Scrum Guide Notes

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Agile Software Development

- A different approach to the software development process
- Focuses on the clean delivery of individual pieces or parts of the software and **not** on the entire application
- Requirements & solutions evolve through the collaborative effort of teams and their customers and/or end users
- Encourages *early delivery* and *continuous improvement*
- The term Agile was popularized in 2001 when the *Agile Manifesto* was published

Agile Manifesto

- **Individuals and interactions**
  over processes and tools
- **Working software**
  over comprehensive documentation
- **Customer collaboration**
  over contract negotiation
- **Responding to change**
  over following a plan

Definition of Scrum

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

What is a framework?

A framework is a system of rules, ideas, or beliefs that is used to plan or decide something.

Note

As a framework, Scrum will never provide you with exact processes or show you exactly how to deal with problems. Instead, it provides a set of rules and relies on the team to find the best possible solution

Concept

- Small team of people that is highly *flexible* and *adaptive*
- Employ an iterative, incremental approach to *optimize predictability* and *control risk*
- Make decisions based on empirical process control theory, or *empiricism*

Empiricism

Knowledge comes from experience and making decisions on what is known.

Scrum Consists of

- Roles
- Events
- Artifacts
- Rules

Scrum Optimizes

- Flexibility
- Creativity
- Productivity

Three Pillars of Scrum

- **Transparency**
  Make significant aspects of the process visible to those responsible for the outcome

- **Inspection**
  Frequently inspect the progress towards a goal to detect undesirable variances
- **Adaptation**
  Adjust the process as soon as possible to minimize further deviation

Scrum Values

- **Commitment**
  People personally commit to achieving the goals of the Scrum Team
- **Courage**
  The Scrum Team members have courage to do the right thing and work on tough problems
- **Focus**
  Everyone focuses on the work of the Sprint and the goals of the Scrum Team
- **Openness**
  The Scrum Team and its stakeholders agree to be open about all the work and the challenges with performing the work
- **Respect**
  Scrum Team members respect each other to be capable, independent people

The Scrum Team

- Product Owner
- Development Team
- Scrum Master

Note

Be careful not to confuse the *Scrum Team* with the *Development Team*. The Scrum Team contains the Development Team, along with the Product Owner and the Scrum Master

Scrum Team Characteristics

- Deliver products *iteratively* and *incrementally*
- Self-organizing
- Cross-functional

Self-organization

Self-organizing teams choose how best to accomplish their work, rather than being directed by others outside the team.

Cross-functionality

Cross-functional teams have all competencies needed to accomplish the work without depending on others not part of the team.

The Product Owner

- Responsible for maximizing the value of the product resulting from work of the Development Team
- One person, not a committee
- The **only** person responsible for managing the *Product Backlog*. They have the final say on its content and ordering and *everyone* must respect their decisions

Note

The Product Owner may have the Development Team or someone else manage the Product Backlog. They, however, remain **accountable**

Product Backlog

- A *prioritized* list of desired product functionality
- Provides a shared understanding of what is needed in the product and in which order

Product Owner - Product Backlog

- Clearly express Product Backlog Items
- Order the items in the Product Backlog to best achieve goals and missions
- Optimize the value of work the Development Team performs
- Ensure that the Product Backlog is visible, transparent, clear to all and shows what the Scrum Team will work on next

- Ensure that the Development Team understands the Product Backlog to the level needed

The Development Team

- Consists of professionals who do the work of delivering a *potentially releasable* Increment of "Done" product at the end of each Sprint
- Only members of the Development Team create the Increment
- Size: 3 to 9 members

Note

The Scrum Guide *suggests* to have a Development Team of 3 to 9 members but this is not a *requirement*. A Development Team can still have 15 members however, it won't be as effective.

Development Team Characteristics

- Self-organizing
- Cross-functional
- Scrum recognizes no titles for Development Team members
- Scrum recognizes no sub-teams in the Development Team
- Accountability belongs to the **team** as a whole

The Scrum Master

- Promotes and supports Scrum
- Helps everyone understand Scrum theory, practices and rules
- Acts as a *Servant-Leader* for the Scrum Team
- Helps those outside the Scrum Team understand which interactions are helpful and which aren't

Note

As servant-leader the Scrum Master guides and coaches the Scrum Team. They are not allowed, however, to tell the team what to do or how to do it unless related to the Scrum framework

