Keeping Pace

Our methods must keep pace with an increasingly complex world

- Our modern world runs on software. What doesn't now, likely will soon.
- We’ve had Moore’s Law for hardware, and Moore’s Law+ for envisioning what software *could do*
- But our prior development practices – waterfall, RAD, iterative and incremental – haven’t kept pace
- Agile shows the greatest promise, but was developed for small team environments
- We need a new approach – *one that harnesses the power of Agile and Lean* – but applies to the needs of the largest software enterprises
Framework Creator: Dean Leffingwell

Author
- Creator: Scaled Agile Framework
- Agile Enterprise Coach
- To some of the world’s largest enterprises
- Agile Executive Mentor
- BMC, John Deere
- Chief Methodologist
- Rally Software
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- Ping Identity, Roving Planet, Silver Creek Systems, Rally Software

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- Enterprise Adopters
- Community

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The Scaled Agile Framework® (SAFe)

The Scaled Agile Framework is a proven, publicly-facing framework for applying Lean and Agile practices at enterprise scale

- Synchronizes alignment, collaboration and delivery
- Well defined in books and now on the web
- Scales successfully to large numbers of practitioners and teams

**Core values:**
1. Alignment
2. Code Quality
3. Program Execution
4. Transparency

[http://ScaledAgileFramework.com](http://ScaledAgileFramework.com)

**Framework Creator: Dean Leffingwell**

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SAFe Delivers Business Results

**Engagement**

- Significant increase in employee engagement
  - John Deere

**Time to Market**

- Agile teams average 37-50% faster to market
  - QSM research

**Business Results**

- We experienced a 20-50% increase in productivity
  - BMC Case Study

- Our agile programs introduced 50% less defects into production
  - Confidential
### Business Results

**John Deere ISG**
- Field Issue resolution time: down 42%
- Warranty Expense: down 50%
- Time to production: down 20%
- Time to market: 20% faster
- Employee engagement: Up 9.8%

Source: Chad Holdorf, John Deere, Intelligent Systems Group. Dallas, Texas Presentation, Dec 2011

**bmc software**
- More responsive to market changes and customer demands
- Development teams more engaged, empowered
- Productivity up 20-50%.
- Significantly improved Product Management-Development teamwork
- Higher returns, reduced investments in unfinished or unshipped work


**Business Results**

**DISCOUNT TIRE**
- Productivity has increased by at least 20-25%
- Time to market and level of quality has increased dramatically
- Nearly zero defects after each tire store system release
- “No additional headcount and we’re taking on more than we ever have”

Source: Chris Chapman, Director of Product Development, Discount Tire

**March 12, 2012 News Release**

“TradeStation Receives Highest Rating In Barron’s Magazine’s Annual Ranking of Online Brokerage Firms”
- Best Trading Experience and Technology
- Higher star-rating than 23 other offerings leading brokers, including TDAmeritrade, Charles Schwab, Fidelity, E*TRADE…

Source: Keith Black, CTO and VP, Product Development, TradeStation Technologies
Lean Thinking Provides the Tools We Need

The Goal: Value

- Respect for People
- Product Development Flow
- Kaizen

Foundation: Leadership
Goal: Speed, Value, Quality

The Goal: Value
- Respect for People
- Product Development Flow
- Kaizen

Foundation: Leadership

THE GOAL
- Sustainably shortest lead time
- Best quality and value to people and society
- Most customer delight, lowest cost, high morale, safety

Minimize delays, handoffs and non-value added activities
All we are doing is looking at the timeline, from the moment the customer gives us an order to the point where we collect the cash. And we are reducing the time line by reducing the non-value added wastes.

— Taiichi Ohno

We need to figure out a way to deliver software so fast that our customers don’t have time to change their minds.

— Mary Poppendieck

Most software problems will exhibit themselves as a delay.

— Alan Shalloway

Respect for People

The Goal: Value
- Respect for People
- Product Development Flow
- Kaizen

Foundation: Leadership

PEOPLE
- Develop individuals and teams; they build products
- Empower teams to continuously improve
- Build partnerships based on trust and mutual respect

People do all the work
- Your customer is whoever consumes your work
- Don’t trouble your customers
- Don’t force people to do wasteful work
- Don’t overload them
- Don’t make them wait
- Don’t impose wishful thinking
- Equip them with problem-solving tools
- Form long-term relationships based on trust
Kaizen

**The Goal: Value**

- Respect for People
- Product Development Flow
- Kaizen

**Foundation: Leadership**

**BECOME RELENTLESS IN:**

- Reflection
- Continuous improvement as anentreprise value

**“We can do better”**

- Steady, small improvements
- Consider all data, then implement change rapidly
- Reflect at key milestones to identify and improve shortcomings
- Use tools like retrospectives, root cause analysis, and value stream mapping
- Protect the knowledge base by developing stable personnel and careful succession systems

Product Development Flow

**The Goal: Value**

- Respect for People
- Product Development Flow
- Kaizen

**Foundation: Leadership**

Reinertsen, Don. *Principles of Product Development Flow*

**Principles of Product Development Flow**

1. Take an economic view
2. Actively manage queues
3. Understand and exploit variability
4. Reduce batch sizes
5. Apply WIP constraints
6. Control flow under uncertainty: cadence and synchronization
7. Get feedback as fast as possible
8. Decentralize control
Take an Economic View

Base your decisions on economics

- Develop an economic framework for decision making
- Empower local decision making
- Do not consider money already spent
- Understand the full value chain
- Sequence jobs for maximum benefit
- If you only quantify one thing, quantify the cost of delay

Cost of Delay

Reinertsen, Don. Principles of Product Development Flow

Agile Accelerates Value Delivery

WATERFALL

- Requirements
- Design
- Implementation
- Verification

Documents
Documents
Unverified Code
Software

AGILE

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Agile Process Movement

Enterprise Agility

Agile (Adaptive) Processes
Scrum, XP, Lean, Open UP, FDD, Crystal...

