

## Scrum Framework: Best in Agile Methodology

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### Abstract

The development methodology selected by the team, and applied to develop the product, has an influence on the goals of the project. Hence choosing the right methodology is crucial for the success of the project. Agile Methodology is such one that has several advantages compared to traditional methodologies. There are various frameworks within Agile methodology that are often used but among them Scrum, Kanban and XP programming are usually the most common ones. This paper mainly focuses on the detail study of Scrum framework and the reason behind being the best framework in agile methodology

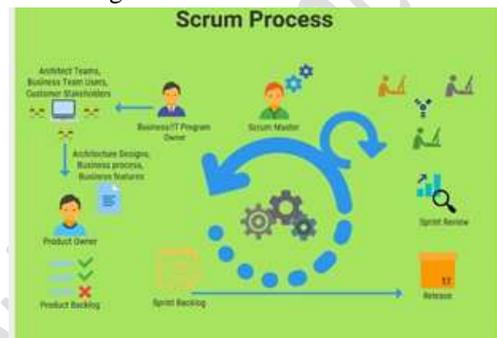
Keywords- Agile Methodology, Scrum, framework, Sprint backlog, Product backlog.

**1. Introduction-** Popularity and application of the Scrum framework in the software product development field is everywhere. Success of Scrum has made it significant and worthwhile to understand the Scrum framework.

The Scrum framework is a light weight framework for developing and maintaining complex products. Foundation of Scrum is Lean Thinking and Empirical process control, that is, clarity, inspection, and adaptation. Scrum is a set of regulation and guidelines that provide just enough structure to help the team cut down on the technical, business and interpersonal complexity of software development as a whole and enables the team to achieve large goals. Scrum's approach to product development is iterative and incremental with multiple response loops – also called inspect and adapt loops, inbuilt with the process.

Scrum can be used as an organizational debugging tool that will accentuate every insufficiency and hindrances that the enterprise has. In other words, Scrum shows organizational dysfunctions that

already exists. Scrum doesn't fix these hindrances. If the organization chooses to fix these hindrances, they benefit and improve their product development and management.



### 2. Scrum Values

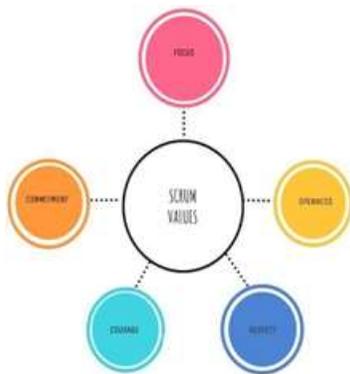
Scrum values determine success, the values provide a code of actions, or ethics. Scrum framework is based on five key values:

**Focus:** Focus on satisfying the customer by delivering the highest value features first. The focus relies on delivering a product that will satisfy the customer, although not in one go release but in increments lined up in such a way that the customer gets the most important features first. The framework gives the end customer the control to prioritize the increments as they will be delivered to them.

**Courage:** It's crucial for practitioners to exhibit the courage to accept that problems exist and that they've to do something about it. Courage enables the product owner to experiment with break-through ideas that may cause failures. Courage allows the development team to challenge the incorrect decisions taken by anybody that can go wrong and focus on course correction

**Openness:** Being open to all stakeholders with information about the work. At every step of the development of the software, the customer, in the form of the Product Owner is involved and kept well-informed. The Product Owner keeps the information available and transparent with the team such as – customer response, the order of the product backlog items, etc.

**Respect:** Respect for people and their freedom to communicate. The Scrum framework accentuates respect for people. The biggest beneficiary of respect is the development team members, who help build and delivers a quality software product. Scrum allows the development team to make decisions and through its rules and encourages everyone to respect the team's decisions.



**Commitment:** Committing to serving customers through valuable and quality products. Commitment comes from the perception that the team is making a difference in the quality of software developed and on-time delivery by focusing on satisfying the customer.

### 1. Scrum Framework

The Scrum framework uses lateral thinking that means it acknowledges the fact that a team doesn't know everything at the beginning of a project & the learning develops slowly during a project. It is made in a way where teams keep refreshing their priorities according to end-user demands and continuously adjust to the changing conditions. Scrum is constructed but not rigid in its application. Its implementation & execution can be custom-built to the needs of any organization.

**The Scrum framework consists of:**

#### Scrum Artifacts

Artifacts are tools to solve a problem or a value that adds clarity. The key idea of determining an artifact is that everyone in a team should be on the same page. The scrum team continuously looks in these 3 Artifacts to make sure the process is trouble-free & that everyone in the group has the same understanding of how to go about the inspection and adaptation.

There are three primary Scrum artifacts, namely:

**Product Backlog:** The Product Backlog is an effective list of features, requirements, improvements, etc. which performs as an input for the Sprint Backlog. It is a customer's demands that gets captured to understand the client's need.

