

Scrum



SE Presentation

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What is Scrum?

- Scrum is an agile software development framework. Work is structured in cycles of work called sprints, iterations of work that are typically two to four weeks in duration. During each sprint, teams pull from a prioritized list of customer requirements, called Product Backlog (user stories), so that the features that are developed first are of the highest value to the customer. At the end of each sprint, a potentially shippable product is delivered.

Definitions of Scrum

- ❑ Scrum is an iterative, incremental process for developing any product or managing any work. It produces a potentially shippable set of functionality at the end of every iteration.
- ❑ Scrum is a process skeleton designed to deliver a product incrementally in smaller components.
- ❑ Scrum is a simple “inspect and adapt” framework that has three roles, three ceremonies, and three artifacts designed to deliver working software in Sprints, usually 30-day iterations.

Attributes of Scrum

- ❑ Scrum is an agile process to manage and control development work.
- ❑ Scrum is a wrapper for existing engineering practices.
- ❑ Scrum is a team-based approach to iteratively, incrementally develop systems and products when requirements are rapidly changing.
- ❑ Scrum is a process that controls the chaos of conflicting interests and needs.
- ❑ Scrum is a way to improve communications and maximize co-operation.

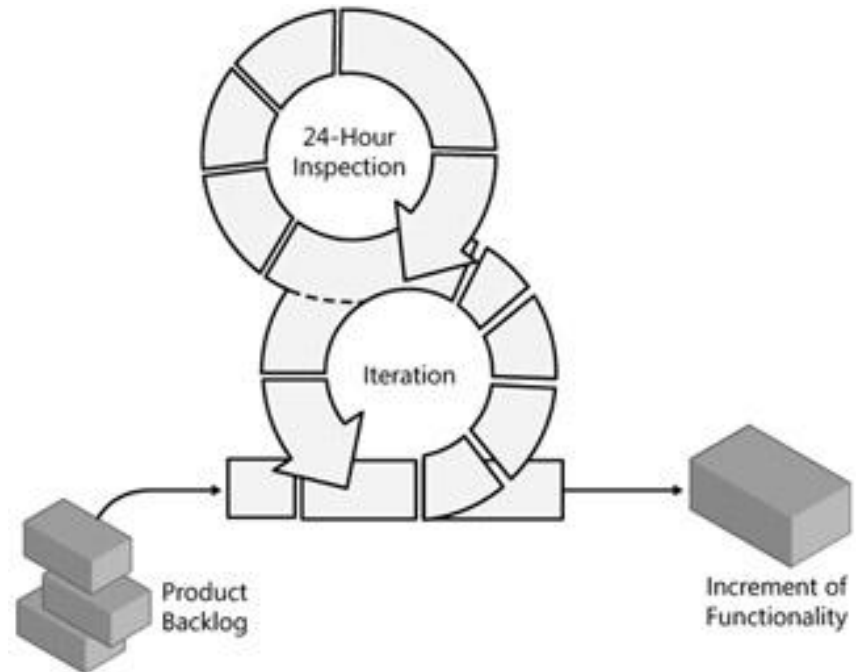
Attributes of Scrum contd.

- ❑ Scrum is a way to detect and cause the removal of anything that gets in the way of developing and delivering products.
- ❑ Scrum is a way to maximize productivity.
- ❑ Scrum is scalable from single projects to entire organizations. Scrum has controlled and organized development and implementation for multiple interrelated products and projects with over a thousand developers and implementers.
- ❑ Scrum is a way for everyone to feel good about their job, their contributions, and that they have done the very best they possibly could.

Scrum Skeleton

Lower circle represents an iteration of development activities that occur, one after another.

Upper circle represents the daily inspection that occurs during the iteration, where the individual team members meet to inspect each other's activities.



Scrum is a Simple Framework

- Three Roles
 - Product Owner
 - Scrum Master
 - Team
- Three Ceremonies
 - Sprint Planning
 - Daily Scrum
 - Sprint Review
- Three Artifacts
 - Product Backlog
 - Sprint Backlog
 - Burndown Charts

Three Roles

- Product Owner
- Scrum Master
- Team

Product Owner

- ❑ Defines the features of the product.
- ❑ Decides on release date and content.
- ❑ Is responsible for the profitability of the product (ROI).
- ❑ Prioritizes features according to market value.
- ❑ Adjusts features and priority every 30 days, as needed.
- ❑ Accepts or rejects work results.

