

MDDM

Agile Project Management

IU4: Introduction to Scrum Methodology

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Learning Objective

By the end of this unit, learners will gain knowledge about the scrum theory, scrum values, and frameworks. The learning unit deep dives into the Scrum methodologies and functions such as scrum events, scrum artifacts, and scrum team structure.

Upon completion of this unit, learners will be able to plan and execute a project workflow plan guided by scrum framework

C Topics Covered

#	Topics
1	Introduction to Scrum, values and framework
2	Scrum team structure
3	Scrum Events
4	Scrum Artifacts
5	Scrum for project planning

What is Scrum?

Scrum is a framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value.

Scrum works by **delivering large projects in small chunks —bite-sized increments that a cross-functional team can begin and complete in one, short-timeboxed iteration.**

As each product increment is completed, teams **review** the functionality and then **decide** what to create next based on what they learned and the **feedback** they received during the review. These frequent inspections and **adapt cycles** reduce waste and minimize risk. The teams also inspect their use of scrum, looking for ways to improve. At the end of each timebox, teams begin a **new iteration** until they deliver the complete product or service, or until what they have released so far fulfills customer needs.

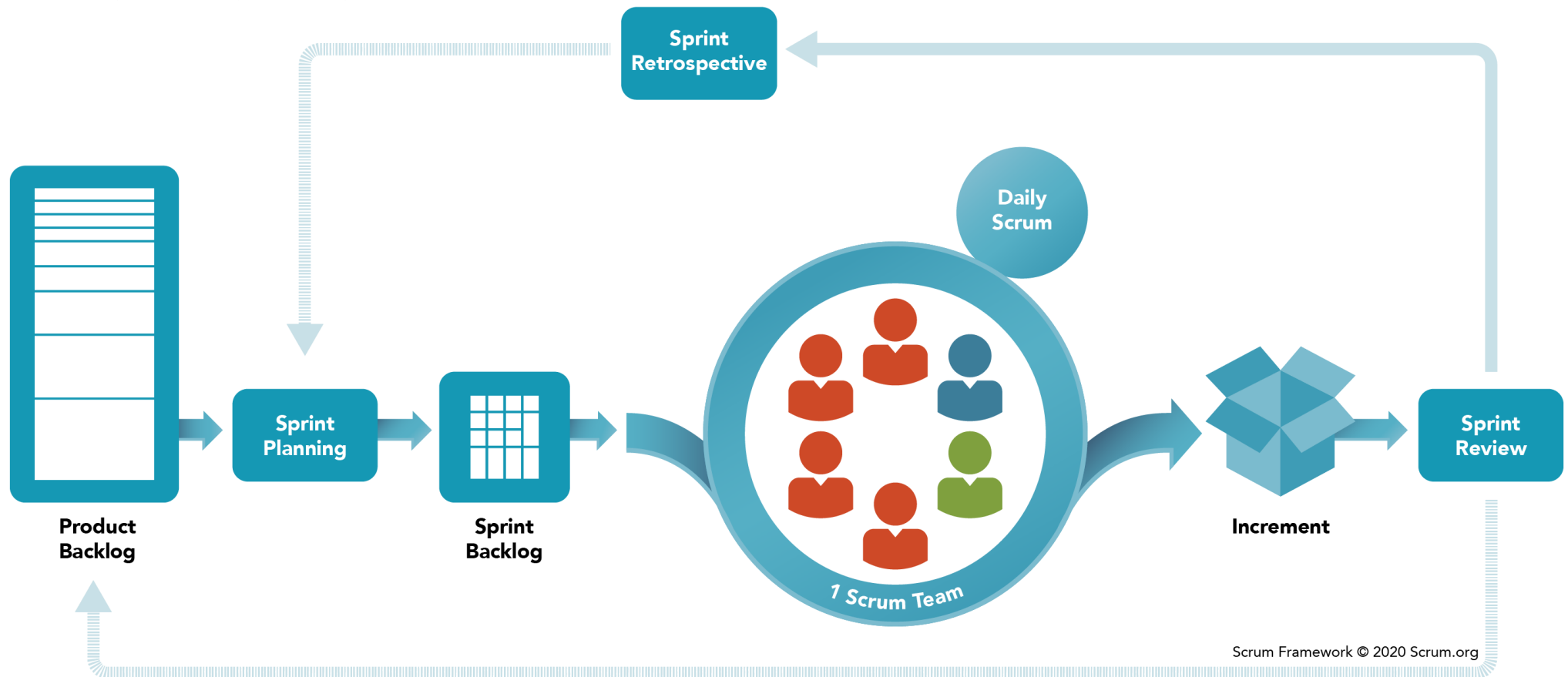
In a nutshell, Scrum requires a Scrum Master to foster an environment where:

