Scrum

4. ToDo - Doing - Done are the 'canonical' (Status) columns, but teams usually expand the number and type of statuses according to their needs.

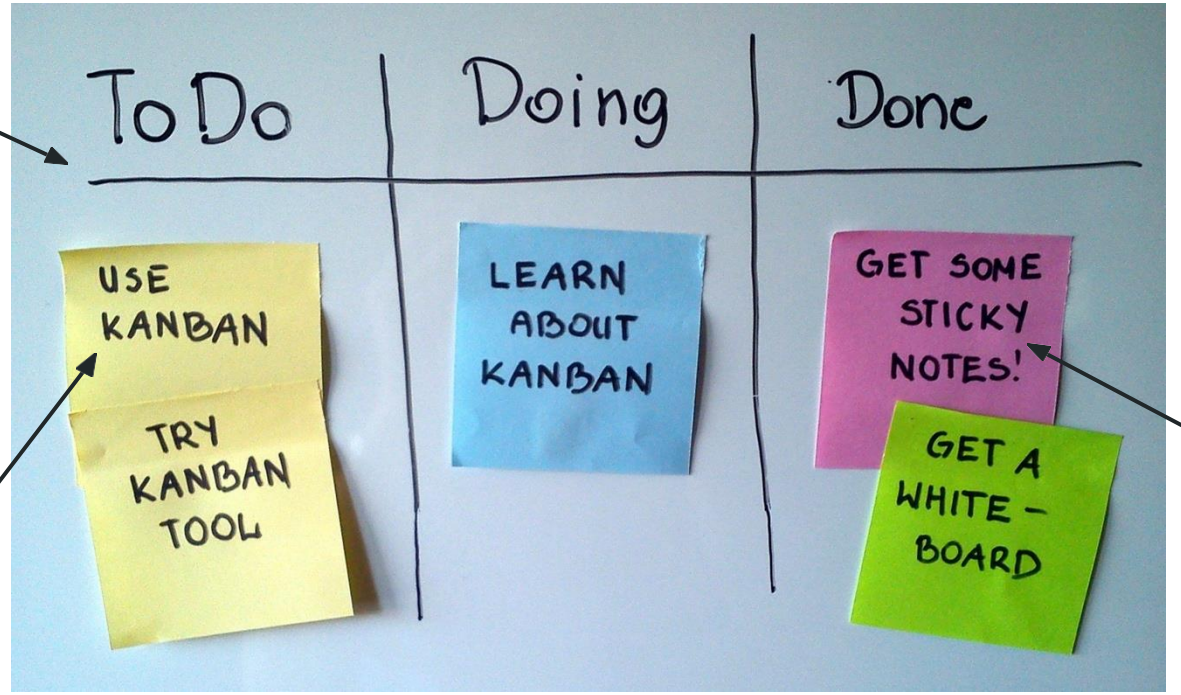
Commonalities between Kanban and Scrum

5. The cards that appear on the board can be of different categories

Anatomy of an agile board

STATUS

Columns identifying the different processing stages



CARD

Description of a portion of the work, also called Task, or Issue

CARD TYPE

Identification of different task categories

Features of the Kanban board

- A Kanban board monitors the flow of the process by limiting the number of ongoing work activities.
- The number of ongoing activities is small enough to avoid unimportant tasks, but large enough to reduce idle personnel.

Kanban is like a basketball game: a completed activity equals one point and the team tries to minimise the time between shots.

Features of the Scrum board

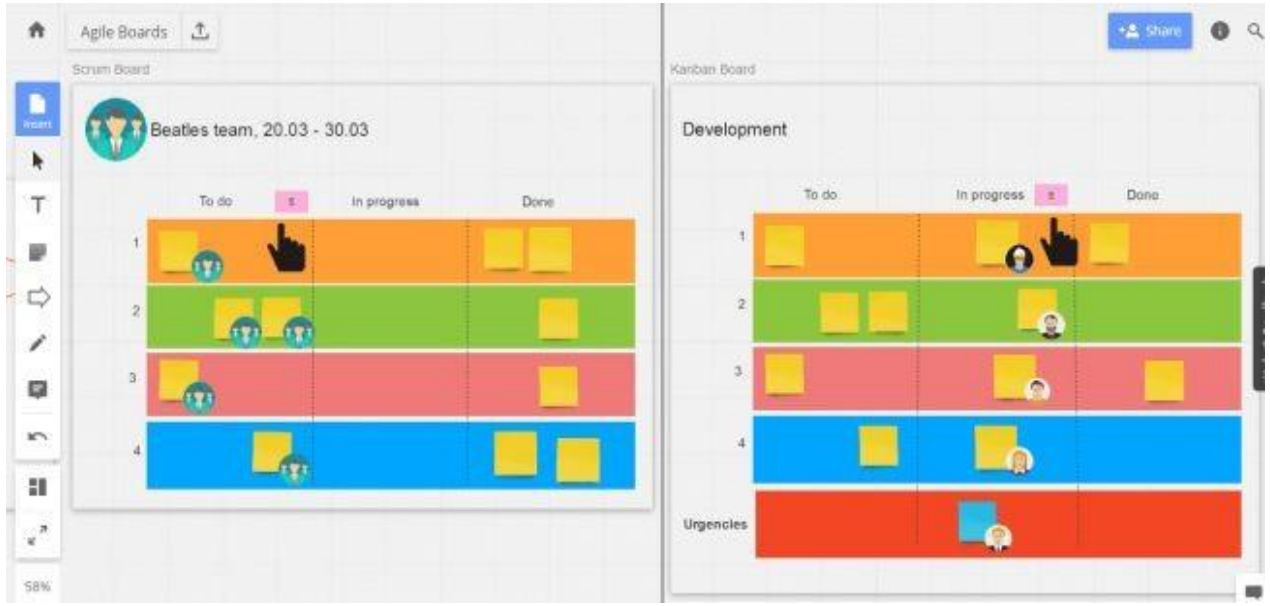
- A Scrum board tracks the work done within fixed duration cycles, called 'Sprints'. A Sprint is a short, consistent and repetitive period of time.
- The length of the Sprint is short enough to keep the team focused, but long enough to provide an appreciable increment of work for the customer.

