Complexity is the Enemy!

How Agile Practices Allow Us to Operate in a VUCA World

Mathias Eifert
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- Agile and Executive Coach at Excella
- CSP-SM, CSP-PO, CAL 1, KMP, CLP, ICP-ATF/ACC
- Applied Lean & Agile principles for 20 years
  - Process Improvement
  - BA / Software Developer / Solution Architect
  - ScrumMaster / Lean-Agile Coach
- @mathiase | @excellaco | #TriAgile2019
- Mathias.Eifert@excella.com
WHY...?
VUCA
It’s messy out there…

**V U C A**

- **LOW VOLATILITY**
  - Illustration: Wavy line

- **LOW UNCERTAINTY**
  - Illustration: Straight line

- **LOW COMPLEXITY**
  - Illustration: Connected dots

- **LOW AMBIGUITY**
  - Illustration: Regular polygon

- **HIGH VOLATILITY**
  - Illustration: More wavy lines

- **HIGH UNCERTAINTY**
  - Illustration: Triangular shape with dashed lines

- **HIGH COMPLEXITY**
  - Illustration: More complex network of dots

- **HIGH AMBIGUITY**
  - Illustration: Blurry polygon

Illustration based on Jeroen Kraaijenbrink
Predictability Matters
Planning & Analysis

Predictable

More = Better Results

Unpredictable

Diminishing Returns
Management Focus

Predictable

• Procedures
• Efficiency

Unpredictable

• Outcomes
• Alignment
Expected Outcomes

Predictable

Fail-Safe

Safe-To-Fail

Unpredictable
Resilience
Framing / Scoping Drive Context

Case Study: Point-of-Sale System

- Technology upgrade ➔ Obvious
- Future-proofing ➔ Complicated
- Open ended innovation questions ➔ Complex
- Resistance to protect mission-critical functionality ➔ Chaotic
Falling Over the Cliff: 

healthcare.gov

- High complexity: policy, organizational, technical
- Plan-driven management with extensive upfront specification
- Lack of unified leadership and visibility
- Plan not updated to reflect reality
- Testing revealed scale of problems too late
Unawareness results in default behavior
Complexity is the enemy...

... and so is oversimplification!
Probe-Sense-Respond
≈
Inspect and Adapt
#1 Feedback Loops
#2 Sprint/Kanban Commitments

- Complex
- Complicated
- Chaotic
- Simple
Sprint/Kanban Commitments

Complex

Complicated

Chaotic

Simple
Small Chunks of Work
#4 Decomposition
Plan-Driven Decomposition

Problem

Solution

Based on a whiteboard sketch by Bas Vodde
Plan-Driven Decomposition

Based on a whiteboard sketch by Bas Vodde

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Agile Decomposition

Problem

Solution

Based on a whiteboard sketch by Bas Vodde
#5 Planning Poker
#6 Agile Teams

Small :: Cross-functional :: Empowered
Dependencies amplify
• Complexity
• Uncertainty
• Volatility

#7 Evolutionary Architectures & Refactoring
“First make it easy to change, then make the easy change”

Kent Beck
#8 Test Automation
#9 Infrastructure As Code
AGILE doesn’t have a BRAIN

Bill Scott
Manifesto for Agile Software Development

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.

http://agilemanifesto.org/
Closing the Value Loop

Agile Delivery & DevOps
Closing the Value Loop

Measure Impact

Lean Discovery/HDD ➔ Agile Delivery & DevOps
Isolating Complexity

Problem

Subproblem A

Solution
Isolating Complexity

Problem

Subproblem A

Subproblem B

Solution
Key Points

- VUCA = Unpredictability
- Decompose problems into smaller problems
- Agile practices manage or contain complexity
- Complexity is the enemy... but also the source of innovation!