Sprint Review and Retrospective

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**SDLC Methodologies:**

During the Systems Development Lifecyle (SDLC), there are two major methodologies that developers may choose in the development of a project. These methodologies are the tradition, or waterfall, approach, and the Agile Methodologies.

The waterfall model takes a sequential and linear approach; it is step by step process when developing a system. Once one phase is finished the next phase will commence. Although this method is simplex, it often poses one major disadvantage: the inability to go back to aa previous phase. Developers may want to go back to the previous phases due to valid reasons such as finding a security flaw within the system that requires them to resolve the issue, or a product owner modifying the product backlogs. Waterfall methods are best implemented when projects are short, low-cost, and the product backlogs are clearly defined.

The Agile Methodologies an approach in SDLC that takes the project and breaks it into several phases. This involves collaboration with stakeholders, product owners, developers, and even end-users of the product. Breaking down the large products into manageable tasks and utilizing iterations to complete these tasks optimizes workflow and enables flexibility of project requirements. Flexibility enables there to be changes in product backlogs and the final system’s requirements. These methodologies are best suited for projects that are large, or the vision of the product is not as clear. Moreover, the term Agile Methodology isn’t just a singular approach, it is more of a philosophy that developers may choose to implement in the SDLC. There are many different types of the Agile Methodologies. These include Kanban, Extreme Programming (XP), and Scrum. Although they each are different frameworks, they all share the same core values and principles that is defined in the Agile Manifesto.

The Agile Manifesto defines the core values to be the following:

* Individuals and interactions over processes and tools.
* Working software over comprehensive documentation.
* Customer collaboration over contract negotiation.
* Responding to change over following a plan.

The Agile Manifesto defines the Twelve following principles:

1. Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
2. Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.
3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
4. Business people and developers must work together daily throughout the project.
5. Build projects around motivated individuals. Give them the environment and support they need and trust them to get the job done.
6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
7. Working software is the primary measure of progress.
8. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
9. Continuous attention to technical excellence and good design enhances agility.
10. Simplicity--the art of maximizing the amount of work not done--is essential.
11. The best architectures, requirements, and designs emerge from self-organizing teams.
12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

**SCRUM:**

The Agile framework that was implemented in the project SNHU Travel Agency is called Scrum. This framework holds the same core values and principles found in the Agile Manifesto. This approach utilizes the collaboration of multiple small teams in an intensive and interdependent manner. This framework takes iterations called sprints. After each sprint is conducted the result will be a potentially releasable product. To understand more about this framework, we must define the Scrum Artifacts, or something we make.

The three Scrum artifacts and their definitions are as follows:

1. Product Backlog: The list of features and requirements of a product. This product owner is the one who defines the list, and it is constantly being revised, reprioritized, and revisited.
2. Sprint Backlog: The list of user stories or bug fixes that is selected by the development team.
3. Sprint Goal: The usable end-product of the sprint.

This framework also defines the key events that must take place. These event and definitions are as follows:

1. Backlog Grooming: This event is typically conducted by the product owner with assistance from the scrum master. It is where the product owner defines the product backlog, maintains it, and revises it. This enables the product owner to clarify the requirements for the product vision.
2. Sprint Planning: This event is facilitated by the scrum master. This meeting is conducted with the development team and sometimes the product owner. This is where they will plan the upcoming sprint and the Sprint Goal will be defined. During sprint planning the product backlogs, sprint backlogs, and the product vision are emphasized.
3. Sprint: The cycle of time where the scrum team works together to reach the sprint goal. Note that the sprint includes all the key scrum events from planning to sprint retrospective and daily stand ups.
4. Daily stand ups: This meeting is facilitated by the scrum master. It is a short event that happens at the same time on every working day. This event will iterate the sprint backlogs and ensure that everyone is on the same page. This event helps the scrum master to monitor the progress. They typically will answer the questions following questions:
   1. What did we do yesterday?
   2. What needs to be done today?
   3. Is there anything impeding our goals?
5. Sprint Review: This event will happen at the end of the sprint. Stakeholders are typically invited. The product owner, scrum master, and the development team are all present. This is where the development team will showcase the product that was created during the sprint and shows all the backlog items that were implemented. This is where the product owner can decide if they want to deploy the product. It is also an opportunity for the product owner to revise the product backlogs.
6. Sprint Retrospective: This event is facilitated by the scrum master. This is where the developers and scrum master come together in a meeting and define what was done, what they should sustain on for the next sprint, and what and how they can improve on the next sprint.

**SNHU Travel Agency Project Analysis:**

During the development of SNHU Travel Agency the Agile Framework Scrum was applied. The two major approaches of SDLC are defined as the Waterfall Model and Agile. Although implementing the Scrum is far more complex than the linear approach of the Waterfall, the Agile Framework of Scrum was most suitable for this project. The major drawback of Scrum is it is more complex to implement. Moreover, organizations tend to want to use a simpler approach. When Scrum was first introduced in the early 2000’s many organizations were uncertain of how to use it. In a case study of the Vision Quest Software, it details about the obstacle that Vision Quest had when the organization wanted to implement Scrum. Although some of the development teams were interested, they still lacked the knowledge of how to implement it. One of the members of the development team took a class and became a Certified Scrum Master. He was able to guide his team to this approach of SDLC. Thus, showing the complexity of implementing Scrum. The waterfall is in fact easier to implement because of its simplex sequential approach. The process of developing a new system has sequential phases like the water in a waterfall. As a phase its finished, it flows to the next phase. Similar to how the water will flow down the path of a waterfall. The con of implementing Scrum with SNHU Travel agency was the complexity. We had to fulfill many different roles and understand the concept of this ideology.

