



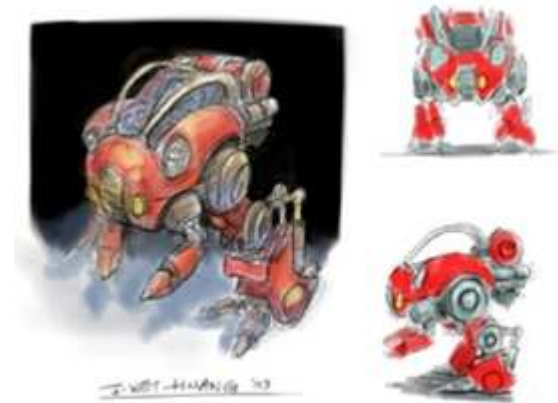
## Architects: Anchors or Accelerators to Organizational Agility?



Jim Highsmith

## SketchBook Pro

- Everything evolves
- Two week iterations, Fixed deadline
- Envision-Evolve, Not Plan-Do
- Release 2.0

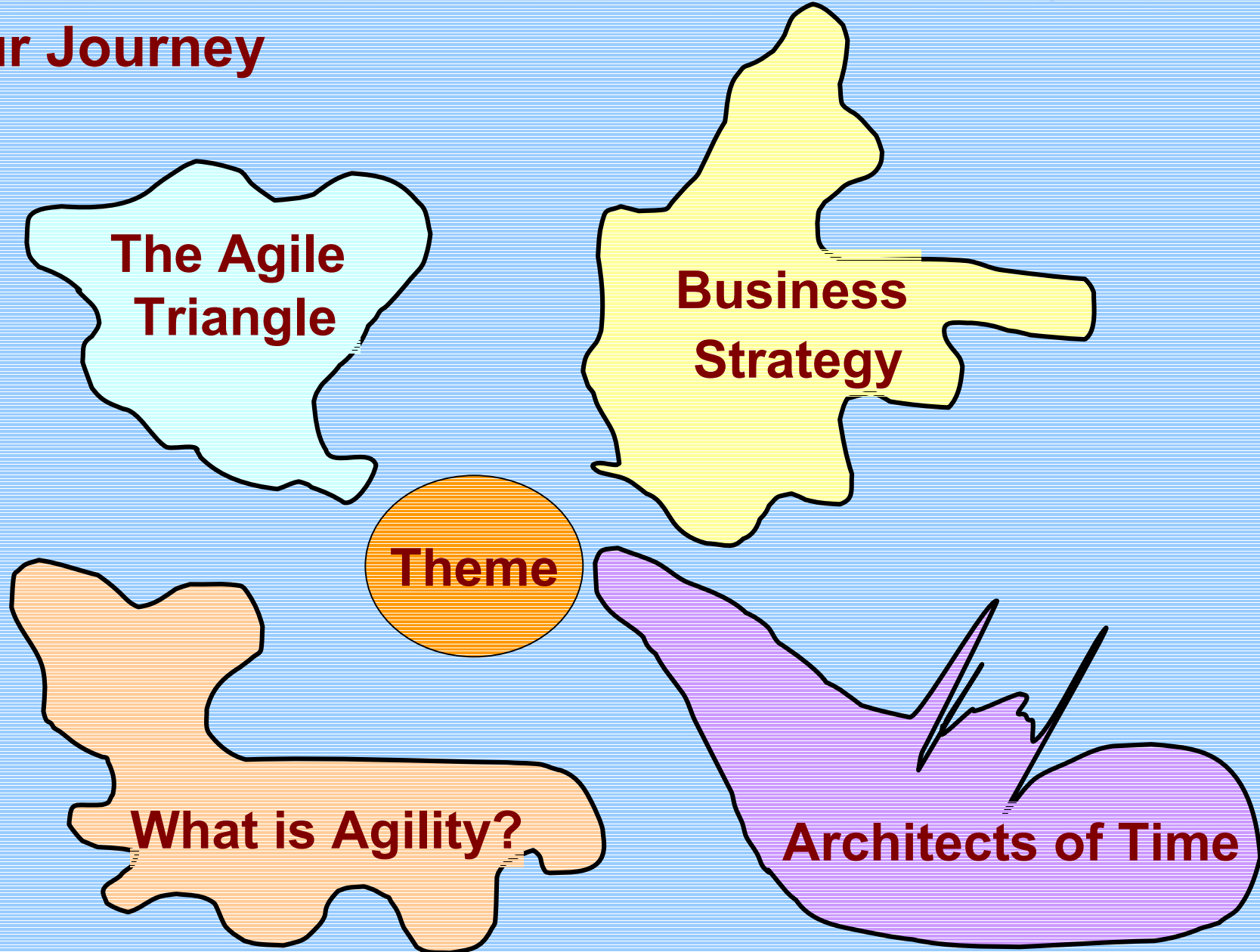


## Adaptability

- Product
- People
- Process
- Architecture



## Our Journey



**“Architects can be customers  
of the Future.”**

**Rebecca Parsons, ThoughtWorks**



**What is agility and should your organization have more of it?**

**Are architecture and agile development compatible?