

Adele Wu

Ms. Wilson

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The Future of Software Development

Software is everywhere in today's society. Yet, the majority of the population does not know how developers develop their software. Software development is the process of computer programming involved in creating and maintaining applications and frameworks to result in a software product. Engineers and other creators implement these programs in various ways, accumulating the needs of different customers. There are many methods that a team of software developers could use for generating their product, and each team must follow a methodology. Software development life cycle refers to the process that a software development follows to create their product. There are a diverse set of methodologies that a team of software developers can follow. The Waterfall methodology and the Agile methodology are currently the most used techniques within the software development industry. The traditional method of software development is Waterfall, and Agile is a newer process. Compared to the traditional Waterfall methodology, The Agile Software Development, which aims for constant innovation, is the better system to handle the software side of the merchandise business.

Agile's system is more effective in terms of an earlier product release time. Waterfall does not emphasize rapid releases. The Waterfall system demands that a considerable amount of time is to be put into the planning of a software product. Using this method could take months or even years before the developers release the product (Smartsheet). This approach aims to create the "perfect product". However, the world is constantly evolving and societal standards change, and that is what makes it a weakness in the Waterfall approach. By the time that the software developers finish documenting the requirements and designing their product, all of their data could be out of date. Also, even if the development team is able to release their "perfect product" within the time range of a trend, it will not last. That is due to the fact that trends do not last, they are constantly evolving, and the Waterfall approach simply is not designed to tackle that aspect of society.

On the other hand, there is the Agile methodology. According to the Agile Manifesto, the overall goal of the Agile method is to "uncover better ways of developing software by doing it and helping others do it". This method is built on the idea that adaptability and innovation is the key to success in software development. Ordinarily, this technique emphasizes the utilization of change. The Agile lifecycle consists of defining the requirements, designing and developing the software, executing a quality assurance test, receiving feedback from the customers, and reiterating through that process, using the feedback as the new requirement that is to be

addressed. Teams using this system invariably loop through this cycle; there is not an end vision for the product. Each iteration using Agile takes only a few weeks for the new software to roll out (Smartsheet). It is extremely important for a business to attract people. By continuously evolving their products, businesses are able to stay on top of trends and accumulate new customers.

Though the rapid release time is one of the main strengths of Agile, critics find this aspect to be a weakness of this method. A noticeable challenge, in this case, is that the deadlines are shorter. Though it is a challenge, it does not constitute to Agile being a defective system. One needs to understand that there are challenges to every method of software development. Though this is a challenge of using the Agile method, it is also a strength. It is because of the compressed timeline, businesses that use Agile are able to roll their software out so promptly.

Another reason why the Agile method is a preferred technique is that it is important to have a strong, positive relationship between a business and its customer, and Agile is created around that idea. Brandl claims that Software development teams believe that “if only the users could write better requirements, then projects would not be late and over budget”. Undoubtedly, it would be wonderful if customers could tell a company everything that they desire for a product. Unfortunately, users are often unable to articulate their recommendations, for their beliefs change over time and users do not know what could actually be possible for a certain

software product. Instead of assigning blame to its customer, Agile evaluates the customer's response through every iteration of the product development. Customer feedback is part of the Agile process, making the customers a key factor in the development of software. A journal that evaluates engineering entities, states that it "give customers a key role in the development process and that customers essentially become part of the development team" (Nelson).

Customers are the people that buy the product, consequently, they are the sole reason why developers develop products. Therefore, developers should always aim to satisfy the customer, as well as have a good relationship with them. Without customers, there is no business. In conclusion, that is why having a strong, positive relationship with customers is crucial to the prosperity of a business.

Though having such a relationship is important, it is not always a simple objective.

Rizzo, the owner of Polarion claims "Engage your users, it will give you the ability to harvest unusual requirements and unsolicited feedback." Polarion is a large company, with over one million users and 10,000 registered community members. Rizzo, amongst many others, have recognized the weakness in using Agile to strengthen a relationship between a business and its customers. As a business grows, it gains more customers. And with more customers, it grows more difficult for a business to obtain feedback and to keep the data organized. However, there are ways around this weakness. One tactic would be to utilize social media. Rizzo states that the

key is to implement Agile in a way that “gives power to the development team while ensuring traceability and accountability”. Social media is traceable, enabling itself to be a reliable source for getting feedback. Obtaining feedback does not have to be as personal as meeting customers and asking them questions or conducting surveys, it can be as informal as looking for comments that people have said or suggestions. This so-called weakness is not, but a door that opens to allow for more feedback and a greater reach, which ultimately contributes to the growing of the business.

Another benefit of using Agile is that there is less risk than the traditional method. As previously stated, just the planning of a software takes an abundance of time when using the Waterfall technique. Oftentimes, the planning takes more time than the actual development of the software (Source Allies). There is always a chance that the product will not attract the targeted audience. Since the Waterfall method forces so much effort to be put into a project, it is devastating for the team if potential customers do not like their new software. The number of failures from Waterfall is overwhelming. “A study conducted in the United Kingdom of 1,027 projects shows that only 13% did not fail, and the Waterfall software development method was the “single largest contributing factor for failure”, being that it was cited in 82% of the projects as the number one problem. Not only did the failures cause devastation to the developers, but suggest that they have disappointed their customers. Moreover, another study conducted of over

400 waterfall projects reported that only 10% of the software was actually deployed, and of that, only 20% was actually used by people (Version One). Due to such statistics, software created using the Waterfall technique proves to be a failure the majority of the time. Failure in producing a desirable product forces the work to be none other than useless effort, which only puts more devastation on the development team. The ultimate goal of any software development for a business is to attract customers; that is what makes a successful product.

With the intention of minimizing the risk of failure of a product, the Agile method does not require as much time to be spent developing each software. By not putting all of their heart into a final product, this method reduces the amount of risk of devastation if a product fails to appeal to the people. Agile also reduces the risk of failure to attract the interest of the public. Because the method requires for the software to be built based on customer feedback, the software developers who use Agile almost always know what to create to maximize drawing in on public interest. Consequently, since the software development team knows what customers want, the team would be able to create software that the people actually want to use. In addition, the Waterfall method requires the development team to follow a rigid, linear process. A certain step can only be executed once the previous step is finished. The only time they are able to receive customer feedback is after they roll out their final software (Segue Technologies). Developers who use Waterfall risk the possibility that the customer will be dissatisfied with their

delivered product. After developers finish creating a product, changes are extremely costly to implement. Waterfall does not consider changes, adaptability, and innovation the way that Agile does.

Agile is a revolutionary method of software development, and companies have recognized it. There has been an increase in adoption of agile software development and enterprise scaled agile initiatives, and it is expected to expand further throughout America and Europe (*ENP Newswire*). Reasons behind why many businesses have adopted this system include that the businesses are able to rapidly release software one after another, which allows for them to stay on top of the latest trends, and thus attracting fresh customers. In addition, Agile allows for the company to build a strong relationship with their customers since they include user feedback as part of the process. Lastly, Agile minimizes the risk of developing a project that fails. That is due to software developers recognizing what the public wants and creating software using this technique requires less time and effort for each roll out of the product. Overall, the Agile methodology is an extremely efficient approach that will revolutionize how software developers create their product to enhance a business. All software development teams of a business should adopt the Agile methodology.

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