Scrum is like an exam at university: you have to complete a series of exercises in a certain time period, within which no other activities are allowed.

Kanban VS Scrum

Work in progress limits

SCRUM **KANBAN**



- Scrum limits the WIP per iteration. The team must commit to the number of tasks in the Sprint. Nothing prevents having all cards in the "In Progress" status simultaneously.

- Kanban limits the WIP per status. The number "5" in the "In Progress" column means that there should be no more than 5 cards in that workflow status.

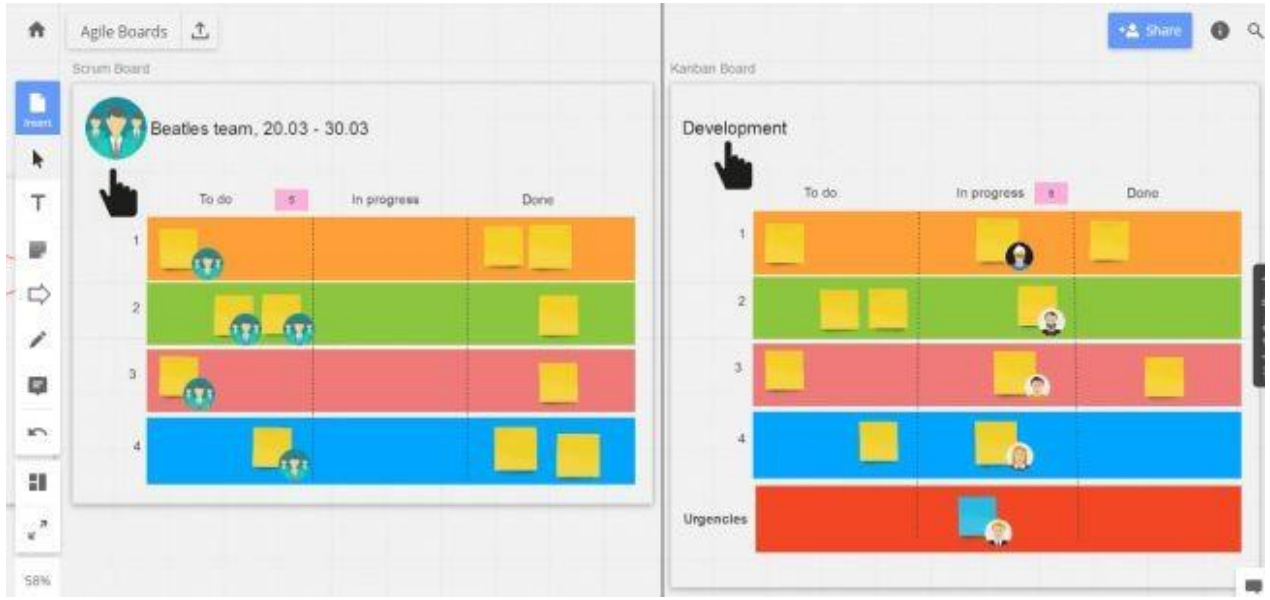
Work In Process: a term used to indicate the number of parts (or batches) processed simultaneously within a production system. This is the material leaving one stage of the process waiting to be processed by the next.

Kanban VS Scrum

Owners

SCRUM

KANBAN



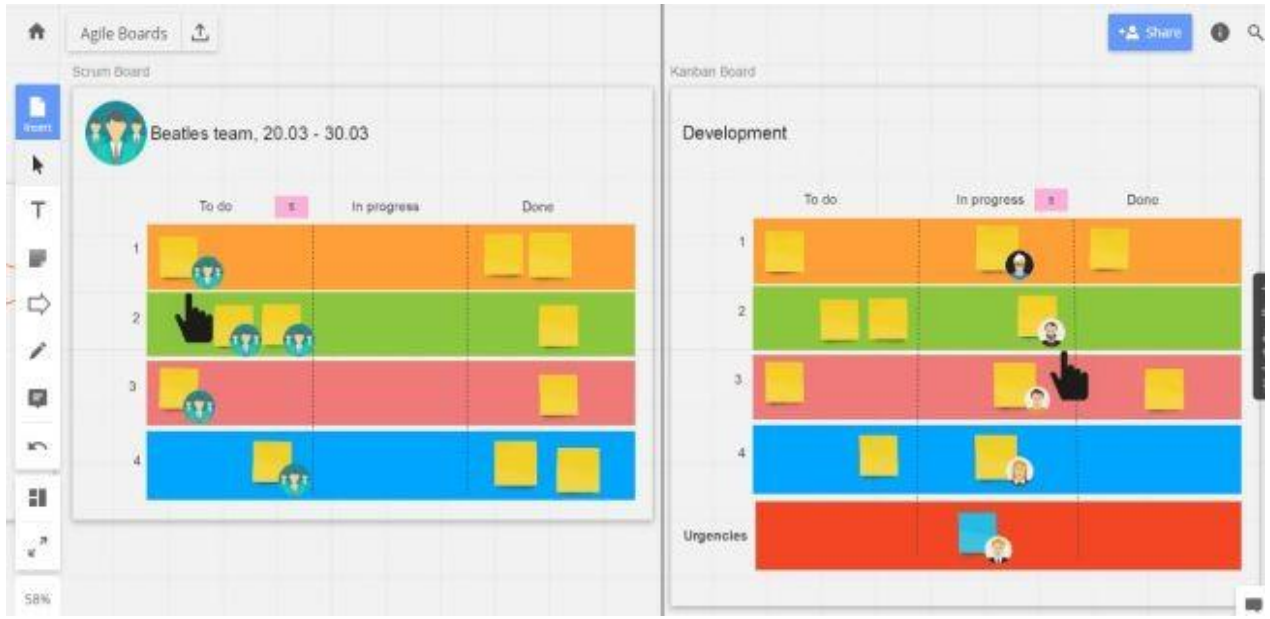
- In Scrum, the board is always 'owned' by a single Scrum team (= cross-functional group of people with all the necessary skills to successfully complete each Sprint activity).
- Kanban board does not need to be owned by a specific team since it is mostly dedicated to a (monofunctional) workflow.