**

**How can architects accelerate agility in organizations?**

## **The Agile Architect**

**What is *agility*  
and should your  
organization  
have more of it?**

## **“There is no more Normal”**

“Without exception, all of my biggest mistakes occurred because I moved too slowly.”

--John Chambers, Cisco CEO,

**“300 start-ups ...  
persisting with the initial business plan  
was the best single predictor of failure.”**





## Turbulence

Opportunity

Exploit the  
change:  
proactive  
agility

Danger

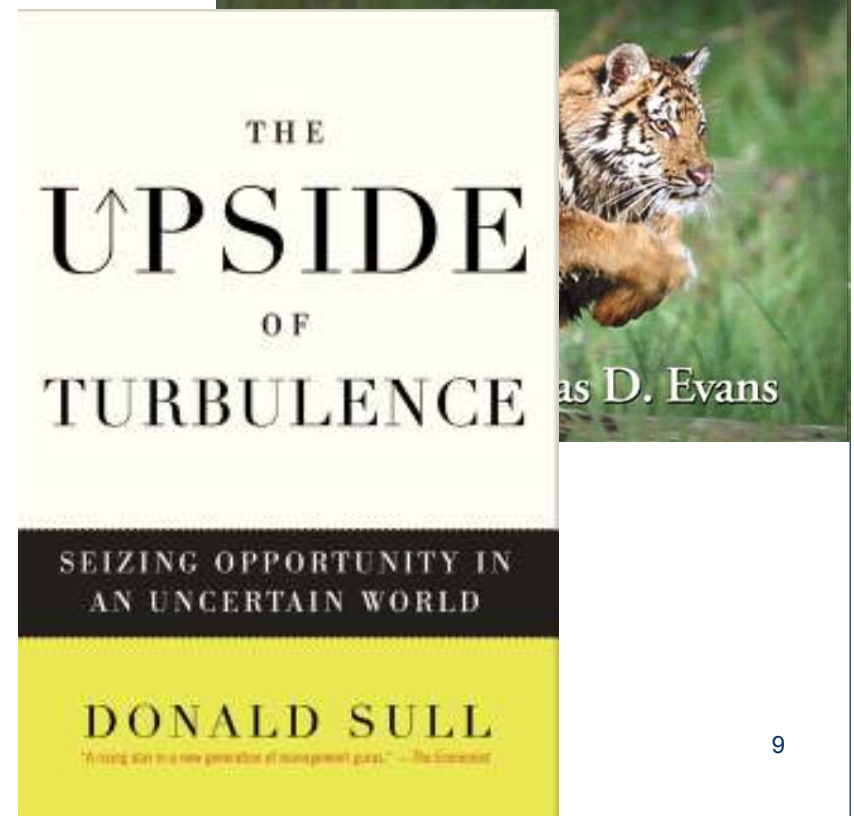
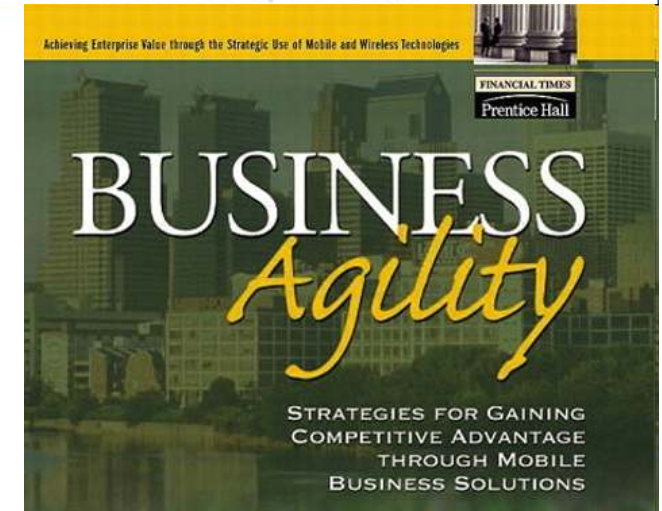
Survive the  
change:  
reactive agility