Iterative Processes
Spiral, RAD, RUP...

Predictive Process


Make Money Faster

Market value of a feature over time
Agile cumulative gross margins

Waterfall cumulative gross margins
Reduces Risk

- Waterfall
- Agile

Risk vs. Time graph

Deadline

Delivers Better Fit for Purpose

- Waterfall customer dissatisfaction
- Agile (adaptive) plan, result
- Waterfall plan, result

What the customer thought they wanted
Measure of waterfall customer dissatisfaction

What the customer would, in the end, like to have
Agile Teams

- Empowered, self-organizing, self-managing teams with developers, testers, content authority
- Teams deliver valuable, fully-tested software increments every two weeks
- Teams apply Scrum (and Kanban) project management practices and XP technical practices
- Teams operate under program vision, system, architecture and User experience guidance

Scale to the Program Level

- A self-organizing, self-managing team-of-agile-teams committed to continuous value delivery
- Organized around enterprise value streams
- Aligned to a common mission

- Delivers fully tested, system-level solutions every 8-12 weeks
- Common sprint lengths and normalized velocity
- Face-to-face planning cadence provides development collaboration, alignment, synchronization, evaluation
Scale to the Portfolio

- Lean principles emphasize sustainably fastest value delivery
- Portfolio vision guides investments and the enterprise architecture needed to support customer and business needs
- Business epic kanban system provides visibility and work-in-process limits to support continuous product development flow
- Enterprise architecture is a first class citizen; architectural epics are developed and maintained in a kanban system
- Objective metrics support governance and kaizen
### Legacy Approach vs. Lean|Agile Pattern

| Legacy Approach          | Lean|Agile Pattern                                                                 |
|--------------------------|---------------------------------|
| Centralized control      | Decentralized decision-making   |
| Project overload         | Continuous value flow           |
| Detailed project plans   | Lightweight business cases       |
| Centralized annual planning | Decentralized, rolling-wave planning |
| Work Breakdown Structure | Agile estimating and planning    |
| Project-based funding    | Agile Release Trains             |
| Projects and PMBOK       | Self-managing teams and programs|
| Waterfall milestones     | Objective, fact-based measures and milestones |

### Centralized Strategy; Localized Execution

Central Decision Making

Local Decision Making

- One theme drives cross cutting Epics
- Value Stream feedback
- Agile Release Train delivers solutions
Agile Program Portfolio Management

Agile Program Portfolio Management fulfills key responsibilities

- Decentralized decision-making
- Continuous value flow
- Lightweight business cases
- Decentralized, rolling-wave planning

- Objective, fact-based measures and milestones

Summary – SAFe Core Values

SAFe Scrum

1. Alignment
   - Sprint and PSI/Program objectives
   - Aligned sprints and velocities
   - Program architecture and UX Guidance, governance
   - Lean prioritization

2. Code Quality
   - Test First: TDD and ATDD
   - Continuous integration: component and system
   - Test automation
   - Fortnightly system demonstration
Summary – SAFe Core Values

3. Program Execution
- Economic prioritization
- Frequent, evaluable, quality deliveries
- Fast customer feedback
- Fixed, reliable cadence
- Fast tracking to actual needs

4. Transparency
- All backlogs and progress visible to all stakeholders
- Objective reporting based on working code
- Everyone understands capacity, velocity, WIP

Go the Way
Lean|Agile Leadership
Foundation: Leadership

Leadership is the foundation

- Management understands and teaches lean and agile behaviors
- Management is trained in practices and tools of continuous improvement
- Management takes responsibility for Lean|Agile success
- Management teaches employees problem solving and corrective action
- Managers are expected to see with their own eyes
- Managers develop people. People develop solutions.

Lean-Thinking Manager-
Teachers

- Management is trained in lean thinking
- Bases decisions on this long term philosophy

Inspire, Inform, Educate

Inspire: Expect and challenge management to lead, not follow the Lean|Agile Transformation

Inform

- Form and support a Lean|Agile working group
- Include management
- Create and work the transformation backlog
- Implement continuous communication plan

Educate

- Lean|Agile leadership trainings and workshops
- Scaled Agile Framework Training and Certification
- Lunch and learns:
  - *Principles of Product Development Flow*, Reinertsen
  - *Agile Software Requirements*, Leffingwell
  - *Lean Software Development*, Poppendieck
Conclusion

- The foundation of Lean is *leadership*
- The foundation of SAFe is *you*
Next Steps

- Browse the framework at scaledagileframework.com
- Read *Agile Software Requirements*
- Get training, certification, courseware and implementation tools through Scaled Agile Academy
- Start/accelerate your Lean|Agile transformation now
- Implement your first Agile Release Train