Kanban VS Scrum

Task devotion

SCRUM

KANBAN

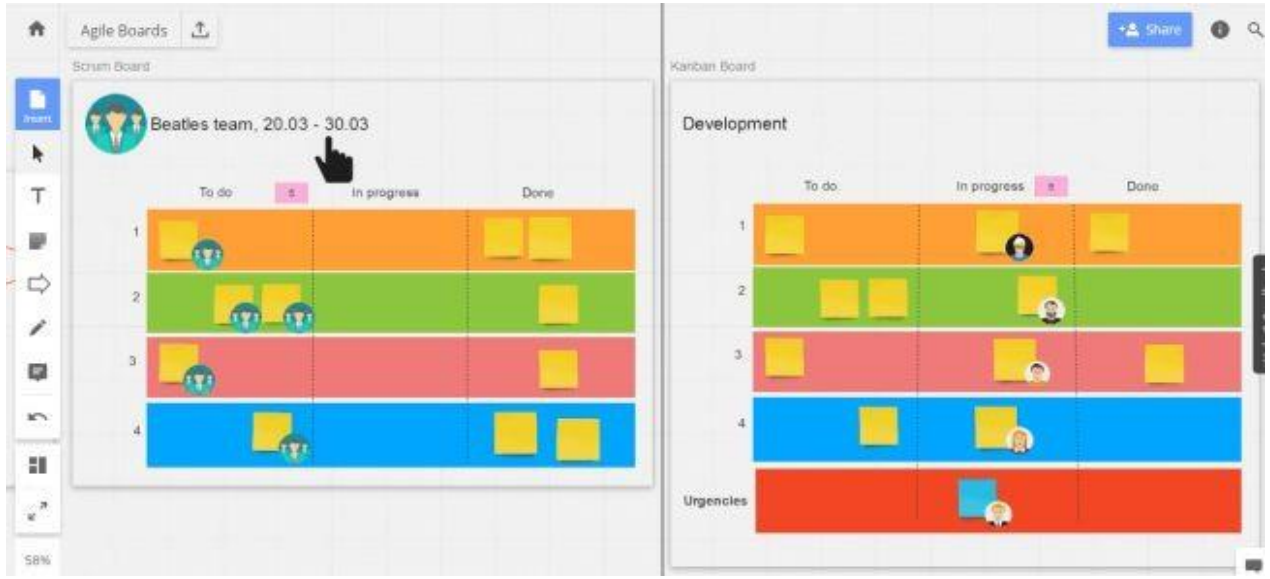


- In Scrum, the entire team converges on each task.
- In Kanban, each person is responsible for his or her own flow of work. However, Kanban has a culture of scarce resources to help solve the so-called 'bottlenecks' → If one person has completed his or her task but there is something complicated in a column of the board (a bottleneck, in fact), he or she can choose whether to help his or her partner complete the task or take another task from the queue.

Kanban VS Scrum

Changes within an iteration

SCRUM **KANBAN**

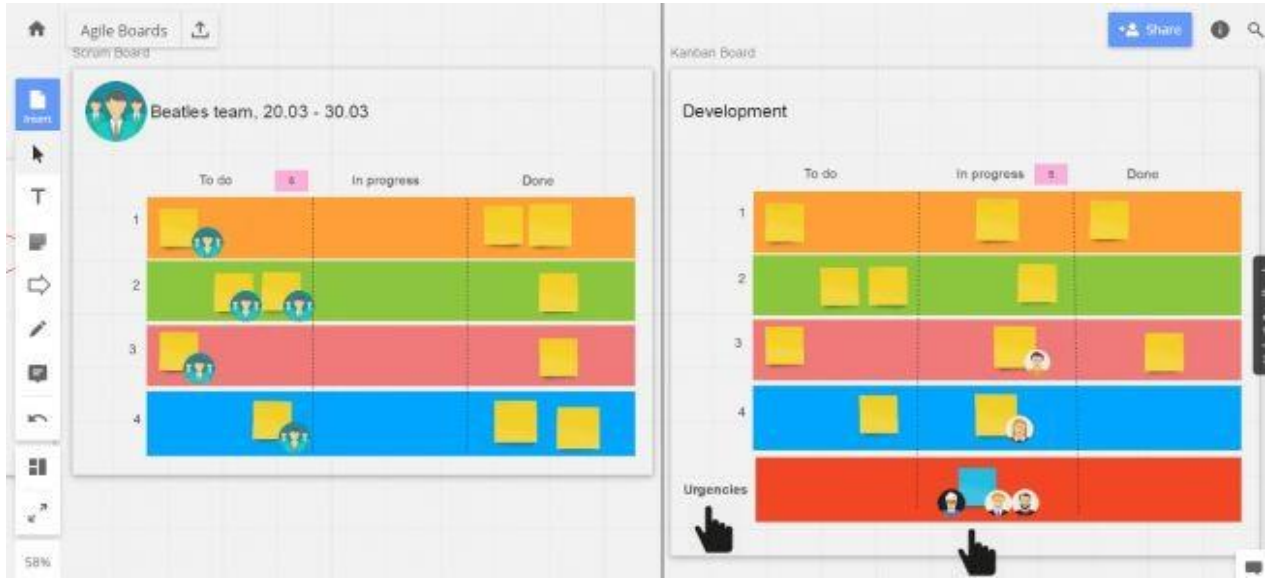


- In Scrum, the team should not add any new cards on the board during the Sprint. The number of cards is defined during the planning session, before the start of the iteration.
- On the other hand, a Kanban board can be changed at any time; the only limitation concerns ongoing activities → As soon as a card moves from 'In Progress' to 'Done', capacity is freed up to be used for a new activity/card (continuous flow).

Kanban VS Scrum

Urgencies (tickets)

SCRUM **KANBAN**



- Thanks to previous analysis, planning, sizing and prioritisation sessions, the Scrum team rarely has to deal with unforeseen urgencies.
- In Kanban, an 'Urgencies' line (also called Swim Lane) can be inserted → Cards that end up there identify an unpredictable urgent task or a task that arises to solve a 'bottleneck' card. They have the highest priority, so some team members converge on it to complete it as soon as possible.

