Nexus Guide Notes

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Scaled Software Development

- If more than one Scrum teams are working off the same Product Backlog and in the same codebase for a product, difficulties arise
- Communication between teams, work integration and testing of the Integrated Increment becomes a challenge
- Problems intensify when three or more Scrum Teams integrate their work into a single Increment

Cross-team Dependencies

- **Requirements**
  The scope of requirements may overlap and the manner in which they are implemented may affect multiple teams
- **Domain knowledge**
  Knowledge of the various business and computer systems should be distributed across the Scrum Teams to ensure they have the necessary knowledge to do their work and minimize interruptions between them during a Sprint
- **Software and test artifacts**
  Requirements are, or will be, instantiated in Software

Nexus

- A *framework* for developing and sustaining scaled product and software delivery initiatives
- Uses Scrum as building block
- Multiple Scrum Teams work off a *single* Product Backlog
- The result is an *Integrated Increment* that meets a goal

Note

Nexus is often characterized as "the exoskeleton of Scrum". It pays more attention to dependencies and interoperation between Scrum Teams in order to deliver *at least* one "Done" Integrated Increment every Sprint

Nexus Roles

- Nexus Integration Team (NIT)
  - Product Owner
  - Scrum Master
  - *One or more* NIT members
- Approximately 3 to 9 Scrum Teams

Note

We refer to the Product Owner and the Scrum Master that are part of the NIT as "The Product Owner" and "The Scrum Master in the NIT". There are no such roles as the "Nexus Product Owner" or "Nexus Scrum Master"

Nexus Integration Team

- *Accountable* for ensuring that a "Done" Integrated Increment is produced *at least* once every Sprint
- Common activities include coaching, consulting and highlighting awareness of dependencies and cross-team issues
- NIT members might also perform work from the Product Backlog
- Composition of the NIT may change over time to reflect the current needs of a Nexus

Note

Members of the NIT may also be members of individual Scrum Teams. In this case, priority must be given to their work on the NIT

Product Owner - NIT

- Nexus works off a **single** Product Backlog
- A Product Backlog has a **single** Product Owner
- As in Scrum, the Product Owner is responsible for maximizing the value of the Product and the work performed and integrated by the Scrum Teams in a Nexus

Scrum Master - NIT

- Has overall responsibility for ensuring Nexus framework is understood and enacted
- May also act as Scrum Master in one or more of the Scrum Teams

NIT Members

- Professionals who are skilled in the tools, practices and the general field of systems engineering
- Responsible for coaching and guiding the Scrum teams in Nexus
- Help Scrum teams understand and implement the practices and tools needed to detect dependencies and frequently integrate all artifacts to the definition of "Done"
- If their primary responsibility is satisfied, they may also work as Development Team members in one or more Scrum Teams

Nexus Events

- Product Backlog Refinement
- Nexus Sprint Planning
- Nexus Daily Scrum
- Nexus Sprint Review
- Nexus Sprint Retrospective

Note

The duration of Nexus events is guided by the length of the corresponding events in the Scrum Guide. What this means is that events in Nexus **should** be timeboxed - just like events in Scrum. For example, Sprint Planning in Scrum can take up to 8 hours for a one-month Sprint; accordingly, Nexus Sprint Planning should take up to 8 hours for a one-month Sprint

Product Backlog Refinement

- Helps the Scrum Teams forecast which team will deliver which Product Backlog Items
- Dependencies between Scrum Teams are identified and removed/minimized
- Product Backlog Items are refined until they are sufficiently independent to be worked on by a single Scrum Team without excessive conflict
- Refinement continues within each Scrum Team in order for Product Backlog Items to be ready for selection in a Nexus Sprint Planning event
- Number, frequency, duration and attendance of Refinement is based on the dependencies and uncertainty in the Product Backlog Items

Note

While in Scrum refinement is not considered an official event and the only guideance provided is that it "usually consumes no more than 10% of the capacity of the Development Team", in Nexus refinement is an official event and an integral part of its flow

