Scrum Basics

Agile Practice

Luxoft Agile Practice

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Scrum Theory

History

Scrum (n), a framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value.

Scrum is:

- Lightweight

- Simple to understand

- Difficult to master

Scrum is a process framework that has been used to manage complex product development since the early 1990s. Scrum is not a process or a technique for building products; rather, it is a framework within which you can employ various processes and techniques.

The Scrum framework consists of Scrum Teams and their associated roles, events, artifacts, and rules. Each component within the framework serves a specific purpose and is essential to Scrum's success and usage.

The rules of Scrum bind together the events, roles, and artifacts, governing the relationships and interaction between them.

Three Pillars
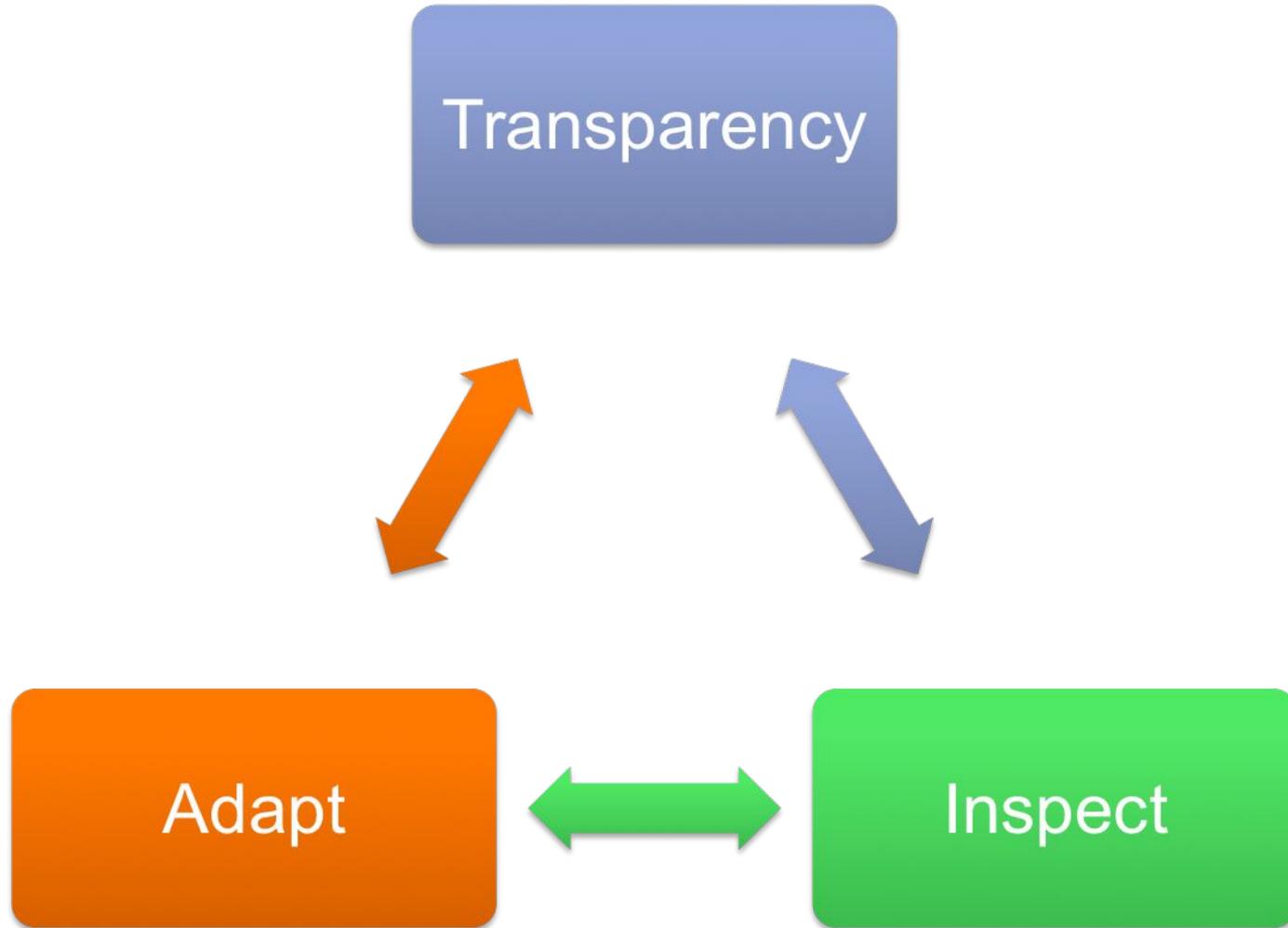
One Main Principle

Empiricism, *the view that all concepts originate in experience, that all concepts are about or applicable to things that can be experienced, or that all rationally acceptable beliefs or propositions are justifiable or knowable only through experience.*

