**PROJECT METHODOLOGIES**

**Waterfall model**

**Waterfall**  is a breakdown of project activities into linear [sequential](https://en.wikipedia.org/wiki/Sequence) phases, where each phase depends on the deliverables of the previous one and corresponds to a specialization of tasks. The approach is typical for certain areas of [engineering design](https://en.wikipedia.org/wiki/Engineering_design). In [software development](https://en.wikipedia.org/wiki/Software_development_process), it tends to be among the less iterative and flexible approaches, as progress flows in largely one direction ("downwards" like a [waterfall](https://en.wikipedia.org/wiki/Waterfall)) through the phases of conception, initiation, [analysis](https://en.wikipedia.org/wiki/Analysis), [design](https://en.wikipedia.org/wiki/Software_design), [construction](https://en.wikipedia.org/wiki/Software_construction), [testing](https://en.wikipedia.org/wiki/Software_testing), [deployment](https://en.wikipedia.org/wiki/Implementation) and [maintenance](https://en.wikipedia.org/wiki/Software_maintenance).

**The Agile**

**Agile** approach combines iterative and incremental approaches by building each feature, one by one, with minimum feature richness, and then both gradually adding features and increasing feature richness until the right combination is achieved. Full richness of all features is not always necessary to deliver an early value to customer.

**AGILE VS WATERFALL**

* Agile is an incremental and iterative approach; Waterfall is a linear and sequential approach.
* Agile separates a project into sprints; Waterfall divides a project into phases.
* Agile helps complete many small projects; Waterfall helps complete one single project.

**SCRUM**

Within [project management](https://en.wikipedia.org/wiki/Project_management), scrum, sometimes written Scrum or SCRUM, is a framework for developing, delivering, and sustaining products in a complex environment, with an initial emphasis on [software development](https://en.wikipedia.org/wiki/Software_development), although it has been used in other fields including research, sales, marketing and [advanced technologies](https://en.wikipedia.org/wiki/High_tech). It is designed for teams of ten or fewer members, who break their work into goals that can be completed within time-boxed iterations, called *sprints*, no longer than one month and most commonly two weeks. The scrum team assess progress in [time-boxed](https://en.wikipedia.org/wiki/Timeboxing) daily meetings of 15 minutes or less, called daily scrums (a form of [stand-up meeting](https://en.wikipedia.org/wiki/Stand-up_meeting)). At the end of the sprint, the team holds two further meetings: the sprint review which demonstrates the work done to [stakeholders](https://en.wikipedia.org/wiki/Stakeholder_(corporate)) to elicit feedback, and [sprint retrospective](https://en.wikipedia.org/wiki/Retrospective#Software_development) which enables the team to reflect and improve.

**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.

**WORK BREAKDOWN STRUCTURE(WBS)**

A work breakdown structure (WBS) is a**visual project breakdown**. Beginning with the scope of work, the WBS shows the deliverables and how they connect back to the overarching project. Since a work breakdown structure is displayed visually, it can be created using a combination of workflow management software and project management frameworks.

**SPRINTS**

Sprints refer to short, repeating blocks of time in which key parts of the project are completed. Scrum, on the other hand, is the name of an Agile project management methodology that uses set processes and protocols, including sprints, to enhance collaboration and continuously improve upon problems.

**KANBAN**

[Kanban is a visual-first project management method that’s based on the Agile methodology.](https://www.bing.com/ck/a?!&&p=75ca1f4ec50759cde9ac47051c928d769b12996526b32cca537452a13eafab3fJmltdHM9MTY1NTI2MjYzMCZpZ3VpZD0yOWNlOTA2YS0xZTIwLTQyYTktYTEyMy1mZTU5MDk1YmQ0ZjUmaW5zaWQ9NTY3MQ&ptn=3&fclid=b637d09f-ec58-11ec-8bb7-27121a8ea9b5&u=a1aHR0cHM6Ly9jbGlja3VwLmNvbS9ibG9nL2thbmJhbi1wcm9qZWN0LW1hbmFnZW1lbnQv&ntb=1" \t "_blank)

