**ChadaTech Agile/Scrum Review**

SNHU Travel contracted ChadaTech to construct a new feature for their website to expand their client base. ChadaTech is always looking to improve their ability to satisfy their customers while at the same time fulfilling internal business goals. ChadaTech took this opportunity to test implementing an Agile/Scrum development process. The goal of this trial is to provide an experience to measure this process’s merits by assessing the roles of the process, identifying difficulties with this process, demonstrate tools used in this process, evaluating the level of customer satisfaction, and identifying other tools or needs to continue with this process so that an informed decision can be made on how to continue with the process in the future.

# **ROLES**

As with most teams, there are defined roles. These roles help compartmentalize and focus activities to certain task types needed to be completed by the team. Our Agile/Scrum team has the defined roles of Scrum Master, Product Owner, Tester, and Developer. Each of these roles provide an essential service to the completion of the project. By defining the roles, we can ascribe ownership to each member of the team in accordance with their expected contribution. Although these roles are defined and assigned, Agile/Scrum is a “team” concept, and the boundaries of the roles are not meant to be limiting. The project’s successful completion is owned equally by every member of the team.

## Scrum Master:

Typically, every team has a leader, except this one. The principles of Agile/Scrum share the ownership of the project with all the team members, because of this there is no team leader per say. However, Agile/Scrum does have a role for someone to steer the team to keep it on course for a successful completion of its project and assigns this role to the Scrum Master. The Scrum Master role is not one of management, it is more of a role of facilitator. The Scrum Master works with the team, helping the team to apply the Agile/Scrum principles, tools, and methods to the project. The Scrum Master works to develop the team into a self-driven team needing less oversite regarding the Agile/Scrum process. This development responsibility means that the Scrum Master is responsible for knowing existing, learning new, and training Agile/Scrum methods to the teams. Another responsibility our Scrum Master had was assembling our team. For this project, our Scrum Master assembled our team, assisted our team with implementing our new process, and helped to clear any obstacles we had in completing our project.

## Product Owner:

The traditional role of Project Manager is transformed into the role of Product Owner in our Agile/Scrum process. It is important to realize the role is transformed and not assigned. In the traditional project management process, the Project Manager was the lead and took on the bulk of the responsibility for the project directly. Since the ownership of the project is now equally shared by all the members of the team there is no Project Manager anymore. There still needs to be a connection between the customer and the team and this role is filled by the Product Owner. One of the tasks of the Product Owner is to get the current product definition form the customer and presents it to the team as “User Stories.” Once the user stories are presented to the team, the Product owner works with the team to refine and split the User Stories into a finer granularity as needed until they are refined enough to be included into the Sprint Sessions. Additionally, the Product Owner works with the customer and the team to assign priority to each of the User Stories which is also used to decide when they will included in a Sprint Session. As each progress release gets evaluated by the customer, the Product Owner is responsible for bringing any product definition changes back to the team and adjusting the User Stories as needed. An excellent example of this was when the customer realized their market was trending in a new direction and wanted to change the focus to Health and Wellness vacation sites. With the quick feedback from the customer, the Product Owner was able to get this to the team for product adjustment in a timely matter without affecting the overall timeline.

## Tester:

Traditional project management typically ascribes ownership of testing solely to the tester and usually after a great deal of work has been completed. In Agile/Scrum the Tester is not solely burdened with the role of testing. The Tester works with the Product Owner and Developer to define what is known as the “Definition of Done.” Each “User Story” is a development requirement and to know if that requirement is fulfilled a “Test Case” is written. The collection of Test Cases for each User Story defines when the User Story is complete. The Tester is also constantly working with the Product Owner making sure the User Story is correctly defined and provides the needed information to define the Test Cases. An example of this occurred when our Tester needed to know how the customer wanted vacations displayed to their customer, via scrolling widows, a card list, or some other method. Once this was cleared, a Test Cases for that User Story thereby completing the Definition of Done for that User Story.

## Developer:

Our Developer works with the Product Owner in refining the User Stories in size and scope. In addition, the Developer works with the Tester to ensure the completion of Test Cases and the Definition of Done for each User Story. As the Developer works on their development, the product is developed enough to just pass each test case. It is the product’s responsibility to successfully pass these Test Cases and the Developer’s role is to develop the product so that it will. Our one example of this is when our developer put together the slide information including images to show “The Top Five Vacation Destinations” in a card list format. The Definition of Done include items like being able to advance to the next vacation in the list, previous vacation in the list or what to do if the last vacation in the list order was reached. The developer put together the code necessary to just pass these Test Cases. And lastly, the Developer also works with the Product Owner and Tester to assign workload value to each User Story and help set up the team’s commitment for each Sprint.

# **USER STORIES**

User Stories are the task lists that lead to the finished product. However, these User Stories are more than just task lists. Normal task list simply list a task, saying nothing more that what needs to be done. A User Story provides more context to the tasks by adding “who” and “why” to the task. A sentence form is typically used to form the User Story to assist in adding the context cleanly. This sentence form is: “As \_\_\_\_\_\_, I want to \_\_\_\_\_ so that I can \_\_\_\_.” In using this form, or something similar, the team increases its chance to meet the customers request, even if they haven’t defined it clearly in an initial product specification. The context provides the Tester a means of prioritizing what tests must be included to make sure the User Story’s use case is met. An example of how User Stories helped us in our project is how the client’s customer would want to limit the vacation information so that they would only see vacations similar to places they have gone in the past. This and other User Stories provide a context of how and why a filter system is needed and would be used. With this added information, the Developer is more likely to limit the solution to the right one for the job possibly from a wide selection of solutions that may not meet the customer’s expectation or desire. This improves the team’s chance of a successful progress release.

