

System Development Methods

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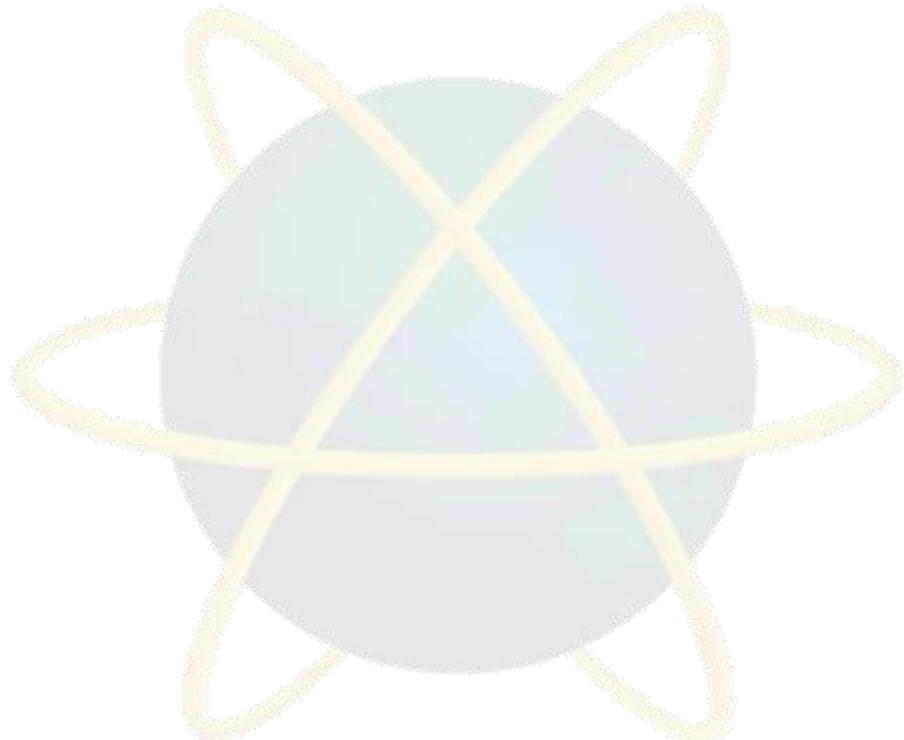