Scrum Master

- Represents management to the project.
- Responsible for enacting Scrum values and practices.
- Removes impediments.
- Ensure that the team is fully functional and productive.
- Enable close cooperation across all roles and functions.
- Shield the team from external interferences.

Team

- Typically a team consists of 5 - 9 members.
- Is a Cross functional team: Programmers, testers, user experience designers, etc.
- Selects the Sprint goal and specifies work results.
- Has the right to do everything within the boundaries of the project guidelines to reach the Sprint goal.
- Organizes itself and its work.
- Demos work results to the Product Owner.

Three Ceremonies

- Sprint Planning
- Daily Scrum
- Sprint Review

Sprint Planning

- ❑ A Sprint Planning Meeting is used to develop a detailed plan for the iteration.
- ❑ Team selects items from the product backlog they can commit to completing.
- ❑ Sprint backlog is created
 - Tasks are identified and each is estimated (1-16 hours).
 - Collaboratively, not done alone by the Scrum Master.
- ❑ Anyone can attend, but primary conversation and work is between Team and Product Owner.

Daily Scrum

- The goal is to get a global snapshot of the project, discover any new dependencies, address any personal needs of committed individuals, and adjust the work plan in real time to the needs of the day.
- Parameters
 - Daily, same place and same time.
 - 15-minutes.
 - Stand-up.

Daily Scrum contd.

- While anyone can attend this meeting, only team members who have committed to deliver work to the Scrum are allowed to speak.
- Everyone answers 3 questions
 - What did I do yesterday?
 - What will I do today?
 - What impediments got in my way?
- Answers to three questions are not status for the Scrum Master
 - these are commitments in front of Peers.

Sprint Review

- Time boxed to a maximum of 4 hours.
- In first half, team presents what it accomplished during the sprint.
- Typically takes the form of a demo of new features or underlying architecture.
- The Product Owner leads first part of the meeting and invites all interested stakeholders to attend.
- The Product Owner determines which items on the Product Backlog have been completed in the Sprint.

Sprint Review contd.

- ❑ The second half of the Sprint Review Meeting is a retrospective for the Scrum team that is led by the Scrum Master.
- ❑ Whole team participates: Scrum Master, Product Owner, Team and possibly customers.
- ❑ The team identifies what worked well and what could work better and develops strategies for improvement.

Three Artifacts

- Product Backlog
- Sprint Backlog
- Burndown Charts

Product Backlog

- Is a set of requirements/user stories.
- A list of all desired work on the project.
- Ideally expressed such that each item has value to the users or customers of the product.
- Prioritized by the product owner.
- Reprioritized at the start of each sprint.

A sample Product Backlog

Enable all users to place book in shopping cart (mocks and additional details are located here)
Upgrade transaction processing module (must be able to support minimum 500 transactions per second)
Investigate solutions for speeding up credit card validation (see target performance metrics located here)
Upgrade all servers to Apache 2.2.3
Diagnose and fix the order processing script errors (bugzilla ID 14823)
Enable all users to create / save wishlist
Enable all users to add and delete items on their wishlist

First item is current highest priority, next item is next highest priority, and so on...



Sprint Backlog

- ❑ A short statement of what the work will be focused on during the sprint.
- ❑ Tasks are estimated in hours, usually 1-16.
- ❑ Task with more than 16 hours are broken down later.
- ❑ Team members sign up for tasks, they aren't just assigned.
- ❑ Estimate work remaining is updated daily.
- ❑ If work is unclear, define a sprint backlog item with a larger amount of time and break it down later.

