

Scrum

An Agile and practical Methodology
for
software project management

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Overview:

We will begin our discussion on the Scrum technique, by looking into the objective, key roles, implementation steps and documentation involved. We will also look at the strengths and weaknesses of the scrum. Next we will try to identify the challenges in software project management and the shortfalls of planned (predictive) techniques. Finally we will see how we can use scrum to address these challenges effectively.

It's important to note here: Scrum complements existing project management techniques rather than replacing them. It brings in the **flexibility** by a mechanism for regular baseline updates and **transparency** with help of Daily scrum communication. It improves the **team moral** by bringing the sense of ownership for tasks assigned to them (also as they are using most discussed pm technique!).

Also note, scrum by itself cannot ensure project progress or success, unless it's well supported with proper development and delivery processes.

Background:

Scrum is the way of restarting the rugby game after each interruption. It seem this technique was named "scrum" by founders due to its "fresh start" and "dynamic nature" attributes (and their love for rugby!).

It's an old technique and the initial documented implementation of the Scrum was done and described in 1986 by Takeuchi and Nonaka at Fuji-Xerox to develop. Scrum technique has several variants led by various thought-leaders few of them are Ken Schwaber, Jeff Sutherland and Mike Cohn.

On Wikipedia "Scrum (development)" is defined as:

Scrum is a method for managing work, improving morale, and achieving very high productivity. The most popular agile method for project management, Scrum is noted for its simplicity, its high level of transparency, and a team based approach to work.

Its been observed that scrum can improve "team productivity" and "time to market" significantly. Scrum works well on smaller teams (around 10) however it can be scaled up logically. It's likely that scrum is still not recognized that well and hence not tried on larger projects/teams.

Scrum Objective:

Objective of scrum is to provide practical and agile (yet formal!) method to plan and track project progress. It recognizes, that not every deliverable is defined (to the last dot) to begin with and even changes in well-defined deliverables may be needed. It just not recognizes uncertainties (in all areas internal and external to project) but also provides a way to document and plan further.

It accepts the present available details and plans for a small period of time known as scrum cycle (or time-box). This period can be few weeks or a month, depending on the level of ambiguity and project size. Within each scrum cycle, Daily status check is performed and published to all stakeholders keeping no surprises for last minute for anyone.

Please note: Scrum does not provide a new ways to create wbs, estimation, project status, valuations or any such existing project management tools and techniques.

It provides a wrapper framework for project management and development/testing processes, bringing in the control, flexibility and transparency.

Scrum Implementation:

So far so good... lets get into the action.

Scrum roles: identifying the hats people need to wear.

Scrum implementation steps: The actual ritual that one should go through.

Scrum documentation: The emails, worksheets, charts etc one needs to maintain, regularly, rather daily!

Scrum Roles:

To implement scrum we need “project owner” who is the business decision maker (or at least official spokesperson) and “scrum master” who in general terms will be “project manager” having the project (and scrum) execution responsibility. “Execution team” is of-course the third part, which comprises of visualisers, developers, testers, tech writers and all others who contribute to project progress.

In popular scrum terminology “Project owner” is called “Product owner” as its assumed that scrum is more of product development methodology. However I prefer “project owner” as it gets generic across project/product development as well as support.

Project owner:

This person typically represents client/user side. He needs to accept inputs from various sources, analyze, define and prioritize functionalities of the product/project being developed (or supported). Project owner should have deep domain knowledge, market understanding, bit

of software development exposure and must be a clear thinker, as he needs to prioritize various project features/tasks.