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Agile Methodologies

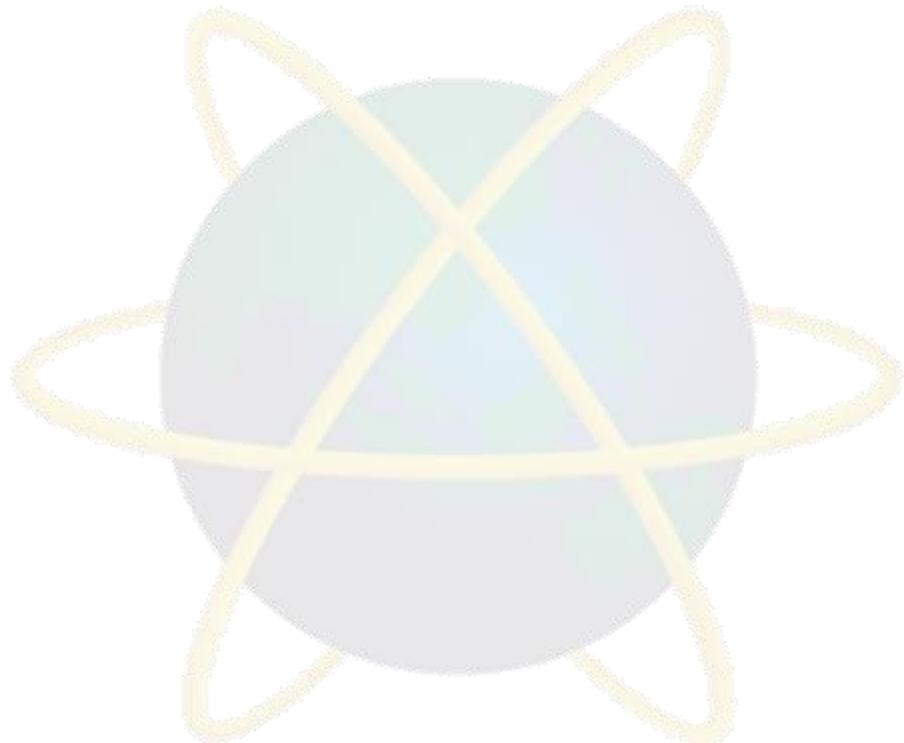
Topic & Structure of the Lesson

- Understanding Agile Projects
- Agile Principles



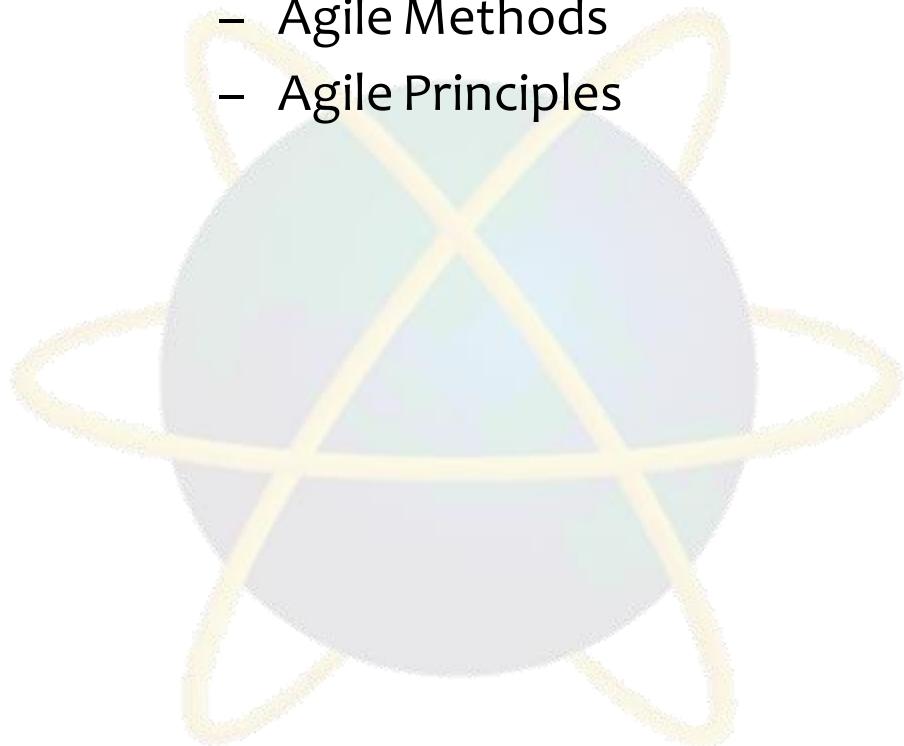
Learning Outcomes

- By the end of this lecture, YOU should be able to :
 - Identify and explain the underlying principles for systems Agile methods



Key Terms you must be able to use

- If you have mastered this topic, **you should be able to use the following terms correctly in your assignments and exams:**
 - Agile Methods
 - Agile Principles



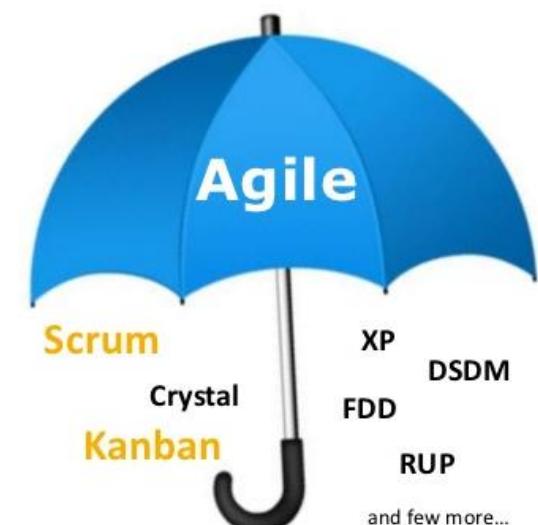
Modern IS Methodologies

- Developed in the mid 80's
- Focus on fast delivery of software and customer satisfaction.
 - Traditional Methodologies focus on product excellence and documentation.
- Flexible stages
- Most Methodologies adopt **Agile Principles**.
- Example of modern methodologies;
 - RAD
 - XP
 - Scrum



