Adapting Agile to the Defense Acquisition Framework

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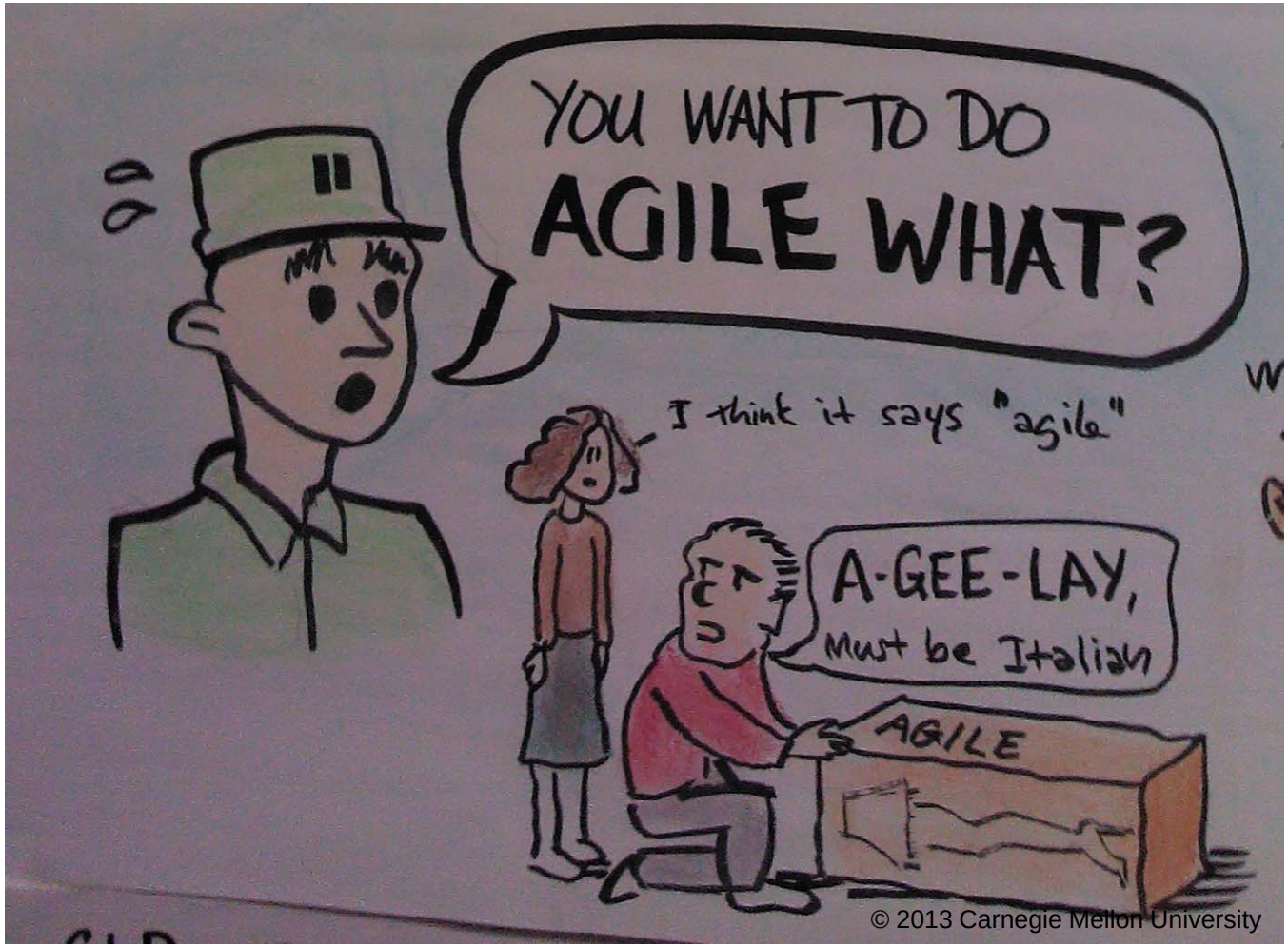
Agile??



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Agenda

The Problem

Setting the context

Our Journey

Solving the problem

Differences Between Traditional and Agile Methods

Comparing cultural elements

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Who's My Audience?

Please identify yourself as one of the following:

- DoD Program Office
- Federal Program Office (non-DoD)
- Contractor – Federal or DoD
- Commercial
- Consultant for tools/process
- Other

