Agile Architecture
Mindset, Skills, and Practices
Scott Ambler

• Helps enterprise-class organizations around the world to improve their processes and organization structures
• Thought leader of:
  – Agile Modeling (AM) method
  – Agile Data (AD) method
• Co-creator of the Disciplined Agile (DA) framework
• Author of 20+ books
• scott [at] scottambler.com
• Advisory Board, ScaleFree
• Advisor, SEMAT
We’re going to cover a lot of ground
Agenda

• Some initial thoughts
• Initial architectural modeling
• Architecture skills on the team
• Architecture evolution strategies
• Parting Thoughts
Some Initial Thoughts
The Principles of Disciplined Agile

- Be Awesome
- Pragmatism
- Delight Customers
- Context Counts
- Choice is Good
- Optimize Flow
- Enterprise Awareness
A Lifecycle Point of View

Agile Project Team

Inception (Sprint 0)  Construction  Transition (Release Sprint)

Continuous Delivery Team

Construction

Warning: Agile Heresy!!!!!!!

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Exercise #1: Initial Architecture Modeling Strategies

- A strategy has been assigned to your group

- Discuss:
  - Advantages of the strategy (select the 3 most important)
  - Disadvantages of the strategy (select the 3 most important)
  - When to use the strategy (Up to 3 scenarios)

- Capture each idea (advantage, disadvantage, scenario) on a sticky note
Exercise #2: Architecture Skills on the Team

• A strategy has been assigned to your group

• Discuss:
  – Advantages of the strategy (select the 3 most important)
  – Disadvantages of the strategy (select the 3 most important)
  – When to use the strategy (Up to 3 scenarios)

• Capture each idea (advantage, disadvantage, scenario) on a sticky note

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Exercise #3: Evolutionary Architecture Strategies

- A strategy has been assigned to your group

- Discuss:
  - Advantages of the strategy (select the 3 most important)
  - Disadvantages of the strategy (select the 3 most important)
  - When to use the strategy (Up to 3 scenarios)

- Capture each idea (advantage, disadvantage, scenario) on a sticky note
Parting Thoughts
Solution Architecture Principles

Architects should understand why

Look beyond technology

Adopt a multi-view approach

Architecture is driven by requirements

Architectures should be loosely coupled

Architectural elements should be highly cohesive
Mindset for Agile Architecture

Think about the future, but wait to act

Learn early, learn fast

Simplicity first

Build quality in

Model in an agile manner

Be enterprise aware
Goal: Identify Initial Architectural Strategy

Identify a Delivery Strategy
- Extend existing solution(s)
  - Build from scratch
  - Configure a commercial package
  - Extend a commercial package

Select an Architecture Strategy
- Existing proven architecture
  - Multiple candidate architectures
  - Single candidate architecture

Choose the Level of Detail
- High-level overview
  - Executable interface specification
  - Detailed interface specification
  - Detailed specification
  - No models

Explore the Architecture
- Model
  - Discuss
  - Mob Programming
  - Spike
  - Proof of concept (PoC)

Apply Modeling Strategy(ies)
- Agile modeling (informal) sessions
  - “What If” discussions
  - MDD/CASE
  - Joint Application Design (JAD) sessions
  - Interviews

Model Technology Architecture
- Architectural stack diagram
  - Network diagram
    - Threat model
    - UML component diagram
    - UML deployment diagram
    - UML statechart
  - Business process diagram
  - Data flow diagram (DFD)
  - Domain/conceptual model
  - Logical modules diagram
    - UML component diagram

Model Business Architecture
- UI flow/Wireframe diagram
  - UI prototype (high fidelity)
  - UI prototype (low fidelity)

Model User Interface (UI) Architecture
- Collaborate with asset owner(s)
- Reverse engineer models
- Run regression test suite
- Read overview documentation
- Analyze data sources
- Read source code
- Read detailed documentation

Investigate Legacy Assets
Goal: Prove Architecture Early

- Validate the Architecture
  - End-to-end working skeleton
  - Architecture spikes
  - Proof of concept (PoC)
  - Solution bake-off
  - Pilot test the solution

- Review the Architecture
  - Stakeholder demos
  - Informal reviews
  - Formal reviews
Goal: Produce a Potentially Consumable Solution

- Plan Your Work
  - Coordination meetings/Daily standups
  - Iteration/sprint planning
  - Just-in-time (JIT) planning
  - Look-ahead planning/Backlog refinement
  - Release planning/Program increment (PI) planning
  - Visualize plan

- Develop Software
  - Behavior driven development (BDD)
  - Test-driven development (TDD)
  - Test-first development (TFD)
  - Test-after development
  - Testless programming

- Explore Stakeholder Needs
  - Active stakeholder participation/On-site customer
  - Agile Modeling session/Big room planning
  - Behavior driven development (BDD)
  - Detailed requirements specification
  - High-level requirements specification
  - Just-in-time (JIT) model storming
  - Look-ahead modeling/Backlog refinement
  - Split (A/B) testing

- Explore Solution Design
  - Agile Modeling session/Big room planning
  - Architecture spike
  - Detailed design specification
  - JIT model storming
  - Look-ahead modeling/Backlog refinement
  - Mob programming
  - Model-driven development (MDD)
  - Proof-of-concept (PoC)
  - Set-based design
  - Test-driven development (TDD)

- Write Deliverable Documentation
  - Active stakeholder participation
  - Continuous documentation – Same iteration
  - Continuous documentation – Following iteration
  - Document late

- Ensure Consumability
  - Demonstrations
    - Design sprint
    - Regular deployment
  - Usability/consumability design
  - Usability/consumability testing
Thank You!

scott [at] scottambler.com
Twitter: @scottwambler

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Scott Ambler + Associates is the thought leader behind the Disciplined Agile (DA) framework and its application. We are a boutique consulting firm that advises organizations to be more effective applying disciplined agile and lean processes within the context of your business.

Our website is [ScottAmbler.com](http://ScottAmbler.com)

We can help