# Business Strategy

- Responsiveness over Efficiency
- Turbulence—  
how much, what kind, what areas?
- Business units & functional areas?
- Agility roadmap (including IT)

**“Companies don’t  
pass through  
life cycles,  
opportunities do.”**



# Measuring Success in a Dynamic World

**Conform  
to Plan**

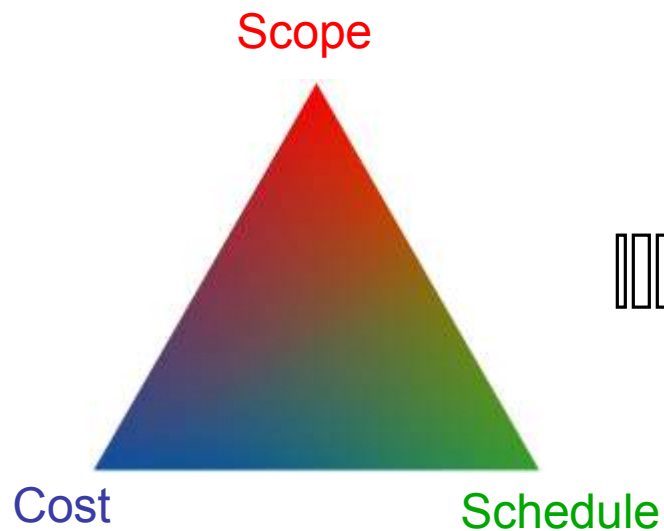


**Be  
Flexible**

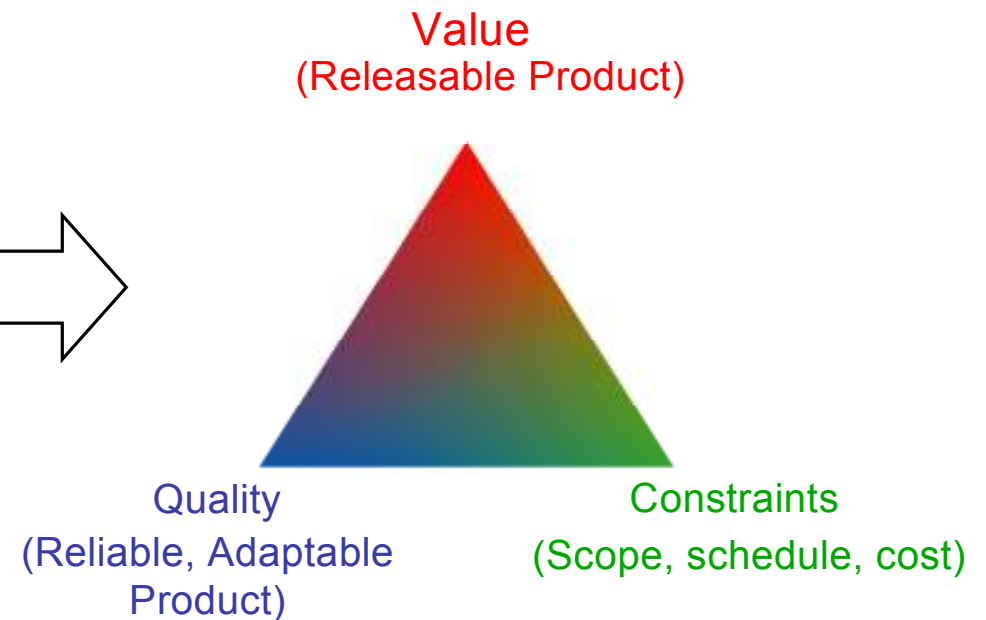


# Beyond Scope, Schedule, and Cost

The Traditional Iron Triangle



The Agile Triangle



A traditional project manager focuses on *following the plan with minimal changes*, whereas an agile leader focuses on “*adapting successfully to inevitable changes*.”