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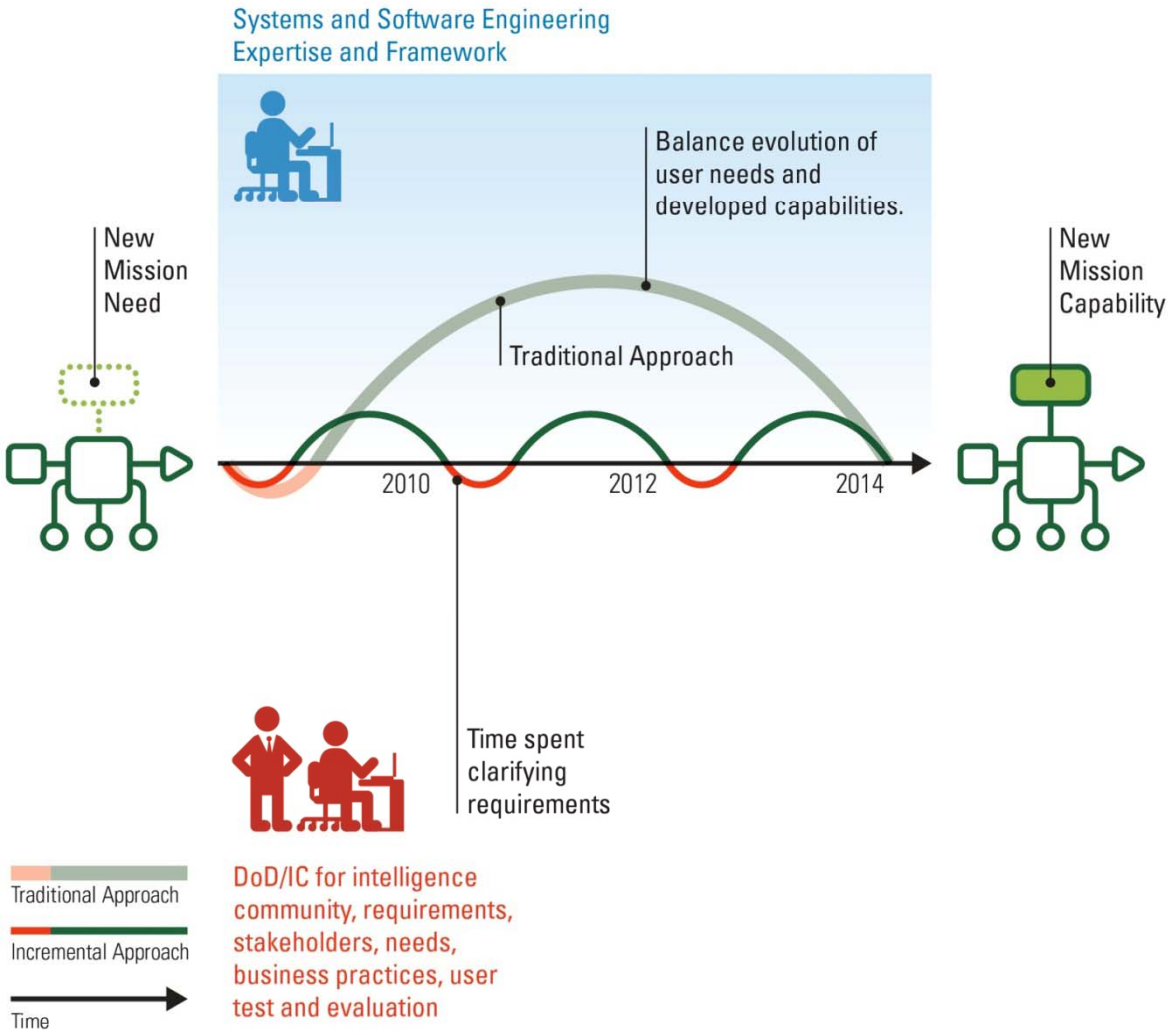
Acquisition and Innovation



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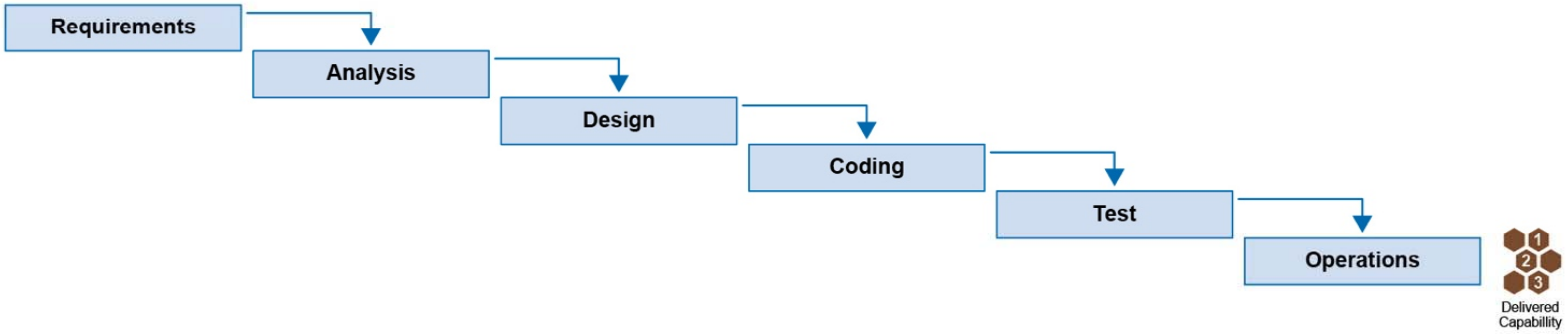
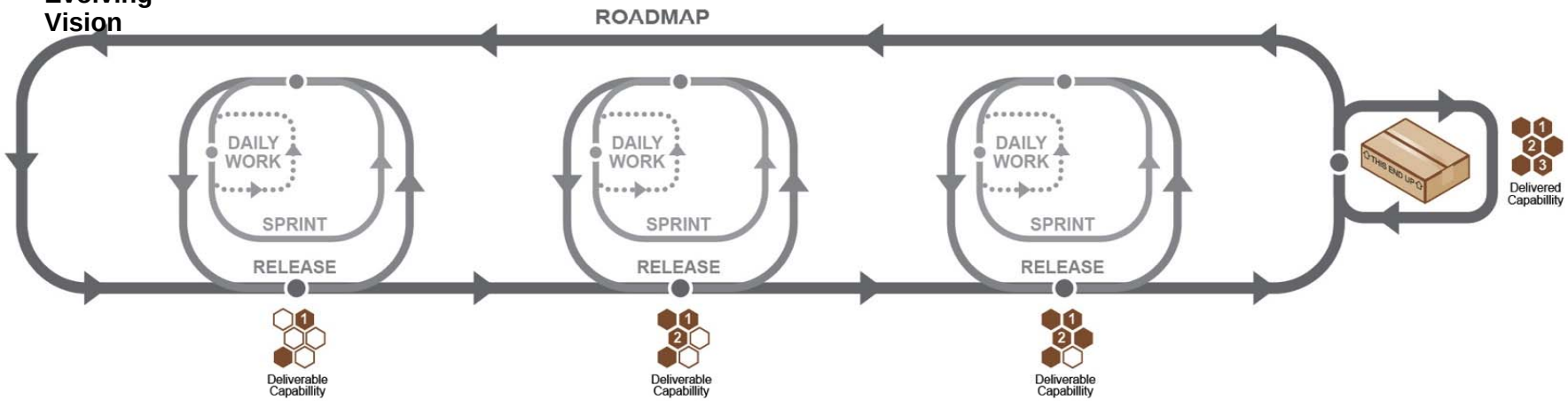
Alternate Worlds