Scrum Master - Product Owner

- Ensure that goals, scope, and product domain are understood by everyone on the Scrum Team as well as possible
- Find techniques for effective Product Backlog management
- Help the Scrum Team understand the need for clear and concise Product Backlog Items
- Ensure the Product Owner knows how to arrange the Product Backlog to maximize value
- Understand product planning in an empirical environment
- Understand and practice agility
- Facilitate Scrum events as requested or needed

Scrum Master - Development Team

- Coach the Development Team in self-organization and cross-functionality
- Help the Development Team create high-value products
- Remove impediments to the Development Team's progress
- Facilitate Scrum events as requested or needed
- Coach the Development Team in organizational environments in which Scrum is not yet fully adopted and understood

Scrum Master - Organization

- Lead and coach the organization in its Scrum adoption
- Plan Scrum implementations within the organization
- Help employees and stakeholders understand and enact Scrum and empirical product development
- Cause change that increases the productivity of the Scrum Team
- Work with other Scrum Masters to increase the effectiveness of the application of Scrum in the organization

Scrum Events

- The Sprint
- Sprint Planning
- Daily Scrum
- Sprint Review
- Sprint Retrospective

Scrum Event Characteristics

- Create regularity
- Minimize the need for meetings not defined in Scrum
- Time-boxed (have max duration)
- Each event is an opportunity to inspect and adapt something
- Failure to include any of these events results in reduced transparency

The Sprint

- Acts as a container for all other events
- Duration: One month or less (consistent duration)
- A new sprint starts immediately after the conclusion of the previous Sprint
- A "Done", potentially releasable Product Increment is created
- Consists of:
  - Sprint Planning
  - Daily Scrums
  - Development Work
  - Sprint Review
  - Sprint Retrospective

During the Sprint

- No changes are made that would endanger the Sprint Goal
- Quality goals do not decrease
- Scope may be clarified and re-negotiated between the Product Owner and the Development Team as more is learned

Cancelling a Sprint

- **Only** the Product Owner has the authority to cancel a Sprint
- The Sprint is cancelled if the Sprint Goal becomes *obsolete*
- 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

Note

Sprint cancellations are often traumatic to the Scrum Team and should be avoided. They also consume resources as everyone regroups in another Sprint Planning to start another Sprint.

Sprint Planning

- What can be delivered in the Increment resulting from the upcoming Sprint?
- How will the work needed to deliver the Increment be achieved?
- The plan is created by the collaborative work of the entire Scrum Team
- Max duration: 8 hours for one-month Sprint
- Attendees: All Scrum Team members

Sprint Planning - Input

- Product Backlog
- Latest Product Increment
- Projected capacity of the Development Team during the Sprint
- Past Performance of the Development Team

Sprint Planning - Notes

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

- The Product Owner can help to clarify selected Product Backlog Items and make tradeoffs
- The Development Team may renegotiate selected Product Backlog Items with the Product Owner
- The Development Team may invite other people to attend to provide technical or domain advice
- Output: *Sprint Backlog* and *Sprint Goal*

Sprint Backlog

- The Product Backlog Items selected for this Sprint
- A plan for delivering them

Sprint Goal

- An **objective** that will be met within the Sprint through the implementation of the selected Product Backlog Items
- Provides guidance to the Development Team on *why* it is building the Increment
- Created by the entire Scrum Team

Note

Although Sprint Planning starts by having the Product Owner discuss the objective that the Sprint should achieve and the Product backlog Items that, if completed during the Sprint, would achieve the Sprint Goal, the final Sprint Goal is created by the collaborative effort of the entire Scrum Team

Daily Scrum

- Held every day of the Sprint at the same place and time
- The Development Team plans work for the next 24 hours
- Max duration: 15 minutes
- Attendees: All Development Team members

Daily Scrum - Notes

- The Scrum Master ensures that the Development Team has the meeting but the Development Team is **responsible for conducting** the Daily Scrum
- The Scrum Master teaches the team to keep the Daily Scrum within the 15-minute timebox
- The Development Team or team members often meet immediately after the Daily Scrum for related discussions
- It is an internal meeting for the Development Team. If others are present, the Scrum Master ensures they **do not disrupt** the meeting

Daily Scrum - Benefits

- Improve communication
- Eliminate the need for other meetings
- Identify impediments to development for removal
- Highlight and promote quick decision-making
- Improve the Development Team's level of knowledge

