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

*A lightweight **framework** that helps people, teams and organizations generate value through adaptive solutions for complex problems.*

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 detailed instructions or show you exactly how to deal with problems. Instead, it provides a set of rules that guide people's relationships and interactions

Concept

A Scrum Master creates an environment where:

1. A Product Owner orders the work for a complex problem into a Product Backlog
2. The Scrum Team turns a selection of the work into an Increment of value during a Sprint
3. The Scrum Team and its stakeholders inspect the results and adjust for the next Sprint
4. *Repeat*

Scrum Characteristics

- Simple
- Purposefully incomplete
- Built upon by the *collective intelligence* of the people using it
- Employs an iterative, incremental approach to *optimize predictability* and *control risk*
- Makes visible the relative efficacy of current management, environment and work techniques, so that *improvements* can be made

Foundations

- **Empiricism**
  Knowledge comes from experience and making decisions based on what is observed
- **Lean thinking**
  Reduce waste (non-value added activities) and focus on the essentials

Three Pillars of Scrum

- **Transparency**
  Make the emergent process and work visible to those performing the work as well as those receiving the work
- **Inspection**
  Frequently inspect the Scrum artifacts and progress toward agreed goals to detect potentially undesirable variances or problems
- **Adaptation**
  If any aspects of a process deviate outside acceptable limits or if the resulting product is unacceptable adjustments must be made as soon as possible to minimize further deviation

Scrum Values

- **Commitment**
  The Scrum Team commits to achieving its goals and supporting each other
- **Focus**
  Everyone focuses on Sprint work to make the best possible progress toward the goals
- **Openness**
  The Scrum Team and its stakeholders are open about the work and the challenges
- **Respect**
  Scrum Team members respect each other to be capable, independent people. They are also respected as such by the people with whom they work
- **Courage**
  Scrum Team members have the courage to do the right thing and work on tough problems

The Scrum Team

- *One* Scrum Master
- *One* Product Owner
- Developers

Scrum Team Characteristics

- *Typically* 10 or fewer people
- No sub-teams or hierarchies
- Focused on *one* objective at a time, the Product Goal
- *Accountable* for creating a valueable, useful Increment every Sprint
- Self-managing
- Cross-functional

Note

The Scrum Guide *suggests* to have a team of up to 10 members but this is not a *requirement*. A Scrum Team can still have 15 members however, it won't be as effective.

Self-management

*Self-managing teams internaly decide who does **what**, **when** and **how**.*

Cross-functionality

Cross-functional teams have all the skills necessary to create value each Sprint.

Note

If a Scrum Team becomes too large, consider reorganizing into multiple cohesive Scrum Teams that work on the same product and share the same Product Goal, Product Backlog and Product Owner

Developers

- The people in the Scrum Team that are committed to creating any aspect of a *usable* Increment each Sprint

Accountable for:

- Creating a plan for the Sprint - the Sprint Backlog
- Instilling quality by adhering to a Definition of Done
- Adapting their plan each day toward the Sprint Goal
- Holding each other accountable as professionals

The Product Owner

- Accountable for maximizing the value of the product resulting from the work of the Scrum Team
- Accountable for effective Product Backlog management
- One person, not a committee
- Their decisions are visible in the content and ordering of the Product Backlog and through the inspectable Increment at the Sprint Review
- The *entire organization* must respect their decisions

Product Backlog Management

- Develop and explicitly communicate the *Product Goal*
- Create and clearly communicate Product Backlog items
- Order Product Backlog items
- Ensure that the Product Backlog is transparent, visible and understood

Note

The Product Owner may do the above work or may delegate the responsibility to others. They, however, remain **accountable**

The Scrum Master

- Accountable for establishing Scrum as defined in the Scrum Guide
- Helps everyone understand Scrum theory, practices and rules both within the Scrum Team and the organization
- Accountable for the Scrum Team's effectiveness
- *Leader who serves* the Scrum Team and the larger organization

Note

As a leader, the Scrum Master guides and coaches the Scrum Team to improve its practices within the Scrum framework

Scrum Master - Scrum Team

- Coaches the team members in self-management and cross-functionality
- Helps the Scrum Team focus on creating high-value Increments that meet the Definition of Done
- Causes the removal of impediments to the Scrum Team's progress
- Ensures that all Scrum events take place and are *positive*, *productive* and kept within the *timebox*

Scrum Master - Product Owner

- Helps find techniques for effective Product Goal definition and Product Backlog management
- Helps the Scrum Team understand the need for clear and concise Product Backlog items
- Helps establish empirical product planning for a complex environment
- Facilitates stakeholder collaboration as requested or needed

Scrum Master - Organization

- Leads, trains and coaches the organization in its Scrum adoption
- Plans and advises Scrum implementations within the organization
- Helps employees and stakeholders understand and enact an empirical approach for complex work
- Removes barriers between stakeholders and Scrum Teams

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
- Designed to enable the transparency required
- Each event is a formal opportunity to inspect and adapt Scrum artifacts
- Failure to operate any events as prescribed results in lost opportunities to inspect and adapt
- *Optimally*, all events are held at the same time and place to reduce complexity

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
- Sprints enable predictability by ensuring inspection and adaptation of progress toward a Product Goal *at least* every calendar month
- Each Sprint may be considered a short project

Note

When a Sprint's horizon is too long the Sprint Goal may become invalid, complexity may rise and risk may increase. Shorter Sprints can be employed to generate more learning cycles and limit risk of cost and effort to a smaller time frame

During the Sprint

- No changes are made that would endanger the Sprint Goal
- Quality does not decrease
- The Product Backlog is refined as needed
- Scope may be clarified and renegotiated with the Product Owner as more is learned

Cancelling a Sprint

- **Only** the Product Owner has the authority to cancel a Sprint
- A Sprint could be cancelled if the Sprint Goal becomes *obsolete*

Sprint Planning

- Initiates the Sprint by laying out the work to be performed for the Sprint
- Topics:
  - Why is this Sprint valuable?
  - What can be Done this Sprint?
  - How will the chosen work get done?
- The resulting 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 - Notes

- The Product Owner ensures that attendees are *prepared* to discuss the most important Product Backlog items and how they map to the Product Goal
- The whole Scrum Team collaborates to define a Sprint Goal that communicates why the Sprint is valuable to stakeholders
- Developers will become more confident in their Sprint forecasts as they learn more about their performance, upcoming capacity and the Definition of Done
- The Scrum Team may refine Product Backlog items during planning to increase its understanding and confidence
- How Developers plan to turn Product Backlog items to an Increment that meets the Definition of Done is at their **solely** up to them
- The Scrum Team may invite other people to attend the Sprint Planning to provide advice
- Output: *Sprint Backlog*

Sprint Backlog

- The Sprint Goal
- The Product Backlog items selected for the Sprint
- A plan for delivering them

Daily Scrum

- Inspect progress toward the Sprint Goal and adapt the Sprint Backlog as necessary
- Held every working day of the Sprint at the same place and time
- Max duration: 15 minutes
- Attendees: All Developers

Daily Scrum - Notes

- If the Product Owner or Scrum Master are actively working on items in the Sprint Backlog, they participate as Developers
- The Developers can select whatever structure and techniques they want, as long as their Daily Scrum focuses on progress toward the Sprint Goal and produces an actionable plan for the next day of work

Daily Scrum - Benefits

- Improve communication
- Identify impediments
- Promote quick decision-making
- Eliminate the need for other meetings

Note

The Daily Scrum is **not** the only time Developers are allowed to adjust their plan. They often meet throughout the day for more detailed discussions about adapting or re-planning the rest of the Sprint's work

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)

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

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

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 toward 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.