

CSIT214/CSIT883

IT Project Management



Principles and practices of agile project
management

History

- ❑ In the 1990s, the IT industry faces substantial frustration:
 - Most project followed the waterfall model
 - Big time gap between business requirements and the delivery of software that answered those needs => cancelling many projects.
 - Business environments and requirements quickly changed and the final product did not meet the then current needs.
 - The waterfall model did not take advantage of how quickly software could be altered.

Agile project management

- ❑ In Feb 2001, 17 software development practitioners gathered in Utah, USA.
- ❑ At that meeting, the Agile Manifesto was also created.



Agile project management

- Agile refers to a set of methods and practices under which:
 - Requirements and solutions evolve through the **collaborative effort** of self-organizing cross-functional teams and their customers and users.
 - adaptive planning, evolutionary development, early delivery, and continuous improvement are advocated.
 - Rapid and flexible response to change is encouraged
- Agile methodologies are mostly based on the *values* and *principles* expressed in the Agile Manifesto.

The Agile Manifesto—a statement of values

Individuals and
interactions

over

Process and tools

Working software

over

Comprehensive
documentation

Customer collaboration

over

Contract negotiation

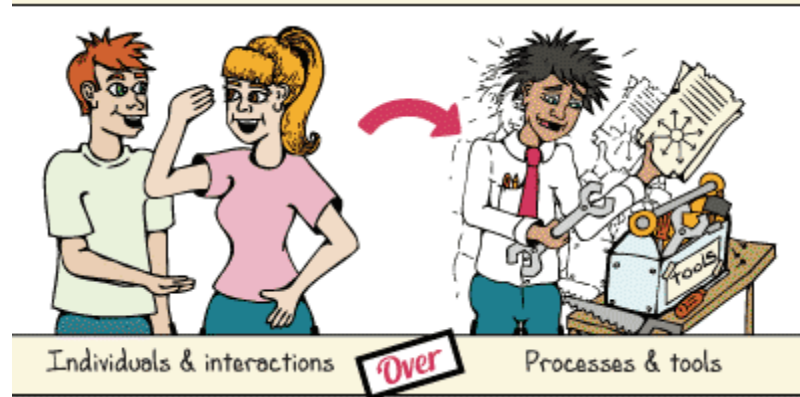
Responding to change

over

Following a plan

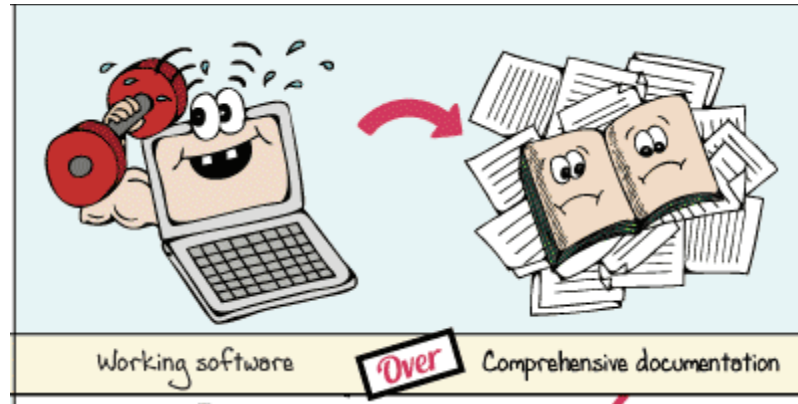
Source: www.agilemanifesto.org

Agile values



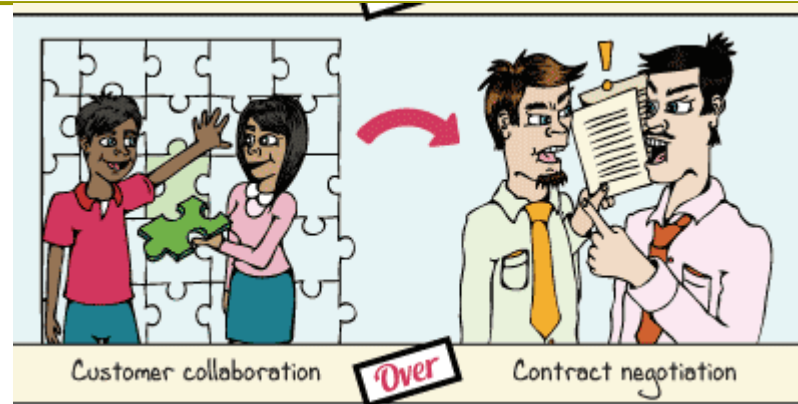
- Individuals and interactions are critical to **high-performing teams**.
 - Question: *What are factors contributing to a high-performance team?*
- Frequent communication and productive interactions between team members is essential.
 - **inspect-and-adapt cycles:** pair programming (every minute), continuous integration (every few hours), stand-up meeting (every day), a review and retrospective meeting (every iteration)
- Tools and processes are still important but they should fit the team's need (not the other way around)

Agile values (cont.)