Fixed Vision



Evolving Vision



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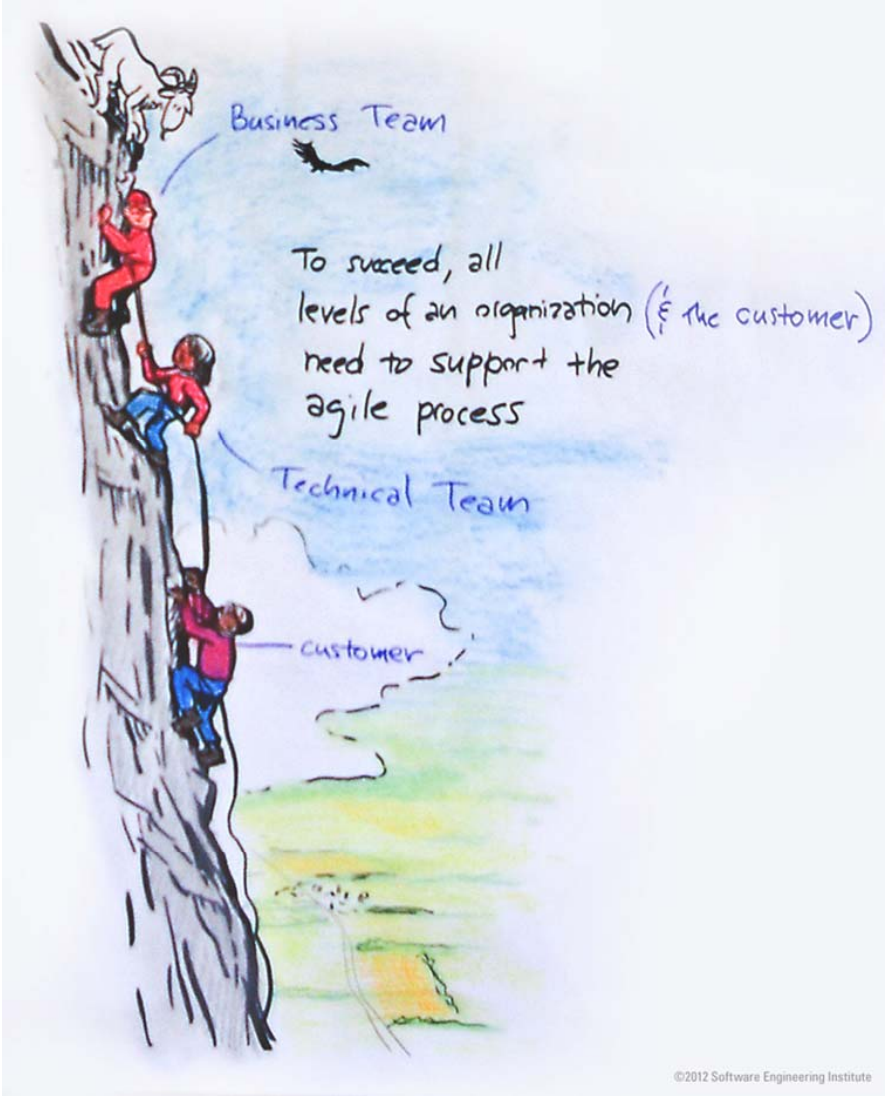
Agile Emphasizes Cross Team Collaboration



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Agile is NOT a Silver Bullet

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What is different about lean/agile methods from basic incremental delivery?

