

CSM Practicing Certification Renewal Assessment

Name: Raegan Morris

Email: raeganwilliams@hotmail.com

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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 goal of the project was to develop infrastructure to allow the company to cross-market existing customers on alternate products early in the sales cycle. The value in moving the cross-marketing up in the sales cycle was that early manual tests indicated customers were much more likely to purchase alternate products when offered at the earliest point of customer contact possible. The infrastructure that the project was enabling, then, allowed for the scalability of this process by automating it across the enterprise.

- Length – what was the duration of the project?

The project was initiated utilizing a waterfall delivery mechanism with projected timelines of 18 months. A streamlined solution delivering 80% of the value of the initial project was delivered utilizing Scrum in 3 months. Based on the delivery of this value so early in the cycle and the fact that the business climate/priorities had changed, the business determined it would not move forward with delivering the additional 20% of value associated with the initial project.

The team determined 3 week (15 development day) iterations were the correct length to complete the work. The product delivery cycle was defined as 3 development iterations and 1 deployment iteration.

- Cost – what were the budgeted and actual costs?

The initial projected cost utilizing waterfall delivery was \$1,978,198. The actual cost utilizing Scrum and Agile practices was \$564,220.

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

The projected value of the initial waterfall project was \$12MM. The actual delivered value was \$10 MM. Additional incalculable value was derived by significantly reducing enterprise risk by automating an existing manual process.

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

The project team initially consisted of 12 core team members. When 3 resources were pulled to work on a higher priority project prior to the final iteration, the customer renegotiated scope and the product was delivered with 9 members of the core team.

- 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 delivery team was both cross-functional and self-organizing. Team members came from 4 separate functional areas within the company and consisted of business representatives as well as operational partners and IT associates. Team members were also cross-functional, playing different roles as the work required. The team was comprised of designers, developers, testers, process managers, a project manager, a business analyst, and a scrum master. The collocated team room consisted of workspace for all team members. Core hours were defined as 9 am – 12 noon and 1 pm – 4 pm and team members were expected to work in the team room during those hours.

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

The waterfall project was initiated by the business team. However, IT resources had been utilizing Scrum to deliver projects using integrated delivery teams. I was assigned as the Scrum Master with the team who was allocated to complete the work. I immediately started working with project stakeholders to discuss transitioning the project to be driven using Scrum and Agile principles. We held a day-long session with the stakeholders to discuss key concepts and principles of Scrum as well as the cost and value associated with the process. Team members who were all new to Agile development practices were trained in a 3 day Discovery session inclusive of Agile practitioner training as well as project

discovery. Additional team members were on-boarded on an as needed basis utilizing a shorter version of the practitioner training.

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

Primarily, information radiators were used to report project progress to stakeholders and customers. Task boards, a risk board, an impediment board, and a Burndown chart were maintained daily to deliver information to anyone who visited the team room. Further, we published End of Sprint reports that included user stories, story points validated, burndown, and budget information. However, recognizing the need to ease the transition between reporting in waterfall versus Agile, the project manager continued to send a scaled-down weekly status communication to project stakeholders. We continue as a team to determine the right amount of external communication between the project team and stakeholders.

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

The team encountered and resolved a number of issues during the project. The initial issue experienced in the first 3 days of the first iteration caused a Sprint Abort to occur. After completing release and iteration planning, the team committed to the sprint 1 goal. A day into the work, team members uncovered that the work was more complex than they originally understood. This caused a number of conversations to occur between the business and the team around how best to complete the work. The outgrowth of these conversations was that there was a better way to deliver more value earlier. The team had uncovered that the initial Sprint goal was wrong and an Abort was declared. Another planning session ensued and iteration 1 began again with the appropriate goal and work. The sprint ended successfully – this set the team up for ongoing success.

During the final development iteration, the team was informed that the business climate had changed and that 3 critical resources would be pulled from the team to work on another critical project. The stakeholders came in and advised the project team that it would need to shut down immediately. The team heard the message and mulled it over for a day. I brought the team together to determine how we would shut the project down in light of the loss of the critical resources. This meeting, however, morphed into a brainstorming session wherein the team determined a way to deliver what had been coded to date, leaving only 20% of the value on the table. The team was very excited about their creative solution and we immediately took the idea to project stakeholders. Initially skeptical, the

stakeholders came to change their perspective after a number of meetings with the excited team. Ultimately, the stakeholders decided to let the team move forward and in so doing paved the way for delivery of 80% of the initial project value. It is commonly understood that had it not been for the early delivery of value provided by Scrum and Agile, the project would certainly have been shut down and none of the value would have been realized.

- 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?

Prior to this project, I was a project manager. The role of Product Owner was filled by an analyst from the business. The customer also participated in this role. Initially, communication between the product owner and customer was not ideal. I spent time with the people occupying both roles and negotiated clear role definitions to allow better communication to ensue. The customer was highly influential in the work the team completed. She played a critical role in prioritizing components for release based on business value and the team was able to self-organize around the work she selected. In subsequent projects, I haven't experienced input and collaboration from the customer that enabled such project success.

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

The organization I am a part of is fairly immature when it comes to Agile software engineering practices. This project team forged the way to highlighting impediments in the software engineering practices of the organization. First, team members had to learn better how to componentize the code to allow for more frequent integration. As an organization, we are a long way from the Agile ideal of continuous (daily) integration. We struggled as a team in being “truly Agile” versus simply squeezing waterfall delivery into one sprint. Second, we had to learn (and continue to learn) how to move testing up in the system development cycle by utilizing acceptance test driven development. Further, we closely integrated with the source control organization to improve code integration to the test environment. Finally, we employed paired programming to aid in cross-training within the team.

