

Agile Architecting

Using Agile Principles to Agilitize the Architecting Process

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Motivation

These two guys will be in a constant marketing war for a while.

We don't have to make one look like the other.

However, we can make one learn from the other.

So...

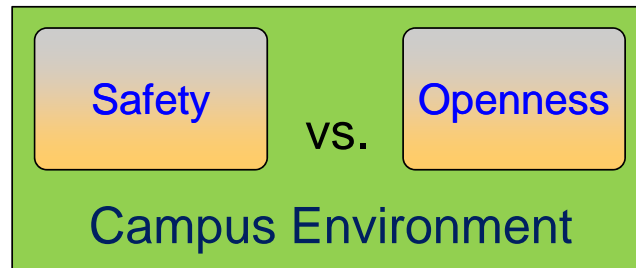
What can architecture learn from Agile?



www.apple.com



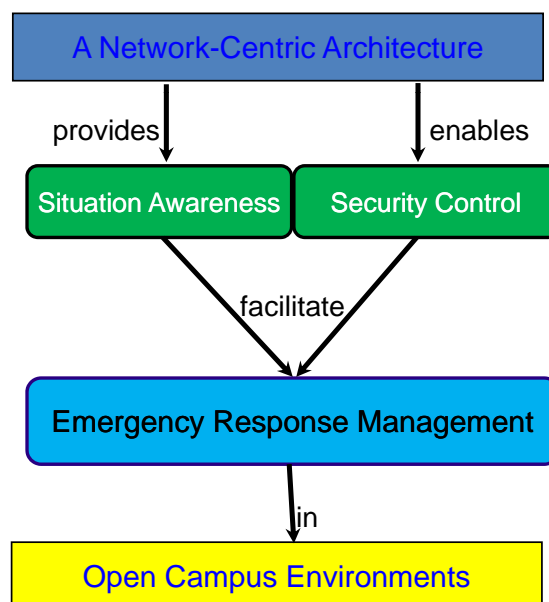
The Project Context



The Issue

Balancing safety and openness on campus environments

Technical Perspective



The Goal



How?
→



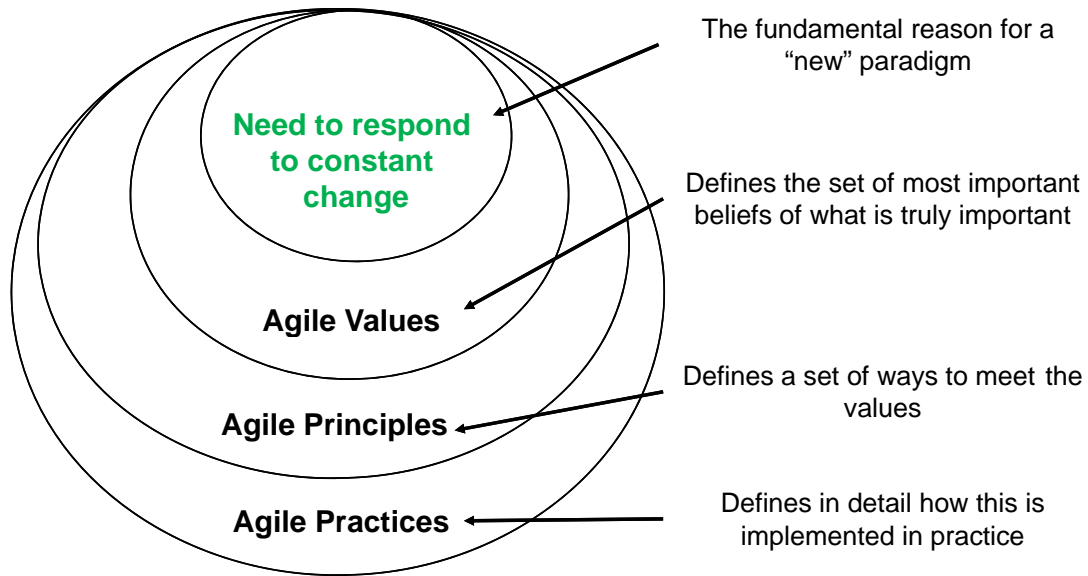
The goal is to make the architecting process agile without changing the process itself.

i.e., agilitize the architecting process.