Kanban VS Scrum

Roles

- Scrum master
- Product Owner
- Team Members

- Not predefined
- Convergence when a member is in trouble

Kanban VS Scrum

Due Dates

- Sprint plan (time-box)

- Continuous flow
- Event-based

Kanban VS Scrum

Priorities

- New tasks only allowed when the entire 'batch' is completed

- New tasks only allowed when previous ones are completed

Kanban VS Scrum

Modifications

- Strongly discouraged

- Permitted (encouraged)

Kanban VS Scrum

Best for...

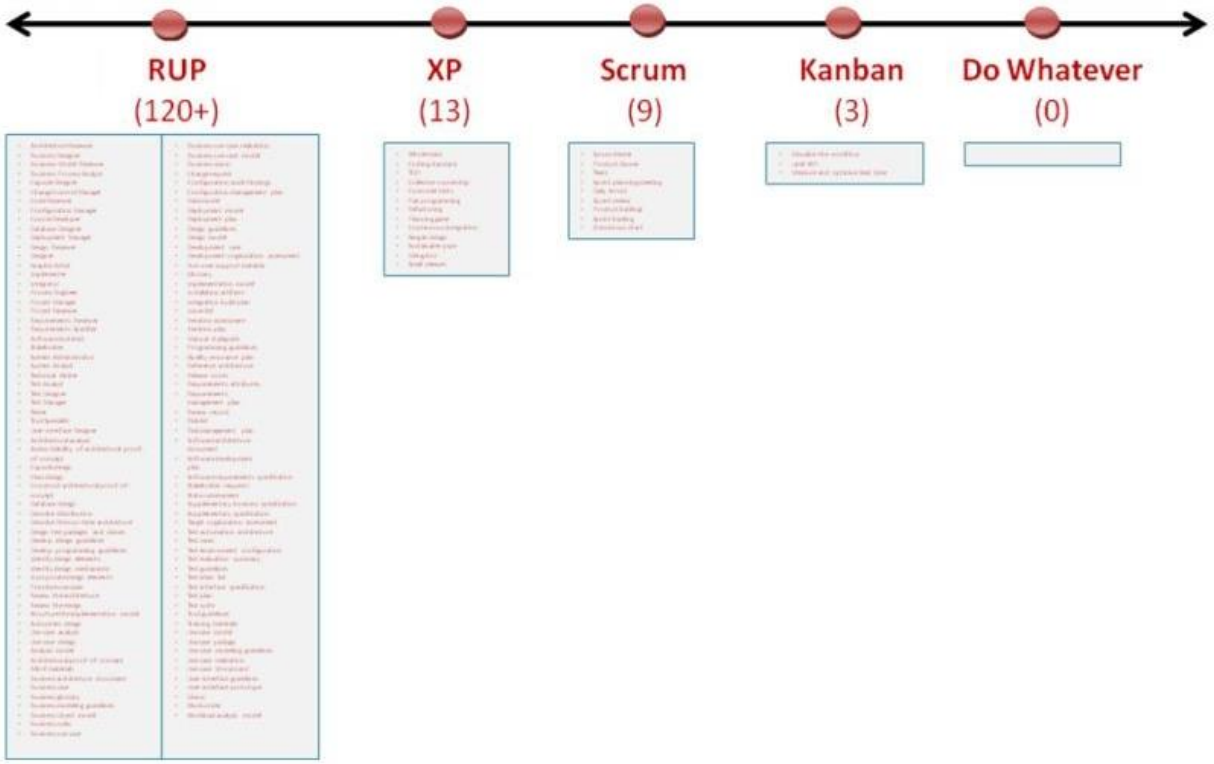
- Stable priorities that vary less in the processing cycle

- More variable scope of work

Kanban VS Scrum

'Prescriptiveness scale' of agile frameworks

More prescriptive **More adaptive**



FRAMEWORK AND NUMBER OF PRESCRIBED RULES:

- RUP (Rational Unified Process): over 120 (including roles, rituals, artefacts and other rules)
- XP (eXtreme Programming): 13
- SCRUM: 9
- KANBAN: 3 (visualise workflow, limit Work In Process, continuously improve)

2.2 Agile in ‘non-development’ processes (2.5 hours)

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Which processes?

Processes, depending on their role within the organisation, can be classified in different ways. Starting from Stalk and Hout's definition, we can identify:

1) OPERATIONAL PROCESSES
2) SUPPORT PROCESSES
3) CONTROL PROCESSES

Which processes?

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3) CONTROL PROCESSES

Which processes?

1) OPERATIONAL PROCESSES

They directly concern the creation of products or services. They are the processes that, more than others, directly provide added value to the product/service.

E.g. design, production, sales.

Which processes?

2) SUPPORT PROCESSES

They support operational processes in order to make them more effective and efficient.

E.g. commercial management, information system, human resources, financial management, procurement, etc.

Which processes?

