

CSM Practicing Certification Renewal Assessment

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Scrum depends on the inspect and adapt mechanisms of process control to manage the complexity of projects. For inspection to work, everyone must know what is being made visible. To implement the Scrum process, such regulating mechanisms as defined roles, involvement versus commitment, time-boxes, and regular cycles are used.

1. Describe one project on which you have used Scrum over the last twelve months. Describe:

- Purpose - what business goal was the project intended to deliver?
The project provides B2B connectivity between 3 arms-length business partners to create a highly customizable product line for consumers.
- Length - what was the duration of the project?
5 months
- Cost - what were the budgeted and actual costs?
Budgeted costs were \$400-600K. The project actuals are at the lower end of this range.
- Value - what were the projected benefits and actual (if measured) actual benefits?
Projected benefits total \$20M per month for the line of business represented by the project sponsor. Other lines of business will also benefit; however, the realization of these benefits was beyond the scope of this project.
- Size - how many people were on the project team(s), how were they organized into teams?
The core team consisted of the product owner, an analyst, a data modeler, a DBA, a developer, a tester, a technical documenter, a project manager, and the ScrumMaster totaling 9 people. The peripheral team consisted of the two external business partners (approximately 12 key individuals), internal business stakeholders (about 2 dozen), internal technical support including production support, enterprise architecture, platform testing, and so forth (for about 20 more).
- Teams - were the teams cross-functional and self-organizing? Were the teams collocated in an open space? Were the teams physically separated within one location, or located in more than one physical location? The core team was collocated 3 hours each day and consisted of individuals with specialized skills. Through collaboration with other team members, the core team members self-organized and stepped "outside the box" to contribute in areas outside their specialty.

As for the external business partners, one practiced XP and the other followed a sequential, phased methodology. One partner was located in the same time zone and another 5 time zones earlier. Coordination with these external groups was managed through a modified weekly "scrum of scrums" to account for their differing development approaches.

- Initiation - how was the project initiated? How was the team trained to use the Scrum process? The core team participated in a 4-day interactive discovery workshop where they learned agile concepts, principles, and practices and the fundamentals of Scrum. Also during the workshop, the business sponsor introduced the business case and the product owner explained the product backlog. Lastly, the team created a release plan and committed to a first set of stories to accomplish in their first iteration. Additional training was provided as the project proceeded on a "just in time" basis.
- Reporting - how did you report progress to management and the customers?
An iteration burndown and story board posted in the team room provided feedback to the team and the on-site customer. Peripheral stakeholders and management met weekly to hear status against the release plan and to provide feedback to the team on any changes to the business case.
- Change - what difficulties were surfaced by Scrum that had to be resolved? How were these resolved?

Getting the right people in the room – The daily standups quickly identified which people needed to be dedicated to the team and those who were not contributing. Coordination with the resource supply group resulted in getting the right people in the room... and non-performers out.

Friction with external groups serving the core team – Often the core team worked at a speed unfamiliar to the external groups who provide services to the team such as release management and operations. The difference in speed sometimes resulted in “friction” when the groups interacted due to the external groups lack of understanding of the sense of urgency embraced by the core team. The friction was lessened through education and decoupling of the separate workstreams to the maximum extent possible. The team identified key interface points, got commitments from the external groups to meet key milestones, and checked on progress through weekly meetings with representatives from the external groups.

Management support to have performers dedicated and collocated – Considerable time was spent early in the project with the performers’ managers to get their buy-in to have resources dedicated to the project. Typically, performers within the organization balance the demands of many projects simultaneously. Even allowing for multiple projects, the idea that a block of 3 hours a day dedicated solely to one project was a hard sell. The thought behind this policy is that performers should be fully utilized and that assigning multiple projects to a performer will eliminate inevitable slack time any one project might have. We encouraged the managers to visit the team room and see the team in action. Once the managers saw the speed at which work was being completed, we were able to secure their commitment.

- Management - what was the previous role of the ScrumMaster? Who took on the role of Product Owner? To what degree were they successful in fulfilling their roles?
The apprentice ScrumMaster was an IT project manager with several years’ project management experience with the organization and the role of product owner in an earlier Scrum-managed project. She shared the ScrumMaster role with a ScrumMaster coach whose role was to coach the team in agile principles and practices with the ultimate aim of fully transitioning the role of ScrumMaster to the apprenticed ScrumMaster. The apprentice ScrumMaster fully adopted the role of ScrumMaster by the end of the 3rd iteration (iterations were 30 days).