Agile Manifesto

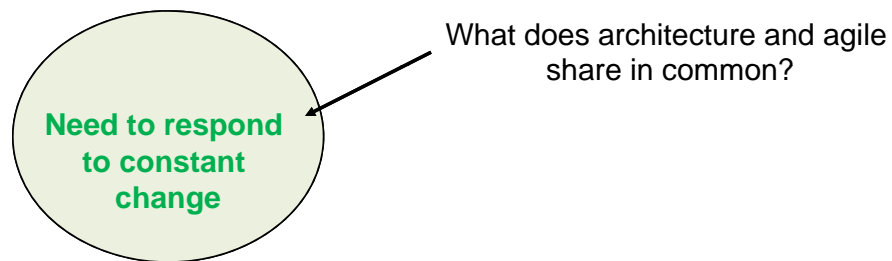
- We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:
 - **Individuals and interactions** over processes and tools
 - **Working software** over comprehensive documentation
 - **Customer collaboration** over contract negotiation
 - **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.

Understanding Agile



Ahmed Sidky, www.dragile.com

Commonality



Question:
Are there agile practices that can be employed at the architecting phase to make the latter more agile?

Four Agile-Like Practices

Quality Scenarios

As a police officer, I want to be able call in an incident on campus with my radio, cell phone, or car computer so to achieve maximum connectivity with the command center.

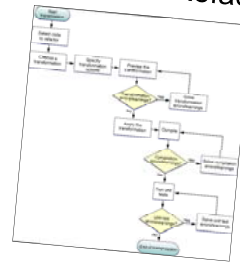
User Stories

As who, I want what so that why.

"The Architecture Wall"



Architectural Refactoring



User Stories

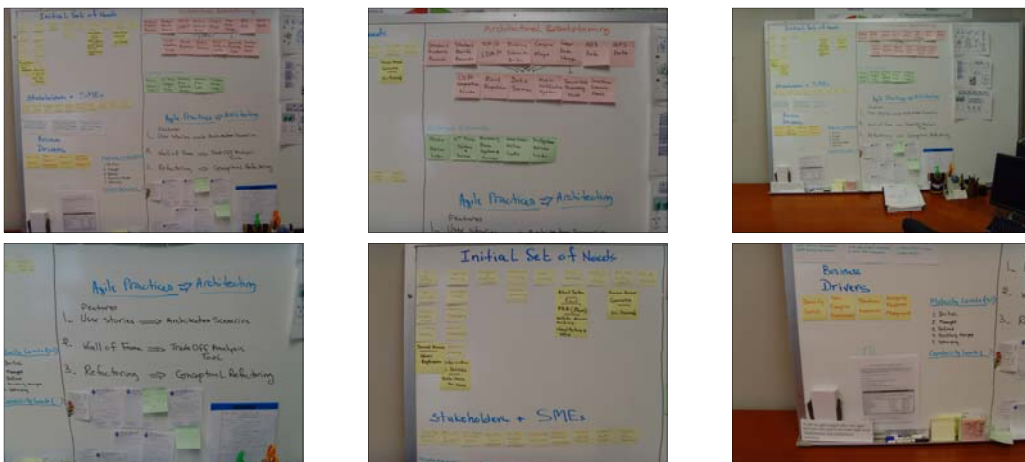
- User stories describe the functional capabilities that the system must provide and are mapped to quality scenarios.
- Scott Ambler
 - User stories are a way to document conversations with a customer (i.e., a stakeholder).
- Mike Cohen
 - As a (role) I want (something) so that (benefit).
- User stories represent a functional requirements artifact.
 - intermediate artifacts between requirements and architecture.

Quality Scenarios

- Quality scenarios describe one or more quality characteristics of the system (e.g., maintainability, interoperability, and usability)
- Quality scenarios represent a quality attribute requirements artifact
 - Intermediate artifacts between quality attribute requirements and architecture.
 - **As a (stakeholder) I want (quality parameters) so to achieve (quality attribute).**

Architecture Wall

The “architecture wall” is the wall and movable whiteboard used to post and organize index cards and post-it notes describing the architecturally relevant capabilities and their corresponding architectural blueprints;



Architectural Refactoring

- Code refactoring is the process of modifying the internal aspect of a program without affecting its external behavior.
- Architectural refactoring refers to the way index cards and post-it notes are shifted around in a structured manner to ensure the integrity of the existing relationships among the user stories, among quality scenarios, and between stories and quality scenarios.

Benefits of Going Agile

- Increased visibility of intermediate work:
 - requirements gathering, quality attribute elicitation, analysis, etc.
- Enhanced communication among architecture owners
 - on going assessment of the architecture
- Change tolerant process
 - emerging requirements easily incorporated

Questions