

Module 7: Final Project

Lyric Hart

Southern New Hampshire University

CS-250-11469-M01 Software Development Lifecycle

Mr. Kagan Ulucay

August 1, 2024

Abstract

This paper explores the transition from the traditional waterfall development model to the Agile Scrum framework within ChadaTech, a custom software company. Focusing on the development of an innovative application for SNHU Travel, this study highlights how the adoption of Agile practices enhanced project execution, facilitated the completion of user stories, and effectively managed project interruptions. By assuming distinct roles within the Scrum team, the impact of these roles on the project's success is analyzed. Additionally, the effectiveness of communication strategies, organization tools, and Scrum events in ensuring project completion is evaluated. The pros and cons of the Agile method are assessed, particularly in contrast with the waterfall model, providing insights into the appropriateness of Agile. Finally, a presentation for ChadaTech's leadership shows a comparative analysis of Agile and waterfall methodologies, emphasizing key considerations in selecting the optimal approach for software development projects.

In the Scrum-Agile framework, the success of a project heavily relies on the effective application of various roles within the team, namely the product owner, scrum master, and development team. The product owner ensures that the team works on high-priority objectives so that they meet the client's needs. This is usually done through a product backlog where they are prioritized. For instance, during the development of the SNHU Travel application, the product owner played a crucial role in refining the backlog, which helped the team focus on delivering features that added the most value. The scrum master facilitated the sprint planning and daily stand-ups, ensuring that the team remained focused, removed impediments, and stayed on track to meet sprint goals. The development team, which included testers and developers, collaborated closely to deliver high-quality increments each sprint. This involved team members leveraging their specialized skills to build and test features for efficiency. The clear delineation of these roles and their execution were key to the project's success.

The approach for the scrum-agile methodology was instrumental in driving the completion of user stories during the software development lifecycle (SDLC) for the SNHU Travel project. User stories help to capture the needs and requirements from the user's perspective and this is broken down into manageable tasks that could be done within a sprint cycle. The iterative nature of Scrum allowed the team to continuously refine and improve the application based on feedback received after each sprint cycle. For example, one of the user stories involved creating a search feature for travel destinations. When a story such as this is divided into smaller sections, such as developing the search's algorithm, designing the UI, and testing the functionality, the team was able to complete the story within the sprint. This ensured that the client review was in order at the end of the sprint iteration. A process such as this helped to facilitate proper handling of project management, product backlog, testing, etc.

Throughout the development of the SNHU Travel application, the project faced several interruptions. Factors such as changing client requirements and unexpected technical challenges were a big obstacle. However, the scrum-agile approach proved to be efficient in handling these interruptions and adapting to changes without compromising the entire project's timeline. For example, midway through the project, the client requested additional features to support group bookings, which were not part of the original plan. Instead of disrupting the sprint cycle, the team decided to utilize the product backlog in reference with the product owner. This enabled the team to accommodate the new requirements in the subsequent sprint while delivering valuable increments. By the use of daily standups and sprint reviews, they provided continuous openings to assess the project's progress and make the necessary adjustments to ensure that everything was on track as planned.

Communication was the cornerstone of the entire project itself. For the scrum-agile approach to be fully effective, we had to foster full collaboration and alignment among team members. The daily standups, sprint planned meetings, and sprint reviews created regular touchpoints where team members could discuss progress, address any issues, and center on priorities. By demonstration during one of the sprints, a developer identified a technical bottleneck relating to third-party APIs. By communicating this through a daily standup, the scrum master was able to resolve this issue by allocating the resources to support the integration. This example of open communication not only strengthened problem-solving skills but also facilitated having a cohesive team where everyone was aware of each other's work. This led to better workflows and transparencies within team collaboration. For the client, they were kept with updates in regards to how the team performed in relation to the developmental responsibilities.

In talks with organization tools, they played a massive role for the SNHU Travel project. Tools such as Jira and Trello were used to manage the product backlog, track sprint progress, and help visualize the workflow, making it simpler for the team to stay on course for the project. For example, the Kanban board in Jira gave a clear glimpse into the tasks that were in progress, pending, or completed. This allowed the scrum master and other team members to address what bottlenecks are important in relation to their effectiveness for positive project results. The scrum events, as mentioned earlier, gave a structured approach to the work so that the project goals were still in center focus.

The scrum-agile approach demonstrated both strengths and challenges during the development of the SNHU Travel project. One of the primary advantages was the flexibility that it offered, allowing the team to adapt to changing client requirements and feedback regularly. The iteration of scrum allowed for ongoing improvement, ensuring that each increment added value and met client expectations. Although this approach also resulted in some setbacks that caused a shift in development. One of them being to maintain long-term project goals while keeping up with constant changes. The need for frequent communication and commitment pushed more pressure on the team to go beyond their limits of team collaboration and development. Despite these challenges, scrum proved to be a valuable development model, well-suited for the SNHU Travel project. The ability to respond to sudden changes was such a critical skill to implement for the project's success. The iterative process, combined with regular client feedback, ensured that the final product was aligned with the client's vision and delivered within the expected timeline.