Agile Software Development

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Lecture 12

Scrum: Sprint Retrospective
Sprint Retrospective

- **What?**
  - An informal meeting where teams analyze the way they work, identify ways to improve, and make plans to implement these improvements.
  - Anything that affects how the team creates the product is open to scrutiny: Processes, practices, communication, environment, artifacts, tools, and so on.
  - It can be as simple as the Scrum team members coming together to discuss questions such as:
    - What worked well this sprint that we want to continue doing?
    - What did not work well this sprint that we should stop doing?
    - What should we start doing or improve?

- **When?**
  - At the end of each sprint cycle, typically after sprint review.
Sprint Retrospective: Participants

- The full scrum team:
  - **Development Team**: Their diverse perspectives are essential for identifying process improvements from multiple points of view.
  - **Scrum Master**: The Scrum Master is an integral part of the process and the process authority for the Scrum team.
    - The Scrum Master does not tell the team how to change its process.
    - The Master points out where the team is not adhering to its own agreed-upon process and acts as a valuable source of knowledge and ideas for the team.
  - **Product Owner**: The product owner is critical to achieving fast and flexible flow of business value, and is therefore a key element of the process.
    - If speaking candidly is not comfortable for team members, the product owner will not attend until the Scrum Master can create a safer environment.

- Due to safety considerations, stakeholders or managers who are not on the Scrum team will attend only if invited by the Scrum team.
Sprint Retrospective: Prework

- Define the retrospective focus
- Select the exercises
- Gather objective data
- Structure the retrospective

[Rubin 2012]
Sprint Retrospective: Prework Activities (1)

1. **Define the Retrospective Focus**
   1. The default focus is to review all relevant aspects of the process the Scrum team used during the current sprint.
   2. However, a team might select a different retrospective focus based on what is currently important to the team and where improvement is required.
      - For example: Focus on how to improve our skills with TDD.
   3. Establishing the focus allows the team to determine if any non-Scrum team members should be invited, and sets the stage for the rest of the prework.

2. **Select the Exercises**
   - Exercises help participants to engage, think, explore, and decide together; typical exercises include:
     1. Create and mine a sprint event timeline.
     2. Brainstorm insights.
     3. Group and vote on insights.
Sprint Retrospective: Prework Activities (2)

3. Gather Objective Data
   - Because a sprint retrospective is performed in a focused, short period of time, any legwork to collect needed data should be done before the retrospective begins.
   - Objective data is hard data (not opinions), such as: What events happened and when, or the burnup chart for the sprint illustrating the flow of completed work.
   - At this point we are not organizing or analyzing any data; we are just collecting it so that it is available during the retrospective.

4. Structure the Retrospective
   1. Duration: Influenced by factors such as how many people are on the team, how new the team is, whether any team members are located remotely, and so on.
      - Budget about 1.5 hours for the sprint retrospective when using two-week sprints, and proportionally more when using longer sprints.
   2. Facilitation: The Scrum Master is usually assigned as the facilitator, but a skilled, neutral, outside facilitator can be assigned as well.
Sprint Retrospective: Process

- **Inputs:** Focus, Exercises and materials, Objective data, Subjective data (brought by individual attendees), Insight backlog (produced in previous retrospectives).

- **Activities:** Set the atmosphere, Create a shared context, Identify insights that can lead to improvements, Determine improvement actions for the next sprint, and Close the retrospective.

- **Outputs:** Improvement actions (to be performed in the next sprint), Backlog of insights (collected during the current retrospective for future sprints), and Improved camaraderie.
Sprint Retrospective: Process

Inputs
- Focus
- Exercises
- Objective data
- Subjective data
- Insight backlog

Sprint review
- Set atmosphere
- Share context
- Identify insights
- Determine actions
- Close the activity

Outputs
- Improvement actions
- Insight backlog
- Improved camaraderie

Participants
- Scrum team
- Others

[Rubin 2012]
Sprint Retrospective Activities: Set the Atmosphere

- A good way to start the retrospective is to establish an atmosphere that makes people feel comfortable participating.
  - People must feel it is safe to express their opinions without fear of retribution.
  - It is helpful to make clear that the focus is on the organizational system and process, not the individuals, thus making it safe to explore what went wrong.

- There will be times when problems are people problems; the retrospective is not the place to solve them.
  - The retrospective is about improving the Scrum team’s process, not about assigning blame or reprimanding individual behavior.
  - When setting the atmosphere, set ground rules which reinforce the concept of a blame-free environment.

- It is important to encourage active participation.
Sprint Retrospective Activities: Share Context

- It is important to establish a shared context: The participants must align their diverse individual perspectives into a shared team perspective.
  - Team members can all experience the same event and yet interpret it differently.
  - If individual perspectives are allowed to dominate, the retrospective could degrade into a session of opinion debate rather than a focused session.

- When establishing a shared context, therefore, it’s imperative that you first ground the retrospective in an objective, big-picture view of the sprint.
  - Share objective data, such as committed PBIs, PBIs completed, number of defects, and so on (based on the retrospective focus.)
  - Allow relevant subjective data to be exposed and discussed.

- Two Common exercises that can be used to develop a shared context of objective and subjective data: Event Timeline and Emotions Seismograph.
Share Context: Event Timeline

- The event timeline is a shared artifact that visually represents the flow of events during a sprint.
  - Events could include “Busted the build,” or “Interrupted to fix production failure,” or “Salina returned from holiday.”

- Draw a timeline on a wall or whiteboard and have the participants put cards (or sticky notes) on the timeline, representing meaningful events that occurred during the sprint.