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

In advance of the code release, we spent the better part of a week coming up

with a post-implementation validation plan. This plan highlighted the tasks and performers that would be required to monitor the code in production after it was released.

The code was released to production in advance of the date it would be needed by about a week. This allowed the team to monitor the code to ensure it did not have ripple effects on the production environment. We had three people from the team closely monitoring production processes. A small handful of issues were quickly identified and fixed before the release was declared a success.

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

Both the IT and business stakeholders declared the project a success. This was the first time the team utilized the Scrum process and all parties involved declared that they “never wanted to go back to the old way of doing things”. This was also the first time we as a platform ran a project utilizing Scrum that extended to more than two systems (integrating a more complex development environment).

From the business perspective, the project’s success created an automated process that enabled the business to scale the use of the business feature to a larger population and at the same time to reduce enterprise risk. The IT leaders looked to this project as a success from both a process perspective as well as a WIP CAP (Work in Progress Capacity) perspective. The IT leaders were happy with the use of Scrum and Agile in an expanded environment and they were also intrigued that we were able to increase the platform WIP CAP by delivering a project significantly earlier than originally planned.

- 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?

As this was our first project as a team using Scrum, I tried as hard as I could to implement “pure” Scrum. However, a few small modifications did occur over the course of the project. First, we slightly modified the language of the scrum. Instead of asking the questions “What did you do yesterday? What are you going to do today? and What is standing in your way?”, we altered the language to get to the concept of completeness. Our language replaced “do” with “complete”. This was a small nuisance but made a big difference in our daily standup.

Discussing completeness allowed people who were dependent on tasks to know when they would need to engage. Also, it focused the conversation on how the work was moving across the task board. It was also useful in that when you ask what someone did in a previous day, often times people will give you a laundry-list of tasks such as “I emailed so-and-so” or “I met with this person about this thing” without the team having any idea how those tasks correlate to getting work done. By turning the language to “complete”, the team was very clear about exactly the progress it was making on a daily basis.

The only other difference was in the length of our iterations. Because the team was newly formed, we chose shorter iterations (15 development days) so that the inspect/adapt cycle was more frequent. This served us well through the project and allowed more inspection points with the stakeholders.

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

Agile estimation is one of the most difficult tasks for a new team to overcome. In order to continue to improve in this competency, the team requires both practice and reflection. Practice in estimation comes only with time; with each iteration the team is able to revisit the skill. However, reflection is the best way to improve the team’s skill in estimation. At the end of each iteration, we reviewed Story Points planned to Story Points validated. We looked at any variance in planned versus validated greater than 20%. For those stories that exceed this threshold, we would discuss as a team why the estimate was much different from the actual. As we moved into later iterations, the team was able to utilize the learnings from this exercise in conjunction with relative estimation to improve the overall effectiveness of the estimation process. While this is tedious, it helps the team choose how much work should be pulled into an iteration. This, in turn, allows the team to develop a rhythm that aids team velocity. While this is not the most critical process to a newly formed team, improved accuracy in estimation is a skill that each team should work on continuously as they work toward becoming a High Performing Team.

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

In order to improve accuracy in what a team commits to in a sprint versus what they are able to deliver, the Scrum Master can employ a number of techniques. As noted above, teams should be practicing task and story estimation on an ongoing basis. This estimation process becomes the input for determining a

team's velocity. A team should analyze its historical velocity to inform what it commits to for an iteration. The historical velocity of a team is the best way to predict how much work it will be able to deliver in an iteration. However, the Scrum Master should lead the team through an exercise wherein the team analyzes various factors that might slow down progress for a given iteration. For example, the Scrum Master should have the team analyze factors such as:

- What do team members' vacation schedules look like for the iteration?
- Has there been a change in the team members from the last iteration?
- Has the customer changed?

By asking these questions, the team is able to go one step beyond estimation to predict any potential changes in the team velocity.

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?

As a team, we have used the following metrics effectively to track the development progress on our Scrum projects, all of which have been implemented as a result of Scrum:

- Iteration Burndown Chart
- Product Burndown Chart
- Defect Reporting
- Impediment Chart

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

Scrum/Agile training for customers and stakeholders

One of the impediments to the adoption of Scrum and Agile in our environment is a lack of understanding on the part of customers and stakeholders. We are in the process of developing useful training for this population centering on how/when/why projects and teams should adopt Agile development techniques.

Scrum practitioner support groups

As we move into an environment where more people are practicing Scrum, a grassroots effort needs to emerge out of team practitioners wherein best practices are discussed amongst teams. Examples: in our team-based environment we risk losing a competency around functional roles (i.e. designers and developer forums). Those groups need to come together to support these traditional functional-based roles.

Coach support groups and participation in Agile community

Similar to the need for practitioners to develop a community, I as a coach have

benefited from having a local community to discuss learnings and best practices from a coach practitioner perspective. Our local coach team meets daily for 30 minutes to discuss various team activities as well as to vet ideas with each other. This community has been immensely helpful as the Scrum movement has grown within our company. Further, we have opened up monthly brownbag sessions to coaches from across the company to meet a similar need across the enterprise. Further participation in the larger Agile community will only further our success as coaches.