

# Waterfall VS. Agile

Both agile and waterfall are popular project management frameworks with their own strengths and weaknesses, as well as risks and benefits. It is important to understand different methods and to be able to choose one that suits the project the best to ensure success. Here are some key similarities and differences between agile and waterfall:

## Waterfall

1. **Sequential Approach.** Waterfall follows a linear approach to software development and each phase needs to be completed before moving forward to the next section.
2. **Roles.** Waterfall assigns strict roles to the project team members with specific duties and responsibilities.
3. **Predictive.** Relies heavily on upfront planning and documentation. Requirements are gone through at the beginning of the project and a thorough plan is compiled, as changes are discouraged after the development process begins.
4. **Time frame.** This method is designed for long projects with predetermined timelines.
5. **Emphasis on documentation.** Waterfall highlights comprehensive documentation significantly at each stage of development, and the documentation serves as a reference point for each phase.
6. **Rigid.** Once the project has started, changes in requirements or scope are difficult to implement, and this can lead to delays and increased costs if changes are required later in the process.
7. **Suitable for stable requirements.** Waterfall works best for project that have simple and unchangeable requirements that are easy to understand.
8. **Pros and Cons.**
  - a. Pros. Structured approach, easy to track progress, supports clear roadmap for every stage of the project, project manager holds key position.
  - b. Cons. Changes require significant replanning, project only released at the end, long delivery time, value is low until the end.

## Agile

1. **Flexible.** Agile is highly flexible and puts emphasis on change. It accommodates changes in priorities and requirements throughout the development process and allows continuous improvements and adaptations.
2. **Collaborative.** Encourages collaborations between different teams, including developers, designers, testers, and stakeholders, and regular communication and feedback meetings are a key value in Agile development.
3. **Value-Driven.** Agile delivers value to the customer early and frequently, as it prioritizes features based on user and customer feedback enabling the project team to deliver the most important features first.
4. **Continuous Improvement.** Agile promotes continuous improvements throughout the development process, as planning and adjustments are done throughout the project's life cycle as soon as new information or requirements emerge.
5. **Time frame.** Agile promotes fast delivery using short iterations, allowing teams to achieve short time frames.
6. **Minimal documentation.** Agile focuses more on self-organized teams and collaboration rather than heavy documentation like waterfall.
7. **Pros and Cons.**
  - a. Pros. Can handle changes to requirements at any point, short feedback loops, clear visibility & ability to see progress.
  - b. Cons. Requires customer involvement, allows additional features which might add cost or time