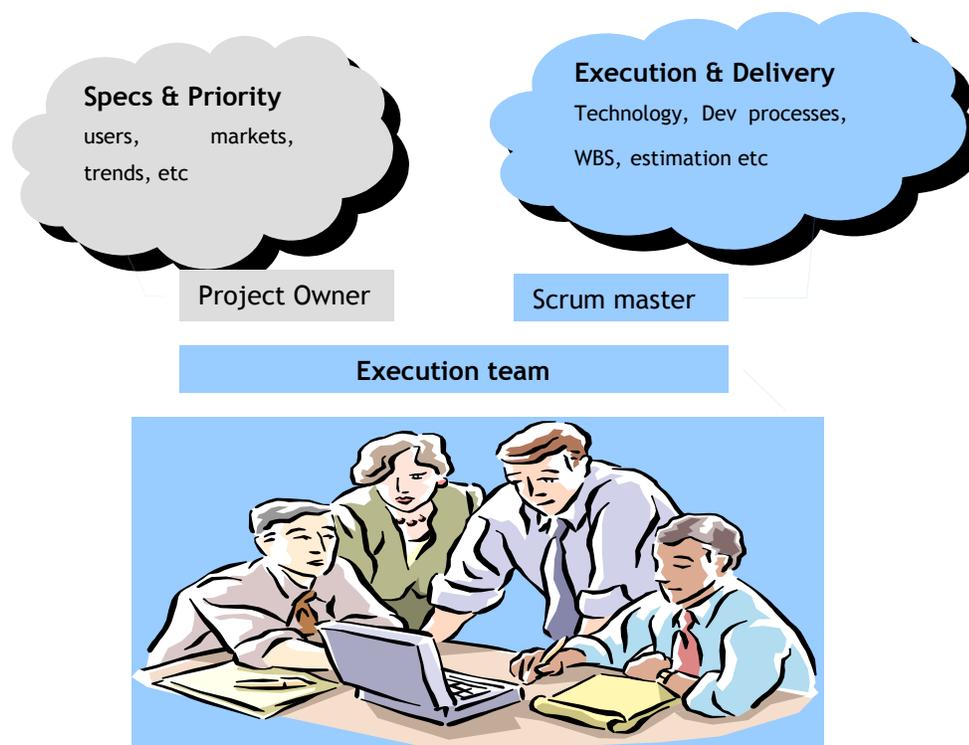


Figure 1: Team structure

Scrum master:

A scrum master typically is a project lead/manager, who is responsible for development and delivery of the project using scrum technique. He should have good understanding of technology and development processes/practices. He should assist project owner to define and scope project tasks. He's the critical link between the project owner and execution team playing management to team and team to management.

It's desired, although not necessary, that both project owner and scrum master be 100% allocated to the project.

Execution team:

An execution team just does not mean resources that are 100% allocated to this project like developers and graphic designers. It also means testers, administrators (list is much longer..) and all people who contribute to project progress but are not 100% booking their time for this project. In case a vendor is involved (or even a special team from within organization like automated testing group) they also become part of the team. It's a good idea to identify and involve all the people contributing to project as part of execution team (real team size ☺)

Scrum implementation:

The first step of any scrum implementation will be the identification and entitlement of the project owner and scrum master as these two guys need to follow all the steps subsequently.

The scrum has broadly three phases:

Pregame:

This is really the state where Project owner with help of scrum master (and few team members) creates project definition (FSD and proto!), technology feasibility, high level estimate (gustimates!) and target dates. One of the target date is to start full steam development.

In our scrum implementation we kept this phase as short as possible (2 to 4 weeks max) and pushed even the FSD and prototyping finalization in “Game” phase. The typical scrum output of this is “**Project Backlog List**”. Backlog list has a series of tasks(no dependencies tracked here). defined preferably to lowest level.

Each task should have a reference document/section like FSD/5.3 or CRF/123 or ERR/156. The task owner and target dates for each task also needs to be assigned, if not decided we can keep it blank in Backlog list.

Pl note: backlog list needs to have the various other documents typically produced at the initiating phases.

Game:

This phase is the action area, where the strength of scrum is realized. In the game phase we perform “Scrum Sprints” iteratively.