# Architecture: “It’s the hard stuff.”—Martin Fowler

**Deliver Today**

**Adapt Tomorrow**

# Are architecture and agile development compatible?

## Being Agile versus Doing Agile



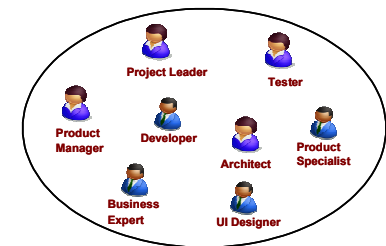
**There is a  
difference  
between  
half-assed  
and half-done.**

**Agility is the ability  
to balance flexibility  
and structure**

**Agility is the ability to create  
and respond to change.**

# Being Agile—Values

- Delivering Value over Meeting Constraints  
(Value over Constraints)
- Adapting to Change over Conforming to plans  
(Adapting over Conforming)
- Leading the Team over Managing Tasks  
(Team over Tasks)



**“Simple, clear purpose and principles give rise to complex, intelligent behavior.”**

**“Complex rules and regulations give rise to simple, stupid behavior.”**

# Doing Agile—Practices

- Focus on Customer Value
- Deliver Chunks of Functionality Incrementally
- Collaborate
- Strive for Technical Excellence
- Reflect and Learn Continuously

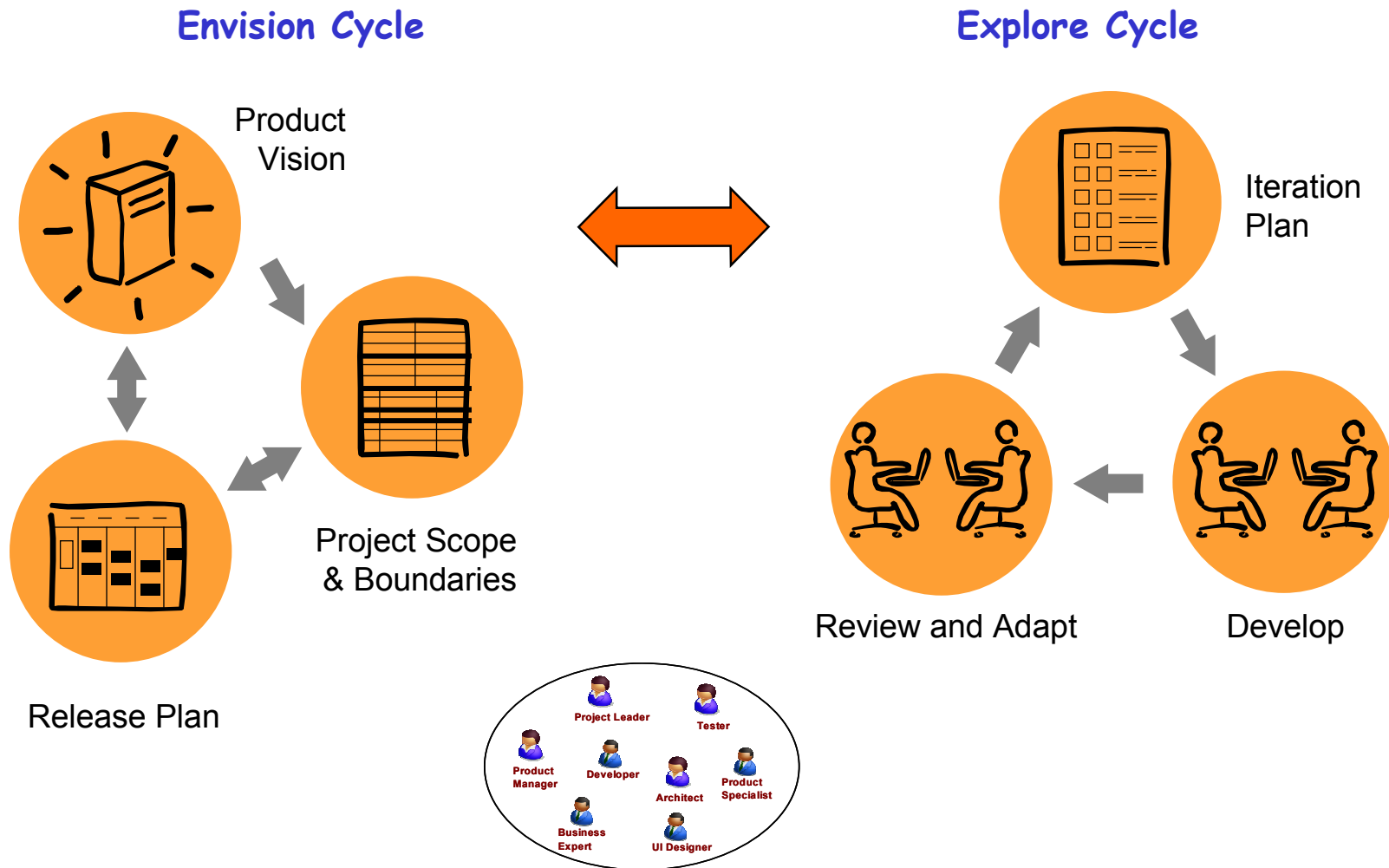
## Management Agility



## Technical Agility

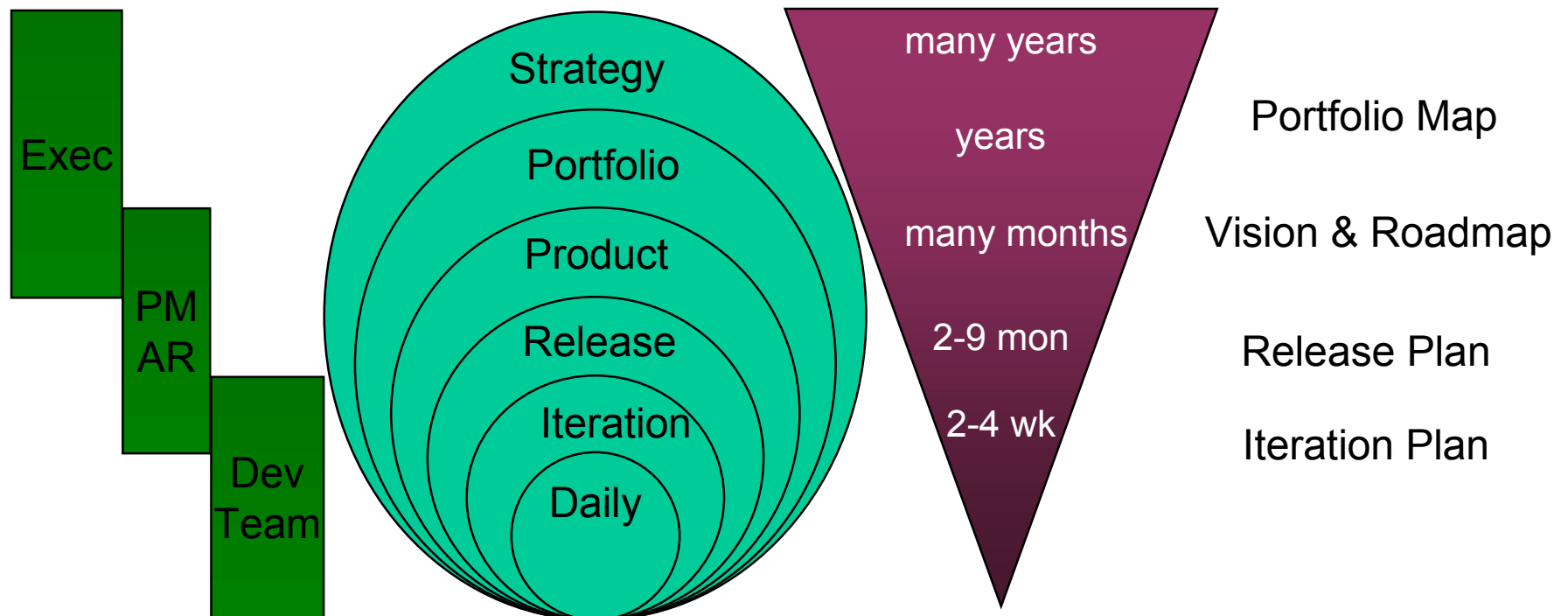


