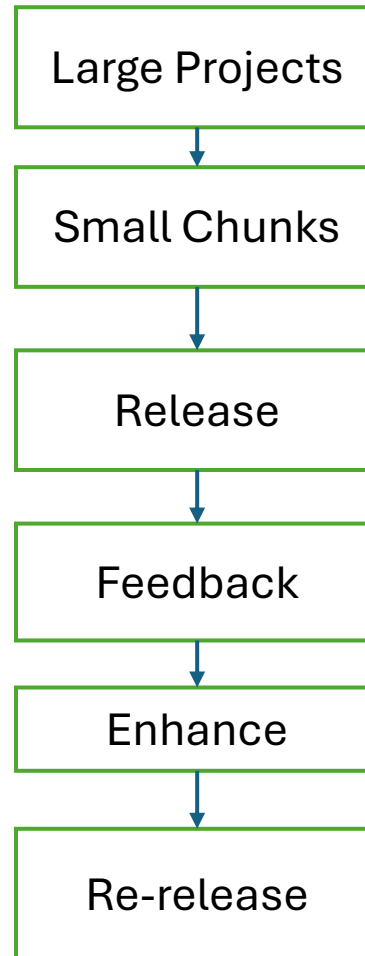


Agile and Scrum

Agile

- Agile is a set of principles and practices for managing projects.



Key Principles

- **Customer Satisfaction:** Deliver valuable software early and continuously. The focus is on meeting customer needs and responding to their feedback.
- **Embrace Change:** Agile welcomes changing requirements, even late in the development process. The goal is to adapt and evolve based on new insights or shifts in the market.
- **Frequent Delivery:** Deliver working software in short, frequent iterations. This ensures that parts of the project are functional and usable as early as possible.
- **Collaboration:** Regular communication and collaboration between business stakeholders and development teams. Agile promotes team cohesion and constant dialogue.
- **Motivated Teams:** Build projects around motivated individuals and give them the support and environment they need to succeed.

- **Face-to-Face Communication:** Prefer face-to-face communication for better collaboration and understanding. However, in remote settings, effective virtual communication is crucial.
- **Working Software:** The primary measure of progress is working software. Deliverables are evaluated based on their functionality and usefulness.
- **Sustainable Development:** The process should be sustainable, maintaining a constant pace. Teams should be able to keep up with the pace indefinitely.
- **Technical Excellence:** Enhance technical skills and good design practices to improve agility and maintainability of the project.
- **Simplicity:** The art of maximizing the amount of work not done focusing only on the essential features and avoiding unnecessary complexity.

Agile Frameworks

- **Scrum:** Focuses on iterative development with defined roles and ceremonies.
- **Kanban:** Visualizes work in progress and focuses on continuous delivery and improvement.
- **Extreme Programming (XP):** Emphasizes technical excellence and frequent releases.

Scrum Framework

- **Scrum** is a specific Agile framework designed to help teams manage complex projects.
- Scrum is a lightweight, iterative and incremental framework.
- Scrum breaks down the development phases into stages or cycles called sprints.
- The development time for each sprint is maximized and dedicated, thereby managing only one sprint at a time.
- It provides a structured approach to Agile with well-defined roles, events, and artifacts.

Key Components

- **Roles:**

Product Owner: Defines and prioritizes the product backlog. Ensures that the team works on the most valuable tasks.

Scrum Master: Facilitates Scrum practices and helps the team remove obstacles. Acts as a coach and ensures adherence to Scrum principles.

Development Team: A cross-functional group that works on the tasks defined in the sprint backlog. They are responsible for delivering the product increment.

- **Artifacts:**

Product Backlog: A dynamic list of features, enhancements, and bug fixes needed for the project. Managed by the Product Owner.

Sprint Backlog: A subset of the product backlog that the team commits to complete during a sprint. Includes tasks needed to achieve the sprint goal.

Increment: The sum of all completed product backlog items at the end of a sprint, which must be in a usable and potentially releasable state.

- **Events:**

Sprint Planning: A meeting where the team plans what will be accomplished in the upcoming sprint. The team selects items from the product backlog and creates a sprint backlog.

Daily Scrum: A brief daily meeting where team members discuss progress, plans, and any issues. Helps keep the team aligned and focused.

Sprint Review: Held at the end of a sprint to demonstrate the completed work. Stakeholders provide feedback, and the product backlog may be adjusted based on this feedback.

Sprint Retrospective: A meeting where the team reflects on the sprint process, discussing what went well, what didn't, and how they can improve in the next sprint.

Benefits of Agile

- Improved Flexibility and Adaptability
- Enhanced Customer Satisfaction
- Higher Quality Products
- Increased Collaboration and Communication
- Greater Transparency
- Risk Management
- Faster Time to Market
- Continuous Improvement
- Better Project Control

Disadvantages of Agile

- Less documentation.
- Maintenance problem.

Advantages of Scrum

- Freedom and adaption
- High quality, low risk product
- Reviewing current sprint before moving to new one.

Disadvantages of Scrum

- More efficient for small team size.
- No changes in the sprint.