

# 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?**

This project was intended to converge two versions of a large commercial ERP system, resulting in one system which would provide the primary functionality of both systems.

- **Length – what was the duration of the project?**

This project was planned for >70,000 hours and began in August, 2004.

- **Cost - what were the budgeted and actual costs?**

This project was never accurately budgeted, although ROMs for the project fluctuated between \$1MM and \$5MM for more than a year before the project began. Costs-to-date have already well-exceeded \$5MM.

- **Value - what were the projected benefits and actual (if measured) actual benefits?**

Projected benefits included:

- ✓ Avoidance of a \$12MM penalty clause for late delivery to a key customer.
- ✓ Potential for \$10MM in new business from the same customer enforcing the penalty clause.
- ✓ Unprojected new software sales to new customers.
- ✓ Unprojected renewal of maintenance licenses for existing customers to receive the new software under maintenance agreements.
- ✓ Unprojected cost savings based on eliminating the need to maintain, enhance, release and support two systems vs. one system.

- **Size - how many people were on the project team(s), how were they organized into teams?**

This project started in the U.S. with two teams comprised of seven individuals each. After the third (of nine) completed U.S. sprints, an offshore partner in Bangalore, India completed ten additional sprints. Both teams completed all of the development work for the project (21,000+ hours). The organization has since closed-down most U.S. development, severed their relationship with the partner in Bangalore and is now in the process of ramping-up our own new development center in Hyderabad, India. Small sprints began in Hyderabad during August, 2005. Thirty-day sprints are planned to begin in Hyderabad on 01-Sep-05. Fifteen individuals in Hyderabad divided into two teams (augmented by a skeletal staff in the US) will complete the remaining 49,000 hours of System Test, Rework and Release sprints by 31-Dec-06).

- **Teams - were the teams cross-functional and self-organizing?**

The teams include software developers, business analysts, database administrators and QA analysts. At first it was difficult for individuals formerly pigeon-holed into specific roles to help in other areas. By the end of the third sprint, however, Developers were writing specifications or test cases if required, while Business Analysts wrote test cases and QA Analysts wrote specifications. Bottom line, the only exception to true cross-functionality now is that only Developers can write code.

- **Were the teams collocated in an open space?**

Individual US teams were initially collocated in an open space with tables. Because the retrospectives for both of the first two sprints asked to eliminate the collocation, this arrangement was abandoned (although we left the common area available for collaboration). Interestingly, within a couple of weeks the entire team was back in that room in various combinations. The Indian team in Bangalore was collocated and the new team in Hyderabad is currently also collocated.

- **Were the teams physically separated within one location, or located in more than one physical location?**

Although collocated within their respective locations, both Indian teams were separated by geography and a significant time difference, requiring coordination by me across the U.S., Bangalore and Hyderabad.

- **Initiation - how was the project initiated? How was the team trained to use the Scrum process?**

The project was initiated by an individual with extensive Scrum experience who had just joined our organization. We were all required to read “Agile Software Development with Scrum” and encouraged to read “Agile Project Management with Scrum” (both by Ken Schwaber). I also attended certified ScrumMaster training in February of 2005, after which I traveled to Bangalore and trained two Indian ScrumMasters. I am also scheduled to mentor at least one ScrumMaster in Hyderabad beginning on 12-Sep-05. Staff in our Rockville, MD location is currently scheduling training through controlchaos.com (three individuals completed ScrumMaster training led by Bob Pace in Washington, DC on 11-Aug-05).

- **Reporting - how did you report progress to management and the customers?**

This part was tricky. Although we produced daily sprint burndown charts for all teams, our corporate PMO initially had a waterfall methodology requiring that a MicroSoft project plan be approved in advance for all projects (and updated regularly). To accomplish this, I created a huge MS-Project plan comprised of the entire release backlog. As we planned each sprint, I would modify the plan to show work at the sprint level (i.e., several general tasks with hours and a general description of what we were doing). As each sprint was completed, I would mark the sprint tasks at “100% complete” then move work from the release backlog to the next sprint following each sprint planning session. Over time, management eliminated the need for MS-Project plans altogether (although I still maintain an overall release backlog to keep us all on the same page).

- **Change - what difficulties were surfaced by Scrum that had to be resolved? How were these resolved?**

Scrum initially frustrated many individuals around the organization. Because there was little up-front design, we would often discover significant problems very early into the sprint. Although this was perceived as a negative effect, it was actually good, in that we discovered problems far earlier in the development cycle than we had using our prior methodology. I often needed to point-out how prior projects with lengthy definition phases often revealed problems during testing which required re-design, re-development, re-testing, etc. Despite all the analysis in the world, surprises always lurk in complex software systems. The other major difficulty was getting teams to perform cross-functionally. This, too, was cured during the first ninety days using Scrum.

