Sprint Retrospective

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Over the past 6 weeks our team has been working on delivering software updates to our new client, SNHU Travel. This project represents a shift for our company in how we approach software development. We incorporated a Scrum-agile framework to deliver better products and services to our clients while improving morale and working conditions among our teams. This review and retrospective will outline the changes we made, explain our communication process, explain what worked and what could be improved upon and what features of the Agile Manifesto benefited our team and our client.

1. **SCRUM team.**

At the center of any Agile methodology is a small self-organizing team. Since we chose the Scrum framework, let’s first meet the key members of this team.

**Product Owner**

At the center of any good Agile team is the product owner. The product owner acts as a general contractor, meeting with the clients, determining how best to complete the job, and communicating this information with the team who will do the work. It is the product owner who first meets with the client and ascertains their wants and needs. From that initial meeting, they created an initial product backlog. While Agile teams do not have a defined hierarchy, we considered our product owner our captain and our leader. When our product owner met with the team at SNHU travel we were given a specific goal, to reach more customers by focusing on niche personalized travel experiences.

The client meeting gave us an overall goal and our product owner and scrum master met to develop the charter for the project. This established the team, scrum format, and outlined the expected sprints and timelines.

We needed some additional information to create our product backlog with details as to what approach we were going to take. We set up a focus group representing SNHU’s target audience. This allowed us to come up with 5 initial user stories that would collectively meet the clients’ needs.

Throughout the project, through daily scrums, communication tools, and meetings with external stakeholders. Our product owner kept us informed of client changes, modifications to the backlog, and overall progress.

**Scrum Master**

An Agile team is only as good as its scrum master. Continuing the construction analogy, the scrum master acts as the foreman on the job. They work very closely with the team, ensuring that they understand what needs to be done and check to see that work is done correctly. The foreman also ensures that the needs of the workers are met. Sometimes this means working with other internal teams but other times, in connection with the general contractor, going external. The foreman also runs interference and protects the teams from distractions. This prevents external parties directly interfering with the teams.

Our scrum master, along with the product owner, broke the goals down to individual sprints, at the end of each would be a finished product. At the sprint planning meeting, the entire team was part of the planning, and the sprints and associated user stories were all agreed upon before any work started.

The scrum master also kept our daily scrum meetings focused and on time. These were very productive since we never felt like we were in a meeting that should have been an email. One thing that was particularly interesting and very well received was the Stuffed Cow. Anyone holding the stuffed cow had the floor and could not be interrupted or talked over. We quickly gave this cow a name and made him the team mascot. Someone on the team had the idea to create an Instagram feed for the cow and you never knew where the cow was going to show up. This might seem silly, but it really helped with team morale and inserted a little bit of fun in each day.

**Tester**

Every user story on a product backlog has a specific end goal. Ensuring that those goals are met falls on the tester. On a construction site the tester would be the inspector. The inspector makes sure that the work done previously was done correctly before any additional work can be done. For example, any electrical work needs to pass an inspection before the drywall workers can cover the walls. The tester in an agile team takes each user story in the backlog and establishes test cases. These test cases are done from the perspective of the stakeholders and ensure that the expectations are met. As the changes arise and user stories are changed, the test cases must also be updated. The tester works with the rest of the team to determine what the definition of “Done”. In other words, if we say something is complete, what exactly does that mean and how does it impact other elements of a project.

**Developers**

The last members of our Agile team are the developers, the workers. These are the individuals who get the work done. In our daily scrum meetings, they talk about what is working, what is not working, what challenges they have and how they overcome these challenges. The developers also worked closely with the testers to ensure that their tests were hitting all of the marks. In our Agile team the tasks were not segmented to any one group of developers, we worked collaboratively on the user stories, sharing knowledge and increasing the overall skill of our team.

On our SNHU Travel project, it was our developers who brought to our attention how the changes proposed by the client would impact on the work already done and the items remaining on our backlog. Their consistent communication both in meetings, emails and on our Jira boards was vital to the success of the project.

This was our first venture using the Agile methodology. We all felt a vested interest in the success of the project. Since we, as a team, were involved from the very beginning, we had a much stronger sense of pride and accomplishment in the final product than we had in the past. We felt respected and appreciated in our daily meetings and were in near constant communication with each other. Removing the hierarchy of traditional environments meant that we could openly share ideas and skills with the team without worrying about self-preservation and our own self value. As a team we are much more valuable than we are as individuals.

1. **User Stories**

Instead of focusing on big picture items and working in segmented groups, we were able to plan, develop, refine, test, and deliver small, workable solutions to the stakeholders. We call these small solutions User Stories. Traditionally we would code many projects and hand large packages over to be tested and refined, then documented and finally delivered as a new release. The process took much longer, and any changes were difficult and costly to implement and normally got pushed to a later release. We placed these small parts of the project into groups called sprints. We typically wanted to group items by priority that we would complete in a relatively short time, 2-4 weeks. This allowed us to consistently deliver working, tested solutions to the client.

We developed 5 initial user stories in our backlog. These included:

* Top 5 Destinations by popularity
* Filter that list to match my personal preferences.
* Customize lists and recommendations based on user preferences.
* Set preferences on the user’s profile.
* Add a budget slider to filter results based on a price.

