UNIVERSITY INSTITUTE OF COMPUTING

Agile Methodology

(24CAT-656)

Unit-2- Syllabus

Unit-2	Agile	Lecture Hours:10
Agile Project Management	Project Management introduction, Agile Scrum, Project management methodology, Selection of right project management methodology, Continuous integration and continuous delivery (CI/CD) in agile development.	
Scrum	Scrum framework, Scrum Roles, Agile Kanban, Agile Vs. Scrum. Product Backlog, Scrum Practices, Process flow of Scrum Methodologies,\	
Agile Design	Agile Daily Stand-up, Sprint Review meeting vs Daily Stand-up meeting in Agile, Definition of Done, Agile Design, Retrospective in Agile development.	

CONTENT OF THE SYLLABUS

• TEXT BOOKS

T1 David J. Anderson and Eli Schragenheim, Agile Management for Software Engineering: Applying the Theory of Constraints for Business Results, Prentice Hall, 2003.

T2 Hazza and Dubinsky, Agile Software Engineering, Series: Undergraduate Topics in Computer Science, Springer, 2009.

T3 Agile Software Development Ecosystems by Jim Highsmith, Addison-Wesley 2002, ISBN 0201760436.

• REFERENCES

R1 Craig Larman, Agile and Iterative Development: A Managers Guide, Addison-Wesley, 2004.

R2 Kevin C. Desouza, Agile Information Systems: Conceptualization, Construction, and Management, Butterworth-Heinemann, 2007.

Definition of Done

- The Agile definition of done is a collection of criteria that must be completed for a project to be considered “done.” It is essentially a checklist used by Scrum teams to create a shared understanding of what is required to make a product releasable.
- To fully understand the definition of done in the context of Scrum, we must first outline two of the key elements in Agile project management:
- **Product backlog item:** This is a specific improvement that is made to a product. Items can include bug fixes, user stories, and specifications.
- **Product increment:** This is what is produced at the end of a short development period or sprint. It combines all the product backlog items completed during this sprint.
- In specific terms, the Scrum definition of done is a list of conditions that must be met to successfully mark a product increment as complete.

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Definition of Done

- Implementing the Agile definition of done offers some key advantages, which coincide with the three pillars of Scrum:
- **Transparency:** Everyone on the Scrum team has a clear understanding of what constitutes “done.” This eliminates confusion and potential clashes of opinion because there is a pre-defined set of rules for what the product should look like when complete.
- **Inspection:** This stage is carried out by every team member throughout the sprint, so issues can be spotted early and addressed quickly. The team can also share the product with customers for testing purposes to gather feedback and ensure their needs are being met.
- **Adaptation:** After the inspection stage, improvements can be made to reach the definition of done in Scrum. These adaptations will ensure higher quality in the finished product, potentially increasing ROI and boosting customer satisfaction.

Agile Design

- Design plays a vital role in any software development process. The agile team also focuses on "what to do about design" because of the following four factors:
- Many crucial factors focus on loyal designs during the planning process. Design forces towards waterfall culture throughout product implementation.
- Designers also interact with a cross team for a limited time.
- Designers don't always have an easy way to report feedback to the engineering team.
- The presentation and logic layers are not still transparent. They are not separated clearly in the code base, making style changes difficult.
- Agile design is a way to understand the idea or methodology of agile, how it runs, how the work is carried out in this, and all other necessary things.

Incorporation of Design Process

- The agile design process uses the iterative as well as incremental approach; in this particular process, the system divides the work into small parts and puts the focus on individual parts holistically. This approach includes:
- **Feedback**: In this process, one can easily interact with the customer to know his requirements and also get the feedback of the client or customer regarding the product and make necessary changes required according to the feedback; it is a very helpful function in the agile design.
- **Changeable:** During the agile design, it is easily doable if any changes are required in the design. There is the proper function for the changes, and software is very helpful for the alteration in the design.
- **Development**: The development in agile is very fast; teams need not waste much time on the allied processes; its easier functions and smooth functioning make the process speedy.

The Methodology of Agile Design

- **Scrum**: It is the widely used methodology in the market when anyone thinks about working in agile; this is the first thing that came to his/her mind. In this methodology, both the planning and implementation of the project happens at the same time. Therefore, it is the easier one to work in agile.
- **Crystal**: This particular methodology focuses on the key areas of the project and concentrates on the project's major priorities. Also, the satisfaction of the customer is the prime agenda of this methodology.
- **Agile UX**: The UX version or this type of methodology focuses on the outcome of the project rather than the negative views of whether the product is successful and all that.
- **Extreme**: The extreme methodology is used mainly for software development and focuses on the end product, and ensure that it should be as far as the customer needs.

Process of Agile Design

- **1. Design**: The design of agile will be made by using any of the methodologies used above, but the best design is that which is customer or client-centric and gives fruitful results. Also, the team that takes charge of making a better agile design pays proper vigil on the project so that no time and resources will be wasted. The design is a hectic task at the inception of the project, which needs proper attention.
- **2. Analyze**: When the design is completed and work is on track, a proper analysis is required from time to time so that the scope of the fault should be eliminated and the quality of the product is maintained. The analyses of the design are also helpful for the team to complete work on time.