3) CONTROL PROCESSES

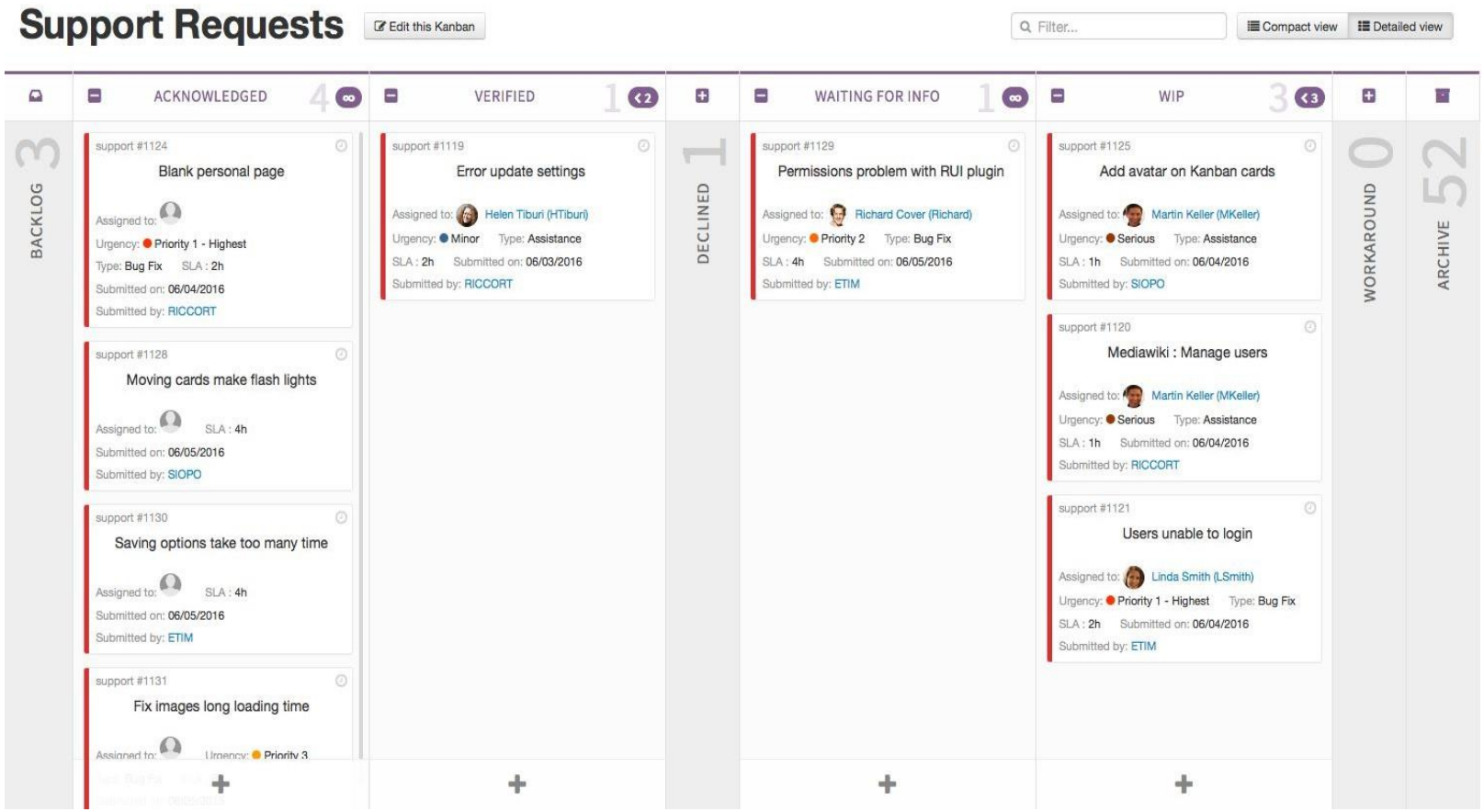
Processes that drive the entire Quality Management System.

E.g. review of the Quality Management System, definition of the organisation's objectives, measurement of results, development of strategies, etc.

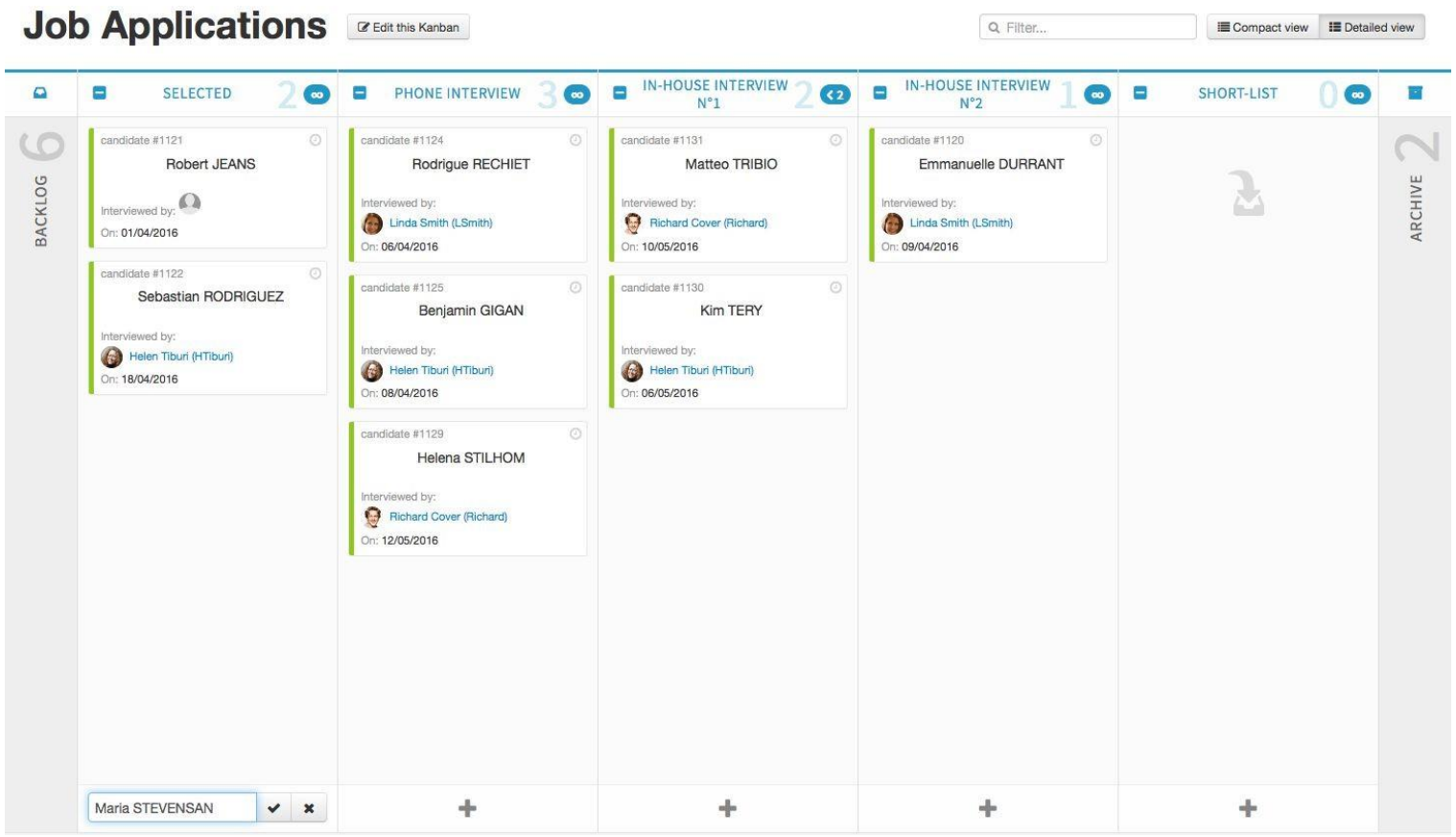
Examples of processes that can be managed with agile

