**Final Project Module 7**

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CS-250 Software Development Lifecycles

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My studies through the Chada tec software assignments have given me great insight of the inner workings of the agile scrum framework, and how it can be implemented in a modern day setting. Whether it be shifting from a previously established waterfall format or creating system from the ground up, agile has proven itself to encourage open communications, and transparent development that allows the customer greater levels of input than ever before. My work with SNHU Travel software has given me the opportunity to test out the benefits of the agile format and shown me how it can benefit both large and small companies.

Defining the different roles in a scrum agile format is essential to creating a system that works efficiently for both the development team and the customer. Since the agile format works so differently than previous forms of software development, it is critical that everyone knows the specifics of what their job entails and how they contribute to the team effort. In one of the first meetings that happened during module two, we saw a great example of how the team coordinated the work around their specific roles. While some roles take on very similar types of workloads such as the developers, other members such as testers take on far more proactive roles in the new workflow. In Developing the SNHU travel lists, the tester took on an active role development by creating in depth test conditions for the team to meet as the created software. Beyond this basic interaction, the actions of the product owner as a means to understand the customers needs, allow the entire team open communication in order to make sure they are always working towards an end goal that works for the customer. The Scrum master then acts an organizer of the entire system as development happens, and makes sure that the scrum agile system is being enacted upon in an organized and optimized way. These last two roles can be seen explicitly in module 2 where both the product owner and the scrum master work with the customer in order to define an end goal to be reached.

The system of creating user stories is another core aspect of the scrum agile workflow that allows the team to quickly work through features and systems in a way that is clear and visible to the customer. While working on the SNHU travel application, user stories played a critical role in developing certain features that might have taken longer otherwise. In module three, a meeting is shown between the product owner and possible user of the software to be developed. It was through this interaction that user stories could be made based on what the respective software should do. Breaking down these features the way we did in that assignment allowed us to prioritize the different user stories and create a path that can be followed by the development team. Beyond simply laying a foundation for the team to build on, having these features and system self contained within different user stories allowed us to quickly pivot when the customer changed their mind on a given part of the program.

Interruptions are a common place occurrence within any software development team. They are an inherent part of working with any customer, so it is essential to create a workflow that allows them to be easily handled. The scrum agile format, in it’s quick iterative process does just this. The Example in module 4 gives an apt example of a commonplace interruption that could happen to a development team. Upon creating the basis of a GUI for the application, the customer clarified the exact details of how they wanted the information to be displayed. Since the framework for creating the software was done incrementally, the team was able to work through the design flaw before it became deeply ingrained within the software. This is one of many possible scenarios in which interruptions could happen. However, when working in short bursts and using that time to reflect upon the software, it is easy to find and create solutions to these problems early.

Communication allows teams to work together. In the Agile scrum framework, communication is created through a number of means which allows the team to be open both horizontally and vertically. In module five we are introduced to one type of communication that is used. When developers are creating features and working on user stories, they work closely with testers who are creating conditions for the team to abide by. While doing this it is important that the two roles are able to actively communicate in regards of the software created. Questions such as formatting of user seen content, the type of content to be shown, and the different needs of the customer should be able to be easily and quickly answered between the two groups. This is one form of communication, though throughout the entire process of software development, there are multiple forms of communication taking place. Another form of communication that I believe is particularly helpful is some form of radiator communication. Sometimes as a developer you need to make multiple people aware of a piece of information, but do not wish to waste time finding a way to communicate this to a large group. Through different forms of radiator communication this can be easily achieved and implemented in something as simple as a publicly available whiteboard.

Often times simple tools such as this are not enough to organize complex development systems, and something more advanced is needed to allow the agile scrum framework to prosper. This is where tools such as Jira come into play. Jira is a system that connects employees and allows them to connect as an agile team through different features such as creating and displaying user stories. The process of using an online tool like this allows employees to quickly see important information such as, which teams are working on what stories, which user stories are completed, and the progression of the current sprint. In short, the software acts as a centralized hub of information regarding developments on the customers' product. In Relation to Scrum Events, the software allows everyone to see the current state of progress and its different components. Whether the team is currently in a sprint, or in the period between, during retrospective, the scrum board and overviews provided by these softwares allow for these events to be clearly seen and understood by the entire team.

While evaluating the scrum agile process for the given SNHU Travel project, it is easy to see the benefits of using Scrum. Among many other prominent things would be the open communication that was kept throughout the project, the ability to quickly shift focus, and quickly releasing working software to the specification of the user client. Communications in the project kept the customer involved in the process and allowed for quick modifications of the software to meet the customers standards. This point goes hand in hand with the ability to shift, and created and end product that is superior than what would have been created through a waterfall format. The negatives of this process are in the attempt to constantly optimize the workflow process, it is entirely possible to slowdown development past what would be seen in a more traditional style of software development. Focusing on constant change stops the flow of development since energy needs to be placed in either increasing the productivity of a system, or the output of the system, you cannot simultaneously spend equal amount of time improving a system and using it in production.

The agile system is an incredibly powerful tool for developers and more importantly the companies and shareholders that fund these projects. It allows for quick innovations, fast turnover, and new ideas when implemented with careful precision. Using the provided tools and taking the time to teach development teams how to work within a new format can set up a company for success, so long as they don't see it as a way quicky improve output in an already dying company. Whether it be increases in communication, improved adaptability, or optimized performance, the scrum agile system has shown itself to be a highly important tool in today's workforce.