# **WORKFLOW**

A feature of the Agile/Scrum development process is the ability to respond to changes in product definition. A reason for this is the Agile/Scrum workflow. Agile/Scrum workflow is meant to give iterative progress releases towards the end product requested by the customer. The workflow is a constant array of continuous communication, meaningful engagement, and successful progress releases. Continuous communications allow the team to be aware and respond to any issues that come up. These issues can include interruptions and changes in directions. Since the User Stories are refined until they fit with-in the short time-boxed Sprint cycle, and all Sprint cycles are intended to provide meaningful progress releases. Any disruption in current meaningful engagement will be limited to the current Sprint. In our teams’ case, the customer changed direction from “Top Five Vacation Destinations” to “Top Five Health & Wellness Destinations.” Since all work is reduced in scope to small pieces, the team was able to evaluate the change and implement the new direction with minimal impact to the release schedule. Also, the periodic progress releases help the customer to realize any product changes needed sooner so that the potential for lost work is lessened.

# **COMMUNICATION**

Communication is key to our team’s success. In-person communications is the most meaningful and is used extensively in Agile/Scrum. There are several meetings that take place throughout the project. Each of the time-boxed Sprint cycles have at minimum a start meeting, review meeting, and a reflection meeting where the Sprint is kicked off, reviewed for completion, and reflected upon for lessons learned. In addition to these meetings there is also a daily Stand-Up meeting with the Developers and Testers and usually the Scrum Master. These daily meetings are where the progress in the current sprint is captured. The Scrum Master, if present, guides the meeting and helps in context of the Agile/Scrum process; The Developers and Tester offer what they completed the day before, what the plan to complete today, and any obstacles they have. These daily Stand-Up meetings are short and usually kept to less than 15 minutes and are meant to just give a snapshot of the current Sprint progress since the previous day. Other forms of communication are used as need with email being a prime method. One instance of using email was when I as a Developer needed more information after updating the Health/Wellness Vacation slide show. Here is the email sent, please notice I also used the “User Story” form in my request:

Subject: Health and Wellness Vacation Slideshow Action

Dear Product Owner,

We have presented a slide show showing five top Health/Wellness Vacations. However, other than viewing the next or previous vacation or exiting the display window, there are no other actions being taken with the data being presented. In other words; is there supposed to be a way for the viewer to choose one of these vacations too book or is this an informative window showing the top five Health/Wellness Vacations? If the viewer is supposed to be able to book the displayed vacation, should this be through a command button, double-clicking the screen, both, or some other feature or combination of features?

As the developer I would like to incorporate this feature into the slide show task as we are doing it so that we do not have to come back and fit it in later.

Once I have an idea of what the customer wants, I should be able to work closely with the tester at the same time I am developing the code providing nothing impedes the Tester’s “Definition of Done” for this part of the story.

Using these forms of communication keep the entire team meaningfully engaged in completing the project.

# **TOOLS**

Again, communication is paramount in Agile/Scrum. Tools that facilitate this communication are most valuable in Agile/Scrum. Tools come in many forms. There are charts like the burn-down and burn-up charts that respectively show how well the team is on track to finish the project and how much work the team put into the project to date. There Kanban boards that keep track of tasks cued and/or in process on the floor. There are also electronic forms of these tools like Azure, Jira, and others that capture the previously listed data, keep track of User Stories and provide access to project info to anyone with access to a computer. Each meeting was a useful tool in that it served a purpose to keep forward movement on the project. The Sprint Kick-Off meetings define the expectations for the next progress release. The Sprint Review meetings present and confirm the progress release of the Sprint cycle. The Sprint Reflection meeting identifies lessons learned during the Sprint cycle. The User Story refinement meetings reduce large tasks to smaller tasks and assign weighting values to the tasks to be used in deciding when to include them in a Sprint Cycle. Lastly, the Daily Stand-Up meeting gives a daily progress snapshot of the teams work toward completing the current Sprint. All the communication is designed to keep the project moving forward and identify any needed adjustments as early as possible.

# SUMMARY

For this project, the Agile/Scrum process worked well. The team was able quickly respond to deviations in the original product request to give the customer what they wanted in the end. This was possible due to the constant looping back on short time cycles of progress releases. Reducing the workload in granularity requires a strong group effort and no team member is isolated in their contribution. By this I mean each team member is involved with everyone on the team. The increased activity of the constant engagement does use the team members’ time. Because of this it seems that the members will only be able to focus on one project at a time. Also, the constant close communications and shortness of the stand-up meetings would limit the size of the team. With the team’s size limited and focus on quick meaningful progress releases, this may limit the scope of project any one team could successfully complete. If projects are too large, it may be necessary to tier the project and make a team of teams and split a large project up between the teams, however, this will increase the difficulty of communications at the top team of teams’ level. The SNHU Travel project was within the capacity of the team assigned and was effective in delivering a successful product to the customer.