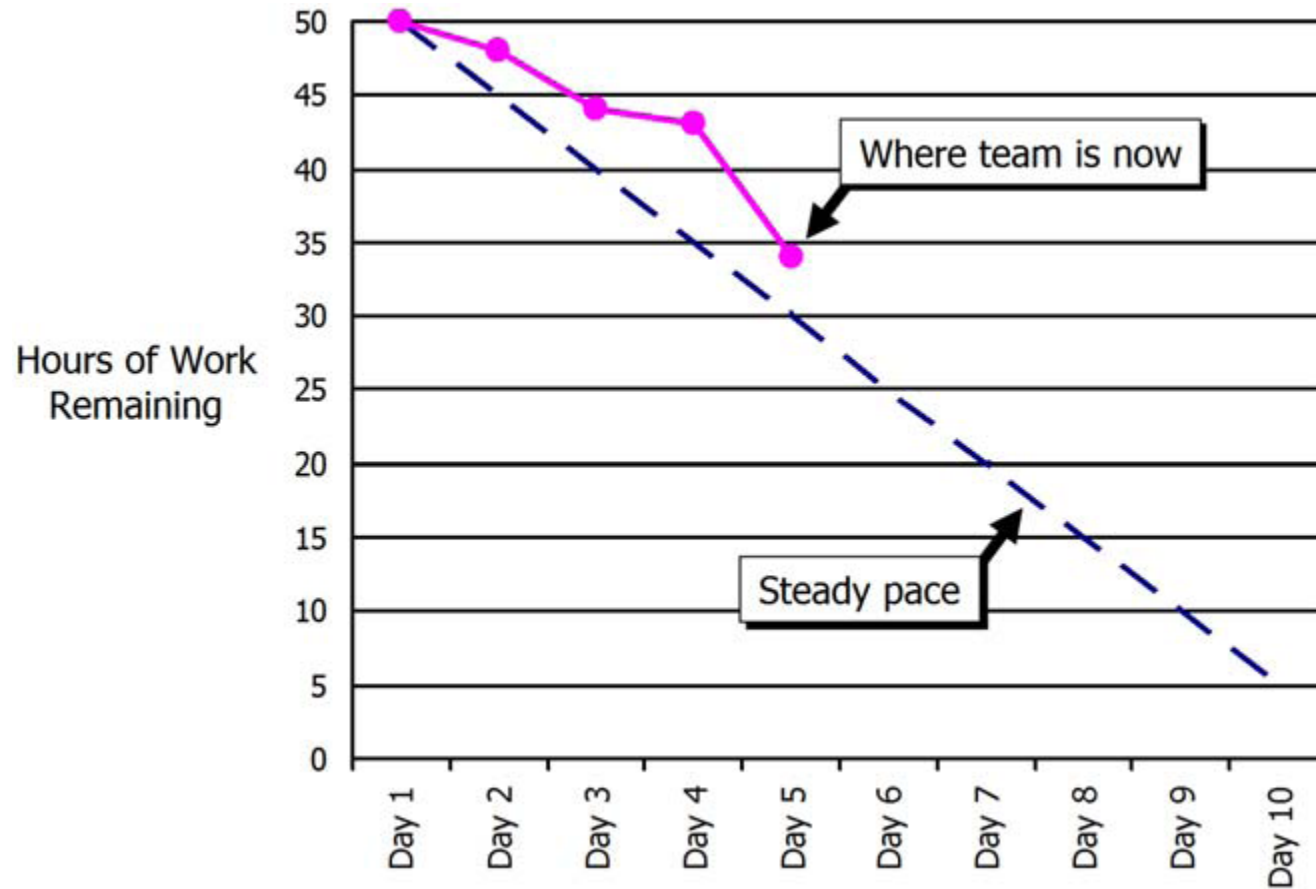
A sample Sprint Backlog

Backlog Item	Task	Owner	Initial Time Estimate
Enable all users to place book in shopping cart	Configure database and space IDs for Trac	Sanjay	4 hours
	Use test data to tune the learning and action model	Jing	2 hours
	Setup a cart server code to run as apache server	Philip	3 hours
	Implement pre-Login Handler	Tracy	3 hours
Upgrade transaction processing module (must be able to support 500 transactions /sec)	Merge DCP code and complete layer-level tests	Jing	5 hours
	Complete machine order for pRank	Jing	4 hours
	Change DCP and reader to use pRank http API	Tracy	3 hours