Traditional Incremental Delivery	Agile Methods
Developer-Acquirer relationship at arm's length	Develop-Acquirer-End User collaboration
Hierarchical, command-and-control based teams	Collocated teams or strong communication mechanisms when teams are distributed
Leader as keeper of the vision and primary source of authority to act	Facilitative leadership and leader as champion and team advocate
Traditional, representational documents used by PMO to oversee the progress of the developer	"Just enough" documentation, highly dependent on product context
Lifecycle model with separate teams, particularly for development and test; some IPTs to involve multiple functions	Cross-functional teams including all roles across the lifecycle throughout the lifespan of the project

http://www.sei.cmu.edu/library/abstracts/reports/11tn002.cfm?DCSext.abstractsource=SearchResults

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If Using Agile…

How Big a Challenge is Your Adoption of Agile Practices?

- large, we need a culture change
- medium, we are running into issues
- small, we are mostly ready
- no challenge at all

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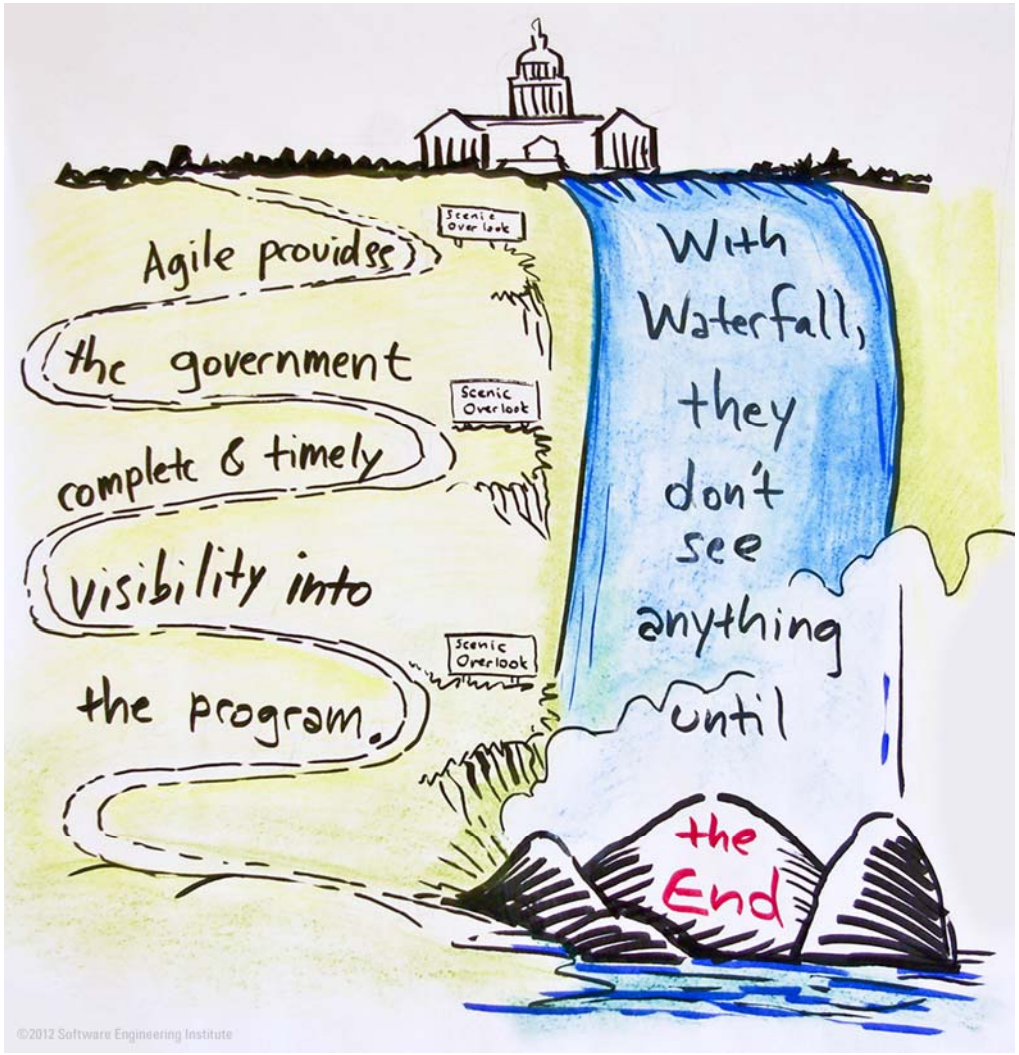

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Comparison of Agile and Traditional DoD Cultural Elements[1]

Knowledge Piece	Method	
Organizational Structure	**Agile DoD** • Flexible and adaptive structures • Self-organizing teams • Collocated teams or strong communication mechanisms when teams are distributed	**Traditional DoD** • Formal structures that are difficult to change • Hierarchical, command-and-control-based teams • Integrated product teams that have formal responsibilities
Leadership Style	**Agile DoD** • Facilitative leadership • Leader as champion and team advocate	**Traditional DoD** • Leader as keeper of vision • Leader as primary source of authority to act

http://www.sei.cmu.edu/library/abstracts/reports/11tn002.cfm?DCSext.abstractsource=SearchResults

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Comparison of Agile and Traditional DoD Cultural Elements$_2$