# Core Agile Cycles





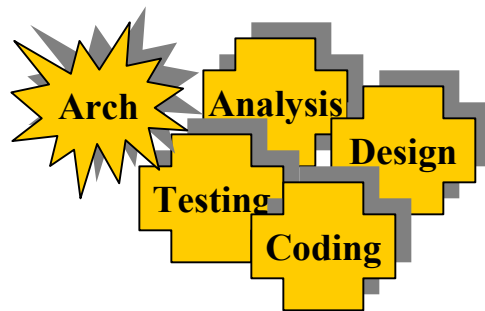
# Planning Time Horizons



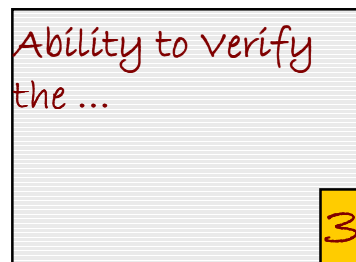
Slide courtesy Luke Hohmann

# Extreme Agile

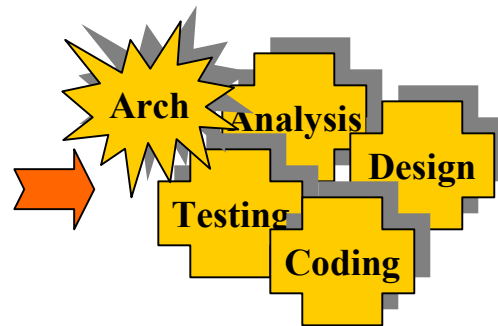
Iteration 1



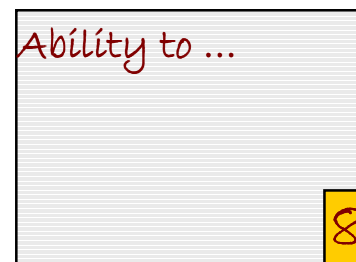
Story 1



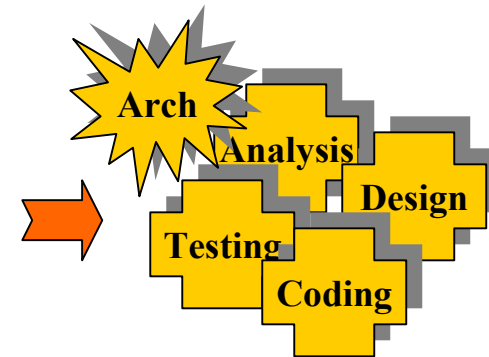
Iteration 2



Story 2



Iteration 3

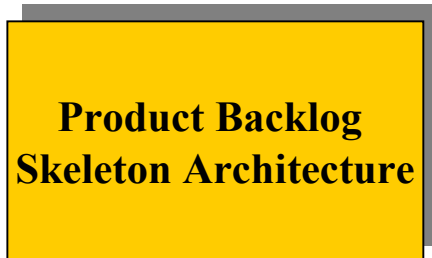


Story 3

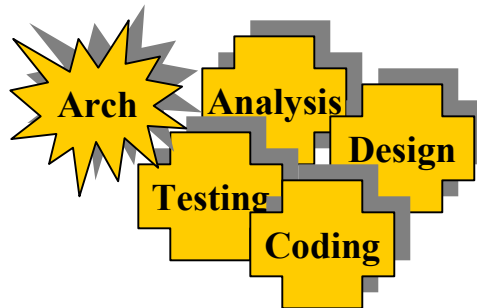


# Typical Agile

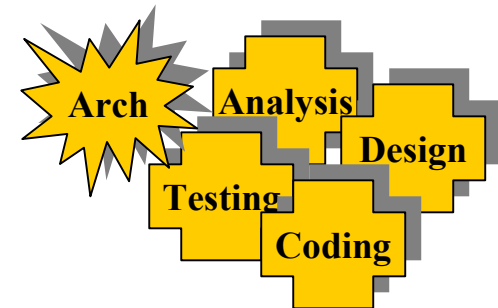
## Iteration 0



## Iteration 1



## Iteration 2

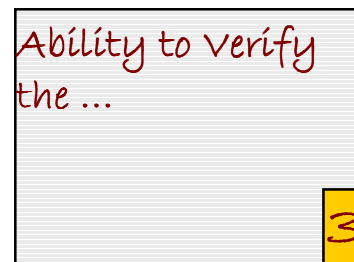
