

AGILE METHODOLOGY



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INTRODUCTION



How do you define a project?

The [Project Management Institute](#) defines a “project” as “a temporary endeavour undertaken to create a unique product, service or result.”

There are a few key things to notice in this definition:

- The word “temporary” means projects must have a defined beginning and end. This means every project must include a timeline, scope and resources.
- The purpose of a project must be “**to create a unique product, service, or result.**” This means a project will be started in order to accomplish a specific goal.

INTRODUCTION



Every project must have the following components:

- 1. Goal:** What are you trying to achieve?
- 2. Timeline:** When are you trying to achieve it by?
- 3. Budget:** How much will it cost to achieve?
- 4. Stakeholders:** Who are the major players who have an interest in this project?
- 5. Project manager:** Who is going to make sure everything that needs to be completed gets completed?

What is project management?

Project management is the practice of **applying knowledge, skills, tools, and techniques to complete a project according to specific requirements.**

- It comes down to identifying the problem, creating a plan to solve the problem, and then executing on that plan until the problem has been solved.

INTRODUCTION



What are the stages of project management?

The five project management process groups are:

- 1. Initiating:** The goal for this phase is to define the project.
- 2. Planning:** This phase includes developing a roadmap for everyone to follow.
- 3. Executing & Monitoring:** In this stage, the project team is built and deliverables are created. Project managers will monitor and measure project performance to ensure it stays on track.
- 4. Closing:** The project is completed, a post mortem is held, and the project is transferred to another team who will maintain it.

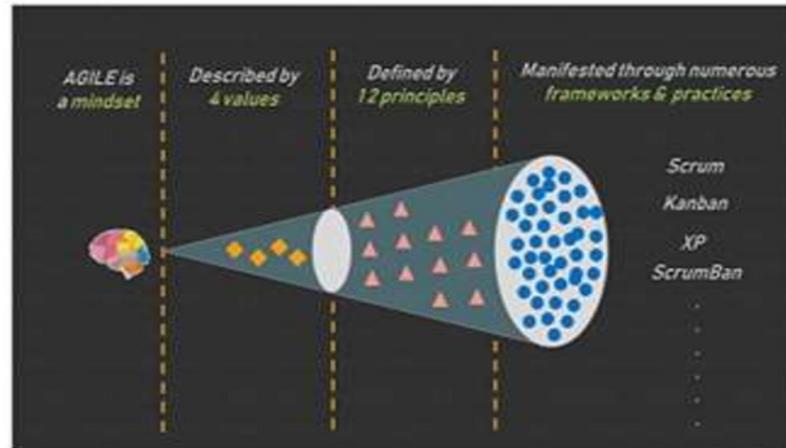
INTRODUCTION



What is Agile Methodology?

Agile is a mind-set, a philosophy, more like a way of thinking, a movement focusing on communication, team-thinking, intrinsic motivation, innovative talks, flow, and value creation while developing a product.

- At its core, Agile is a set of principles for actions that keep a software development team organized and efficient.
- Agile started when in 2001, a team of software developers got together in Utah for a weekend of fun and discussion.
- They compiled their views and principles into a document that is easy to understand and apply. Which we refer to as *Agile Manifesto*.