Knowledge Piece	Method	
Rewards System	**Agile DoD** • Team is focus of reward systems • Sometimes team itself recognizes individuals	**Traditional DoD** • Individual is focus of the reward system
Staffing Model	**Agile DoD** • Cross-functional teams including all roles across the life cycle throughout the lifespan of the project • Includes an Agile advocate or coach who explicitly attends to the team's process	**Traditional DoD** • Uses traditional life-cycle model with separate teams, particularly for development and testing • Different roles are active at different defined points in the life cycle and are not substantively involved except at those times

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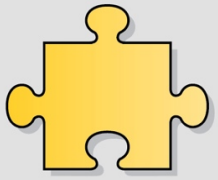
Comparison of Agile and Traditional DoD Cultural Elements[3]

Knowledge Piece	Method	
	Agile DoD	**Traditional DoD**
Communications & Decision Making 	• Daily stand-up meetings • Frequent retrospectives to improve practices • Information radiators to communicate critical project information • Evocative documents to feed conversation • "Just enough" documentation, highly dependent on product context	• Top-down communication structures dominate • External regulations, policies and procedures drive the focus of work • Indirect communications, like documented activities and processes, dominate over face-to-face dialogue • Traditional, representational documents used by the PMO throughout the development life cycle to oversee the progress of the developer • PMO oversight tools focused on demonstrating compliance vs. achieving insight into progress

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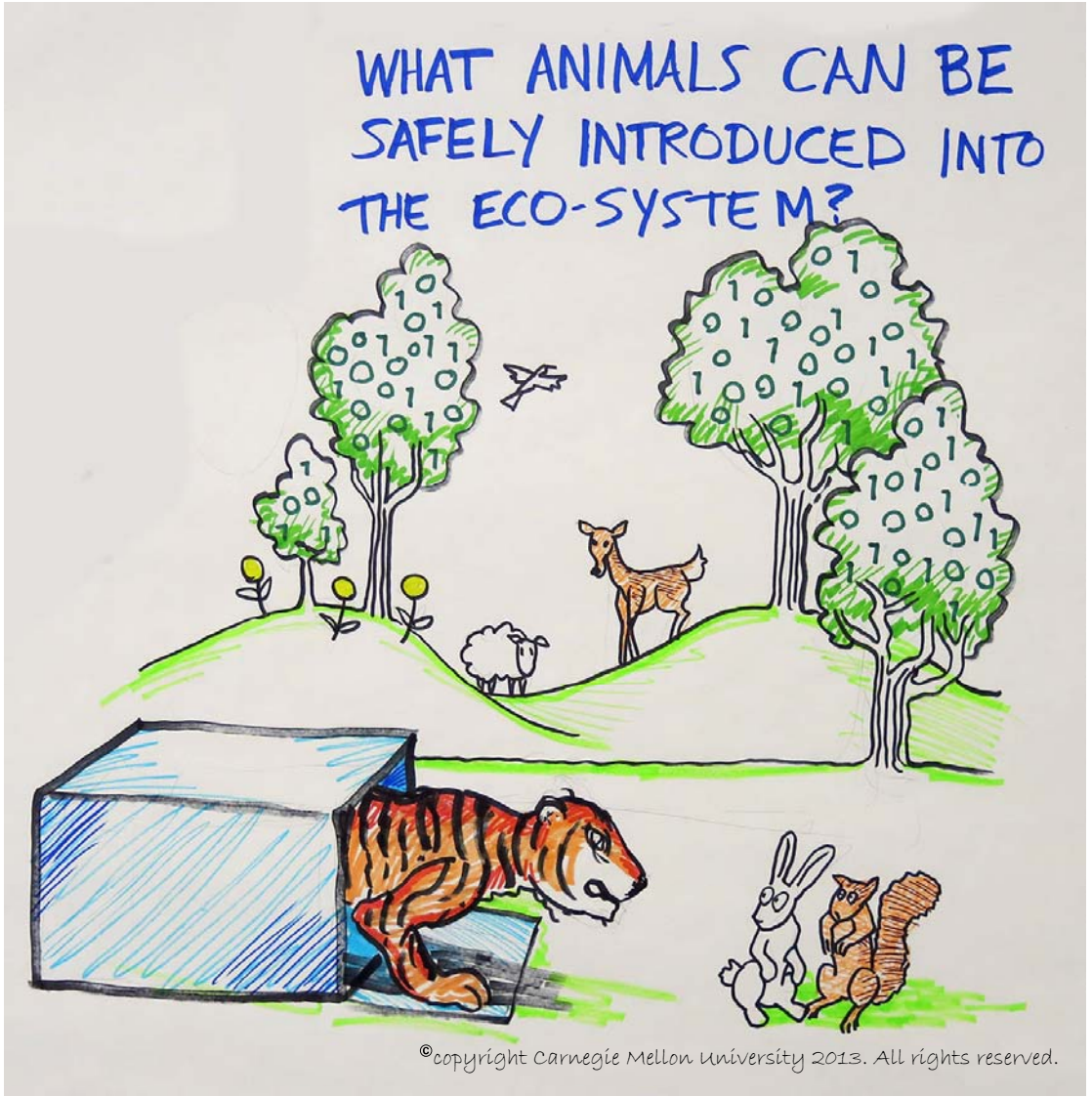
Fragility of a New Agile Eco-system



