Scrum Guide Notes

Vasileios Papadopoulos

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

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
- 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

Scrum 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 any 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

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

Scrum Team Characteristics

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

- An emergent, ordered list of what is needed to improve the product
- Single source of work undertaken by the Scrum Team
- If someone wants to modify the Product Backlog they can do so by trying to convince the Product Owner

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
- Accountable for the Scrum Team's effectiveness
- *Leader* that serves the Scrum Team and the larger organization
- Helps everyone understand Scrum theory, practices and rules (both within the Scrum Team and the organization)
- Guides and coaches the Scrum Team to improve its practices within the Scrum framework

Scrum Master - Scrum Team

- Coaches 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 finding 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

- Enable the transparency required
- Create regularity
- Minimize the need for meetings not defined in Scrum
- Each event is a formal opportunity to inspect and adapt Scrum artifacts
- 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. In such cases it is advised to employ shorter Sprints to generate more learning cycles and limit the 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
- Topics:
  - Why is this Sprint valuable?
  - What can be Done this Sprint?
  - How will the chosen work get done?
- The plan created (the Sprint Backlog) is the result of the collaborative work of the *entire* Scrum Team
- Max duration: 8 hours for one-month Sprint
- Attendees: All Scrum Team members. Other people may also be invited to provide advice

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
- 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 Sprint Planning to increase its understanding and confidence
- It is solely up to the Developers to plan how to turn Product Backlog items to an Increment that meets the Definition of Done

Sprint Backlog

- The Sprint Goal which communicates why the Sprint is valuable to stakeholders
- 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

- Inspect the outcome of the Sprint and determine future adaptations
- Held at the end of the Sprint, before the Sprint Retrospective
- The Scrum Team presents the results of their work to key stakeholders and progress toward the Product Goal is discussed
- Attendees then examine what has changed in their environment and collaborate on what to do next
- Max duration: 4 hours for a one-month Sprint
- Attendees: All Scrum Team members and Stakeholders

Sprint Review - Notes

- The Sprint Review is a *working session* and the Scrum Team should avoid limiting it to a presentation
- The Product Backlog may be adjusted following the Sprint Review to meet new opportunities

Sprint Retrospective

- Inspect how the last Sprint went with regards to individuals, interactions, processes, tools, and the Definition of Done
- Discuss what went well during the Sprint, what problems were encountered and how those problems were (or were not) solved
- Identify the most helpful changes to improve effectiveness and *address* them as soon as possible
- Last event of the Sprint
- Max duration: 3 hours for a one-month Sprint
- Attendees: All Scrum Team members

Sprint Retrospective - Notes

- Inspected elements often vary with the domain of work
- Identified improvements **may** be added to the Sprint Backlog for the next Sprint

Scrum Artifacts

- **Product Backlog**
  Commitment: Product Goal
- **Sprint Backlog**
  Commitment: Sprint Goal
- **Increment**
  Commitment: Definition of Done

Note

Scrum artifacts represent work or value. Each artifact contains a commitment to ensure it provides information that enhances transparency and focus against which progress can be **measured**

Product Definition

A product is a vehicle to deliver value. It has a clear boundary, known stakeholders, well-defined users or customers. A product could be a service, a physical product or something more abstract

Product Backlog

- Emergent, ordered list of what is needed to improve the product
- Single source of work undertaken by the Scrum Team
- Product Backlog items that can be Done by the Scrum Team within one Sprint are deemed *ready* for selection in a Sprint Planning event
- Product Backlog items *usually* acquire the necessary degree of transparency after refining activities

Product Backlog Refinement

- The act of breaking down and further defining Product Backlog items into smaller, more precise items
- An ongoing activity during which details such as a *description*, *order* and *size* are added to Product Backlog items
- Attributes added usually vary with the domain of work

Note

The Developers doing the work are responsible for sizing the corresponding Product Backlog items. Although the Product Owner may influence them by helping them understand and select trade-offs, the people who will perform the work make the final estimate

Product Goal

- Future state of the product
- Serves as a long-term objective for the Scrum Team to plan against
- Resides in the Product Backlog. The rest of the Product Backlog emerges to define "what" will fulfill the Product Goal
- The Scrum Team must fulfill (or abandon) one Product Goal before taking on the next

Sprint Backlog

- A plan **by and for** the Developers
- Consists of:
  - The Sprint Goal (why)
  - The set of Product Backlog items selected for the Sprint (what)
  - An actionable plan for delivering the Increment (how)
- Highly visible, *real-time* picture of the work that the Developers plan to accomplish during the Sprint in order to achieve the Sprint Goal
- Updated throughout the Sprint as more is learned
- Should have enough detail so progress can be inspected during the Daily Scrum

Sprint Goal

- Single objective for the Sprint
- Creates coherence and focus
- Encourages the Scrum Team to work together rather than on separate initiatives
- Provides flexibility to the Developers in terms of the exact work needed to achieve it

Note

As Developers work during the Sprint, they keep the Sprint Goal in mind. If the work turns out to be different than they expected, they collaborate with the Product Owner to negotiate the scope of the Sprint Backlog within the Sprint **without** affecting the Sprint Goal

Increment

- A concrete step toward the Product Goal
- The moment a Product Backlog item meets the Definition of Done, an Increment is born
- Each Increment is additive to all prior Increments and thoroughly verified to ensure that all Increments work together
- Multiple Increments may be created within a Sprint
- Must be **usable**

Note

The Scrum Team has the ability to deliver an Increment to the stakeholders prior to the end of the Sprint. The Sprint Review should **never** be considered a gate to releasing value

Definition of Done

- A formal description of the state of the Increment when it meets the quality measures required for the product
- Creates transparency by providing everyone a shared understanding of what work was completed as part of the Increment
- Developers are required to conform to the Definition of Done
- Work cannot be considered part of an Increment unless it meets the Definition of Done

Note

If a Product Backlog item does not meet the Definition of Done by the end of the Sprint, it cannot be released or even presented at the Sprint Review. Instead, it returns to the Product Backlog for future consideration

Definition of Done - Notes

- Multiple Scrum Teams working together on a Product must *mutually* define and comply with the same Definition of Done
- If the Definition of Done is part of the standards of the organization all Scrum Teams must follow it as a *minimum*
- If there is not an organizational standard the *Scrum Team* must create a Definition of Done that is appropriate for the product

References

[1] Kent Beck, Mike Beedle, Arie Van Bennekum, Alistair Cockburn, Ward Cunningham, Martin Fowler, James Grenning, Jim Highsmith, Andrew Hunt, Ron Jeffries, et al. Manifesto for agile software development. `https://www.agilemanifesto.org/`, 2001.

[2] Ken Schwaber and Jeff Sutherland. The scrum guide. `https://www.scrumguides.org/`, November 2020.