**Final Project: Sprint Review and Retrospective**

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Throughout my experiences working with ChadaTech to create the SNHU Travel website, the utilization of an Agile approach has been instrumental in creating a functional website that allows customers to provide valuable input needed to make continuous improvements designed to satisfy customer needs and wants. Each role on the team played a significant part in the success of this project, including the Scrum Master, Product Owner, Developer and Tester. These roles collaborated through constant open communication to deliver a successful website allowing customers to book vacations that reflected their own personal requirements.

While we were discussing the original ideas for the website, I as the Scrum master had the role of organizing the stakeholders and calling a meeting to gather information that was necessary from these stakeholders/customers to create user stories that could be built into a Product Backlog by the Product Owner. I also set up the Sprint Planning meeting, so we could plan out the sprints that would be needed to complete the project. With this, the Agile Team Charter Template was created, which outlined the purpose of the product (to create a niche vacation website), the roles of the team members, risks involved as well as the values principles the team would follow. When the stakeholders decided that changes needed to be made, such as a focus on wellness and detox vacations, I communicated these changes to the team and continued with the original timeline since this was decided upon in the Spring Planning Meeting. I also ran the Daily Scrums, which were helpful as the team navigated the changes that would occur during the previous workday and allowed the team to reflect on what they needed to complete during the current workday. The Daily Scrum also helped the team together so that when changes were made to the program to focus on wellness and detox vacations, the Product Owner was able to add these user stories to the backlog, and the developers and testers were reassured that they did not have to redo all of their work, but rather make a few simple changes to the program so that it presented these types of vacations at the forefront.

The Product Owner collected the user stories during a focus group and created the Product Backlog, which was used by the Developers to create the code necessary for the implementation of each part of the program. These stories included customer wants and needs, such as the ability to search for vacations based on location, setting price limits, and seeing the top vacation locations that were booked by customers. The Product Owner also prioritized the user stories so that the most important elements of the program that are key to its functionality were developed first, based on the input that the Product Owner receives from customers and stakeholders. For example, the top two priorities in the Product Backlog included the creation of a “Top 5” list as well as the ability to search vacations by price. The Developers are then aware of which two parts of the program should be functioning first, and are able to begin their own work, while the Testers can begin to write test cases for these two user stories to be used once the programs have been set up. The Product Owner is always in constant communication with both the Scrum team and the stakeholders, so that any changes made such as when the stakeholders wanted to change the focus of the niche site to be wellness/detox vacations, can be done efficiently. In this case, a meeting was arranged with the Scrum Master and the entire team to introduce the new user story and explain how it would affect their current progress.

The Developers and Testers are the heart of the creation of the SHNU Travel program and rely completely on the Scum Master and Product Owner to provide the line of communication between themselves and the customer. The Daily Scums, as well as the use of communication though email and the Scrum board were important in the design of the travel program and allowed the Developers and Testers to communicate with each other as well. While the Developers were developing the code, the Tester can create test cases to measure whether the code created would complete the necessary task and assess any bugs that could occur in the program. This communication is continuous, so that the program can be written and tested in a very efficient manner. The Developers first used a method where the user would scroll through the vacations, which was later changed to a method where they would click “next” to see the next vacation location and resort. These changes were fueled by user stories and were able to be implement quickly due to the constant communication between all team members. The Tester was then able to communicate with the Product Owner as well, and examine what changes need to be implemented.

The utilization of a Scrum-agile model was key to the efficient development of the SNHU Travel website. First and foremost, open communication through emails, in person conversations, meetings with stakeholders and Daily Scrums allowed each member of the Scrum team to keep track of the project’s progress and any changes that needed to be implemented throughout production. The user stories, such as a “Top 5 List” was first suggested by a customer in the focus group. From this, a user story was created by the Product Owner, which was presented to the Developers and Testers for implementation. The original list of vacations would be based on all vacations booked through the SNHU Travel site, so that all customers would view the same top destinations list. After meeting again with stakeholders, it was decided that this list would be changed to reflect both the locations chosen in the user’s profile, as well as destinations they had previously visited. The updated list would sort top resorts for wellness/detox rather than sorting by destination only. Using the Scrum model allowed us to make changes to the project as it was moving along, which in turn allowed us to create a product that represented the exact wishes of the stakeholders. Agile is about flexibility, and being able to make changes to a product and its development anytime during the development process to suit the needs of the customer creates an environment centered around customer service.