1. A Product Owner orders the work for a complex problem into a Product Backlog.
2. The Scrum Team turns a selection of the work into an Increment of value during a Sprint.
3. The Scrum Team and its stakeholders inspect the results and adjust for the next Sprint.
4. Repeat

The Scrum Framework

Scrum is not a methodology. Scrum implements the scientific method of empiricism. Scrum replaces a programmed algorithmic approach with a heuristic one, with respect for people and self-organization to deal with unpredictability and solve complex problems.

The below graphic represents Scrum in Action as described by Ken Schwaber and Jeff Sutherland in their book *Software in 30 Days* taking us from planning through software delivery.

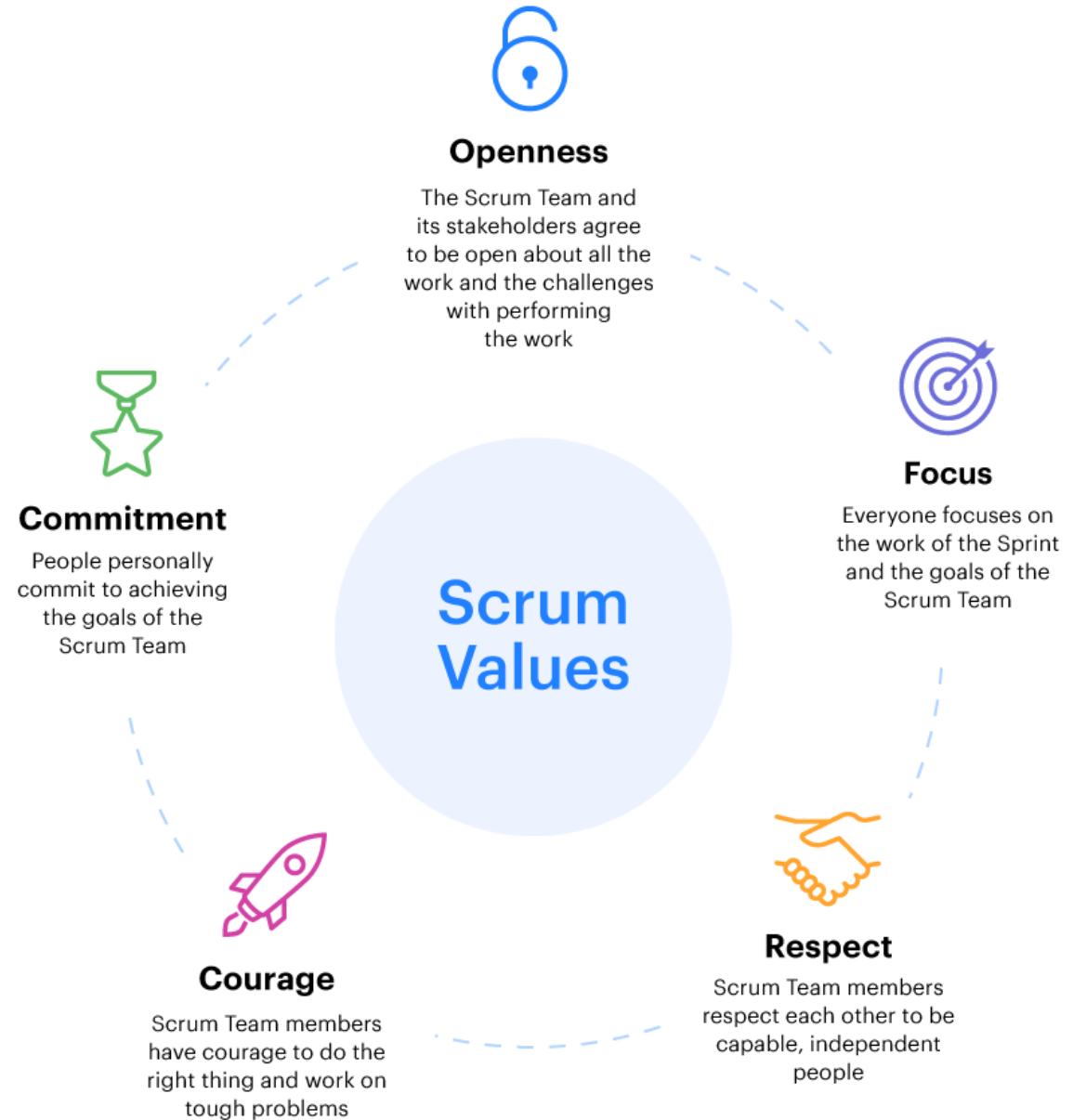


Scrum Framework © 2020 Scrum.org

The Scrum Values

In Scrum methodology, these values serve as a guide for individual and team behavior, intending to boost collaboration and increase the odds of project success.

Scrum teams focus on four key roles: product owner, Scrum master, team members, and stakeholders. All of these individuals work towards one common goal — creating value for the client, patient, or customer.



Scrum Team

The Scrum Team consists of one Scrum Master, one Product Owner, and Developers. Within a Scrum Team, there are no sub-teams or hierarchies. It is a cohesive unit of professionals focused on one objective at a time, the Product Goal.

Developers

Developers are the people in the Scrum Team that are committed to creating any aspect of a usable Increment each Sprint. The specific skills needed by the Developers are often broad and will vary with the domain of work.

The Developers are always accountable for:

- Creating a plan for the Sprint, the Sprint Backlog;
- Instilling quality by adhering to a Definition of Done;
- Adapting their plan each day toward the Sprint Goal; and,
- Holding each other accountable as professionals.

Scrum Team

Product Owner

The Product Owner is accountable for maximizing the value of the product resulting from the work of the Scrum Team. How this is done may vary widely across organizations, Scrum Teams, and individuals.

The Product Owner is also accountable for effective Product Backlog management, which includes:

- Developing and explicitly communicating the Product Goal;
- Creating and clearly communicating Product Backlog items;
- Ordering Product Backlog items; and,
- Ensuring that the Product Backlog is transparent, visible and understood.

Scrum Team

Scrum Master

The Scrum Master is accountable for establishing Scrum as defined in the Scrum Guide. They do this by helping everyone understand Scrum theory and practice, both within the Scrum Team and the organization. The Scrum Master is accountable for the Scrum Team's effectiveness. They do this by enabling the Scrum Team to improve its practices, within the Scrum framework. Scrum Masters are true leaders who serve the Scrum Team and the larger organization.

The Scrum Master serves the Scrum Team in several ways, including:

- Coaching the team members in self-management and cross-functionality;
- Helping the Scrum Team focus on creating high-value Increments that meet the Definition of Done;
- Causing the removal of impediments to the Scrum Team's progress; and,
- Ensuring that all Scrum events take place and are positive, productive, and kept within the timebox.

Scrum Team

The Scrum Master serves the Product Owner in several ways, including:

- Helping find techniques for effective Product Goal definition and Product Backlog management;
- Helping the Scrum Team understand the need for clear and concise Product Backlog items;
- Helping establish empirical product planning for a complex environment; and,
- Facilitating stakeholder collaboration as requested or needed.

The Scrum Master serves the organization in several ways, including:

- Leading, training, and coaching the organization in its Scrum adoption;
- Planning and advising Scrum implementations within the organization;
- Helping employees and stakeholders understand and enact an empirical approach for complex work; and,
- Removing barriers between stakeholders and Scrum Teams.

Scrum Events

The Sprint

Sprints are the heartbeat of Scrum, where ideas are turned into value. They are fixed length events of one month or less to create consistency. A new Sprint starts immediately after the conclusion of the previous Sprint. All the work necessary to achieve the Product Goal, including Sprint Planning, Daily Scrums, Sprint Review, and Sprint Retrospective, happen within Sprints.