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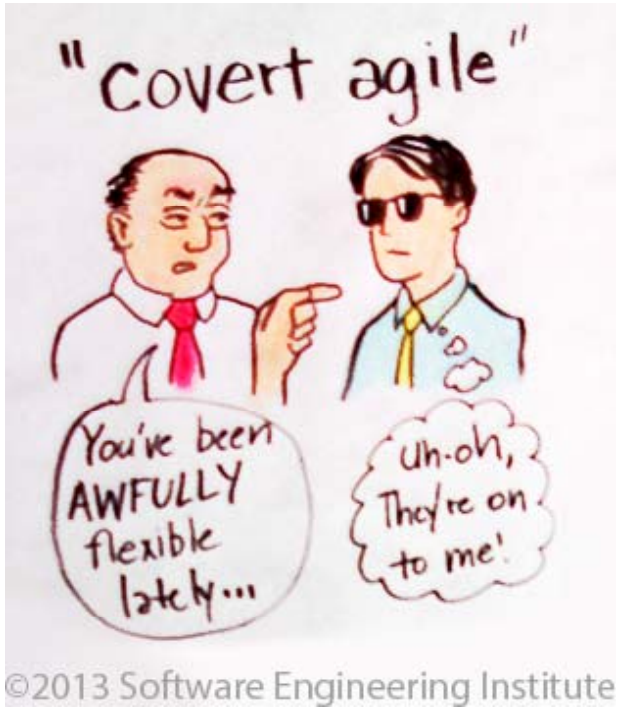
2008 – 2013 Agile Adoption in Defense



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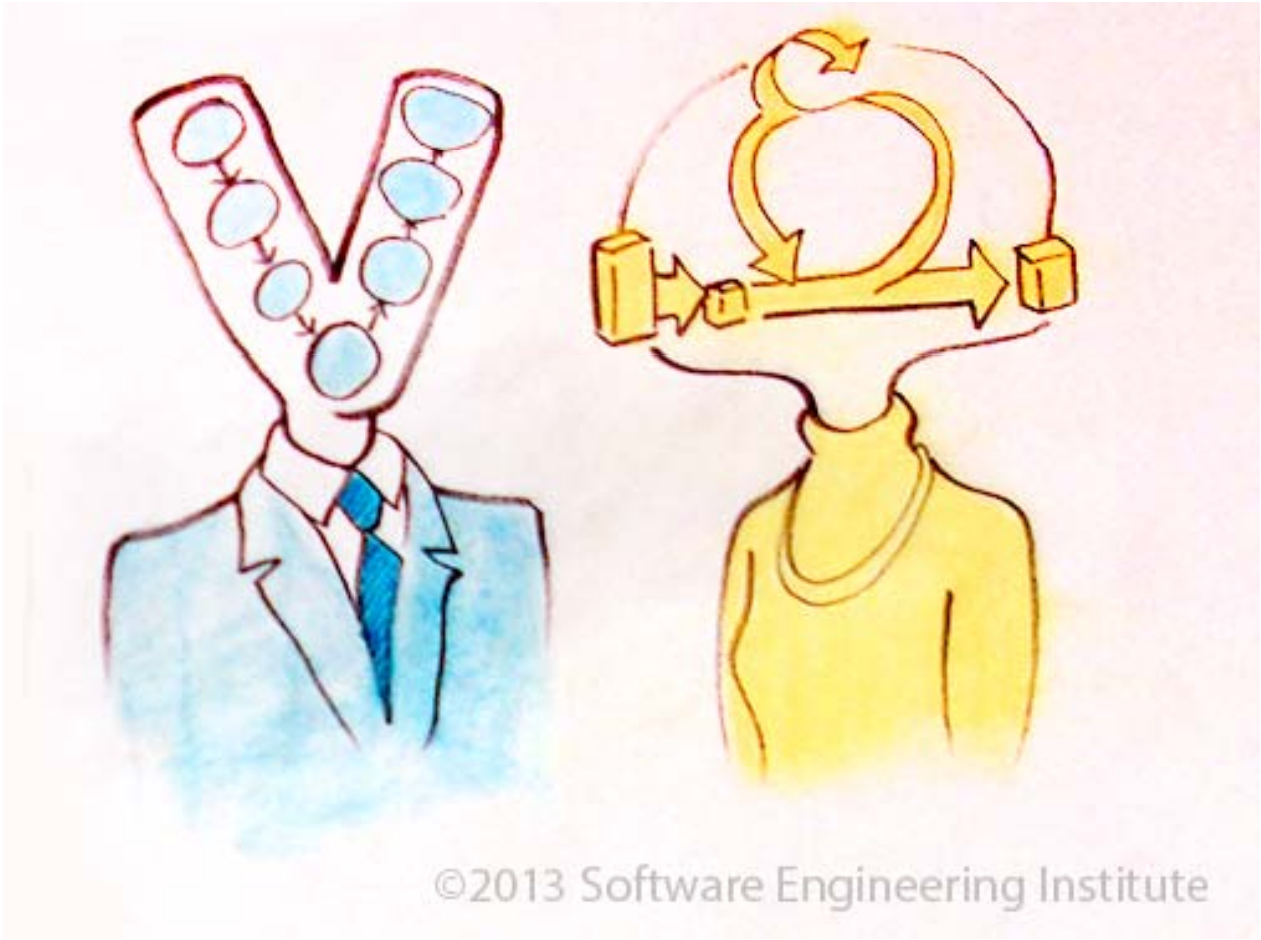
Agile and Systems Engineering?



