



DevOps for Defense

July 2018

Agile Deep Dive

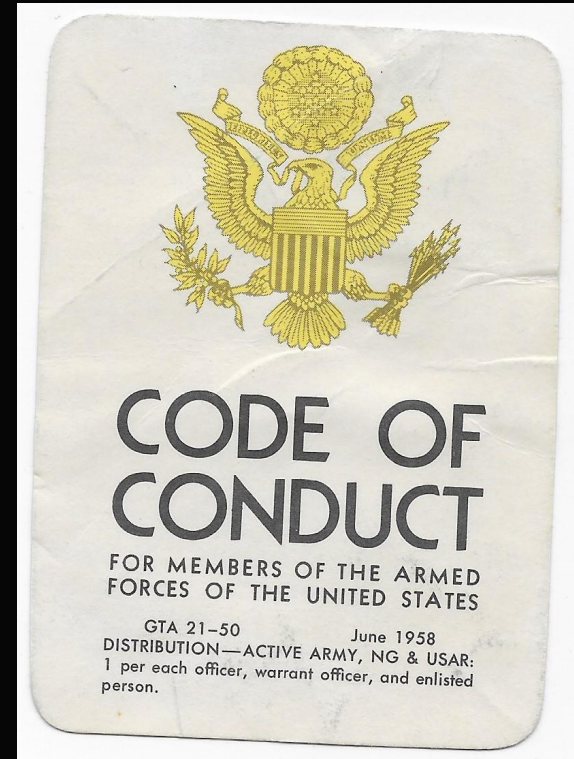
JD Black

Session 1: The Backstory

<https://www.meetup.com/DevOps-for-Defense/>
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DevOps for Defense Meetup: Code of Conduct

- UNCLASSIFIED ONLY!!!!
- Treat each other with respect and professionalism.
- Do not talk about private, sensitive, or proprietary work.
- Do talk about your experiences, needs, desires to improve work in our domain.
- Do share your thoughts.
- Do learn from others.
- Do respect & tip your bartenders!



Agile?

Is the defense industry

ready to embrace this

17 Year Old, Widely Proven
~~new, immature~~ way of

developing large,

complex systems?



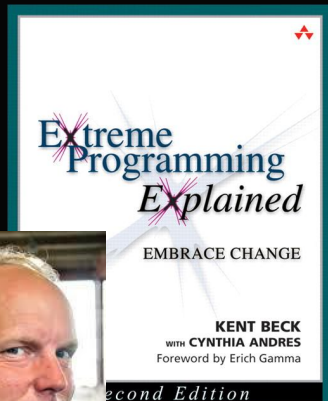
Decades of Faulty Assumptions

Software Engineering was originally established upon principles of Civil Engineering.

- 1) Understand Customer Requirements
- 2) Establish Initial Architecture / Design & Solicit Customer Feedback
- 3) Develop Detailed Blueprints
- 4) Validate With Other Disciplines (Structural Engineers, Electrical Engineers, etc.)
- 5) Create Detailed Construction Specifications
- 6) Hire a Construction Company & Closely Oversee Everything as it is Built
- 7) Statute & Construction Code Certification
- 8) Hold the Ribbon Cutting Ceremony





Then...




Scrum history

- **Jeff Sutherland** created the first Scrum team in **1993** at Easel Corporation
- In **1995**, Jeff introduced the Scrum to **Ken Schwaber**
- First formalized the Scrum at OOPSLA'95
- In 2011 Scrum is used in over 75% of Agile implementations worldwide [1]



Jeff Sutherland Ken Schwaber

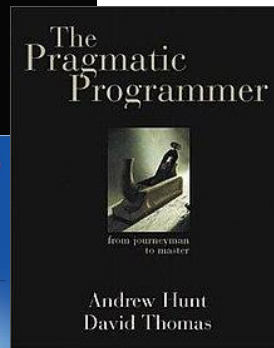
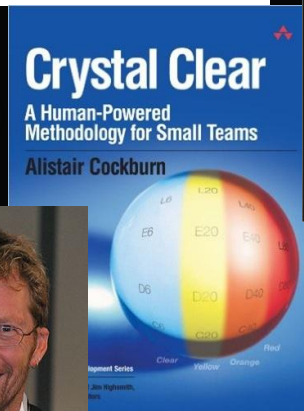
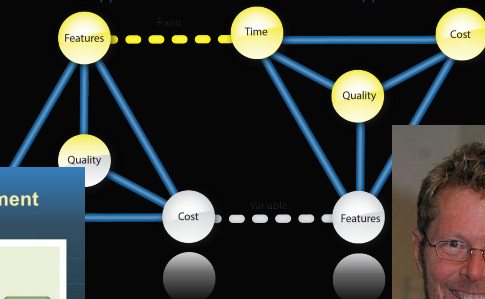
[1] "The Scrum Papers: Nut, Bolts, and Origins of an Agile Framework", Jeff Sutherland
Pictures by www.scrum-events.de
Page 19 - "IT project management and Scrum: Agile Paradigms"