- Ensuring the correct execution of a project (also in PA)
- Selling
- Manage customer communications (marketing activities, etc.)
- Monitor customer satisfaction
- Manage resources (manage financial transactions, process internal and external information reporting, fulfil legal obligations)

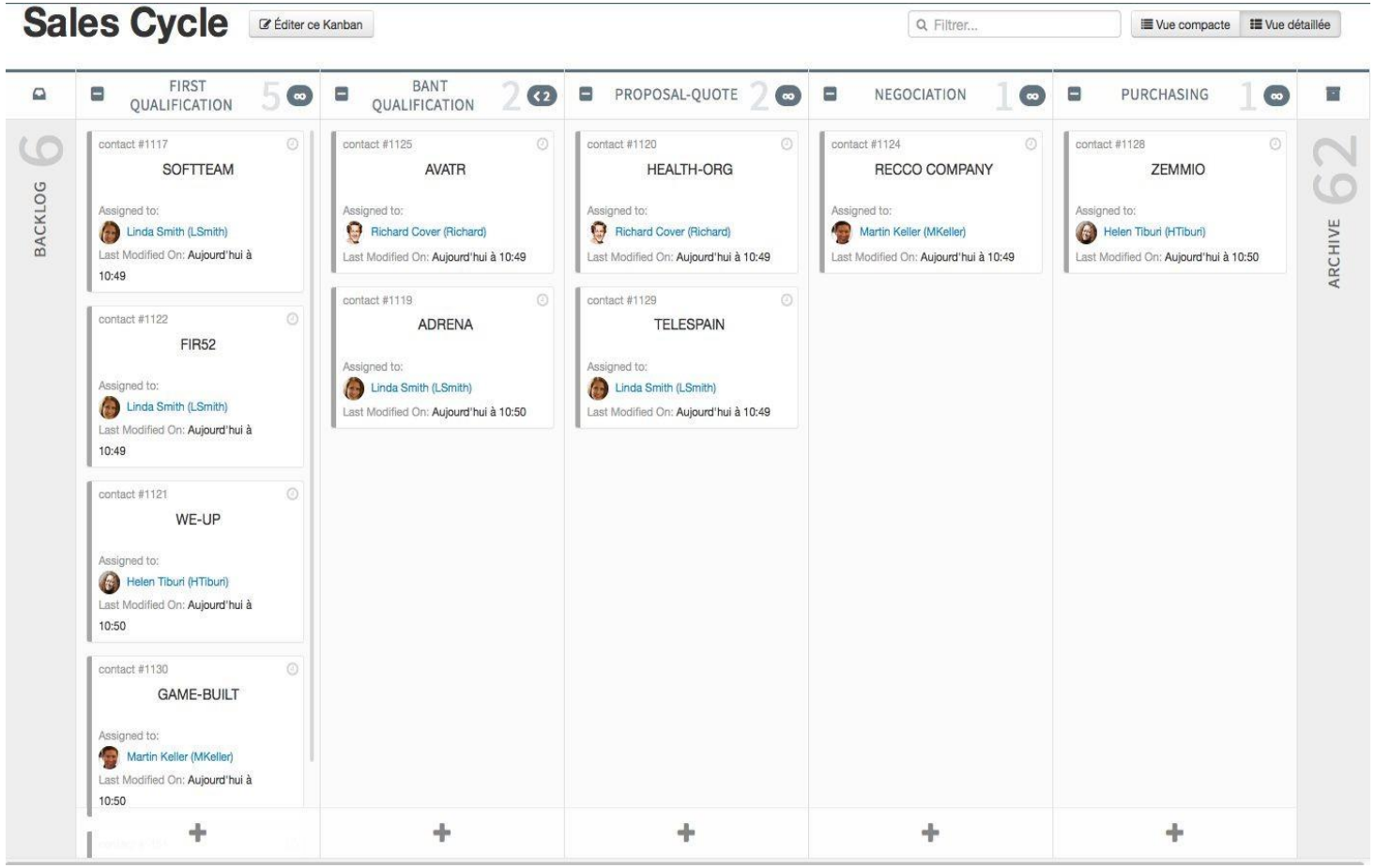
Agile board for after-sales management



Agile board to manage personnel selection



Agile board to manage sales



2.3 Roles and rituals (2 hours)

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Roles

Role: set of behaviours, rights, duties, beliefs and norms related to and accepted by people in a certain social context

- Product Owner
- Scrum Master
- Team members

Product Owner

- Is responsible for the product/project
- Adds new activities
- Has the final say on the priority and order of activities

Scrum Master

- Schedules meetings (rituals)
- Supervises their proper functioning
- Reminds the team of the "fundamentals" of the method

