AGILE DEVELOPMENT TECHNIQUE

Scrum

Scrum is an agile software development method that was conceived by Jeff Sutherland. The Scrum method provides a project management framework. It is centered around a set of sprints, which are fixed time periods when a system increment is developed. Planning is based on prioritizing a backlog of work and selecting the highest priority tasks for a sprint.

Scrum principles are consistent with the agile manifesto and are used to guide development activities within a process that incorporates the following framework activities: requirements, analysis, design, evolution, and delivery. Within each framework activity, work tasks occur within a process pattern called a sprint. The work conducted within a sprint (the number of sprints required for each framework activity will vary depending on product complexity and size) is adapted to the problem at hand and is defined and often modified in real time by the Scrum team. The overall flow of the Scrum process is illustrated in Figure 1.

The members of a Scrum team play three roles __ **Product owner** (Represents the customers, users, and other stakeholders. **Team member** (self-organized cross-functional team members who build the application) **and Scrum Master** (team leader)**.**

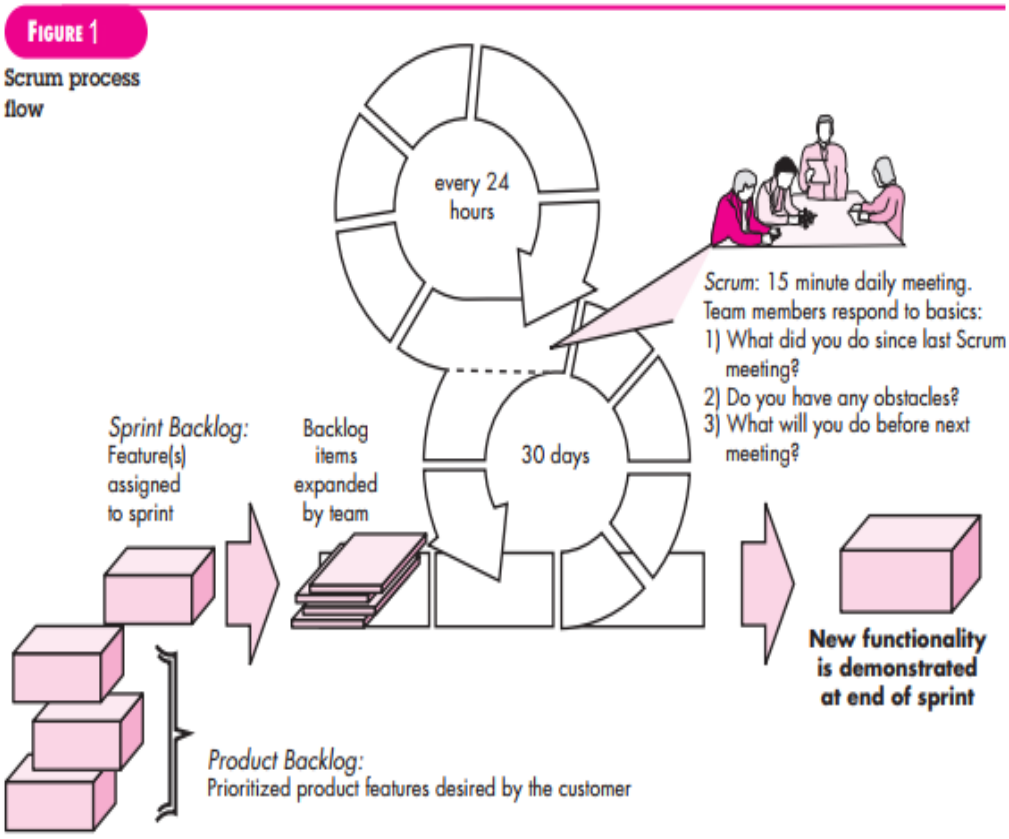

FIGURE 1
Scrum process flow

Scrum emphasizes the use of a set of software process patterns that have proven effective for projects with tight timelines, changing requirements, and business criticality. Each of these process patterns defines a set of development actions:

- **Backlog**—a prioritized list of project requirements or features that provide business value for the customer. Items can be added to the backlog at any time (this is how changes are introduced). The product manager assesses the backlog and updates priorities as required.
- **Sprints—** A Scrum project creates a series of timeboxed incremental iterations, which are usually called sprints **.**It's consist of work units that are required to achieve a requirement defined in the backlog that must be fit into a predefined time-box (typically 30 days).

Scrum meetings—are short (typically 15 minutes) meetings held daily by the Scrum team. Three key questions are asked and answered by all team members:

• What did you do since the last team meeting?

• What obstacles are you encountering?

• What do you plan to accomplish by the next team meeting?

A team leader, called a **Scrum master**, leads the meeting and assesses the responses from each person. The Scrum meeting helps the team to uncover potential problems as early as possible. Also, these daily meetings lead to "knowledge socialization" and thereby promote a self-organizing team structure. **Demos**, deliver the software increment to the customer so that functionality that has been implemented can be demonstrated and evaluated by the customer. It is important to note that the demo may not contain all planned functionality, but rather those functions that can be delivered within the time-box that was established.

Burndown, Scrum uses burndown charts to measure progress. A burndown chart shows the amount of work remaining plotted over time. A sprint burndown chart shows the amount of work for a sprint.A product burndown chart (also called a release burndown chart) shows the amount of work remaining for the whole project. As the project continues, some sprints will be more productive than others, so the actual progress won't follow the ideal burndown exactly. You can use the burndown charts to decide if the project is getting too far off of its targets. **Velocity**, A project's velocity

represents the amount of work the team can perform during a sprint. To calculate the velocity during a sprint, simply add up the number of features the sprint delivered. To calculate the number of features, you can use story points, backlog items, or any other measure that you find useful.

Key characteristics of Scrum are as follows:

1. Sprints are fixed length, normally 2–4 weeks.
2. The starting point for planning is the product backlog, which is the list of work to be done on the project. During the assessment phase of the sprint, this is reviewed, and priorities and risks are assigned. The customer is closely involved in this process and can introduce new requirements or tasks at the beginning of each sprint.
3. The selection phase involves all of the project team who work with the customer to select the features and functionality to be developed during the sprint.
4. Once these are agreed, the team organizes themselves to develop the software. Short daily meetings involving all team members are held to review progress and if necessary, reprioritize work. During this stage the team is isolated from the customer and the organization, with all communications channelled through Scrum master.
5. At the end of the sprint, the work done is reviewed and presented to stakeholders.

And the next sprint cycle then begins.