During the Sprint:

- No changes are made that would endanger the Sprint Goal;
- Quality does not decrease;
- The Product Backlog is refined as needed; and,
- Scope may be clarified and renegotiated with the Product Owner as more is learned.

A Sprint could be cancelled if the Sprint Goal becomes obsolete. Only the Product Owner has the authority to cancel the Sprint.

Scrum Events

Sprint Planning

Sprint Planning initiates the Sprint by laying out the work to be performed for the Sprint. This resulting plan is created by the collaborative work of the entire Scrum Team. The Product Owner ensures that attendees are prepared to discuss the most important Product Backlog items and how they map to the Product Goal. The Scrum Team may also invite other people to attend Sprint Planning to provide advice.

Sprint Planning addresses the following topics:

- Topic One: Why is this Sprint valuable?
- Topic Two: What can be Done this Sprint?
- Topic Three: How will the chosen work get done?

Scrum Events

Daily Scrum

The purpose of the Daily Scrum is to inspect progress toward the Sprint Goal and adapt the Sprint Backlog as necessary, adjusting the upcoming planned work.

The Daily Scrum is a 15-minute event for the Developers of the Scrum Team. To reduce complexity, it is held at the same time and place every working day of the Sprint.

If the Product Owner or Scrum Master are actively working on items in the Sprint Backlog, they participate as Developers. The Developers can select whatever structure and techniques they want, as long as their Daily Scrum focuses on progress toward the Sprint Goal and produces an actionable plan for the next day of work. This creates focus and improves self-management.

Daily Scrums improve communications, identify impediments, promote quick decision-making, and consequently eliminate the need for other meetings.

Scrum Events

Sprint Review

The purpose of the Sprint Review is to inspect the outcome of the Sprint and determine future adaptations.

The Scrum Team presents the results of their work to key stakeholders and progress toward the Product Goal is discussed. During the event, the Scrum Team and stakeholders review what was accomplished in the Sprint and what has changed in their environment. Based on this information, attendees collaborate on what to do next. The Product Backlog may also be adjusted to meet new opportunities.

The Sprint Review is a working session, and the Scrum Team should avoid limiting it to a presentation. The Sprint Review is the second to last event of the Sprint and is timeboxed to a maximum of four hours for a one-month Sprint. For shorter Sprints, the event is usually shorter.

Scrum Events

Sprint Retrospective

The purpose of the Sprint Retrospective is to **plan ways to increase quality and effectiveness.**

The Scrum Team inspects how the last Sprint went with regard to individuals, interactions, processes, tools, and their Definition of Done.

Inspected elements often vary with the domain of work. Assumptions that led them astray are identified and their origins explored. The Scrum Team discusses what went well during the Sprint, what problems it encountered, and how those problems were (or were not) solved.

The Scrum Team identifies the most helpful changes to improve its effectiveness. The most impactful improvements are addressed as soon as possible. They may even be added to the Sprint Backlog for the next Sprint. The Sprint Retrospective concludes the Sprint. It is timeboxed to a maximum of three hours for a onemonth Sprint. For shorter Sprints, the event is usually shorter.

Scrum Artifacts

Scrum's artifacts represent work or value.

They are designed to maximize the transparency of key information.

Thus, everyone inspecting them has the same basis for adaptation.

Each artifact contains a commitment to ensure it provides information that enhances transparency and focus against which progress can be measured:

- For the Product Backlog it is the Product Goal.
- For the Sprint Backlog it is the Sprint Goal.
- For the Increment it is the Definition of Done.

These commitments exist to reinforce empiricism and the Scrum values for the Scrum Team and their stakeholders.