Team members

- Make up the working group
- They carry out a portion of the project activities

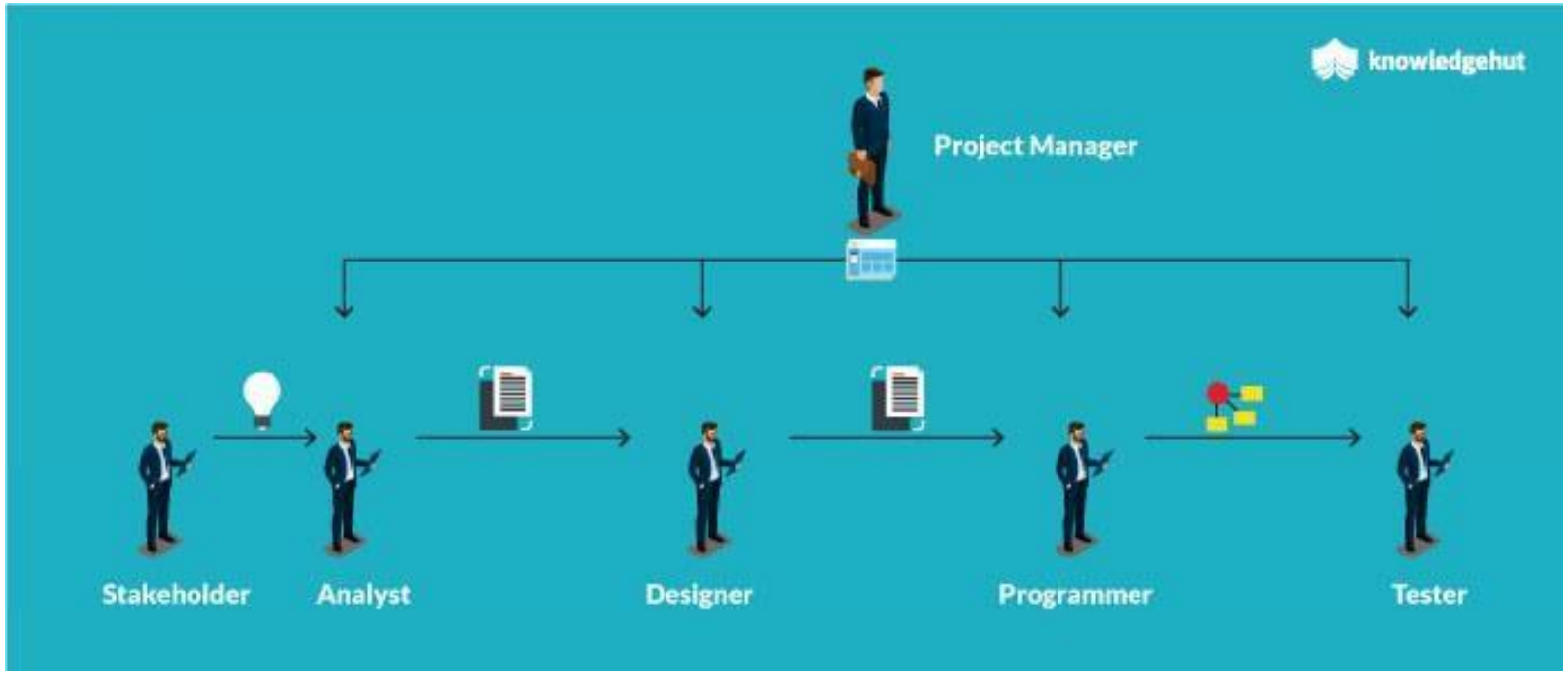
Product Owner VS Scrum Master

Product Owner: product development manager

Product Manager: responsible for strategy, roadmap, budget

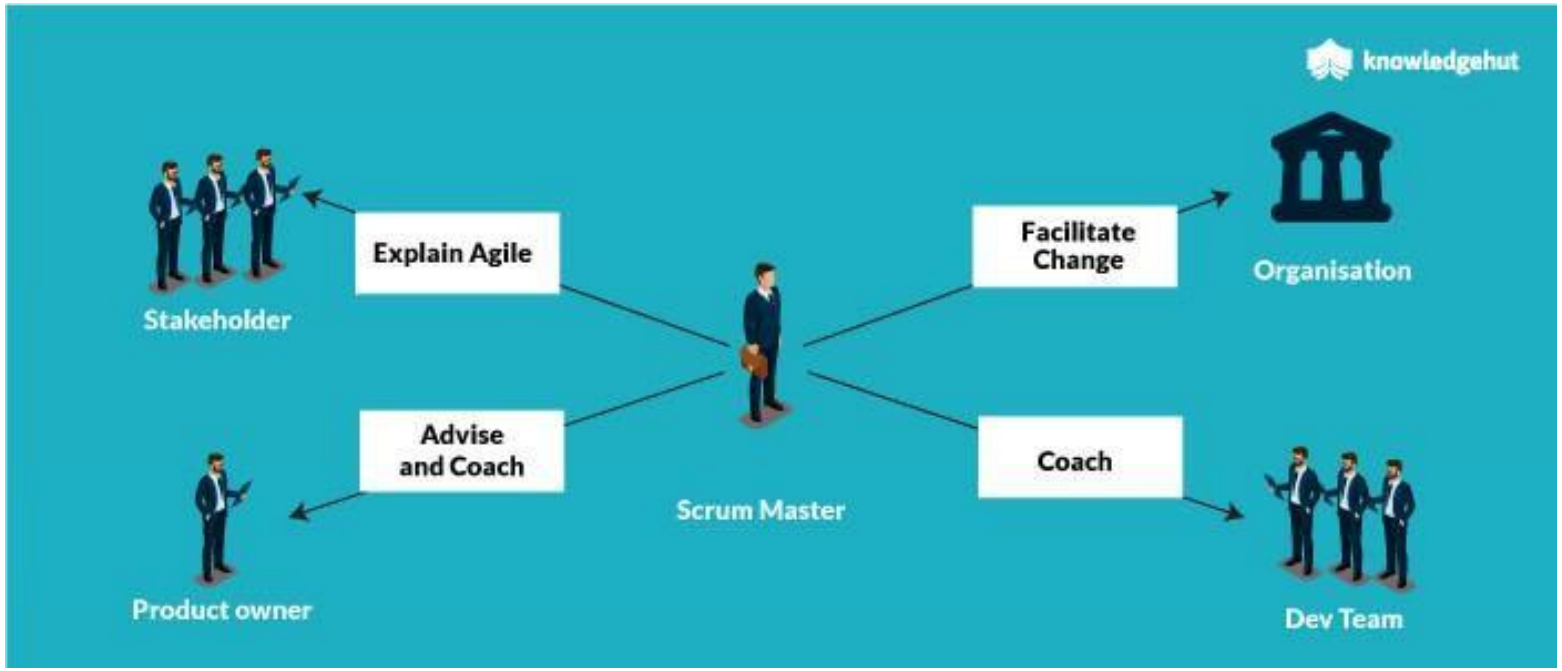
Given the substantial overlapping of roles it is better to use only the Product / Project Manager.