Agile Methods

- Agile Methods are a **set of Modern IS Methodologies** which shares some of the **Agile Principles**.
- **Agile Principles** are defined in ‘The Agile Manifesto’, developed by expect software developers in 2001.
- Agility (in a software development sense) means;
 - Being flexible.
 - Being in control.
 - Able to adapt to changing environment.



The Agile Manifesto is based on twelve principles

- 1) Customer satisfaction by early and continuous delivery of valuable software
- 2) Welcome changing requirements, even in late development
- 3) Working software is delivered frequently (weeks rather than months)
- 4) Close, daily cooperation between business people and developers
- 5) Projects are built around motivated individuals, who should be trusted
- 6) Face-to-face conversation is the best form of communication (co-location)
- 7) Working software is the principal measure of progress
- 8) Sustainable development, able to maintain a constant pace
- 9) Continuous attention to technical excellence and good design
- 10) Simplicity—the art of maximizing the amount of work not done—is essential
- 11) Best architectures, requirements, and designs emerge from self-organizing teams
- 12) Regularly, the team reflects on how to become more effective, and adjusts accordingly

* See next slide for summarized version



Agile Principles

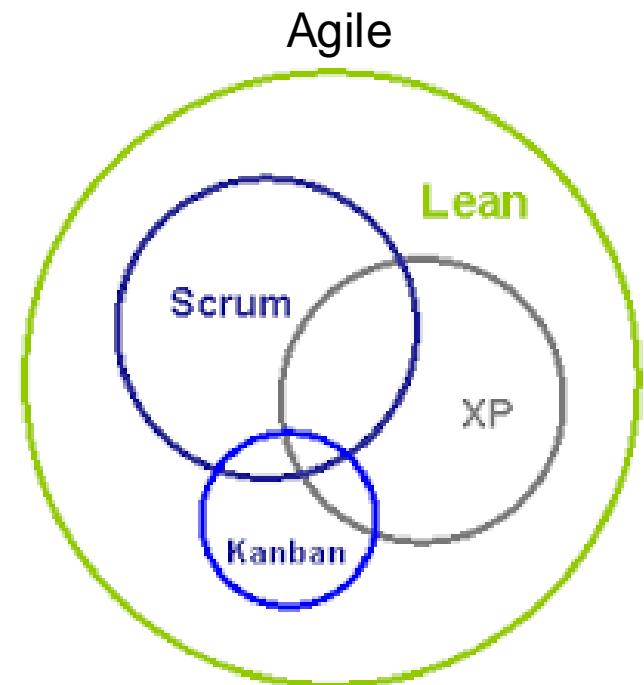
(summarized version)

- **Customer Satisfaction**
 - By fast and frequent delivery of products
 - Welcome changing requirements, even late in development
- **Teamwork**
 - By Face-to-face communication with all people involved
 - Motivate and trust developers
- **Fast Development**
 - Break bigger system into small and manageable components
 - Close monitoring of development
- **High Product Quality**
 - Maintain good design and simplicity
 - Adopt to latest technologies.



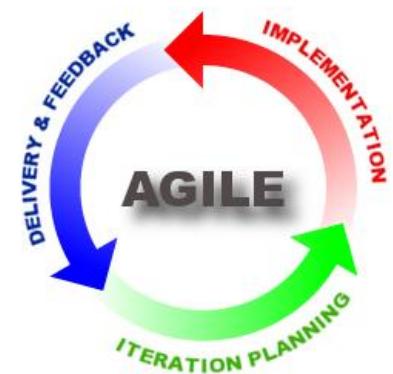
Popular IS Methodologies under adopting to Agile Principles