Scrum Artifacts

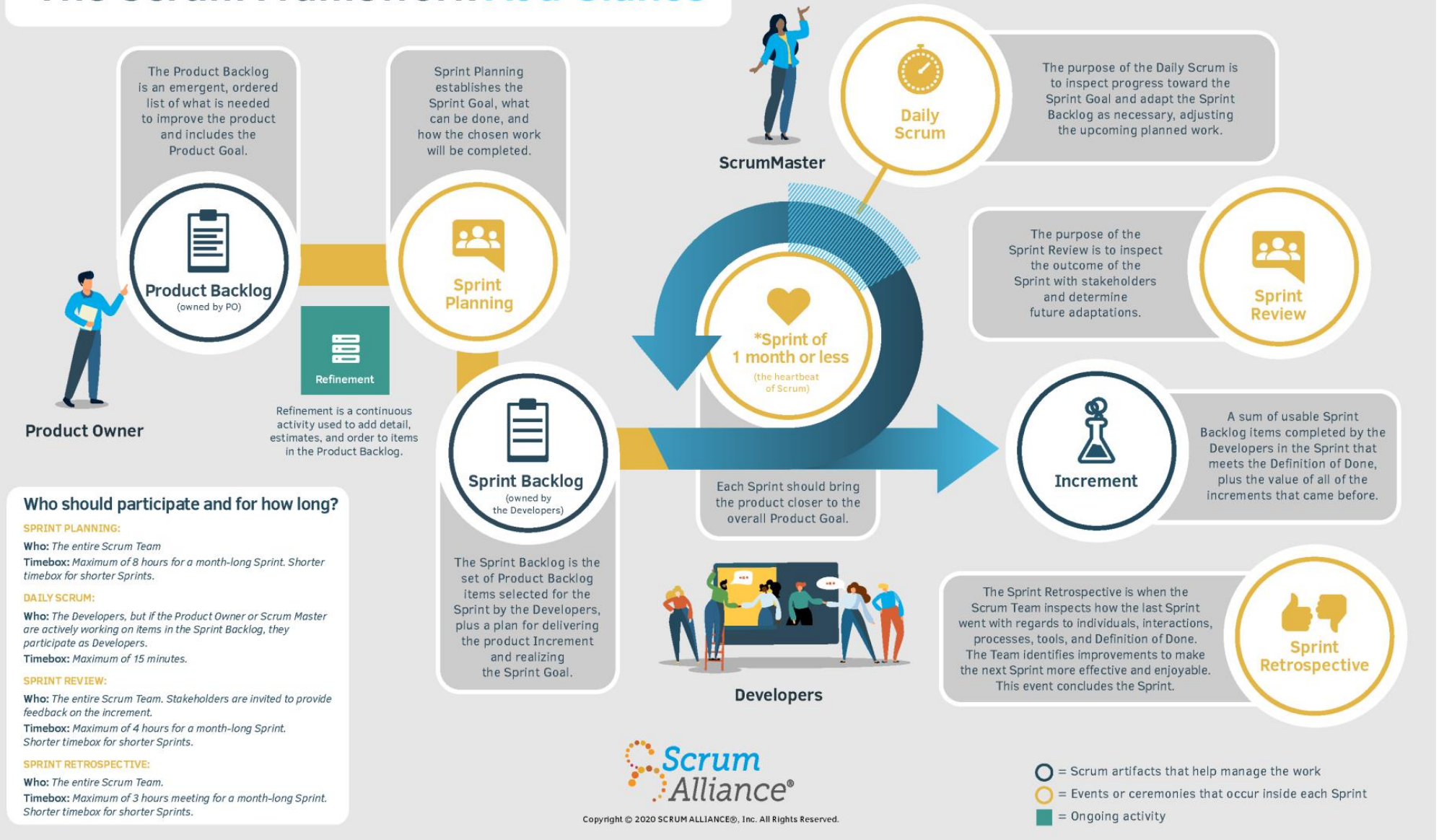
Product Backlog: The Product Backlog is an emergent, ordered list of what is needed to improve the product. It is the single source of work undertaken by the Scrum Team.

Sprint Backlog: The Sprint Backlog is composed of the Sprint Goal (why), the set of Product Backlog items selected for the Sprint (what), as well as an actionable plan for delivering the Increment (how).

Increment: An Increment is a concrete steppingstone toward the Product Goal. Each Increment is additive to all prior Increments and thoroughly verified, ensuring that all Increments work together. Multiple Increments may be created within a Sprint.

The Scrum Framework At a Glance

Version 5.0



Source: https://www.scrumalliance.org/ScrumRedesignDEVSite/media/ScrumAllianceMedia/Files%20and%20PDFs/VER5-scrum-framework_2020.pdf

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