- **Management - what was the previous role of the ScrumMaster?**

I am the U.S. ScrumMaster. My former role was “Director, Product Development, where I managed a portfolio of projects, including resource allocation and management for our division of the US branch. Both of the Indian ScrumMasters had been traditional waterfall-style Project Managers.

- **Who took on the role of Product Owner? To what degree were they successful in fulfilling their roles?**

The role of Product Owner was assumed by the “Solution Manager” (organizational title) for the ERP product. The Solution Manager is responsible for determining the market requirements for the system, etc. There were actually two individuals performing this role (one left and was replaced by another). The first Product Owner participated in every daily Scrum and really helped to define and refine the backlog as we moved forward. The second Product Owner was overwhelmed because she had to take-on Solutions Management for three products (vs. one) due to downsizing. Because of this, her initial participation was spotty. Several times this resulted in changes being requested during the sprint demonstration. Such changes inevitably made it into the backlog of the next sprint. This situation resolved itself when the Product Owner became engaged in the process and began to fully-participate.

- **Engineering - what software engineering practices or environment had to be changed?**

Prior to Scrum, the organization followed an internal SDLC methodology called FLEX (“Flawless Execution”). This was a ponderous waterfall methodology, requiring numerous formal documents, reviews, approvals, etc. It should also be noted that our division was allowed to try Scrum while the rest of the company suffered under FLEX. We initially attempted what we called “Scrum under FLEX” – a compromise whereby we would produce certain FLEX deliverables during sprints. After seeing the success of our projects, however, the rest of the organization adopted Scrum and has largely abandoned FLEX (with the exception of a few project artifacts).

- **Stabilization – for how long did the software have to be stabilized before it could be released? How did you structure this stabilization process?**

The software for this project has yet to be released. Nonetheless, with every new sprint more and more features work together and can be demonstrated. There is already a plan in place for our internal users to exercise this software in a concentrated manner for several weeks about three months before release (including representatives from Solutions Management, Global Consulting Services and Global Client Support). Following this, we will have three key customers come to our site and each “test drive” the system for two weeks. We have also allowed for re-work bandwidth in our last sprints in order to further eliminate the risk of an unstable release.

- **Success - to what degree was the project successful? To what degree was the Scrum process instrumental in the success of the project?**

Although this project is still in progress, senior management is truly pleased with what is demonstrated monthly (pleased enough to adopt Scrum for all commercial software development world-wide).

- **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?**

Although we attempted to implement Scrum “out of the box”, we needed to start with some up-front concessions. Examples included:

- ✓ Allowing team members to perform their “designated” title/function exclusively at first (e.g., only perform analysis, development or QA, etc.). Over time, individuals were cross-trained to eliminate this concession.
- ✓ For more difficult features, we initially allowed Business Analysts to perform analysis for subsequent sprints ahead of time (creating a mini-waterfall).
- ✓ We needed to alter the lengths of sprints (varying anywhere from two weeks to two months). We are currently following a model where nearly all six of our sprints in three geographical locations are on a calendar month cycle.

Although the above concessions were made, we continued to closely monitor what we were doing and did our best to eliminate these concessions (or minimize their negative impact). Simply conducting daily Scrums alone was enough to ensure the continued value of the inspect/adapt mechanisms. From our view, there aren't any parts of Scrum which can't be implemented, although we're not quite there yet (e.g., we don't have all teams on calendar month cycles, Hyderabad still requires ramp-up, etc.).

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

Once the team understands that they will not be held to their initial estimates and can adjust estimates daily, they begin to relax and their estimates improve. The team discovers problems early and thus determines next steps with better accuracy. Sometimes discoveries reveal large unanticipated tasks. Other times fears associated with seemingly formidable tasks dissipate. If estimates are not accurate, functionality may need to be moved to the release backlog for a subsequent sprint, or eliminated from the release altogether. The accuracy of estimates is paramount, in that it makes delivery of the backlog predictable and provides the organization with a good comfort-level.

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

As soon as a ScrumMaster really empowers a team, the team begins to take commitments seriously and really begins to deliver against estimates. Our sprints currently exhibit impressive accuracy.

**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?**

Because we have adopted Scrum as an organization only over the last thirty days, all of our former “traditional” metrics are now up in the air. For my sprints, I have only tracked the accuracy of our actual sprint burndowns vs. estimates in the release backlog. Meaningless or confusing metrics do more harm than good. We will continue to evaluate various metrics which support Agile processes and use whatever metrics we determine will add value to Scrum.

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

As mentioned previously, the company is committed to Scrum and has already engaged controlchaos.com for training (for four individuals thus far – certain to be followed by many others). The company has also purchased numerous copies of both “Agile Software Development with Scrum” and “Agile Project Management with Scrum”, both by Ken Schwaber. Copies of these books have been circulated throughout our Development organizations in both the U.S. and in India. Everyone really feels the organization’s commitment to Scrum.

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