Scaling Agile Methods for Major Defense Programs: Frameworks and Methods in Use Today
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Agenda

Agile Methods
What Does “Scaling” Mean?
Frameworks Available
Summary
Background

Agile Methods
Agile Manifesto-Source of Agile Concepts

Through this work we have come to value:

- Individuals and interactions
- Processes and tools
- Working software
- Comprehensive documentation
- Customer collaboration
- Contract negotiation
- Responding to change
- Following a plan

Common myth:
The manifesto is often misinterpreted to mean:
- no documentation,
- no process, and
- no plan!

That is, while there is value in the items on the right, we value the items on the left more.

http://www.agilemanifesto.org/
Agile Principles-1

1. Highest priority is satisfy the customer through early and continuous delivery of software.

2. Welcome changing requirements, even late in development…

3. Deliver working software frequently, from a couple of weeks to a couple of months…

4. Business people and developers must work together daily throughout the project.

5. Build projects around motivated individuals. Provide environment and support they need…

6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
Agile Principles – 2

7. Working software is the primary measure of progress.

8. Agile processes promote sustainable development...a constant pace indefinitely.

9. Continuous attention to technical excellence and good design enhances agility.

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 behavior accordingly.

Adapted from http://agilemanifesto.org/principles.html
New Focus

Scaling Agile Methods
A Physical Example

Barlow’s Formula

- Relates the internal pressure that a pipe can withstand to its dimensions and the strength of its material.
- Provides a time-tested basis for designing hydraulic systems that operate under pressure
- Not simply a way to ‘scale-up’ something that works in the small

\[ P = \frac{2St}{D} \]

where

- \( P \) = pressure
- \( S \) = allowable stress
- \( t \) = wall thickness
- \( D \) = outside diameter

[https://en.wikipedia.org/wiki/Barlow%27s_formula](https://en.wikipedia.org/wiki/Barlow%27s_formula)
If only it were that simple…

Software (and System) Engineering is:
- Knowledge-intensive work done by people
- An enabler of unprecedented capability
- Exceedingly difficult to predict…

However, a number of striking similarities are observed among agile scaling methods/frameworks
- Small teams
- Short iterations
- Consistent cadence
- Roles: scrum master, product owner, user
Brief Overview

Frameworks Available
Disciplined Agile Delivery (DAD) -1

www.disciplinedagiledelivery.com
Dynamic Systems Development Method (DSDM)

www.dsdm.org
Large Scale Scrum (LeSS)

Why LeSS Framework?

Supporting Principles:
- Lean Thinking
- Systems Thinking
- Continuous Improvement
- Adoption
- Coaching

Roles and Responsibilities:
- ScrumMaster
- Feature Teams
- Product Owner

Framework Elements:
- Sprints
- Product Backlog
- Daily Scrum
- Sprint Review
- Sprint Retrospective
- Overall Backlog Refinement

Key Areas:
- Feature Teams
- Organization
- Communities
- Structure
- Technical Excellence

Less Works/Img/less-overview-diagram.pdf
Modular Framework for Scaling Scrum

www.scruminc.com/scrum-at-scale-part-1/
Scaled Agile Framework (SAFe)

scaledagileframework.com
Summary
Common Attributes

Each of the scaling frameworks/methods discussed today:

- Embrace lean principles and associated logic
- Espouse strong connection to the agile manifesto
- Compatible with (if not predicated on) scrum at team level
- Offer training and certification to practitioners and consultants
- Address (in one way or another) the work an organization must undertake to make agile work in their setting

- Are not focused *merely* on how to make agile concepts work with larger groups of people.
Differentiators

Methods/frameworks differ from others in the extent to which they:

• provide a ‘default setting’ for things like iteration lengths, role assignments and tools & templates available for use

• describe the end-state or structure of the agile organization

• explicitly call for other parts of the organization (beyond the development team) to address specific roles and responsibilities

• offer selectable options that depend on the engineering discipline involved or magnitude of the product to be fielded
Questions?
Contact Information

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