This leads directly to the next important point, which is that the Scrum-agile model works wonders when changes need to occur during a project. As mentioned earlier, stakeholder needs changed during this project. Rather than focusing on all niche vacations, data suggested that wellness/detox vacations were going to be very popular in the near future. The stakeholders wanted to focus on these types of vacation packages and create a site that uses a “next” click rather than scroll to move between vacation packages. The images were also changed to wellness resorts in certain areas rather than the locations themselves. These changes in a Waterfall model would mean that the entire project would need to be redesigned, however an Agile approach is very conducive to changes mid-project. In fact, these changes are embraced to be sure that the customers are getting the product that best suits their needs. In this case, these changes were described during a Daily Scrum, and the Developers got to work, changing the code needed to address the changes to the program. These changes were added to the Scrum board and would be implemented during the next Sprint. Afterwards, the Tester worked on test cases to match the new changes that were made. The Agile process allows everyone to work together, so that we are able to see what each member of the team is working on each day. This way, the Tester knows when the Developers are finished creating the code for one part of the site and are then able to run tests on this small section of code and make corrections as needed. This method of incremental development helps create a better program with less bugs, and also allows the Tester to be part of the entire design process. After the changes were made, and due to the flexibility of the Scrum-agile process, we were able to present the stakeholders with a product that was completed in the same time frame of five weeks, even with the changes mentioned above.

In order to be sure my team was successful I also communicated frequently with all members of the team to be sure they were aware of how the project was progressing, as well as the expectations of all team members throughout the development process. As an example, in one of my Daily Scrum I first started the meeting by reminding the team that the meeting is fifteen minutes long daily, in the same place at the same time, and introduced the three questions for the day. I shared my answers to the questions, making sure to provide detailed information, and modeling how I would like other members of the team to share. Afterwards, I allowed the team members to share their answers, and gives input when they ask for or need clarification. I was sure to keep the team on track, and when they asked questions or had issues not related to the Daily Scrum, and created a list of topics that can be discussed after the meeting to be sure the meeting still stayed within the fifteen-minute time frame. I ended the meeting on time, to be sure we could all continue our work on the project as well. These expectations were outlined in my Team Charter Template, which is attached at the end of this document (see Appendix A). I also encouraged team members to communicate with myself and others using tools such as the Scrum Board and emails, especially in situations where we are not able to meet face-to-face.

Communication in the Scrum-agile model is encouraged through the use of various tools and principles. One of the tools we chose to use is the Scrum Board, which uses notes to organize our ideas. These notes represent various tasks based on user stories and are separated into tasks that need to be completed, are in the process of being completed, and have been completed (Cobb, 2015). Originally, we were using a physical board with post-it notes to represent these tasks. As we progressed, we decided to implement a digital system, known as Jira Software Cloud, to create a digital Scrum board that all the team members could access in real time. This board would allow the team to see which tasks still needed to be completed and encourage communication between members to separate the tasks amongst each other. It also encourages collaboration, since the Developers can work together to complete a single task, or in some cases work with a Tester to develop and test the code simultaneously. This also aids in time management, since the team is aware of who is working on each task, and no two members are separately working on the same task, which would waste valuable time. We are also able to adjust the board based on the current Sprint and move items into the next Sprint if they are not yet completed.