We set priorities for each item and began working on the most important of the list. Because we took this segmented approach, when the client came to us with a change in direction from popular destinations to specifically Wellness/Detox, we were able to see that this would impact only one or two of the user stories. We made this the priority, and the other stories could be moved to the next Sprint.

Now, when the client requests a change, it can be implemented into the current or next sprint depending on urgency. We can react quickly to changes in the marketplace without numerous discussions and meetings. We realized that the change in focus from the client would push back some of the lower priority items to the next sprint.

1. **Changes to the Scope of Work**

There are many aspects of Agile that allow for rapid implementation of changes to the scope of a project. Our team was small and self-organizing, so we set our own pace and managed our own product backlog. There were two instances when SNHU Travel informed us of changes.

The first change was more of a clarification. We were to set up a top 5 list of destinations based on user preferences. We naturally planned this to be a vertical scroll page. When our tester was setting up the test case for this story, they made an inquiry to the product owner about what type of page this was to be and the client came back with a slideshow rather than a scroll list.

The second change was more problematic. We were working on creating customized lists based on a user’s past purchases and their set preferences. We also included a budget slider that would filter recommended packages by budget. To make this happen we had planned on modifications to the backend database to accommodate the classifications, modifications to the user page to set preferences, engineer the budget slider and work that into the system, and code a means to track and record their preferences based on purchases. Midway through the sprint the client changed their plan and now wanted to focus on Wellness/Detox retreats and packages.

Because we work in self-governing teams, we were able to meet quickly and decide on a new plan with minimal downtime. We pushed the preferences and budget sliders back to the next sprint and kept the slideshow listing page which was already coded. We changed the listing from preference based to the popular Wellness/Detox packages based on popularity. Internally we were able to handle the change quickly without too much wasted effort. By working in small groups and breaking down projects into individual user stories we easily shifted stories around to meet the client’s needs. From the client’s perspective we were able to react quickly to their request without increasing the budget or pushing the timeline back.

1. **Team Communication**

Communication is key when working in small, self-organizing groups. It’s important that all members of the group know what everyone is working on. From the start of the project, our communication was clear, concise and on point. Starting with our charter we clearly laid out our mission statement and the criteria for success:

|  |  |
| --- | --- |
| **Mission Statement**  (result to accomplish) | Revamp SNHU Travels web and backend systems to accommodate these new travel offerings. The redesigned application will leverage SNHU Travels prominence in the market while highlighting these new packages. |
| **Success Criteria** | Start date: 3/18/2024  Expected completion date: 4/19/2024  Final deliverable: 4/22/2024  Key project objectives:  4/1/24: Backend database modifications for new niche packages  4/12/24: Site redesign and integration with backend database  4/19/24: Testing front end navigation and backend integration with sample data sets. |

We identified what the meetings and other means of communication would be for the team:

|  |  |
| --- | --- |
| **Communication Guidelines**  (scrum events and rules) | **Sprint 1 (Backend Database modification)**  Sprint Planning meeting – 2 hours 3/18/24  Daily Scrum – 15 minutes 9:30 am  Sprint Review – 2 Hours – 3/29/24  Sprint Retrospective – 1 Hour – 3/29/24  **Sprint 2 (Site Redesign and database integration)**  Sprint Planning meeting – 2 hours 4/1/24  Daily Scrum – 15 minutes 9:30 am  Sprint Review – 2 Hours – 4/12/24  Sprint Retrospective – 1 Hour – 4/12/24  **Sprint 3 (Test site navigation and backend integration)**  Sprint Planning meeting – 2 hours 4/15/24  Daily Scrum – 15 minutes 9:30 am  Sprint Review – 2 Hours – 4/19/24  Sprint Retrospective – 1 Hour – 4/22/24  Product backlog will be updated each morning prior to the daily scrum.  Meeting minutes will be sent out within 24 hours to all team members. The product owner will cancel and reschedule any meetings. All team members are expected to attend all meetings in person and be on time. |

As a group we reviewed the Product Backlog and user stories. For each story we listed the goal and what would be considered completion of the story, see example below:

|  |  |
| --- | --- |
| **User Story Number:** | 1 |
| **User Story Name:** | Top 5 Destination List |
| **User Story Size:** | medium |
|  |  |
| **User Story Value Statement:** | As an end user I want to click a link and see a list of the top 5 most popular travel destinations. |
|  |  |
| **Acceptance Criteria:** | \* Ability to click a link on the homepage that will open an ordered list of most popular destinations.  \* List will be ordered from most popular to 5th most popular. \* Each destination listing will include:  \*Name  \* Short Description  \*Thumbnail Photo  \*Hyperlink to destination page |

Our Product backlog consisted of 5 user stories as follows:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Priority** | **Size** | As a(n) <type of user> | I want to <perform some task> | **So that I can <achieve some goal>.** |
| 1 | medium | end user | click on a link | see a list of most popular travel destinations |
| 1 | small | end user | see a personalized list | so that I am not viewing activities that I'm not interested in |
| 2 | small | end user | set personal preferences | so that I can see more travel options that meet my interests |
| 2 | medium | end user | see packages within a price range | so that I see packages that I know fit in my budget |
| 3 | small | end user | fully customize the list of destinations | so that I can explore popular combinations that meet my interests |

This information was on our Kanban board and displayed at every scrum meeting. When team members had questions about a story or an issue was raised, email was the normal means of communication. You can see from the samples below that we were in regular contact with each other despite being in remote locations.