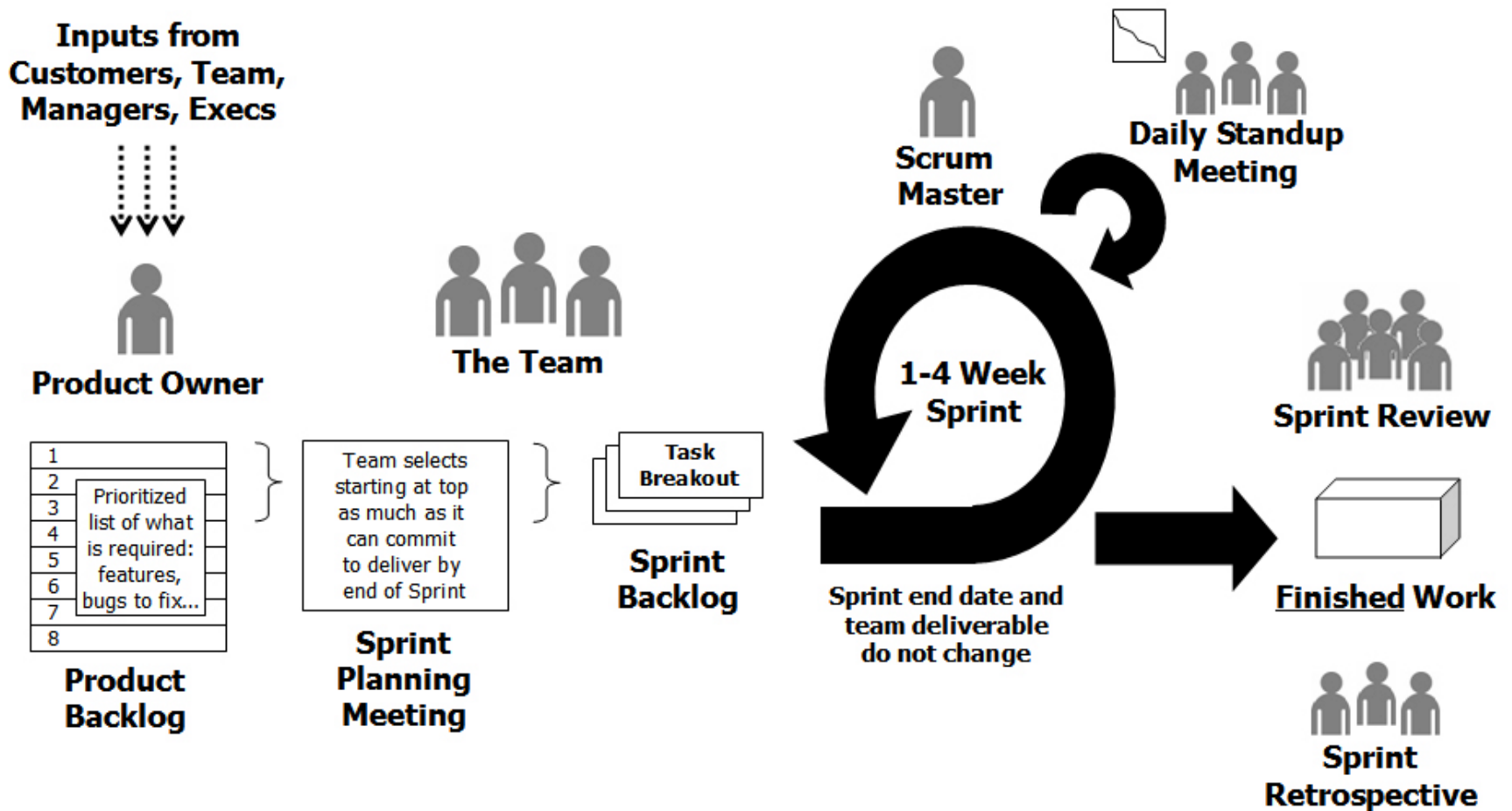
Burndown Chart

- ❑ The Burndown Chart is used as a tool to guide the development team to successful completion of a Sprint on time with working code that is potentially shippable as a product.
- ❑ The Burndown Chart shows the cumulative work remaining in a Sprint, day-by-day.
- ❑ Time reporting is not part of Scrum.
- ❑ Scrum is results oriented, not effort driven.

A sample Burndown Chart



Putting it all together



Benefits of Scrum

- ❑ Scrum is flexible in that it does not work off the “old school” assumption that requirements should be frozen before development begins.
- ❑ Mitigates risks by addressing them early in the development process.
- ❑ Customer begins to see results very early in the project.
- ❑ Development team is able to participate in all phases of the development process.

A Scrum Reading List

- ❑ Agile Estimating and Planning by Mike Cohn
- ❑ Agile Project Management with Scrum by Ken Schwaber
- ❑ Agile Software Development with Scrum by Ken Schwaber and Mike Beedle
- ❑ Scrum and The Enterprise by Ken Schwaber
- ❑ User Stories Applied for Agile Software Development by Mike Cohn
- ❑ Lots of weekly articles at www.scrumalliance.org

References

- Scrum Alliance
www.scrumalliance.org
- An Overview of Scrum by Mike Cohn
- Agile Project Management by Ken Schwaber
www.controlchaos.com
- HL Arledge's blog:
www.blogs.decadesoftware.com/hlarledge/
- The Scrum Papers by Jeff Sutherland