The idea of short, two-week Sprints for work completion is also an important tool of Scrum that increases work efficiency. As a team, we can plan for what we are able to accomplish during this time, which allows a greater focus on individual parts of the program through specific user stories, rather than always looking at the program as a whole, which can be overwhelming for the development team. This also encourages productivity, since we now have a specific set of tasks to conquer during this time frame, and each member of the team can choose which tasks they would like to work on. Any remaining tasks can be taken by other members of the team if they finish the current tasks, so that we are not wasting time with some team members that are finished with work and have no other tasks to complete. The use of the Scrum Board is essential for this, as well as another tool we implemented, the burn-down chart. This tool was used in combination with the Scrum Board and allowed us to track the progress of the project. As the Scrum Master, I created the chart and with the help of the team decided upon a goal for how many user stories we would be able to complete per Sprint. After each Sprint, we would assess the chart, and examine whether we were meeting our goals based on how many user story tasks were completed. If we were falling behind or moving more quickly than expected, we could adjust the chart to reflect our new goals until the project came to completion. This was a wonderful tool to keep the team motivated and focused, and to set realistic expectations of the workload so as not to either overwhelm the team or leave them uninterested if not enough work was expected of them each Sprint.

The implementation of a Scrum-agile method for the creation of the SNHU Travel website had several pros and cons. The process itself is very customer focused, allowing the customer or stakeholders to be involved with all the decisions that are made throughout the process. This allows the Product Owner to constantly update the Product Backlog so that all team members are aware of any changes that are made. This in turn allows for the creation of a product that meets the customer’s needs and wants. Along with customer involvement, the entire Scrum process encourages flexibility during production, allowing changes to be made during the design process without disrupting the entire project. Separating the process into short, two or four-week Sprints allows the team to work on smaller components at a time, and these parts can be rearranged as needed based on changes that are made during planning. User stories can be added or modified without disrupting the entire flow of the project or creating unnecessary stress for the development team. Even the definition of “done” can vary based on the team and the customers, so that a finished product may continue to be in development long after it reaches the customer through future product updates (Cobb, 20125). All of this, combined with the intense level of organization that Scum-agile utilizes through the Product Backlog, Scrum Boards, and Daily Scrums allow the team members to keep track of every part of the project, what needs to be completed, and who is completing which tasks. This transparency throughout the design process increases efficiency of the team and reduces any down time that some team members may have had during previous methods. For example, in more traditional development methods, the Testers would not be working as closely with the developers, and rather would be completing the majority of their work at the end of the process, testing the final product after all of the initial programing was completed.

While Scrum-agile has many positive attributes, the are some challenges to using this method as well. For some customers, having a looser definition of “done” may not work depending on the type of product being created, such as a physical product rather than software. There may also be some pressure if too many changes need to be made during the design process, which could cause delays in the final production or release of the product. Having the customer too involved could lead to constant changes without a final product ever being created. The Developers and Tester were originally worried when changes to the vacation types were presented, and a focus on wellness/detox was added. Although these changes still allowed the product to be finished on time, they did cause interruptions in the process that could have created extra work for the team as well as stress around completing these new tasks on top of the tasks they were already working on. Lastly, having to communicate through email was difficult at times, since some of the information conveyed through the Scrum Master and Product Owner about changes to the process were not completely clear to all members of the team. In-person communication is best; however, this is not always possible. Therefore, emails needed to be sent by the Tester to ask for more clarification on the changes to the program that were being implemented, a task that would be less likely during a more traditional approach such as Waterfall, since these changes would not be allowed once the design process had begun. Finally, the team is very dependent on one another, so that if one team member is not completing their tasks, it can have significant impacts on the work done by other members of the team.

Overall, I feel strongly that a Scrum-agile approach to development was key to the successful creation of the SNHU Travel website. Utilizing the tools that were available, we were able to meet during our Daily Scrums to discuss the tasks that we had completed, what needed to be done, and what challenges we were facing as a team. We were able to address these changes in these face-to-face meetings and develop solutions that increased the overall efficiency of the team. The team utilized the Scrum Board and the burn-down charts to keep track of their progress both individually and as a whole, allowing equal distribution of the workload throughout each Sprint. When changes were needed based on the stakeholders, the team, though wary, was able to create a plan using the new user stories and work together to distribute the new tasks amongst each other. In a dynamic situation such as this, where the final product will be constantly changing due to user input, reviews, and changing trends in vacation planning, an Agile approach is key. This process will allow the team to continue to make improvements to the SNHU Trave site long after it has been completed, based on customer feedback. Focus groups can be held regularly to assess customer needs and make changes accordingly. New locations and new features to the website can be added since Scrum-agile encourages such flexibility during and even after the product is “done”. The Scrum-agile method has enabled ChadaTech to design a customer-centered travel site that can be continuously improved to meet the needs and wants of customers in an ever-changing world.