INTRODUCTION



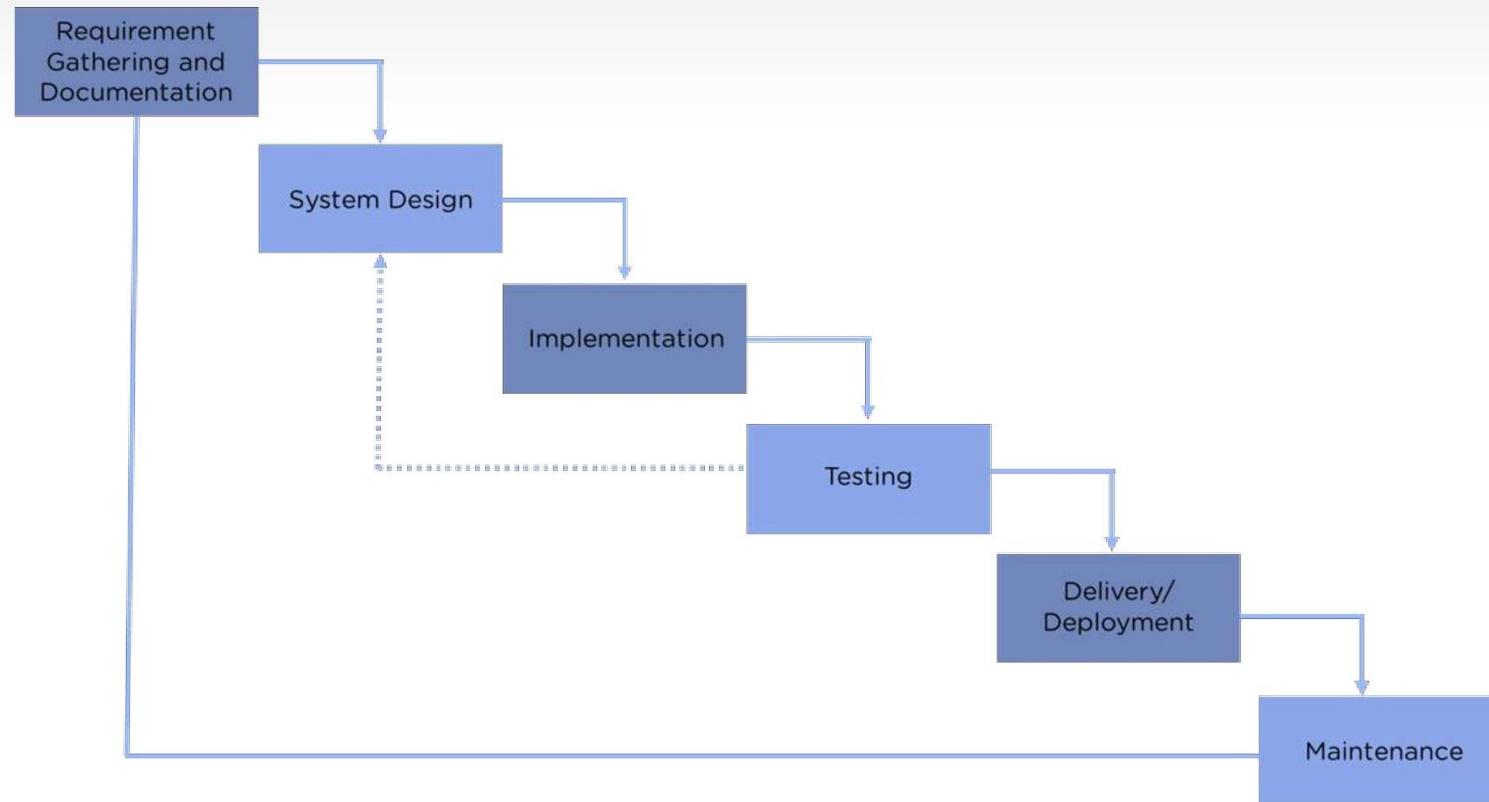
Points To Remember

- Agile Methodology meaning a practice that promotes **continuous iteration** of development and testing throughout the software development lifecycle of the project.
- In the Agile model in software testing, both development and testing activities are concurrent, unlike the Waterfall model.

INTRODUCTION



Why do we need Agile methodology?



Waterfall model of software development

INTRODUCTION



Waterfall model however suffered a few drawbacks such as follows:

- This model was too time-consuming. Unless you complete a particular stage, you cannot proceed to the further stages.
- This model was suitable only for projects where requirements are stable.
- The working software is delivered only after completion of the final stage of the model.
- It is very difficult to go back to the previous stages and make some changes that you had not thought about in the initial phase.

AGILE MANIFESTO



The Agile Manifesto describes 4 values and 12 supporting principles.

The Agile Manifesto

Here are some of the values mentioned in the manifesto:

Individuals and Interactions

Working Products

Customer Collaboration

Responding to Changes

OVER

Processes and Tools

Comprehensive Documentation

Contract Negotiation

Following a plan

Agile Manifesto.....Values



1. Individuals and interactions over processes and tools.

- People are the most important ingredient of success. A good process will not save the project from failure if the team doesn't have strong players, but a bad process can make even the strongest of players ineffective.
- Even a group of strong players can fail badly if they don't work as a team.
- Remember, building the team is more important than building the environment.

2. Working software over comprehensive documentation.

- too much documentation is worse than too little.
- It is always a good idea for the team to write and maintain a rationale and structure document, but that document needs to be *short* and *salient*.
- *Produce no document unless its need is immediate and significant.*

Agile Manifesto.....Values



3. Customer collaboration over contract negotiation.

- Successful projects involve customer feedback on a regular and frequent basis. Rather than depending on a contract or a statement of work, the customer of the software works closely with the development team, providing frequent feedback on their efforts.
- The best contracts are those that govern the way the development team and the customer will work together.

