**SSW 555 Agile Methods for Software Development**

**Homework 7**

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**1. In the reading assignment this week Poppendieck and Cusumano point out that some of the principles of the lean philosophy have been practiced by software developers in the past, before agile methods like XP and Scrum were invented. Describe one of these "pre-agile" software development practices or methods that embraces one of the lean principles, and explain how it does that.**

* Even before Lean software development was invented Microsoft was using the “agile” like principles which are very similar to lean software development.
* They are:
  + Overlapping responsibilities. (similar to engage everyone)
  + Builds and continuous integration. (similar to build integrity in)
  + Development by small-scale features, Short cycles and milestone intervals and Postmortems, process evolution. (similar to keep getting better)
* One of the pre-agile software development practice was to build small parts of the system called units and continuously integrate them with the system so that the system remains in consistent shape for everyone who accesses it. This embraces the Lean principle of **“Build Quality In”.**
* As the book states,” continuously integrating small units of software into larger systems has long been held to be best practice, even though it might not have been common practice. As long ago as 1970, IBM’s Harlan Mills successfully developed an approach he called “top-down programming”—a process whereby modules are integrated into the overall system as they are written, rather than at the end of development”.

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**2. Describe a practice of XP that is consistent with one of the principles of the lean philosophy, and explain how it does that.**

* As mentioned in the paper there are many similarities between XP and Lean in their basic structures.
* The basic approach of Agile methodology can be seen on tasks like reducing waste in terms of time and staffing, focusing on value for the customer, the product, and the enterprise, as well as stressing the benefits of a more flexible, iterative, lightweight development process.
* But, the practice of **Refactoring the code in XP** can be very closely related with **Building in Integrity** in Lean software development.
* For **Refactoring in XP** one needs to eliminate duplicate or dead code, cut down on unnecessary variables. That is refactoring is done to keep the design simple as you go and to avoid needless clutter and complexity. Keep your code clean and concise so it is easier to understand, modify, and extend.
* In **Lean** **development**, **building in integrity** means refactoring whenever bad smells in code are detected, testing frequently to assure quality and then developing releases that provide value to the customer.
* Also continuous integration in XP and building quality in, in Lean are kind of equivalent. Both of these practices involve continuous integration of smaller software units into larger ones.

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**3. Describe a practice of Scrum that is consistent with one of the principles of the lean philosophy, and explain how it does that.**

* In Scrum there are Sprint Retrospective meetings which are an opportunity for the Scrum Team to inspect itself and create a plan for improvements to be enacted during the next Sprint.
* The Sprint Retrospective occurs after the Sprint Review and prior to the next Sprint Planning.
* In **Lean Software development,** the principle of “**keep getting better”,** in which every work system is improved constantly, is similar with the Sprint retrospective.
* As in the daily Scrum meetings the Scrum Master and developers evaluate how the Sprint is going and learn about the risks and knowledge related to the product (latest technologies, new frameworks, security features) and analyze the risks related. This can be thought of similar to the lean principle **“learn constantly”** which is creating knowledge and embedding that knowledge in a product.

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**4.Describe a practice of XP or Scrum that violates one of the principles of the lean philosophy, and explain how it does that.**

* In XP and in Scrum, there are different roles assigned to members of the teams. Like in XP there are customers, coach, programmers, manager. In Scrum the roles are product owner, Scrum master, developers and customers.
* According to the roles one has to own the responsibility of what needs to be done.
* So in this process the development team members aren’t generally expected to assume the responsibility for the over-all success of their work; that responsibility is delegated to the customer or product owner roles.
* But in Lean software development, we consider software development as the utmost important task and place responsibility equally on everyone. We regard developers as members of a larger product team, and expect all product team members to become engaged in the overall success of the product. There’s no product owner or customer roles in lean development.
* A manager may have overall responsibility for a complete product, including its success in the customer environment, and engages every-one on a multidiscipline product team in delivering that success.
* There’s no intermediate role prioritizing work for a separate software development team.
* Another noteworthy difference between lean and other Agile methods like Scrum is that Lean delegates the decision of selecting the design of the system to the very last moment. In Scrum it is made at the very first and based on that Sprints are planned.