Encyclopedia Britannica

Scrum Team

Two Attributes of Scrum Team

1. **Self-organization**

1. **Cross-functionality**

Three Roles

Development Team
- Cross-functional. Have all of the skills to create the Increment
- Self-organizing. Know how to to turn Product Backlog into Increments of potentially releasable functionality
- Is of optimal size (3-9 people)

Scrum Master
- Is responsible for ensuring Scrum is understood and enacted
- Is a servant-leader for the Scrum Team
- Helps to understand interactions within and outside the Scrum Team

Product Owner
- Is responsible for maximizing the value of the product and the work of the Development Team
- Is responsible for managing the Product Backlog
- Is one person, not a committee.

Scrum-master Services

To PO

- Finding techniques for effective PB management
- Helping the Scrum Team understand the need for clear and concise PBI
- Understanding product planning in an empirical environment
- Ensuring the PO knows how to arrange the PB to maximize value
- Understanding and practicing agility
- Facilitating Scrum events as requested or needed

To Dev Team

- Coaching the Team in self-organization and cross-functionality
- Helping to create high-value products
- Removing impediments
- Facilitating Scrum events as requested or needed
- Coaching the Team in organizational environments in which Scrum is not yet fully adopted and understood

To Organization

- Leading and coaching the organization in its Scrum adoption;
- Planning Scrum implementations within the organization;
- Helping employees and stakeholders understand and enact Scrum and empirical product development
- Causing change that increases the productivity of the Scrum Team
- Working with other SMs to increase the effectiveness of the application of Scrum in the organization

Scrum Events

Six Scrum Events

PBR
Standup
Sprint
Planning
Review
Retrospective
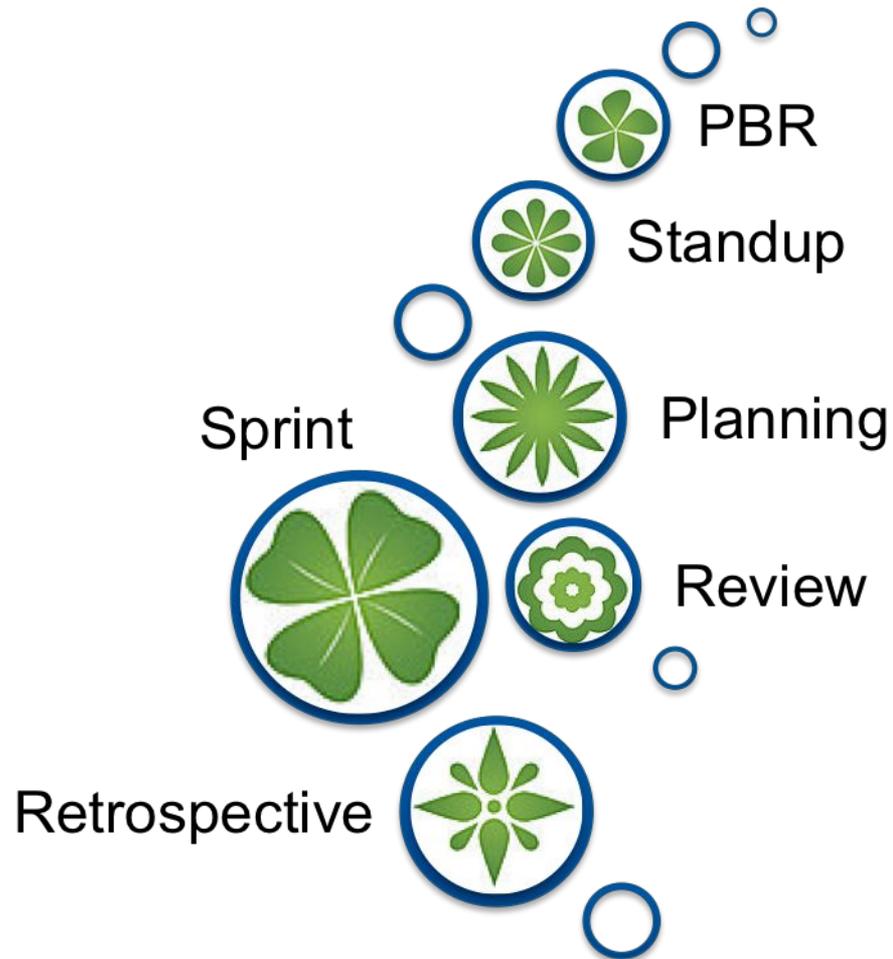
Standup