Nexus Sprint Planning

- Coordinate the activities of all Scrum Teams in a Nexus for a single Sprint
- Appropriate representatives from each Scrum Team validate and make adjustments to the ordering of the work created during Refinement events

- All Scrum Team members should be present to minimize communication issues
- Product Owner discusses the *Nexus Sprint Goal*
- Once the overall work for the Nexus is understood, planning continues with each Scrum Team performing their own separate Sprint Planning
- Scrum teams should share newly found dependencies with each other
- Planning is complete when each Scrum Team has finished their individual Sprint Planning events
- All Product Backlog items selected for the Sprint and their dependencies should be made transparent on the *Nexus Sprint Backlog*

Note

In order for Sprint Planning to begin, the Product Backlog should be adequately refined with dependencies identified and removed/minimized

Nexus Sprint Backlog

- Composed by the Product Backlog items from the Sprint Backlogs of the individual Scrum Teams
- Used to highlight dependencies and the flow of work during the Sprint

Nexus Sprint Goal

- An objective set for the Sprint
- Sum of all the work and Sprint Goals of the Scrum Teams

Note

As in Scrum, each Scrum Team in Nexus crafts its own Sprint Goal during Sprint Planning that aligns with the overarching Nexus Sprint Goal. It also creates and maintains its individual Sprint Backlog

Nexus Daily Scrum

- Inspect current state of the integrated Increment
- Identify integration issues or newly discovered cross-team dependencies or cross-team impacts
- Attendees: Appropriate representatives from individual Development Teams
- When the Nexus Daily Scrum is completed, individual Scrum Teams take back issues and work that were identified during the Nexus Daily Scrum for planning inside their individual Daily Scrum events

Nexus Daily Scrum - Topics

- Was the previous day's work successfully integrated? If not, why not?
- What new dependencies or impacts have been identified?
- What information needs to be shared across teams?

Nexus Sprint Review

- Held at the end of the Sprint
- *Replaces* individual Scrum Team Sprint Reviews
- Get feedback on the Integrated Increment and adapt the Product Backlog if needed
- May not be possible to show all completed work in detail
- Attendees: All Nexus members and Stakeholders
- Output: A revised Product Backlog

Nexus Sprint Retrospective

- Occurs after the Sprint Review and prior to the next Nexus Sprint Planning
- Inspect and adapt the Nexus and create a plan for improvements to be enacted during the next Sprint
- **Part One**
  Appropriate representatives from across Nexus meet and identify issues that have impacted *more than a single team*

- **Part Two**
  Each Scrum Team holds its own Sprint Retrospective. Using issues from part one, individual Scrum Teams should form actions to address these issues
- **Part Three**
  Appropriate representatives from the Scrum Teams meet again and agree on how to visualize and track the identified actions

Nexus Sprint Retrospective - Topics

- Was any work left undone? Did Nexus generate technical debt?
- Were all artifacts, particularly code, frequently successfully integrated?
- Was the sortware successfully built, tested and deployed often enough to prevent the overwhelming accumulation of unresolved dependencies?

Nexus Artifacts

- Product Backlog
- Nexus Sprint Backlog
- Integrated Increment

Integrated Increment

- Represents sum of all integrated work completed by a Nexus
- *Must* be usable and potentially releasable
- *Must* meet the definition of "Done"
- Inspected during the Nexus Sprint Review

Note

Nexus Sprint Backlog is updated daily often as part of the Nexus Daily Scrum

Definition of "Done"

- The Nexus Integration Team is *responsible* for a definition of "Done" that can be applied to the Integrated Increment developed each Sprint
- All Scrum Teams **adhere to** this definition of "Done"
- Individual Scrum Teams may choose to apply a more stringent Definition of "Done" but cannot apply less rigorous criteria than those agreed for the Increment

Sprint Progress

- The *Development Teams* use the Nexus Daily Scrum to inspect progress toward the Nexus Sprint Goal
- At least every Nexus Daily Scrum the Nexus Sprint Backlog should be adjusted to reflect the current understanding of the Scrum Teams' work within the Nexus

References

[1] Ken Schwaber. The nexus guide. `https://www.scrum.org/resources/online-nexus-guide`, January 2018.

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