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Visualizing the Nexus Sprint Backlog

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The Nexus Sprint Backlog is created during Nexus Sprint Planning. It is a visualization of the work across the Nexus that has dependencies. The purpose of Nexus Sprint Planning is to coordinate the activities of all Scrum Teams in a Nexus for a single Sprint.

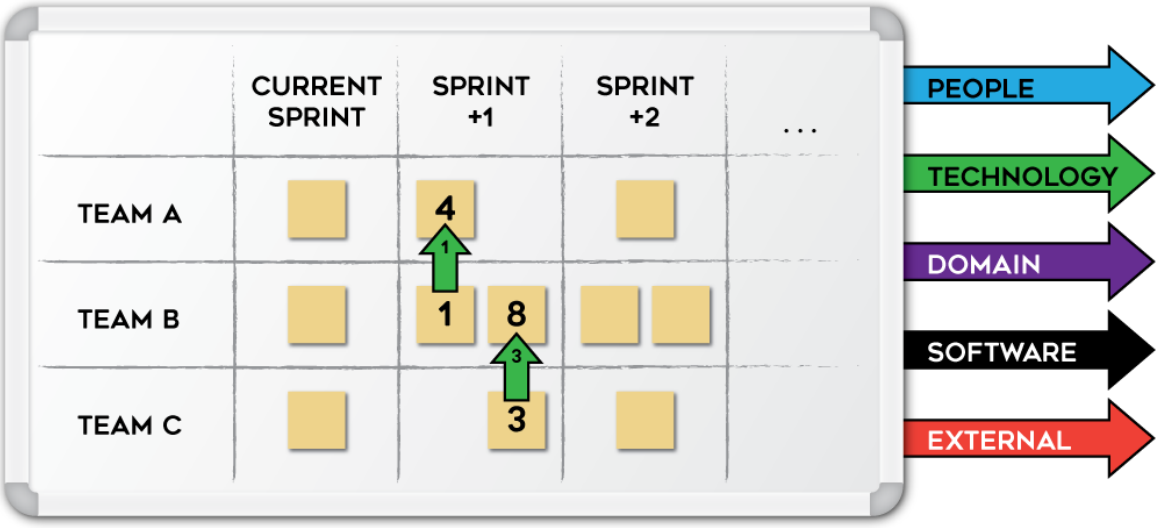
When many Scrum Teams plan together without structure, chaos can ensue. It is important to facilitate a planning event in a structured way in order to translate the information from Refinement into an effective plan for the next Sprint to be leveraged by all teams in the Nexus.

Effective Nexus Sprint Planning occurs in 2 steps:

1. Each team in the Nexus selects their work for the Sprint. This is a collaborative activity with representation from each Scrum Team.
2. Each team performs their normal Sprint Planning process. This occurs per Scrum Team and can happen in parallel.

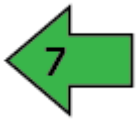
During the first step, a Cross-Team Refinement board can be used to validate that information is still up-to-date and relevant. As described in the "Cross-Team Refinement in Nexus" whitepaper, cross-team dependencies can be visualized using a Cross-Team Refinement board as shown in Figure 1.

Figure 1. Cross-Team Refinement Board



Dependencies should be represented in the form of arrows (*dependency arrows*), because the direction of the arrows indicates parent to child relationships. (e.g. Item number 1 depends on item number 4.) Commonly, teams will write a child ID on the parent card also. In the example above (Figure 1), card 1 could have the number 4 written on it, and card 3 could have the number 8 written on it also. It is important to represent dependencies in arrows, because their direction informs delivery risk.

Dependency arrows on an item highlight the relationships of work. More arrows indicate high risk due to the number of dependent items impacted. This visualization helps the teams within the Nexus identify the 'critical path' of work throughout the upcoming Sprints and provides the basis for conversations about ways to remove or minimize the impact of these dependencies.



A horizontal dependency arrow represents a dependency within a single team across time. It means that a single team is building an item in one Sprint that is needed by an item that will be delivered in a subsequent Sprint. This can be considered a low risk relationship.

A diagonal dependency arrow represents a dependency that is across teams and across time. A team is building an item in one Sprint that is needed by an item that will be delivered in a subsequent Sprint *by a different team*. Cross-team collaboration and communication will be vital to success. This is a medium risk relationship.

A vertical dependency arrow represents a dependency that is across teams within a single Sprint. One team will build an item in a Sprint that is needed by an item that will be delivered *in the same Sprint by a different team.* This dependency gives little room for delay or unexpected complexity. This is a high risk relationship.

External Dependencies typically do not have an ID as they are delivered from a team outside the Nexus and can be represented as shown below.

This downward facing diagonal dependency arrow is external across time. It represents that a team is relying on an item delivered by an external group in order to build a subsequent item.