**Appendix A**

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| Item | Response |
| **Business Case/Vision**  (value to attain) | The client SNHU Travel wants to expand the business to offer trendy, niche vacation packages with the hopes of gaining a larger audience in the United States. |
| **Mission Statement**  (result to accomplish) | The team will create a niche vacation booking system for the client SNHU Travel. |
| **Project Team**  (team members and roles) | The team that will be assembled includes the Product Owner, Tester, Developer, and the Scrum Master.  Christy the Product Owner will start creating and prioritizing the Product Backlog. She discussed with the Client Amanda what the needs of the company were, including creating a niche travel site, and a timeline of five weeks since that is when people will start booking cations.  The Testers and Developers will be responsible for the creation and testing of the different parts of the program during the Sprints.  Ron, the Scrum Master will facilitate the Scrum process, and assemble the Scrum team so that they can begin work on the project. He will also schedule the scrum events such as the Daily Scrums, Sprint Planning, and Backlog Refinement. |
| **Success Criteria** | Start date: Today or as soon as possible.  Expected completion date: Five weeks.  Final deliverable: Vacation booking system for niche vacation packages.  Key project objectives: Create a program to allow guests to explore and book niche vacation packages, therefore gaining more customers. |
| **Key Project Risks** | Creating a system that does not interfere with the current system.  Not completing the program by the five-week timeline.  The product may not in fact attract more customers or may not appeal to current customers booking vacations. |
| **Rules of Behavior**  (values and principles) | The key values of Scrum will be essential for this project, including:  Commitment and focus, openness, respect and courage. Participants in the Scrum Team must adhere to these values and take responsibility for their role in the Scrum Team.  Along with the key values are the general principles of Scrum. These include:  Variability and uncertainty, prediction and adaptation, validated learning, work in progress, progress, and performance. These combined showcases the idea that the team will work together, quickly and effectively, and provide many opportunities for reflection on the process and allow for changes to be made as needed.  The team will also communicate openly with one another with full transparency so that the creation of the program will flow well and collaboration will be possible between all members of the Scrum Team. (Cobb, 2015) |
| **Communication Guidelines**  (scrum events and rules) | A Daily Scrum needs to be set up, as well as Sprint Planning, Sprint Review and Retrospective, and Backlog Refinement.  For the Daily Scrum, the meeting should be no more than 15 minutes, and should include the following three questions:   1. What did you do yesterday? 2. What will you do today? 3. What obstacles are in your way?   All testers/developers are expected to participate and share during the Daily Scrum, and any other topics should be added to a message board that can be addressed after the Scrum.  The Sprint Planning should be done by both the Product Owner and the developer/tester with the help of the Scrum Master as needed. The process cannot take more than eight hours. The members will discuss why the Sprint is valuable and create a Sprint Goal, examine how much work can be done during the Sprint, and how this work will be accomplished. The developer/tester will also look at the Product Backlog and split the information up into more manageable tasks that can be done in one day, or even less.  The Sprint Review and Sprint Retrospective are both ways to reflect on how well the Sprint went, and what changes need to be made for future Sprints. The Review focuses on the outcome, and what was done to meet the Product Goal. The meeting should be four hours or less and should also include any changes that need to be made to the Product Backlog for future Sprints. The information is presented to stakeholders as well.  The Spring Retrospective will examine how well the last Sprint worked, and what can be done to improve the effectiveness and productivity of the team. Problems and solutions will be discussed, and this ends the Sprint. The meeting should take no more than three hours. (Schwaber and Sutherland, 2020) |

**Works Cited:**

Cobb, C. G. (2015). *The Project Manager’s Guide to Agile*. John Wiley and Sons Inc.

Schwaber, K. and Sutherland, J. (1991) The Scrum Guide The Definitive Guide to Scrum: The Rules of the Game. [www.scrum.org](http://www.scrum.org)

Tutorials Point. (2023). SDLC Tutorial. Tutorials Point https://www.tutorialspoint.com/sdlc/index.htm