Although the waterfall model is more simplex, it is more so suited for projects that have a clear and stable requirement defined in the product backlog, and it is more suited for small projects. SNHU Travel Agency envisioned a product that would expand its client base and overall have a product that enables customers to book trips. Understanding if this project is small or large comes down to defining some of the backlogs and requirements. It was noted that Chritsy, the project owner wanted to implement a way for customers to book a means of transportations for their vacation and implementing a mobile application that works with the website. Developing a website that requires a payment method, and to talk to outside systems for travel (ie delta airlines, carnival cruise line, Amtrak, etc) requires the implementation API services and other protocols to connect to outside resources for payment processing and to connect with transportation services. In addition, deploying an application that connects with the website requires many other requirements nonfunctional, or functional. These include cross-platform requirements for mobile applications or website usage, security, scalability, and even availability. Because of the complexity of developing SNHU Travel Agency, we may conclude that this project is in fact large. The fact that Christy wants to expand their client base entails that that the product backlogs are not as clear, and they may change. The Scrum framework is suitable for projects that do not have well defined product backlog and is for projects that are large. The major pro of the Scrum Framework is it flexibility to change. For example, Christy wanted to modify the product backlog to limit only vacations that are for wellness and detox. The scrum framework enabled us to make this change because of its adaptability. After the first sprint, Christy Notified the scrum team that she modified the product backlog. During the sprint planning event for the next sprint the modified product backlogs were emphasized, and the developmental team came up with a sprint backlog that reflects the sprint goal. During the next sprint the development team was able to deliver a potentially releasable product that reflected the changes Christy made. Thus, deeming that Scrum Framework was most suitable for the SNHU Travel Agency.

The Scrum Framework enabled the success of the SNHU Travel Agency. The following Scrum roles are identifiable:

* Product owner: Christy
* Client: Amanda
* Scrum Master: Ron
* Tester: Brian
* Developer: Nicky

The following key events were implemented:

1. Backlog Grooming:
   1. Christy Identified the product backlogs of the project and defined the product vision. The original product vison was to gain a larger audience and upgrade the current system of SNHU Travel Agency to have niche vacation booking system. Christy revised and reprioritized the project backlogs and vison. She held focus group meetings with customers and stakeholders and considered any feedback. The feedbacks assisted her in refining the product backlogs and product visions.
      1. The product vision was modified and is defined now as to gain a larger audience and upgrade the current system of SNHU Travel Agency to have showcase vacations for wellness and detox retreats.
   2. Christy is the one that ultimately determines if the product should be deployed after a sprint
2. Sprint Planning:
   1. The Scrum Master facilitated two meetings of sprint planning where he ensured the scrum team came up a plan for the given sprint.
      1. Sprint 1:
         1. During this sprint planning event the development team defined the sprint backlogs, the product owner emphasized the product backlogs, the scrum master ensured that everyone was on the same page and understood the vision. The product vison: gain a larger audience and upgrade the current system of SNHU Travel Agency to have niche vacation booking system. The sprint goal was defined. The sprint goal entailed that an increment must showcase the top five destinations retreats.
      2. Sprint 2:
         1. During this sprint planning event the development team defined the sprint backlogs, the product owner emphasized the product backlogs, the scrum master ensured that everyone was on the same page and understood the vision. The product vison: gain a larger audience and upgrade the current system of SNHU Travel Agency to have showcase vacations for wellness and detox retreats. The sprint goal was defined. The sprint goal entailed that an increment must showcase the top five destinations for wellness retreats.
3. Sprint: During this project there were two iterations of sprints.
4. Daily Stand Up: During this project, Ron was able to facilitate meetings in the morning that lasted about 15 minutes. This was to ensure progress was being made. It was very effected because it ensures that every member of the scrum team is on the same page. The daily stand-up meeting ensures effective communication.
5. Sprint Review: Ron conducted this meeting after each sprint. All the stakeholders attended, Christy, and the Scrum team. The development team presented their releasable product. After Sprint 1, Christy was able to emphasize about her desired modifications of the product backlogs and product vison.
6. Sprint Retrospective: Ron facilitated this meeting with the Scrum team after each sprint. The importance of this was to assess how the sprint went and what they all as a team can do differently.

Implementing all these scrum events ensued effective communications amongst the scrum team, stakeholders, and end users. Christy utilization of focus groups for stakeholders and end users enabled her to refine the product backlog. In addition, written communication of the emails ensured that Brian, Nicky, Christy, and Ron were all on the same page. Since Christy was not able to be present in our office all the time, Brian emailed her for clarification of the user stories and epics that must be implemented. In addition, Nicky, also emailed Christy for clarification. To ensure that the team was on the same page, it was great practice that they were able to CC the scrum team on the email traffic. We also must keep in mind that it was great practice to update the scrum team as we go. The Daily Stand Ups also ensured that progress was being made and every team member was on the same page. Another tool we can also implement is online management tools such as Azure Boards! In addition, the scrum agile approach was able to help the user stories come to completion because of the communications, the key events, and the core values and principles of Agile. For example, Christy implemented customer collaboration in her focus group meetings. This enabled her to refine the product backlogs. The product backlogs define the user stories. In addition, the scrum team was able to respond to change effectively.   
When Christy refined the product vision, the next sprint addressed the modification and the next increment reflected on the new product backlogs. Overall, with the Agile Approach of Scrum applied, ChadaTech was able to successfully complete and deploy the Information System SNHU Travel Agency.

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