[In the Kanban method, your project tasks are visualized as sticky notes (known as Kanban cards) on a board (known as a Kanban board).](https://www.bing.com/ck/a?!&&p=aa9f5fa0431493943fbc047948f509f9bffa3bf251dad45ddf34045efeb7a21cJmltdHM9MTY1NTI2MjYzMCZpZ3VpZD0yOWNlOTA2YS0xZTIwLTQyYTktYTEyMy1mZTU5MDk1YmQ0ZjUmaW5zaWQ9NTY3Mw&ptn=3&fclid=b637d3dc-ec58-11ec-9377-9610aad010d7&u=a1aHR0cHM6Ly9jbGlja3VwLmNvbS9ibG9nL2thbmJhbi1wcm9qZWN0LW1hbmFnZW1lbnQv&ntb=1" \t "_blank)

[In the 1940s, a Toyota engineer named Taiichi Ohno developed a ‘just-in-time’ production system. The system was based on visual communication, kind...](https://www.bing.com/ck/a?!&&p=34e8687fb61129aa390bea0ef0339b8a800dc54217882f8c11605813897d5afaJmltdHM9MTY1NTI2MjYzMCZpZ3VpZD0yOWNlOTA2YS0xZTIwLTQyYTktYTEyMy1mZTU5MDk1YmQ0ZjUmaW5zaWQ9NTY3NQ&ptn=3&fclid=b637d695-ec58-11ec-9fb3-70ac53356d1b&u=a1aHR0cHM6Ly9jbGlja3VwLmNvbS9ibG9nL2thbmJhbi1wcm9qZWN0LW1hbmFnZW1lbnQv&ntb=1" \t "_blank)

[What are the 3 components of Kanban project management?](https://www.bing.com/ck/a?!&&p=df039f6495d3959f25e766cd504b3b2b0b0b52c8f2c0e7636bfbb9dcf2ff74fdJmltdHM9MTY1NTI2MjYzMCZpZ3VpZD0yOWNlOTA2YS0xZTIwLTQyYTktYTEyMy1mZTU5MDk1YmQ0ZjUmaW5zaWQ9NTY3Nw&ptn=3&fclid=b637d947-ec58-11ec-b924-67ed95900b3d&u=a1aHR0cHM6Ly9jbGlja3VwLmNvbS9ibG9nL2thbmJhbi1wcm9qZWN0LW1hbmFnZW1lbnQv&ntb=1" \t "_blank)

[A Kanban board, Kanban cards, commitment point, and delivery point are the main components of Kanban project management.](https://www.bing.com/ck/a?!&&p=df039f6495d3959f25e766cd504b3b2b0b0b52c8f2c0e7636bfbb9dcf2ff74fdJmltdHM9MTY1NTI2MjYzMCZpZ3VpZD0yOWNlOTA2YS0xZTIwLTQyYTktYTEyMy1mZTU5MDk1YmQ0ZjUmaW5zaWQ9NTY3Nw&ptn=3&fclid=b637d947-ec58-11ec-b924-67ed95900b3d&u=a1aHR0cHM6Ly9jbGlja3VwLmNvbS9ibG9nL2thbmJhbi1wcm9qZWN0LW1hbmFnZW1lbnQv&ntb=1" \t "_blank)

1. To Do: Tasks that need to be picked up
2. Work In Progress: Tasks currently being worked on
3. Done: Completed tasks

**Extreme programming**

Extreme programming is a software development methodology that’s part of what’s collectively known as agile methodologies. XP is built upon values, principles, and practices, and its goal is to allow small to mid-sized teams to produce high-quality software and adapt to evolving and changing requirements. Extreme programming (XP) is a software development methodology, which is intended to improve software quality and responsiveness to changing customer requirements

**BURNDOWN RATE**

Burndown**shows the trend of completed and remaining work over a specified time period.** Burn rate provides calculations of the completed and required rate of work based on the specified time period. Also, a chart shows the amount of completed and remaining work that is assigned to team members.

**PRODUCT OWNER**

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

**DEVELOPERS**

Developers**research aspects of each project** to check that it follows all regulations and to complete the project on time and under the budget. They are responsible for overseeing various projects for their companies. They staff the project and make necessary purchases.