This downward facing vertical dependency arrow is external and represents another in Sprint dependency. A team is relying on an item delivered by an external group *in the same Sprint* in order to build a subsequent item. This is an extremely high risk item.

Representatives from each team can come together with the Product Owner to validate that the Sprint +1 information in Figure 1 is still valid. If so, then the Nexus Sprint Backlog can be created using that information. Otherwise, the teams should update the Cross-Team Refinement Board. During these conversations, any further dependencies are identified and visualized.

All work that has dependencies should be visualized on the Nexus Sprint Backlog as shown in Figure 2. Depending on the size of the Nexus, some organizations may choose to visualize all work on this backlog.

Figure 2. Nexus Sprint Backlog

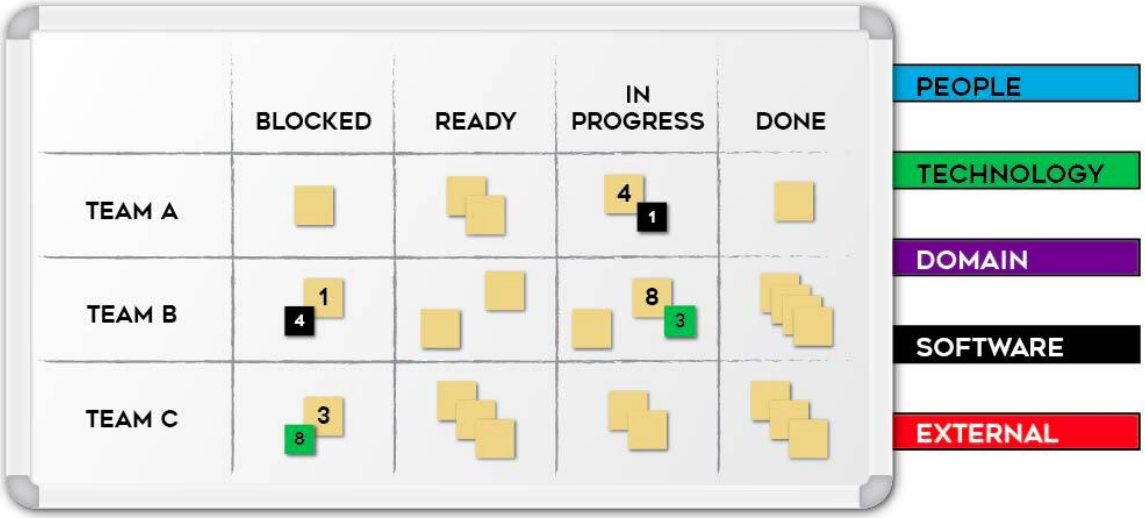


Figure 2 shows in-Sprint dependencies between the teams during the Sprint. (Figure 1 shows these as vertical dependency arrows in the Sprint +1 column).

- Product Backlog Item (PBI) **1**, being delivered by Team B, **depends on** PBI **4**, being delivered by Team A.
- Product Backlog Item (PBI) **3**, being delivered by Team C, **depends on** PBI **8**, being delivered by Team B.

Notice that the placement of the dependency annotation depends on the direction of the dependency. In Team A's lane, we can read that 'Item 4 will unblock Item 1'. In team B's lane, we can read that 'Item 1 is blocked by item 4' e.g. the annotation on the bottom left is an incoming dependency and an annotation on the bottom right is an outgoing dependency.

It may be possible for work to begin on a dependent item before it becomes blocked by a dependency. For instance, in Figure 2, PBI 4 is "In Progress," and PBI 1 is dependent on it being completed, as represented by an annotation dependency sticker. However, Team B may potentially begin work on Item 1 until the work that requires Item 4 becomes unblocked. When PBI 1 does become blocked, it should be placed into the "Blocked" column. When Team A finishes Item 4, they should place it into "Done" and remove the annotation dependency sticker (e.g. the black stickie number 1). This is a

trigger to remove Item 1 from the "Blocked" column. Team A can let Team B know that Item 1 is ready for them to continue working on.

This visualization is important, because it displays the dependency risk inside the Sprint and encourages a focus on the right work. For instance, in Figure 2, if Team A does not pull Item 4 first, then everyone can be aware of the additional risk. Therefore, during the Nexus Daily Scrum, the Nexus Sprint Backlog board is normally a focal point.

If a Nexus does not have in-Sprint dependencies, as an alternative, teams may choose to represent the Nexus Sprint Backlog through the current Sprint column within the Cross-Team Refinement Board. In this case, the Refinement Board becomes the focal point for the Nexus Daily Scrum.

Conclusion

As stated in the Nexus Guide, "The purpose of Nexus Sprint Planning is to coordinate the activities of all Scrum Teams in a Nexus for a single Sprint," The Nexus Sprint Backlog represents the plan for the next Sprint for a Nexus. It is used by the Development Teams to highlight dependencies and to manage the flow of work during the Sprint.