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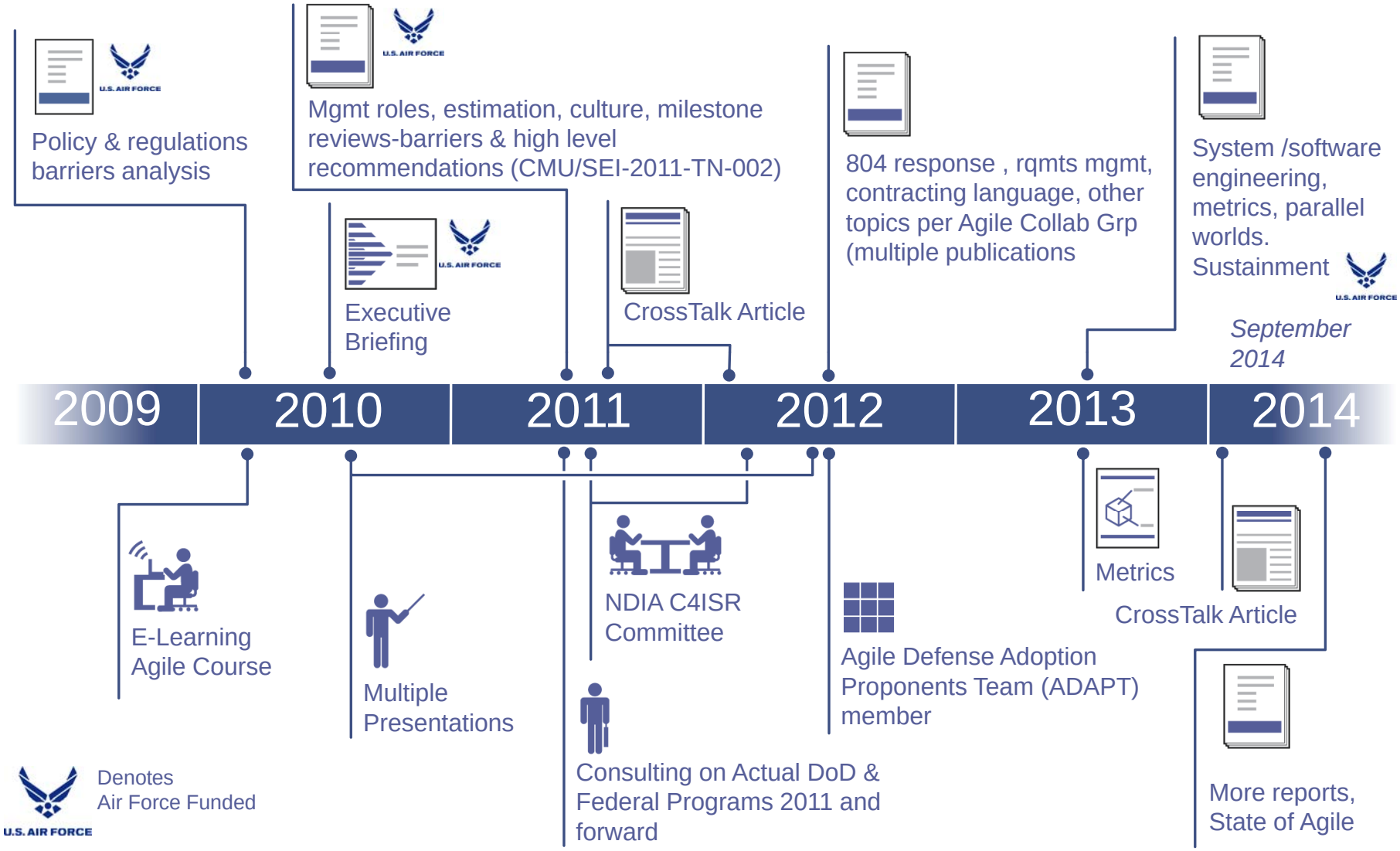
SEI ASP Agile Portfolio FY10 -14 (Our Journey)



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SEI Agile Work – Published$_1$

Considerations for Using Agile in DoD Acquisition
http://www.sei.cmu.edu/library/abstracts/reports/10tn002.cfm?DCSext.abstractsource=SearchResults

Agile Methods: Selected DoD Management and Acquisition Concerns
http://www.sei.cmu.edu/library/abstracts/reports/11tn002.cfm?DCSext.abstractsource=SearchResults

A Closer Look at 804: A Summary of Considerations for DoD Program Managers
http://www.sei.cmu.edu/library/abstracts/reports/11sr015.cfm?DCSext.abstractsource=SearchResults

DoD Agile Adoption: Necessary Considerations, Concerns, and Changes
http://www.crosstalkonline.org/issues/janfeb-2012.html

DoD Information Assurance and Agile: Challenges and Recommendations Gathered Through Interviews with Agile Program Managers and DoD Accreditation Reviewers

http://www.sei.cmu.edu/library/abstracts/reports/12tn024.cfm?DCSext.abstractsource=SearchResults

Documenting Software Architectures in an Agile World

http://www.sei.cmu.edu/library/abstracts/reports/03tn023.cfm?DCSext.abstractsource=SearchResults