- Extreme Programming (XP).
 - Scrum Agile Modeling Adaptive Software Development (ASD).
 - Dynamic Systems Development Method (DSDM).
 - Feature Driven Development (FDD).
 - Lean software development.
 - Dialogue-Driven Development (aka d3).
 - Kanban Methods
- *Most of the above Methodologies share most (or all) of the Agile Principles.*



Advantages of Agile Methods

- Customer satisfaction with frequent delivery of working product.
- Gives customers/users ‘power’ to change their mind anytime and send new requirements.
- Gives more ‘control’ to core developers to make decisions
- Emphasize the use of latest design and technologies
- Encourage close communication and teamwork.



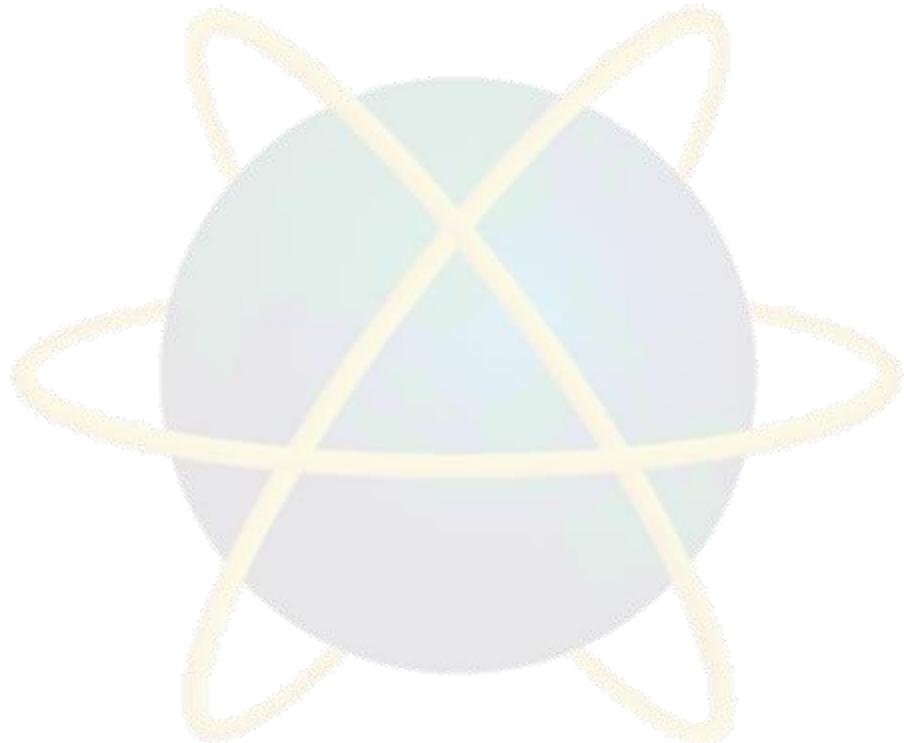
Disadvantages of Agile Methods

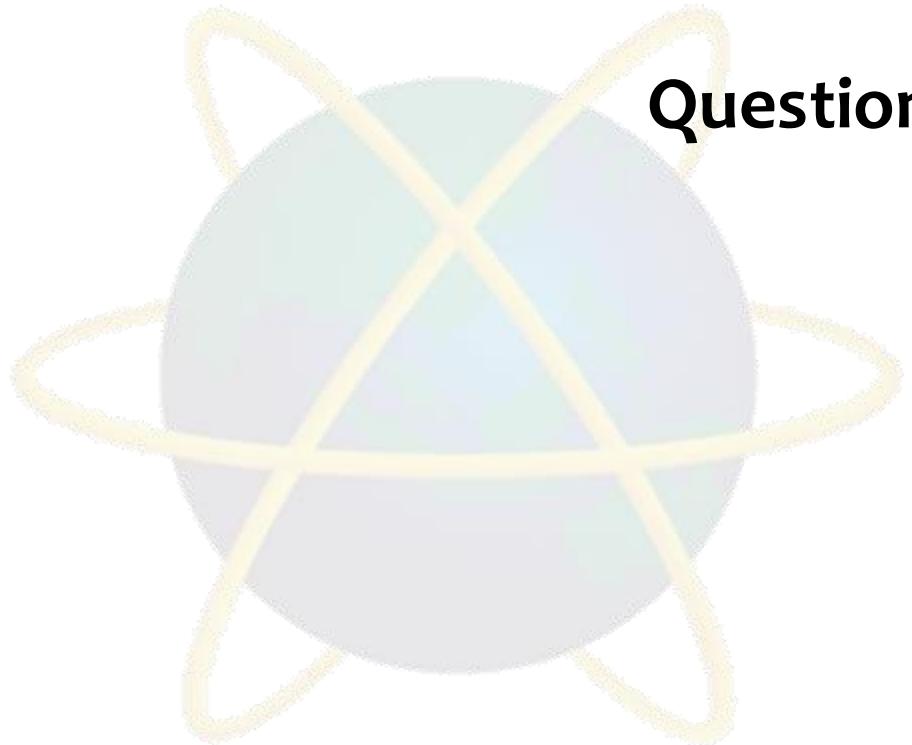