**Sprint Backlog:** Sprint Backlog is the list of concluded user stories, work items, bug fixes, etc., completed & selected by the scrum team for implementation & execution in the current sprint cycle.

**Sprint Goal:** The Sprint Goal is the functional end product acquired from the completion of a sprint. It is also called as an increment. This sprint goal is displayed at the "End-of-Sprint Demo".

#### Scrum Roles

Scrum acknowledges and depicts 3 roles. These three roles make a Scrum team. A Scrum team is a small, cross-functional team focused on delivering a relevant product.

**Product Owner:** The PO is in charge of maximizing the Return on investment (ROI). The Product Owner does so by collaborating with the customer to acknowledge business needs and setting the direction of the product by ordering the product backlog concerning highest business value.

**Scrum Master:** The Scrum Master serves a purpose to the Product Owner to achieve the product goals, the development team to enhance

the performance of team and the organization to become a learning organization.

**Scrum Development Team:** The Dev Team follows product vision and direction set by the Product Owner and helps convert it into a relevant software product. The development team members share the ownership and contributions to build, deliver and support the product. Scrum empowers the team members and promotes the combined ownership of a value delivery.

### **Scrum Foundation**

**Scrum is based on three rules –**

**Transparency:** Transparency lets everyone on the Scrum Team and outside to align and optimize the goals of the Scrum Team, self-organize based on the available information and adapt based on the feedback. Transparency enhances decision making, eliminates duplication and wasteful efforts.

**Inspection:** In the presence of information available clearly, the members of the Scrum Team are able to inspect any digress of actual results compared with anticipated results.

**Adaptation:** Due to frequently and rapidly changing goals, customer demands, market conditions, competition, there is an ongoing need to adapt the direction of the products/services/solutions, organizations offer. Scrum Events provides chances for regular Inspection and Adaptation.

## **2. Scrum Reigns Supreme**

**Anticipatory thinking:** The conventional waterfall project management is built on anticipatory thinking and following the anticipated direction. For example, the product manager identifies the requirements to be built with a basic assumption that the user will buy this product, the user will pay for these features, these features will make the product more relevant, etc. Whereas, the Scrum Framework is built based on inspect the data/facts and adapt the direction suitably. Test the assumptions, fail-fast, build features, conduct

experiment is a way of agile mentality and being agile.

**Organization of Top-down hierarchy:** Hierarchy slows down the information movement within the organization, resulting in slower decision making. On the other hand, design of Scrum requires fast decision making at the ground, to be able to adapt to changing scenarios.

**To reduce quality to meet deadlines:** The pressure of meeting artificial deadlines and always increasing scope is to reduce quality

– unknowingly. Scrum puts a cessation to this by breaking down the product delivery in smaller generally 2-week increments.

**Advance planning:** Conventional program managers, project managers, put in months for planning the project, architects spend weeks and months designing the system and analyzing it. The reality of the product development world is that in the beginning of every product development, the users and the product managers in most cases, have little idea about the end result they want from the product. While the product is being developed there are insights and data being generated that help shape the direction of the product as well as the changing market impacts the requirements. Due to changing demands, the plans that are made in advance, the architecture that's is designed no longer holds good and must be adjusted. The Scrum framework uplifts slightly but frequent planning at well-organized intervals. It acknowledges the user feedback, data and reality to shape the future course of the product.

### **Other Benefits**

- Scrum clearly identifies Product Owner role who is in charge of the work to maximize value and improve ROI (Return on investment).
- Recurring and set time-boxes – called Sprints, and smaller broken-down features that are required by customer value, help the team focus on the small yet measurable increment of the product / service that they are building.

- It's derived from real world successful teams, rather than from a assumption or academic research.
- Scrum allows quick decision making by 1) empowering the Scrum Team
- 2) enabling clarity of information and 3) encouraging data based decisions.
- Scrum helps teams to remarkably improve their ability to adapt to the rapidly changing business environment.
- Having built-in inspect and adapt loops, Scrum is particularly better suited for high-risk and complex product development environment.
- Scrum enhances the alignment of product development with customer / business requirements and priorities through the Product Backlog.
- Scrum boosts the effectiveness of the Scrum team in converting ideas to products.
- Scrum eliminates the analysis- paralysis and makes teams focused on delivering highest customer value in every Sprint.

### **Conclusion:**

Scrum is designed to enhance team satisfaction and productivity, product quality, receptiveness to customers, and transparency for stakeholders. It is crucial to implement the roles, artifacts, events, and rules of the Scrum framework correctly to truly make the most of it. The main practices that enables these benefits include minimize work on strenuous product delivery, implementing and completing each User Story in a Sprint Backlog in succession, functioning in short Sprints of 2-4 weeks, and making every project information available to all stakeholders. Corroboration shows that scrum has built up popularity and will continue in the many years to come.

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