Integrating Software-Architecture-Centric Methods into Extreme Programming (XP)

http://www.sei.cmu.edu/library/abstracts/reports/04tn036.cfm?DCSext.abstractsource=SearchResults

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SEI Agile Work – Published$_2$

Parallel Worlds: Agile and Waterfall Differences and Similarities (CMU/SEI-2013-TN-021)

http://resources.sei.cmu.edu/library/asset-view.cfm?AssetID=62901

Using Agile Effectively in DoD Environments

http://blog.sei.cmu.edu/archives.cfm/author/mary-ann-lapham

Readiness and Fit Analysis (blog)

http://blog.sei.cmu.edu/archives.cfm/author/suzanne-miller

Podcast

http://www.sei.cmu.edu/podcasts/index.cfm?getRecord=7D03CB1F-9D60-C314-66526F8E8B2864B8&wtPodcast=AgileAcquisition

Colloquium Graphical Recordings, June 2012, March 2013, July 2013

available upon request

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SEI Agile Work – in Process

- **Requirements**
- **System engineering and software engineering interface in an agile world**
- **Metrics including research with Rally see**

  http://www.rallydev.com/community/agile-blog/rally-announces-new-program-quantify-performance-impact-agile-practices

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Lapham
NDIA System Engineering Conference
Oct 30, 2013
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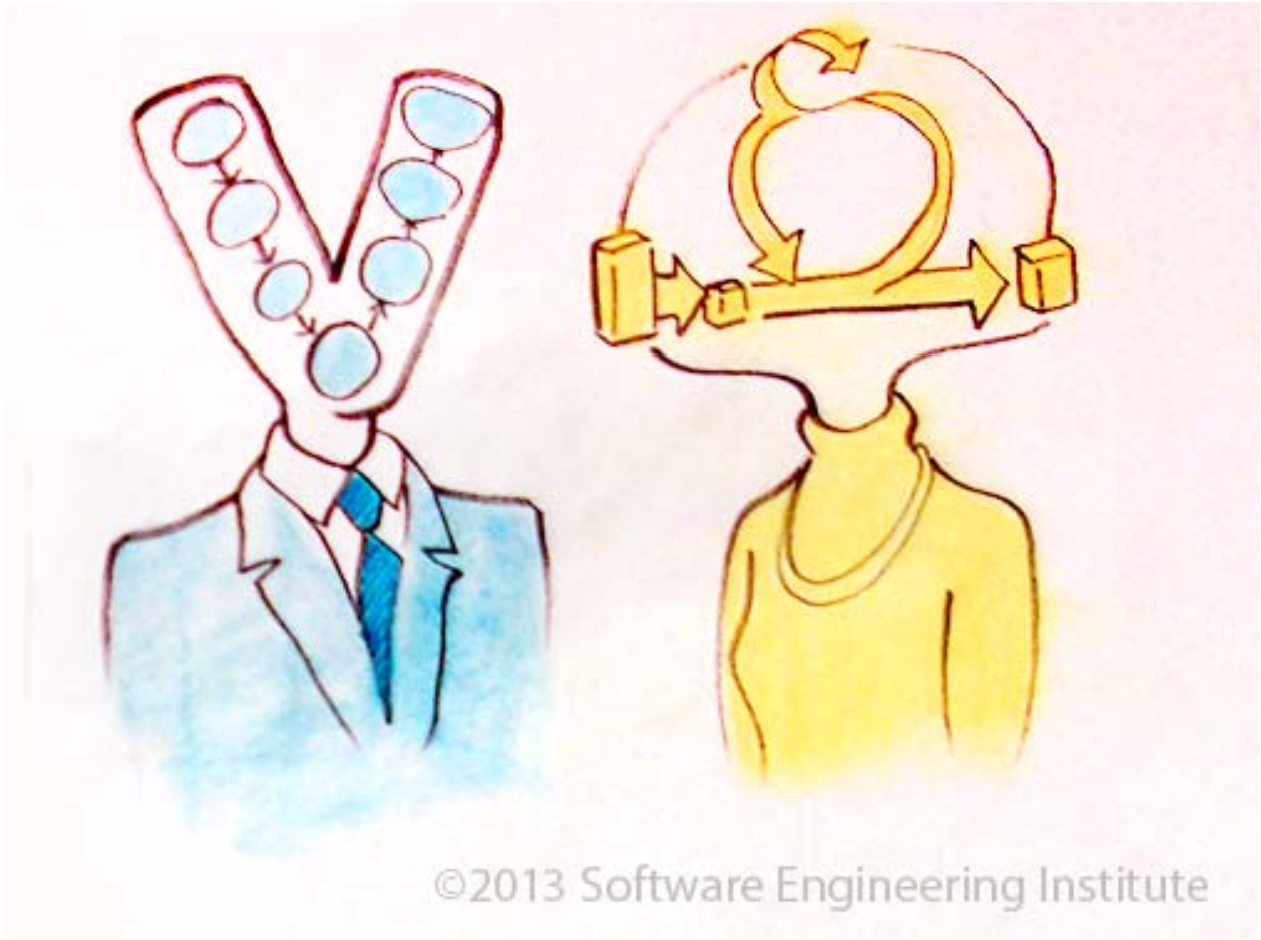
Agile and Systems Engineering?



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