Product Owner VS Scrum Master



Product Owner VS Scrum Master

Product Owner VS Scrum Master



Rituals

Ritual: sequence of activities involving gestures, words and objects, performed in a given place and according to a predetermined sequence.

- Sprint planning
- Daily stand-up meeting
- Sprint retrospective

Sprint planning

- The entire team participates.
- The product owner sets the highest project priorities.
- The team asks questions that help break down the entire project into detailed tasks.
- The team (not the product owner) determines the amount of work to be performed in the sprint (self-managed teams).
- The session ends only AFTER defining one or more sprint goals (a short description of the goals to be achieved) and a sprint backlog (list of tasks to be performed).

Sprint planning

Daily stand-up meeting

- The daily standup meeting (or daily scrum) is the daily practice at the heart of agile, to be carried out in the same place and at the same time every day, preferably in the morning.
- These meetings should last no longer than 15 minutes and are intended for all team members.
- It is important that the meeting is focused more on status updates than on problem solving (which should instead concern only certain team members).
- This practice dictates the pace of the project and keeps team members 'committed' to the goal.

Daily stand-up meeting

Sprint retrospective

- In the retrospective, the team looks for ways to improve the work from what happened during the sprint.
- The whole team participates and it usually lasts one hour at the most.
- Three questions are answered during the retrospective:
  - what the team should start doing
  - what the team should stop doing
  - what the team should continue to do
- The Scrum Master facilitates this ritual.

2.4 Focus on Scrum Master certifications (1 hour)

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Scrum Master certifications

Here is a list of the most **important and widely recognized Scrum Master certifications**, including their issuing organizations, focus areas, and suitability for different levels of experience:

1. Certified ScrumMaster® (CSM)
2. Professional Scrum Master™ (PSM I, II, III)
3. SAFe® Scrum Master (SSM)
4. Scrum Master Certified (SMC®)

1. Certified ScrumMaster® (CSM)

Issuing Organization: Scrum Alliance (scrumalliance.org)

Level: Entry-level (ideal for beginners to Scrum or transitioning project managers)

Duration: 2-day course + online exam
Renewal: Every 2 years (requires Scrum Education Units - credits - and a fee)

Focus:
- Scrum basics (roles, events, artifacts)
- Facilitation, coaching, servant leadership
- Responsibilities of a Scrum Master

2. Professional Scrum Master™ (PSM I, II, III)

Issuing Organization: Scrum.org (scrum.org)

Levels:
- **PSM I** – Foundational (most popular)
- **PSM II** – Intermediate (focus on real-world application)
- **PSM III** – Advanced (difficult, essay-based)

Duration: no course required, self-study possible
Renewal: Lifetime certification

Focus:
- Strong on Scrum theory and principles
- Emphasizes deep understanding over rote memorization

3. SAFe® Scrum Master (SSM)

Issuing Organization: Scaled Agile, Inc. (scaledagile.com)

Level: Intermediate
Ideal for Scrum Masters working in enterprises using SAFe

Duration: 2-day course + online exam
Renewal: Annual (with fee)

Focus:
- Scrum Master role in Scaled Agile Framework (SAFe)
- PI (Program Increment) planning, agile at scale
- Coordination across teams in larger organizations

4. Scrum Master Certified (SMC®)

Issuing Organization: SCRUMstudy (scrumstudy.com)

Level: Beginner to intermediate

Duration: 2-day course + online exam
Renewal: Every 3 years (requires a fee)

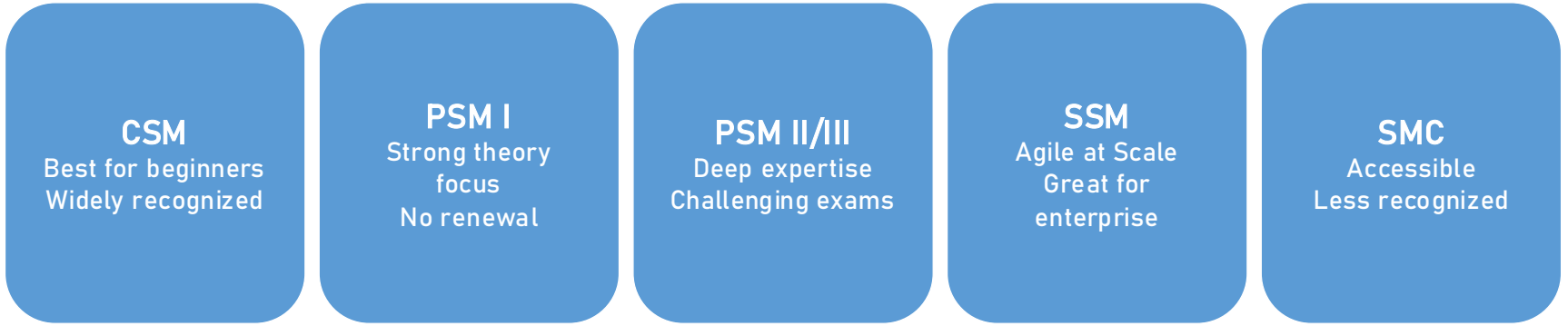
Focus:
- Scrum lifecycle
- Roles and responsibilities
- Real-world scenarios

Criticism: Less recognized compared to CSM and PSM

Scrum Master certifications – Comparison Summary

Certification	*Organization*	*Level*	*Renewal*	*Exam Required*	*Highly Recognized*
CSM	Scrum Alliance	Entry	Yes	Yes	✅✅✅
PSM I	Scrum.org	Entry	No	Yes	✅✅✅
PSM II/III	Scrum.org	Advanced	No	Yes	✅✅
SSM	Scaled Agile	Intermediate	Yes	Yes	✅✅
SMC	SCRUMstudy	Beginner	Yes	Yes	✅ (less common)

Choosing the right Scrum Master Certification



New to Scrum? → Start with **CSM** or **PSM I**
Want a deep understanding + no renewal? → Choose **PSM I**
Working in enterprise/large teams? → Go for **SSM**
Interested in long-term Scrum career? → Progress to **PSM II/III** or **SAFe**