

AGILE

Agile software development refers to a group of software development methodologies based on iterative development, where requirements and solutions evolve through collaboration between self-organizing cross-functional teams. Agile methods or Agile processes generally promote a disciplined project management process that encourages frequent inspection and adaptation, a leadership philosophy that encourages teamwork, self-organization and accountability, a set of engineering best practices intended to allow for rapid delivery of high-quality software, and a business approach that aligns development with customer needs and company goals. Agile development refers to any development process that is aligned with the concepts of the Agile Manifesto. The Manifesto was developed by a group fourteen leading figures in the software industry, and reflects their experience of what approaches do and do not work for software development. Read more about the [Agile Manifesto](#).

SCRUM

Scrum is a subset of Agile. It is a lightweight process framework for agile development, and the most widely-used one.

- A “process framework” is a particular set of practices that must be followed in order for a process to be consistent with the framework. (For example, the Scrum process framework requires the use of development cycles called Sprints, the XP framework requires pair programming, and so forth.)
- “Lightweight” means that the overhead of the process is kept as small as possible, to maximize the amount of productive time available for getting useful work done.

A Scrum process is distinguished from other agile processes by specific concepts and practices, divided into the three categories of Roles, Artifacts, and Time Boxes. These and other terms used in Scrum are defined below. Scrum is most often used to manage complex software and product development, using iterative and incremental practices. Scrum significantly increases productivity and reduces time to benefits relative to classic “waterfall” processes. Scrum processes enable organizations to adjust smoothly to rapidly-changing requirements, and produce a product that meets evolving business goals. An agile Scrum process benefits the organization by helping it to

- Increase the quality of the deliverables
- Cope better with change (and expect the changes)
- Provide better estimates while spending less time creating them
- Be more in control of the project schedule and state

<https://www.cprime.com/resources/what-is-agile-what-is-scrum/>

Principles behind the Agile Manifesto

We follow these principles:

Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.

Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.

Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.

Business people and developers must work together daily throughout the project.

Build projects around motivated individuals.

Give them the environment and support they need, and trust them to get the job done.

The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.

Working software is the primary measure of progress.

Agile processes promote sustainable development.

The sponsors, developers, and users should be able to maintain a constant pace indefinitely.

Continuous attention to technical excellence and good design enhances agility.

Simplicity--the art of maximizing the amount of work not done--is essential.

The best architectures, requirements, and designs emerge from self-organizing teams.

At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

The product owner

Product owners are the champions for their product. They are focused on understanding business and market requirements, then prioritizing the work to be done by the engineering team accordingly. Effective product owners:

- Build and manage the product backlog
- Closely partner with the business and the team to ensure everyone understands the work items in the product backlog
- Give the team clear guidance on which features to deliver next
- Decide when to ship the product with the predisposition towards more frequent delivery

Keep in mind that a product owner is not a project manager. Product owners are not managing the status of the program. They focus on ensuring the development team delivers the most value to the business. Also, it's important that the product owner be an individual. No development team wants mixed guidance from multiple product owners.

The scrum master

Scrum masters are the champion for scrum within their team. They coach the team, the product owner, and the business on the scrum process and look for ways to fine-tune their practice of it. An effective scrum master deeply understands the work being done by the team and can help the team optimize their delivery flow. As the facilitator-in-chief, they schedule the needed resources (both human and logistical) for sprint planning, stand-up, sprint review, and the sprint retrospective.

Scrum masters also look to resolve impediments and distractions for the development team, insulating them from external disruptions whenever possible.

Part of the scrum master's job is to defend against an anti-pattern common among teams new to scrum: changing the sprint's scope after it has already begun. Product owners will sometimes ask, "Can't we get this one more super-important little thing into this sprint?" But keeping scope air tight reinforces good estimation and product planning—not to mention fends off a source of disruption to the development team.

Scrum masters are commonly mistaken for project managers, when in fact, project managers don't really have a place in the scrum methodology. A scrum team controls its own destiny and self-organizes around their work. Agile teams use pull models where the team pulls a certain amount of work off the [backlog](#) and commits to completing it that sprint, which is very effective in maintaining quality and ensuring optimum performance of the team over the long-term. Neither scrum masters nor project managers nor product owners push work to the team (which, by contrast, tends to erode both quality and morale).

The scrum team

Scrum teams are the champions for sustainable development practices. The most effective scrum teams are tight-knit, co-located, and usually 5 to 7 members. Team members have differing skill sets, and cross-train each other so no one person becomes a bottleneck in the delivery of work. Strong scrum teams approach their project with a clear

"we" attitude. All members of the team help one another to ensure a successful sprint completion.

As mentioned above, the scrum team drives the plan for each sprint. They forecast how much work they believe they can complete over the iteration using their historical velocity as a guide. Keeping the iteration length fixed gives the development team important feedback on their estimation and delivery process, which in turn makes their forecasts increasingly accurate over time.