- Users/customers not available at all time.
- Developer - difficult to determine final cost and development time as requirement keep changing
- Developer – difficult to plan and deliver workable product frequently.
- Experts developers and CASE Tools are expensive
- Often lack comprehensive documentation



Quick Quiz

- Briefly explain the following techniques;
 - Iterative and Incremental approach

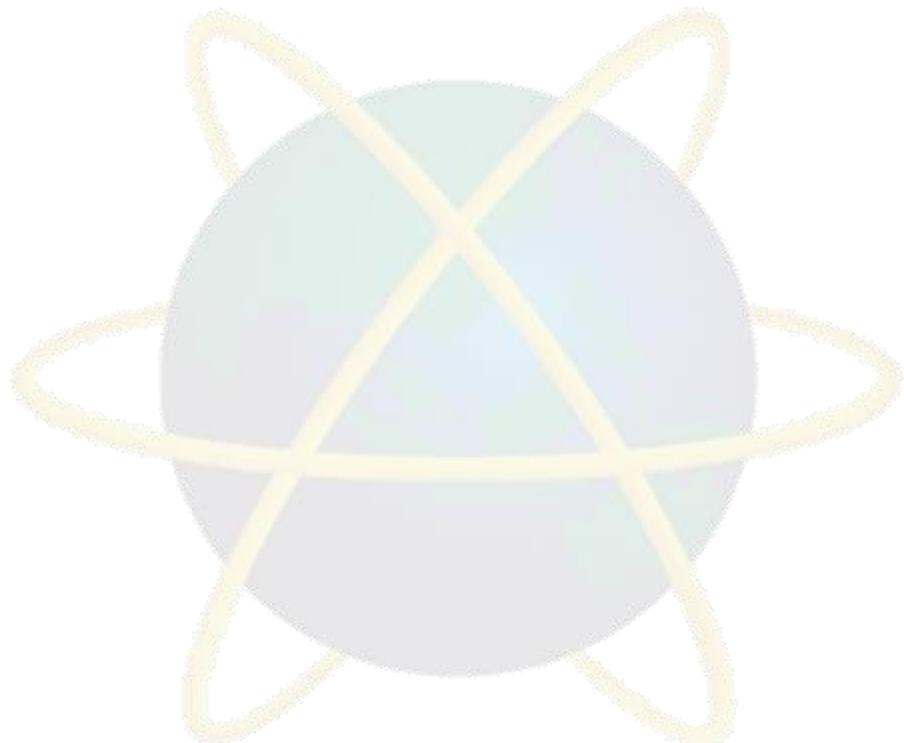




Question & Answer

Next Session

- Process Oriented Methodologies



Tutorial

1. List down and briefly explain the 12 principles of Agile Methods.
2. Compare Traditional methodologies with Agile Principles
3. Give examples of projects where Agile Methods would NOT be suitable to be used (compared to Structured Methods).
4. Discuss the weakness of Agile Methods.