Sprint Review

- Held at the end of each Sprint
- Inspect the Increment and adapt the Product Backlog if needed
- Collaborate on the next things that could be done to optimize value
- Max duration: 4 hours for a one-month Sprint
- Attendees: All Scrum Team members and Stakeholders
  (Invited by the Product Owner)

Sprint Review - Notes

- The Sprint Review is **not a demo**
- The presentation of the Increment is intended to elicit feedback and foster collaboration
- Output: A revised Product Backlog that defines the *probable* Product Backlog Items for the next Sprint

Scrum Master - Sprint Review

- Ensure that the event takes place
- Everyone should understand its purpose
- Teach everyone to keep it within the time-limit

Sprint Retrospective

- Occurs after the Sprint Review and prior to the next Sprint Planning
- Identify how the last Sprint went with regards to people, relationships, processes 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
- Max duration: 3 hours for a one-month Sprint
- Attendees: All Scrum Team members

Scrum Master - Sprint Retrospective

- Ensure that the event takes place and attendants understand its purpose
- Ensure that the meeting is *positive* and *productive*
- Teach everyone to keep it within the time-box
- Participate as peer team member from the accountability over the Scrum process
- Encourage the Scrum Team to improve

Note

During each Sprint Retrospective, the Scrum Team plans ways to increase product quality by improving work processes or adapting the definition of "Done" if appropriate and not in conflict with the product or organizational standards

Scrum Artifacts

- Product Backlog
- Sprint Backlog
- Increment

Product Backlog

- Ordered list of everything known to be needed in the Product
- Single source of requirements for any changes to be made to the Product
- Dynamic (it evolves)
- It is never complete
- If a Product exists, a Product Backlog exists too

Note

If multiple Scrum Teams work on the same Product, **only one** Product Backlog is used

Product Backlog Items

- Product Backlog items that will occupy the Development Team for the upcoming Sprint are *refined* so that any one item can reasonably be "Done" within the Sprint
- Product Backlog items that can be "Done" by the Development Team within one Sprint are deemed "Ready" for selection in a Sprint Planning

Note

Product Backlog Items can be updated *anytime* by the Product Owner or at the Product Owner's discretion

Product Backlog Items - Attributes

- Description
- Order
- Estimate
- Value
- May also include test descriptions that will prove the item's completeness when "Done"

Product Backlog Refinement

- The act of adding **detail**, **estimates**, and **order** to items in the Product Backlog

- The Product Owner and the Development Team cooperate during refinement
- The Scrum Team decides *how* and *when* refinement is done
- *Usually* consumes no more than 10% of the Development Team's capacity

Note

It is the sole responsibility of the Development Team to estimate items in the Product Backlog. Although the Product Owner may influence the team by helping it understand and select trade-offs, the people who will perform the work make the final estimate

Sprint Backlog

- The set of Product Backlog Items selected for the Sprint
- A plan for delivering the Increment and realizing the Sprint Goal
- Includes *at least* one high priority process improvement identified in the previous Retrospective meeting
- Belongs **solely** to the Development Team. Only they can change it during a Sprint

Increment

- The sum of all Product Backlog Items completed during the Sprint and the value of Increments of all previous Sprints
- A step towards a vision or a goal
- Must be in *usable condition* regardless of whether the Product Owner decides to release it

Definition of "Done"

- When a Product Backlog Item or an Increment is described as "Done", everyone must understand what "Done" means
- The definition of "Done" is used to assess when work is complete on the product Increment
- Guides the Development Team in knowing how many Product Backlog Items it can select during a Sprint Planning

Definition of "Done" - Notes

- Multiple Scrum Teams working on the same Product **must** mutually define the definition of "Done"
- If the definition of "Done" is part of the conventions, standards or guidelines of the development organization, all Scrum Teams **must** follow it as a *minimum*
- As Scrum Teams mature, it is expected that their definitions of "Done" will expand to include more stringent criteria for higher quality
- A new Definition of "Done", as used, may uncover work to be done in previously "Done" Increments

Sprint Progress

- The *Development Team* tracks the total work remaining in the Sprint Backlog at least every **Daily Scrum**
- Helps evaluate the likelihood of achieving the Sprint Goal

Release Progress

- The *Product Owner* tracks the total work remaining to reach a goal at least every **Sprint Review**
- They compare this amount with work remaining at previous Sprint Reviews to assess progress toward completing projected work

References

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[2] Ken Schwaber and Jeff Sutherland. The scrum guide. https://www.scrumguides.org/, November 2017.