- Is 15-minute time-boxed for Dev Team to synchronize activities and create a plan for the next 24 hours.

- Is held at the same time and place each day to reduce complexity

- Is consists of 3 questions to inspect progress toward the Sprint Goal

- Improves communications, eliminate other meetings, identify impediments to development for removal, highlight and promote quick decision-making, and improve the Dev Team level of knowledge.

Sprint

- Is a time-box of one month or less

- Has a goal

- During sprint no changes are made to endanger the Goal

- Quality goals do not decrease during Sprint

- Sprint scope may be clarified and re-negotiated between the Product Owner and Dev Team as more is learned

- Consists of the BPR, Sprint Planning, Daily Scrums, the development work, the Sprint Review, and the Sprint Retrospective

- Has a definition of what is to be built, a design and flexible plan that will guide building it, the work, and the resultant product

- A new Sprint starts immediately after the conclusion of the previous Sprint.

Sprint Cancelation

- A Sprint can be cancelled before the Sprint time-box is over.

- A Sprint can cancelled if the Sprint Goal becomes obsolete.

- Only the PO has the authority to cancel the Sprint

- Sprint cancellations are often traumatic to the Scrum Team

- When a Sprint is cancelled, any completed and "Done" Product Backlog items are reviewed. If part of the work is potentially releasable, the Product Owner typically accepts it. All incomplete Product Backlog Items are re-estimated and put back on the Product Backlog.

PBR
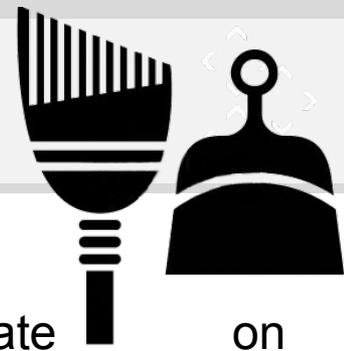
- Is the act of adding detail, estimates, and order to PBIs.

- Is an ongoing process in which the PO and the Dev Team collaborate on the details of PBIs.

- During PBR items are reviewed and revised. The Scrum Team decides how and when refinement is done.

- PBR usually consumes >10% of the capacity of the Development Team.

- Higher ordered PBIs are usually clearer and more detailed than lower ordered ones. More precise estimates are made based on the greater clarity and increased detail; the lower the order, the less detail.

- PBIs that can be "Done" by the Dev Team within one Sprint are deemed "Ready" for selection in a Sprint Planning.

- The Dev Team is responsible for all estimates. The PO may influence the Dev Team by helping it understand and select trade-offs, but the people who will perform the work make the final estimate.

Planning

- Is done by the collaborative work of the entire Scrum Team.

- Is time-boxed to a maximum of eight hours for a one-month Sprint.

- Answers the following:
  - What can be delivered in the Increment resulting from the upcoming Sprint?
  - How will the work needed to deliver the Increment be achieved?

Planning: Topic #1

What can be done this Sprint?

- The Dev Team works to forecast the functionality that will be developed during the Sprint.

- The Product Owner discusses the objective that the Sprint should achieve.

- The entire Scrum Team collaborates on understanding the work of the Sprint.

- The input to this meeting is the Product Backlog, the latest product Increment, projected capacity of the Development Team during the Sprint, and past performance of the Development Team.

- The number of items selected from the Product Backlog for the Sprint is solely up to the Development Team.

- After the Development Team forecasts the Product Backlog items it will deliver in the Sprint, the Scrum Team crafts a Sprint Goal.

Sprint Goal

- Is an objective set for the Sprint that can be met through the implementation of Product Backlog.

- Provides guidance to the Development Team on why it is building the Increment.