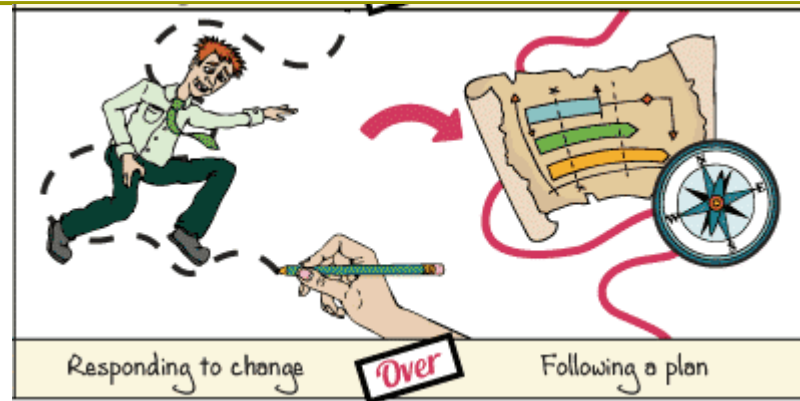
- ❑ Documentation is important but *working software* is even more important!
 - Question: What is a “working software”?
- ❑ Delivering small pieces of *working software* to the customer at regular intervals is essential.

Agile values



- ❑ Customers should be engaged and collaborates with the development throughout the development process.
 - A customer representative should be part of the team.
- ❑ This to ensure that the product meets the business needs of the customer.

Agile values



- ❑ Over 60 percent of product or project requirements change during the development of software.
- ❑ Plans and processes need to be able to accommodate changes and feedback from customers.
 - In order to succeed, we must plan to change

Agile principles

1. The **highest** priority is to satisfy the customer through **early** and **continuous delivery** of valuable software.
2. Welcome **changing requirements**, even late in development. Agile processes harness change for the customer's competitive advantage.
3. Deliver working software **frequently**, from a couple of weeks to a couple of months, with a preference to the **shorter** timescale.

Source: <https://agilemanifesto.org/>

Agile principles (cont.)

4. **Business** people and developers must **work together daily** throughout the project.
5. Build projects around **motivated individuals**. Give them the environment and **support** they need, and **trust** them to get the job done.
6. The most efficient and effective method of conveying information to and within a development team is **face-to-face** conversation.

Agile principles (cont.)

7. **Working software** is the primary measure of progress.
8. Agile processes promote **sustainable development**. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
9. Continuous attention to **technical excellence and good design** enhances agility.

Agile principles (cont.)

- 10. **Simplicity**--the art of maximizing the amount of work not done--is essential.
- 11. The best architectures, requirements, and designs emerge from **self-organizing** teams.
- 12. At regular intervals, the team **reflects** on how to become more effective, then **tunes** and **adjusts** its behaviour accordingly.

Agile management methods

- ❑ Scrum
- ❑ Extreme Programming
- ❑ Dynamic Systems Development Methods
- ❑ Kanban
- ❑ Lean software development
- ❑ Etc.

Exit Quiz

1. Which statement would NOT be a reasonable conclusion regarding the evolution of the Waterfall model?

- A. The Waterfall model is obsolete and no longer relevant today
- B. The Waterfall model added structure and discipline to a development process
- C. The Waterfall model became particularly important as a means of scaling large, complex projects
- D. By providing a way of systematically managing and tracking requirements all the way through the development process to final testing, the Waterfall process provided a way to significantly improve project quality over adhoc, unstructured development processes

2. An important Agile Manifesto value is that processes and tools are not consistent with an Agile approach

- A. True
- B. False

3. Agile development puts an emphasis on creating an environment that is based on empowered teams in order to encourage innovation and creativity

- A. True
- B. False

4. One of the major problems associated with an over-reliance on documentation is that it can inhibit normal communications

- A. True
- B. False

Exit Quiz

5. It is not possible to have a contract with a customer in an Agile environment

- A. True
- B. False

6. It is always very important in an Agile project to define requirements in order to manage customer collaboration

- A. True
- B. False

7. An Agile approach emphasizes creating an environment that is designed to be responsive to changes in order to optimize the value of the product that is ultimately delivered to the customer

- A. True
- B. False

8. An important consideration with all Agile values is that they are intended to be relative statements and not absolutes and it requires judgment to interpret them in the context of the situation

- A. True
- B. False

Exit Quiz

9. Which Agile Manifesto Value would be most relevant to this situation:

A customer has requested a project team to submit a fixed-price bid on a large Request for Proposal (RFP)

- A. Individuals and interactions over processes and tools
- B. Working software over comprehensive documentation
- C. Customer collaboration over contract negotiation
- D. Responding to change over following a plan

10. Which Agile Manifesto Value would be most relevant to this situation:

A customer realized in the middle of a project that what was being built will not really meet his needs and a very different solution is more appropriate; however, the new approach will significantly increase the cost and schedule for completing the effort

- A. Individuals and interactions over processes and tools
- B. Working software over comprehensive documentation
- C. Customer collaboration over contract negotiation
- D. Responding to change over following a plan