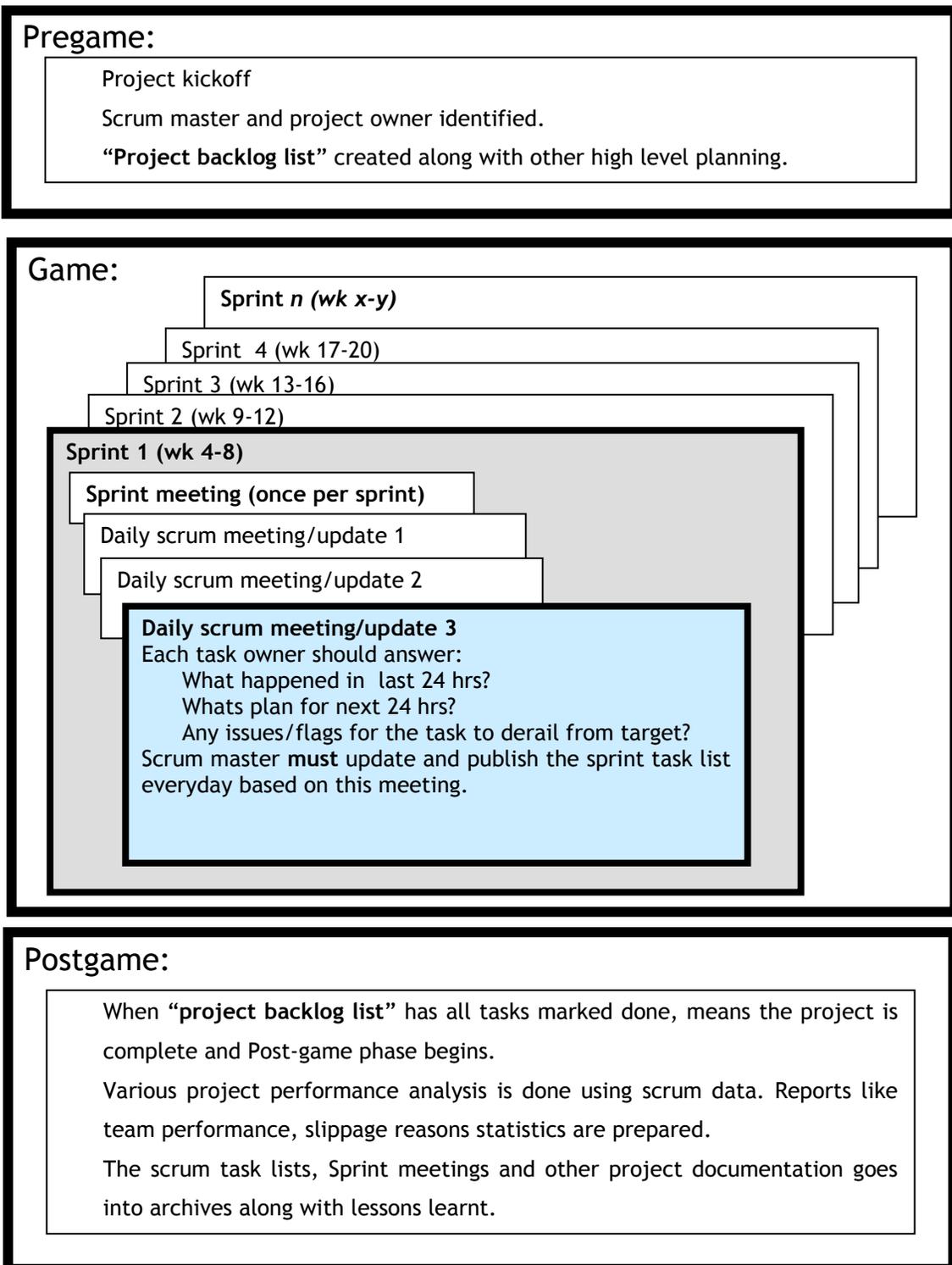
For each Sprint we need “**Sprint Task List**”, containing specific tasks from “backlog list”, with task owners and target dates now identified. Each sprint has a specific start and end-date, which is also referred as “TimeBox” which is typically of 2 to 4 weeks.

Sprint meeting:

Each sprint begins with a sprint meeting attended by all the team members, scrum master and project owner (preferably in person or using skype or so). This meeting is to analyze completed sprint (except first sprint) and plan next “**Sprint task list**”. Scrum master describes the tasks that team needs to complete during this sprint, their inter-dependencies and ownership. Team members discuss, accept or suggest modifications and scrum master using his judgment finalizes the “**Sprint task list**” and is circulated along with MOM and other documents.

Now that team knows what needs to be done with dates, the “sprint” begins with each task owner trying to reach his target.

Figure 2: Scrum execution overview



Daily Scrum meeting:

Challenge in any project management is to keep tab on progress and scheduling it real time. This is achieved in scrum by conducting a daily “stand-up meeting” to check the exact status from each task owner. The objective of stand-up is to keep it short and focused on the project progress and dependencies and not for any technical or other discussions.

The typical scrum questions asked by scrum master to each task owner are:

1. What’s the progress done from last meeting (last 24 hrs)?
2. What’s the expected progress till next meeting (next 24 hrs)?
3. Any obstacles that are seen which will take the task off-track?

First two questions keep tab on the project progress, where as the third question triggers any corrective activities.

We used to call it a “status check meeting” and never had a standup format. In fact sometimes it’s not even possible to conduct a team meeting, however it’s must to get the updates from all task owners and publish “**Sprint task list**” everyday, highlighting tasks that are facing issues and need revisions if any.

It’s the responsibility of scrum master to address the obstacles either by providing the technical/admin solutions or discussing with project owner for scope/schedule change, move tasks back to project backlog list or to bring in new tasks into sprint task list so as to achieve a well defined release at the end of each sprint.

Although most scrum variants don’t agree for the change in sprint scope, we realized its getting rigid and impractical killing the spirit of scrum!

Post-game

As the sprints progress “project backlog list” starts getting empty (or marked done). The time when we complete a sprint that clears all tasks, the game is complete. Post game is typically a closure process where the scrum data is analyzed and reports of team performance, slippage based on task type etc are prepared to have overall project performance.