Week 2 Essay Question

CSE-682 SOFTWARE ENGINEERING

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Question

Explain how the principles underlying agile methods lead to the accelerated development and deployment of software.

The agile manifesto is defined in the following statement: "We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

Individuals and interactions over processes and tools,
working software over comprehensive documentation,
customer collaboration over contract negotiation, and
responding to change over following a plan.

That is, while there is value in the items on the right, we value the items on the left more."

Software engineers do not like to be bogged down with large amounts of documentation related to the overhead of software design methods. They prefer writing code and delivering a product to the customer quickly to receive their feedback for future versions. The principles underlying the agile methods were designed to better fit the work style and increase the productivity of software engineers.

The five principles of agile methods are <u>customer involvement</u>, <u>embrace change</u>, <u>incremental delivery</u>, <u>maintain simplicity</u>, and "<u>people, not process</u>." Throughout the development and deployment process, the software engineers work closely with the customer to define requirements and objectives that must be met by the final product. Their feedback is used to make changes to existing versions. Thus, the software is developed and delivered incrementally to the customer for review.

Simplicity is always promoted over complexity. Complex systems may be broken down into multiple smaller, simpler modules. Finally, "people, not process" refers to the utilization of each team member's unique skillset. Not all team members will have the same strengths. A team leader's job is to work with each member to define their strengths and to determine where they will be most effectively utilized within the project.

The five principles of the agile process lead to a more accelerated development and deployment of software than the plan-driven process. Neither process is better than the other, as most development strategies involve elements from both processes. However, the agile-driven process tends to lead to quicker development and deployment of software by closely working with the customer to create iterative versions that adapt to their changing requirements and needs.

The Principles of Agile Methods

Principle	Description
Customer involvement	Customers should be closely involved throughout the development process. Their role is provide and prioritize new system requirements and to evaluate the iterations of the system.
Embrace change	Expect the system requirements to change, and so design the system to accommodate these changes.
Incremental delivery	The software is developed in increments, with the customer specifying the requirements to be included in each increment.
Maintain simplicity	Focus on simplicity in both the software being developed and in the development process. Wherever possible, actively work to eliminate complexity from the system.
People, not process	The skills of the development team should be recognized and exploited. Team members should be left to develop their own ways of working without prescriptive processes.