*Christy,*

*I’m setting up the test cases for SNHU Travel and I need some additional information to ensure that the following deliverables are met.*

*User Story #2: Top 5 list based on user preferences:*

*Should there be an indication on the listing what preferences are being met by this suggestion? Perhaps in addition to the description we should add the categories of trips that are available at these destinations.*

*Since these lists are based on popularity, should there be an indicator of how popular? Perhaps display the number of bookings in the past month, etc?*

*Let me know your thoughts on these so I can revise the tests.*

*Warmly,*

*Ben*

*Hi Christy and Ben(tester)*

*To accommodate this shift in focus toward Wellness and Detox destinations, we need to know how this affects the other stories on the backlog.*

*We have been working on having the Top 5 list reflect user preferences. Since the list is now going to focus on Wellness and Detox destinations, we can use the same framework but change the backend.*

*If this change is the priority, we will need to push back the user preferences and budget slider tasks to focus on these changes.*

*In tomorrow’s Scrum we can discuss further how the other items in the backlog should be ordered. Ben, this shouldn’t change your tests all too much except that the list will not consider the user preferences. The rest of the test should work for this change.*

*We should be able to keep up with the original timeline of deliverables, the items delivered will just change slightly.*

*Again, we can discuss it further tomorrow morning.*

*Bring Doughnuts!*

*Joe*

1. **Key principles of the Agile Manifesto**

The first three principles of the Agile Manifesto focus on delivering working software to the client frequently in spite of changes mid project. Our Scrum team embodied this perfectly. We were in regular communication with each other and the client and in a relatively short time, 4 weeks, we delivered a working product to the client even with a last-minute change. Our daily meetings, use of a Kanban board, and breaking the project down into complete deliverable segments allowed us to meet the needs of the client. The system allows us to continue working on the product backlog after the first sprint is completed. The allows us to address items that had to be pushed back because of changes.

We incorporated testing and refactoring of code into each user story. This allowed us to maintain a quality product that was fully tested working when it was delivered to the client. This was in line with the 7th and 9th principles of the Agile Manifesto which state that working software is the primary measure of progress and the attention to technical excellence enhances agility. By working closely together, without a hierarchy, we were able to share ideas and increase the overall skill of the team. The work we put out in a relatively short time was of a quality far surpassing anything we have done in the past when working in larger organizational groups. This was in line with the 11th principle of the Agile Manifesto.

We ended up incorporating many more of the principles than we thought we would at the start of the project. As a group we realized that following the principles really does have a positive effect not only on our work product, but the morale of the team members as well. We worked much better together in this small team than we ever did in the past in larger groups. There was no resentment between developers/testers and the product owner or scrum master. No one was seen to be in charge, we just each had our defined roles.

Agile improved the accuracy of our estimates and the overall company bottom line. Since estimates are done on the team level, we meet collectively to discuss the value, time and costs associated with a particular sprint and relay that to the stakeholders. It prevents underestimates and overestimates that are made by people not closely related to the work. Team level estimates provide a fair assessment to the client and ensure that the companies costs are covered. On our SNHU Travel project we used a technique called Affinity Grouping to produce the estimate. This technique involved going through each task to be completed with the team and one by one deciding if the current item is more complex or less complex than the previous task. As we moved through the items the board grew out from the middle.  When we were finished, we went through each side and ultimately broke the list into approx. 5 groups ranging from easiest to most difficult.  We then assigned point values, 1 point to the easiest to 8 points for the most difficult.  Totaling up the points based on the included items gave us the basis for our estimate. When the client informed us of a change, we were able to see clearly how this would affect the estimate.

1. **Conclusions**

The Scrum-agile model was not without its problems, we have talked extensively about the benefits as it related to the SNHU Travel project, but the one negative was that, since we were a relatively small team, some of the items had to pushed back to a later sprint. If our team was larger, or if multiple teams were working on the project, perhaps more of the product backlog could have been delivered in the first sprint. While not necessarily a con, it was an issue for us.

While group consensus is overall a positive thing, it can become an impediment to progress. There are going to be times when groups of people are not going to agree. If we had chosen to incorporate Planning Poker for our estimation process it might have taken much longer for all parties to agree on each item. There are times when someone needs to be “In Charge” and make decisions when the group cannot form a consensus. This might be something that needs to be added to the structure of future scrum teams.

However, our ability to react quickly and make decisions as a small group benefited the SNHU Travel project greatly. We were able to react quickly and provide working software to the client, despite their changes. It showed that we worked will together, delivered a quality product in a short period of time, and will continue to provide updates that will ultimately satisfy the initial request of the client, which was to increase business with niche, customized packages.