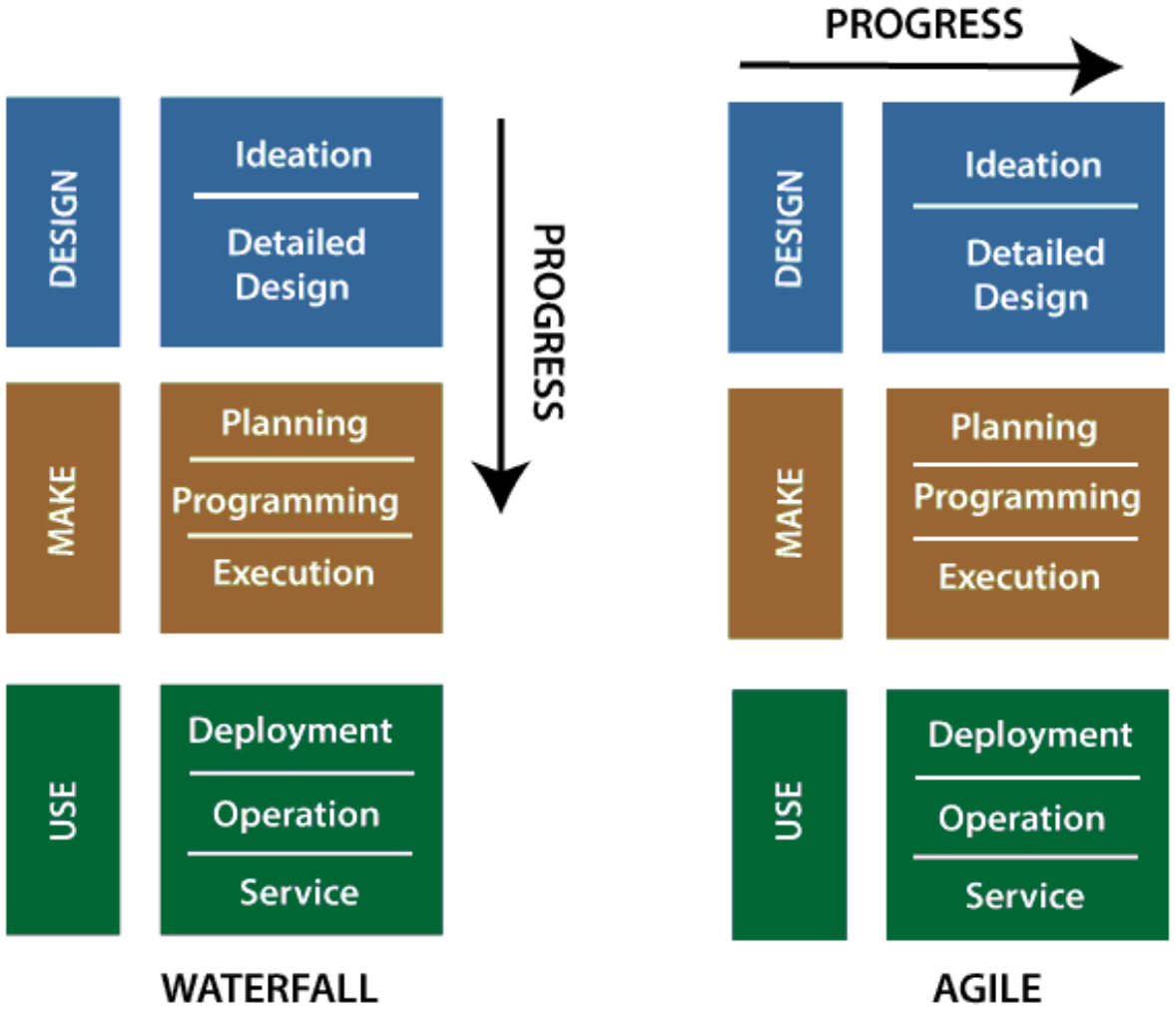
Process of Agile Design

- **3. Develop**: Here, develop means to develop the required project management software, which is the prime moving force of the project after its completion. Management is very necessary after the project execution, so agile management is much required.
- **4. Implement**: The last stage of the process is to implement the agile project and its execution. The feedback of the design is most important so that the team can make changes if required. Also, the satisfaction of the client is much-required things after the implementation.

The product design process and customer interview

- The agile is divided into several methodologies and processes. These methodologies and processes keep the iterative and free-flowing nature of the technique at their core.
- The agile design and development methodology used especially in engineering development, and this process called Scrum.

The product design process and customer interview



The product design process and customer interview

- Customer interviews can be an informative part of the project design phase. We will have several of those "light bulb" movements during interviews. It encourages the people who are interviewing with other members of the team (engineering, marketing, design, etc.)
- There are several resources that are available on which we conduct an interview- the logistics, methods, and techniques.

The customer interview pyramid

- Atlassian is a simple framework that helps in building the customer interview pyramid. This pyramid looks like as
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Customer interview Pyramid

The customer interview pyramid

- **Communication Observation:** At the bottom of the pyramid, we will get the very minimum. We should all come back from an interview and be able to list observations as we don't need any experience to regulate what you've seen.
- **Interpret problems:** Above the Communication Observation, it is an interpret problem. It is explaining the user's behavior and grouping them with an over-arching problem statement.
- **Connecting opportunities:** This is the peak of the pyramid where the most value comes in combining the problem with potential opportunities or related patterns. This helps influence a roadmap and make decisions about what to tackle next.
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THANK YOU