- To help visually categorize events, use colored cards:
  - To represent different event types (for example, green is a technical event, yellow is an organizational event, red is a personal event); or
  - to represent feelings or energy levels (for example, green is a positive event, yellow is a neutral event, and pink or red is a negative event).
Share Context: Emotions Seismograph

- The emotions seismograph is a graphical representation of the emotional ups and downs of the participants over the course of the sprint.
  - Usually created as a complement to the event timeline.
  - Helps expand the shared context beyond the objective data (what happened) to include some subjective data (how the team felt about it).

- Each participant is invited to draw a curve showing how they felt or what their energy level was like over the course of the sprint.
  - It is frequently convenient to draw the seismograph directly under the event timeline so that the two sets of data can be visually correlated.
Share Context: Event Timeline and Emotions Seismograph

[Rubin 2012]
Sprint Retrospective Activities: Identify Insights

Once a shared context has been established, the participants can examine, understand, and interpret the data to identify process improvement insights:

1. Participants should start by mining the shared context data; they can look at the timeline and seismograph and ask the following questions:
   - What worked well?
   - What did not work well?
   - Where are some opportunities to do things differently?

2. Participants brainstorm insights, capture them on cards and place them on a wall or any other surface so that everyone can see them.

3. Another source for insights might be the team’s insight backlog, a prioritized list of previously generated insights that have not yet been acted upon.
   - Participants mine this backlog to see which insights should be included in the current retrospective, represent them by cards and place them on the wall.

4. Participants cluster the insights into meaningful groupings to indicate similar or duplicate cards.
Identify Insights: Grouping Insight Cards

- **Silent grouping**: A time efficient and effective grouping technique during which people collaboratively create the groupings without verbal discussion.

  - The clusters can be emergently determined during the grouping activity; they are in fact similarity groups.

  - Alternatively, you can divide the wall into predetermined category areas (such as things to keep doing, things to stop doing, things to try) before the retrospective.

- Some of the insights might lead to discussions among the participants to better understand underlying causes, or important patterns or relationships.
Identify Insights: Grouping Insight Cards

Similarity Groups

Predetermined Groups

[ Rubin 2012 ]
Sprint Retrospective Activities: Determine Actions

- **Insights** are our ideas or perceptions of things that can be improved.

- To extract long-term value from these insights we need to move from discussing them to taking **demonstrable Actions** to leverage them.
  - For example:
    - **Insight**: “We’re wasting too much time because the code management system keeps failing.”
    - **Action**: “Have Talya apply the vendor patches to the code management system to make it more stable.” Talya can take this action in the next sprint.

- The participants should also take time to review what happened to the improvement actions from the last retrospective.
  - If those actions have not been completed (or even started), the participants need to know why before they start addressing new insights.
  - They might choose to carry forward previous actions or prioritize them against the new insights they have just identified.
Determine Actions: Select Insights

- Participants first need to determine which improvement insights to act on immediately and which to defer.
  - Retrospectives frequently identify many more improvement insights than the Scrum team and organization can digest and act on in a short period of time.

- **Dot Voting**: A practice for prioritizing insights:
  1. Each participant is given a small number (perhaps three to five) colored dots.
  2. The participants then simultaneously place their dots on the improvement insight cards that they feel are the highest priorities to address.
     - A person can put all the dots on one card or spread them over several cards.
  3. Once everyone has voted, the cards with the greatest number of votes should be considered first.

- The number of selected insights depends on how much capacity the participants are able to dedicate to the insights over the next sprint.
Select Insights: Dot Voting

[Rubin 2012]
Determine Actions: Decide on Actions

- Most actions should be broken down into specific tasks that one or more Scrum team members will perform during the upcoming sprint.

- Some actions do not require specific task-level work; for example, “People should make the effort to show up at the daily scrum on time.”

- Sometimes the actions represent impediments that the Scrum Master must resolve, perhaps through collaborating with the organization.

- Sometimes it is not possible to immediately address an insight; we might need to explore the insight before we can actually make an improvement.
  - In such cases, the proper action might be to investigate and collect data during the next sprint so that we can better understand the problem.
Sprint Retrospective Activities: Close the Retrospective

- Close by recapping what actions the team has decided to take based on what the participants learned.
  - This might be as simple as describing each committed action item and who is going to work on it.

- Closing is also a good time to appreciate people and their participation.
  - Each participant should say a few kind words of appreciation regarding the contributions made by others.
  - Be sure to also recognize any non-Scrum team members who took time out of their busy schedules to participate in the retrospective.

- It’s a good idea to spend a few minutes asking the team for suggestions to improve the team’s approach to performing a retrospective.
Sprint Retrospective: Follow Through

- To ensure that what happens in the sprint retrospective does not just stay in the sprint retrospective, the participants should follow up on the actions.
  - Some actions (such as that everyone shows up on time for daily meetings) need only to be reinforced by the team members and the Scrum Master.
  - Others will need to be addressed during the forthcoming sprint-planning activity.

- The easiest way to handle the improvement actions is to populate the sprint backlog with tasks corresponding to each action before adding new features.
  - The team’s available capacity to work on new features would then be adjusted downward by the estimated time these improvement tasks will take.

- Warning: One approach that does not work is to have an “improvement plan” for the team that is separate from the work it will do each sprint.
  - This approach will almost always lead to the improvement plan being subordinate to the typical feature-driven sprint plan.
Sprint Retrospective Issues

- Not doing the retrospective or low attendance
- All fluff, no stuff
- Ignoring the elephant in the room
- Poor facilitator
- Depressing and energy draining
- Blame game
- Complaint session
- Replaces ad hoc process improvement
- Too ambitious
- No follow-through

[Rubin 2012]
References