Second Edition

Traditional Approach


DSDM Approach



Lean Basics - History



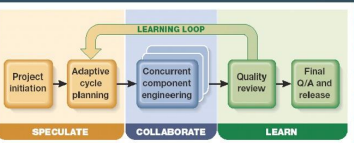
Taiichi Ohno (February 29, 1912 – May 28, 1990)
He was a Japanese businessman.
He is considered to be the father of the Toyota Production System.
He wrote several books about the system, including Toyota Production System



www.ignite2shine.com

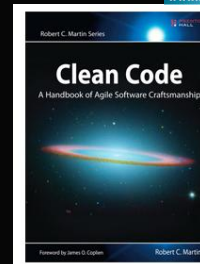
QUALITY STEPS INFO

Adaptive Software Development



- Short iterations
- Deliverable-centric instead of task-centric

100109



"Organizational Anarchists"



"I personally didn't expect that this particular group of agilites to ever agree on anything substantive. Speaking for myself, I am delighted by the final phrasing [of the Manifesto]. I was surprised that the others appeared equally delighted by the final phrasing. So we did agree on something substantive."

- Alistair Cockburn

The Agile Alliance was established later in 2001 to promote the core values of Agile Development.

The 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.

The Initial Defense Industry Reactions



“Agile is the hottest new thing, so we’re doing it...and we’ll be successful...because I’ll work you harder than ever before to make it happen.”

- The Other Defense PMs

“We could never do something like Agile. Agile throws away decades of successful system development best practices. Agile is just the wild wild west full of cowboy coders.”

- Almost Every Defense PM



So for years the defense industry...

(based on my experience)

Maintains the status quo

Avoids disruption

Strengthens centralized control

Wields contracts like weapons

Adopts little things when comfortable...claim to be agile when needed / pressured



Except for a few special unicorns...

Internal investment projects

Small, short duration programs

When we have to compete with commercial industry for engineers

When the customer mandates Agile contractually

Then the Wake Up Call Hit...

National Defense Authorization Act - Dec 2017

<https://www.congress.gov/bill/115th-congress/house-bill/2810/text>

SEC. 873. Pilot Program to Use Agile or Iterative Development Methods to Tailor Major Software-Intensive Warfighting Systems and Defense Business Systems.

Not later than 60 days after selecting a system for the pilot program under subsection (a)(3), the **Secretary shall develop a plan for realigning the system by breaking down the system into smaller increments using agile or iterative development methods.** The realignment plan shall include a revised cost estimate that is lower than the cost estimate for the system that was current as of the date of the enactment of this Act.



Each increment for a realigned system shall:

- (A) be designed to **deliver a meaningfully useful capability within the first 180 days** following realignment;
- (B) be designed to **deliver subsequent meaningfully useful capabilities** in time periods of less than 180 days;
- (C) **incorporate multidisciplinary teams** focused on software production that prioritize user needs and control of total cost of ownership;
- (D) be staffed with **highly qualified technically trained staff and personnel** with management and business process expertise in leadership positions to support requirements modification, acquisition strategy, and program decision making;
- (E) ensure that the **acquisition strategy for the realigned system** is broad enough to allow for proposals of a service, system, modified business practice, configuration of personnel, or combination thereof for implementing the strategy;
- (F) include **periodic engagement with the user community**, as well as representation by the user community in program management and software production activity;
- (G) ensure that the acquisition strategy for the realigned system **favours outcomes-based requirements definition and capability as a service**, including the establishment of technical evaluation criteria as outcomes to be used to negotiate service-level agreements with vendors; and
- (H) consider **options for termination of the relationship with any vendor unable or unwilling** to offer terms that meet the requirements of this section.

Today...

We must learn.

We must educate others.

We must think differently.

We must work differently.

We must redefine value.

We must optimize for speed.

We must embrace change.

We must embrace diversity.

We must experiment and measure.

We must embody professionalism and discipline.

...and fast!

Group Exercise: Lean Coffee

1. Each table has a facilitator.
2. The facilitator has a short introduction to an aspect of continuous experimentation and improvement.
3. Everyone write down questions on the subject. Place them in the middle of the table.
4. The group votes on questions by placing a dot on the card. 3 votes per person.
5. Question with most dots goes first. Set a timer for 5 minutes and discuss.
6. After 5 minutes, either vote (thumbs up/down) to keep going or move on to the next question.



Agenda: Finish with a Lean Coffee (with a twist)

1. What is “Agile Discipline” in the defense industry?
2. What single Agile change would be most beneficial?
3. What is our first Agile success?
4. What is “value”?



DevOps Resources

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Books / Publications:

- The Phoenix Project
- The DevOps Handbook
- Continuous Delivery
- Lean Enterprise
- Lean Startup
- The State of DevOps Report
- Turn This Ship Around!

Conference Presentations (YouTube):

- DevOps Enterprise Summit (DOES)
- Velocity
- GoTo

