S2.5 Assignment 8: software Process Models

The SDPM that we'll be looking into today will be the **Agile** process model versus **Waterfall** process model. Both are popular models used within the technology industry to develop software and products for their customers so let's take a look at some of the differences that both development processes provide.

In the Agile process, the process occurs in a cyclical phase that generally occur in 6 stages[1]: the concept, inception, iteration or development, release, maintenance, and retirement stages. In Agile, there is continuous iterations and the projects and design features can always respond to changes. There is also consistent review within each phase of the agile process. Some of the features that make Agile a popular frame work is that it is more flexible and less rigid compared to the Waterfall process. It's also better for ongoing projects and allows the development team to perform continuous improvements throughout the software development process. It also considers the values and discussions that occur between the stakeholders and customers in order to get feedback for if the software is up to the customers needs.

In the Waterfall process model, it follows the 5 phases that include[2]: requirements, design, implementation, verification, and maintenance. Waterfall process follows a very linear approach and requires upfront planning. With agile, there is continuous integration and improvement, however with the Waterfall method, the projects overall plan generally starts from the start to finish. Meaning there is no continuous improvement throughout the cycle and after each stage is complete, the team moves on to the next development within the project. Everything within the plan is already planned out from the beginning. This is ideal for projects where resources and the project details are completely laid out in the beginning. Because the plan has already been laid out in the beginning, there are generally strict deadlines for when the project should be completed. This also means that because everything has already been planned out, little monitoring by the customers or stakeholders occur within this cycle.

As previously discussed in the above paragraphs comparing Agile vs. Waterfall, there are some instances when you would chose one over the other. Some examples for why we would chose Agile would be if we were working on a project and some of the requirements or future outcomes may change over time. Because Agile is a continuous iterative process / approach we can be flexible in the way we design and approach this specific project. Often times stakeholders and customers may have an idea for something

they want but decide later to change their minds, the development team can make those changes. With the Waterfall approach, we would use this methodology if we are fully aware in the beginning of the specific requirements and deadlines. This means that the solution and problem is very well understood and straightforward to implement without having too much involvement from the stakeholders / customers. The Waterfall is best suited for projects that are fairly stable and does not require much change throughout the process as everything has already been laid out from the beginning.

References:

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3) The Agile Shop. 2024, February 2024. Waterfall vs Agile in 60 seconds. YouTube. Waterfall vs. Agile in 60 seconds - YouTube
4) Hamilton T. Agile vs Waterfall – Difference between methodologies. Guru99. November 16, 2023. Agile vs Waterfall – Difference Between Methodologies (guru99.com)
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