The Product Owner was a business analyst with the line of business sponsoring the project. She was coached and supported in her role by the apprentice ScrumMaster. The Product Owner represented the interests of many external stakeholders and with the assistance of the apprentice ScrumMaster worked with the project sponsor to manage scope expectations and determine backlog priority.

- Engineering - what software engineering practices or environment had to be changed?
- Test-Driven Development – The team engaged the testing resources from the start and made them part of the core team. The team used test-driven development at the user acceptance level to focus the team on “just enough” delivery and to ensure satisfaction of customer identified success criteria. The upfront identification of the testing criteria to satisfy the customer’s requirements and, most significantly, the use of these criteria to drive all team activity required a major mindshift for the team. The adoption of this agile practice was a primary enabler for the team to rapidly deliver the highest priority business value.
- Stabilization - for how long did the software have to be stabilized before it could be released? How did you structure this stabilization process? The team planned for a month long “release” iteration to conduct end-to-end testing with the 2 external business partners. Earlier testing of the interfaces with these vendors was accomplished through single point testing or a mock interface. Final stabilization occurred during this release iteration and the software released to production.
- Success - to what degree was the project successful? To what degree was the Scrum process instrumental in the success of the project? The project has been a great

success. The principles of Scrum were applied to manage the project scope and the work process for the team. Scrum provided an effective structure to focus the project team on early delivery of the right features in the eyes of the customer.

- Scrum Process - to what degree was the Scrum process implemented "out of the box?" To what degree did you have to modify the Scrum process for this project? For each modification, how did you formulate the modification so that the basic inspect/adapt mechanisms continued to function? What parts of Scrum couldn't be implemented, or failed, and why?

The core structure of Scrum was implemented out of the box. We did split the duties of the ScrumMaster between 2 individuals. One, external to the organization, was responsible for teaching the team the fundamentals of Scrum and worked with the team to adopt the Scrum practices. The other was a PM internal to the organization who knew the culture of the organization and the navigation of the internal network through which blocks might be removed. The external coach worked with the PM to ultimately transition the full responsibilities of the ScrumMaster to the PM.

2. How do you cause the accuracy of Product Backlog estimates to improve? To what degree does their accuracy matter?

The burndown graph for the first iteration provided the team with insight into the accuracy of their estimates and, in a way, forced them to be more honest with themselves regarding both their estimates and the progress they were making towards completing sprint backlog items. In the first iteration, the graph showed linear downward progress towards completion until the last few days. At this point, the downward progression ceased and the graph flat-lined, making the chart resemble a hockey stick. Somehow the team just couldn't complete the last few stories.

During the process reflection at the end of the iteration, the team called out that they had not been quite honest with themselves regarding updating the work remaining each day and that their results for the first iteration suffered accordingly. They had not been able to adapt and respond appropriately to fulfill their sprint commitment. The team made more accurate estimates of work remaining a high priority for improving their process for the next iteration. The graph for the second iteration took on a more characteristic "bumpy-ride" look and began to provide valuable feedback to the team.

3. How do you cause the accuracy of what a team commits to for a Sprint to what the team actually delivers?

The iterative feedback provided by the sprint cycle gradually improves the accuracy of the team's commitments. One key to making sure that the feedback is good is to determine the "right" length for the sprints. This length is dependent on the changeability of the requirements and their prioritization; the average size of the minimum set of meaningful features that might constitute a potentially shippable increment of the product; the experience, skills, and knowledge of the project team; dependence on external parties, and so forth. If iterations are too short, tangible business value will not be delivered and feedback will be incomplete. If the iterations are too long, feedback will be delayed unnecessarily. The profile of each project must be considered to determine the right length for an individual project.

4. What metrics do you use to track the development process? Which metrics have been changed, removed, or newly implemented as a result of using Scrum?

The team used the iteration burndown chart and graph as the principle metrics tool to track progress in development. In addition, the release plan and product backlog provided high level visibility to overall progress towards the release goal.

5. What type of training, resources, or tools would best help you successfully employ Scrum in the future?

ScrumMaster certification for ScrumMaster candidates is a good first step. ScrumMasters new to Scrum benefit from a mentor or coach to help them through the first few iterations. I've found that on-the-job and just-in-time and just-enough training tend to work best with my teams. Upfront education and training of customers and other stakeholders in how to work with a Scrum team is essential to ensure informed commitment to the process.

6. (Optional) Scrum and Extreme Programming are sometimes used together. What must be considered when this is done?

In applying any underlying engineering methodology, Scrum encourages a pragmatic approach. Ensure that the engineering practice adds value to the project. Don't implement a practice just for the sake of the practice. If a practice isn't adding value, adapt or drop it. Regularly assess what practices should be adopted, adapted or dropped.