- Is created during the Sprint Planning meeting.

- Gives the Dev Team some flexibility regarding the functionality implemented within the Sprint.

- At any point in time, the total work remaining to reach a goal can be summed.

- Various projective practices upon trending have been used to forecast progress, like burn- downs, burn-ups, or cumulative flows. These have proven useful. However, these do not replace the importance of empiricism.

Planning: Topic #2

How will the chosen work get done?

- Dev Team decides how PBIs will build into a "Done" product Increment during the Sprint.

- PBIs selected for the Sprint plus the plan for delivering them is called the Sprint Backlog

- PBIs may be of varying size or estimated effort.

- Work planned for the Sprint is decomposed by the end of this meeting, often to units of one day or less.

- The PO can help to clarify the selected PBIs and make trade-offs

- The Dev Team may also invite other people to attend planning in order to provide technical or domain advice.

Review

- Is a four-hour time-boxed meeting for one-month Sprints

- Is held at the end of the Sprint to inspect the Increment and adapt the Product Backlog if needed

- Is an informal meeting, not a status meeting, and the presentation of the Increment is intended to elicit feedback and foster collaboration.

- The result of the Sprint Review is a revised Product Backlog that defines the probable Product Backlog items for the next Sprint.

Review Processes

- Attendees include the Scrum Team and key stakeholders invited by the Product Owner.

- The Product Owner explains what Product Backlog items have been "Done" and what has not been "Done".

- The Development Team discusses what went well during the Sprint, what problems it ran into, and how those problems were solved.

- The Development Team demonstrates the work that it has "Done" and answers questions about the Increment.

- The Product Owner discusses the Product Backlog as it stands. He or she projects likely completion dates based on progress to date (if needed).

- The entire group collaborates on what to do next, so that the Sprint Review provides valuable input to subsequent Sprint Planning.

- Review of how the marketplace or potential use of the product might have changed what is the most valuable thing to do next.

- Review of the timeline, budget, potential capabilities, and marketplace for the next anticipated release of the product.

Retrospective

- is an opportunity for the Scrum Team to inspect itself and create a plan for improvements to be enacted during the next Sprint.

- Occurs after the Sprint Review and prior to the next Sprint Planning.

- A three-hour time-boxed meeting for one-month Sprints.

Retrospective Purpose

- Inspect how the last Sprint went with regards to people, relationships, process, and tools.

- Identify and order the major items that went well and potential improvements.

- Create a plan for implementing improvements to the way the Scrum Team does its work.

"By the end of the Sprint Retrospective, the Scrum Team should have identified improvements that it will implement in the next Sprint. Implementing these improvements in the next Sprint is the adaptation to the inspection of the Scrum Team itself. Although improvements may be implemented at any time, the Sprint Retrospective provides a formal opportunity to focus on inspection and adaptation."

Scrum Guide

Scrum Artifacts

Product Backlog

- Is an ordered list of everything that might be needed in the product and is the single source of requirements for any changes to be made to the product.

- The PO is responsible for the Product Backlog, including its content, availability, and ordering.

- PBIs have the attributes of a description, order, estimate and value.

- Evolves as the product and the environment in which it will be used evolves.

- Multiple Scrum Teams often work together on the same product backlog.

Sprint Backlog

- Is the set of PBIs selected for the Sprint and a plan for delivering the product Increment and achieving the Sprint Goal.

- The Sprint Backlog is a forecast by the Dev Team about what functionality will be in the next Increment.

- The Increment is the sum of all the Product Backlog items completed during a Sprint and the value of the increments of all previous Sprints.

- The Dev Team modifies the Sprint Backlog throughout the Sprint, and the Sprint Backlog emerges during the Sprint. It occurs as the Dev Team works through the plan and learns more about the work needed to meet the Sprint Goal.

- Only the Development Team can change its Sprint Backlog during a Sprint.

Definition of Done (shippable Increment)

- When a Product Backlog item or an Increment is described as *"*Done", everyone in the Scrum Team must understand what "Done*"* means.

- Guides the Development Team in knowing how many Product Backlog items it can select during a Sprint Planning.

- If there are multiple Scrum Teams working on the system or product release, the development teams on all of the Scrum Teams must mutually define the definition of "Done."

- Each Increment is additive to all prior Increments and thoroughly tested, ensuring that all Increments work together.