4. Responding to change over following a plan.

- It is the ability to respond to change that often determines the success or failure of a software project.
- When we build plans, we need to make sure that our plans are flexible and ready to adapt to changes in the business and technology.
- Customers are likely to alter the requirements once they see the system start to function.

Agile Manifesto.....Principles



To make a process Agile, the following 12 principles need to be satisfied.

1. Customer Satisfaction



- *Highest priority is to satisfy the customer through early and continuous delivery of valuable software.*
- *The more frequent the deliveries, the higher the final quality.*

Agile Manifesto.....Principles



2. Welcome Change



- *Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.*
- *This is a statement of attitude. The participants in an agile process are not afraid of change. They view changes to the requirements as good things, because those changes mean that the team has learned more about what it will take to satisfy the market.*

Agile Manifesto.....Principles



3. Deliver Frequently



- *Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter time scale.*
- Our eye is on the goal of delivering software that satisfies the customer's needs.

Agile Manifesto.....Principles



4. Work Together

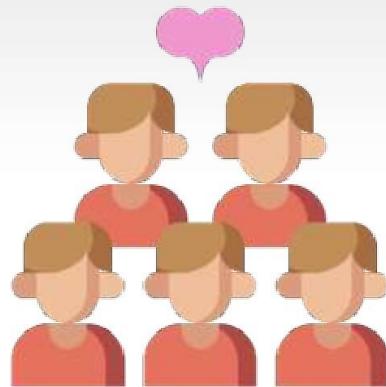


- *Business people and developers must work together daily throughout the project.*
- In order for a project to be agile, there must be significant and frequent interaction between the customers, developers, and stakeholders. A software project is not like a fire-and-forget weapon. A software project must be continuously guided.

Agile Manifesto.....Principles



5. Motivated Team



- *Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.*
- An agile project is one in which people are considered the most important factor of success. All other factors, process, environment, management, etc.—are considered to be second order effects, and they are subject to change if they are having an adverse effect upon the people.
- For example, if the office environment is an obstacle to the team, the office environment must be changed. If certain process steps are an obstacle to the team, the process steps must be changed.

Agile Manifesto.....Principles



6. Face-to-face



- *The most efficient and effective method of conveying information to and within a development team is face to-face conversation.*
- In an agile project, people *talk* to each other. The primary mode of communication is conversation. Documents may be created, but there is no attempt to capture all project information in writing.
- An agile project team does not demand written specs, written plans, or written designs. Team members may create them if they perceive an immediate and significant need, but they are not the default. The default is conversation.

Agile Manifesto.....Principles



7. Working Software



- *Working software is the primary measure of progress.*
- Agile projects measure their progress by measuring the amount of software that is currently meeting the customer's need.
- They are 30% done when 30% of the necessary functionality is working.

Agile Manifesto.....Principles



8. Constant Pace



Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.

Agile Manifesto.....Principles



9. Good Design



Continuous attention to technical excellence and good design enhances agility.

Agile Manifesto.....Principles



10. Simplicity



Keep things simple and use simple terms to measure the work that is not completed.

Agile Manifesto.....Principles



11. Self-Organization



The Agile team should be self-organized. They should not be depending heavily on other teams because the best architectures, requirements, and designs emerge from self-organized teams.

Agile Manifesto.....Principles



12. Reflect and Adjust



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

Advantages of Agile methodology



The various advantages offered by AGILE methodology are as follows:

- In AGILE, the delivery of the software is persistent.
- After every Sprint, working feature(s) is/are delivered to the customer. This increases the level of satisfaction in them.
- Customers can have a look at the developed features and check if they meet their expectations.
- If the customers have any feedback or they want any changes in the features, then it can be accommodated in the current or maybe the next release of the product.
- Changes can be made even in the later stages of the development of the product.
- In AGILE, the business people and the developers of the product interact daily.
- A significant amount of attention is paid to the design of the product.

How to implement Agile methodology?



The AGILE methodology can be implemented with the help of various frameworks such as

- Scrum.
- Kanban.
- Extreme Programming(XP).
- Lean, Crystal.
- Adaptive Project Framework(APF).
- Feature Driven Development(FDD).
- Dynamic Systems Development Method(DSDM),
- Agile Unified Process(AUP) and so on.