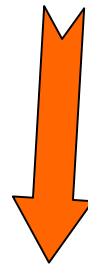


### Agile Project Initiation:

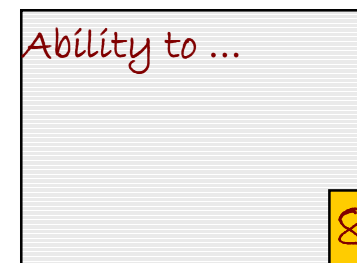
- 3.9 weeks
- 86% architecture

Source: Scott Ambler

## Story 1



## Story 2



So,  
Are architecture and agile development  
compatible?

Of course they are!

# How can architects accelerate agility in organizations?



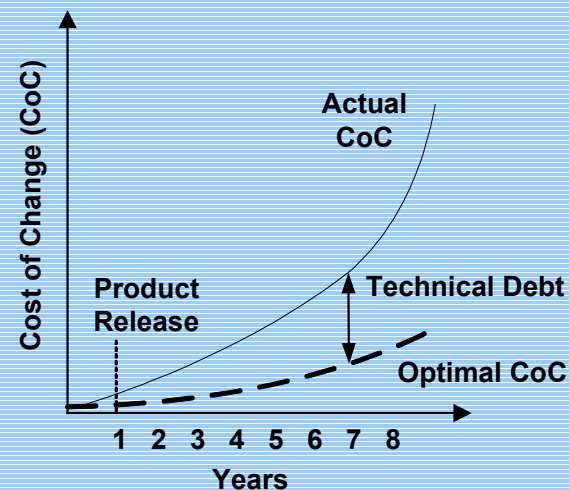
# Customers of the Future...

Structure

Time

Transitions

Being Agile



Technical Debt

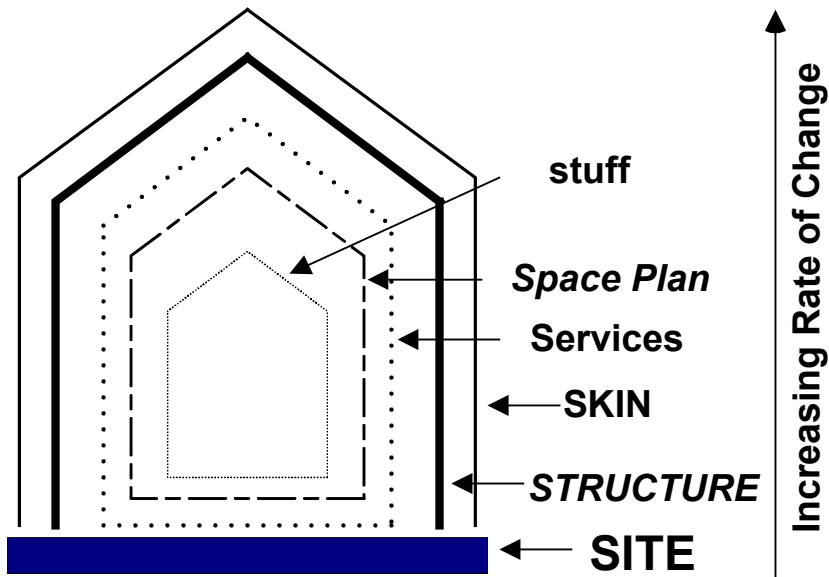


## How many of you have 3 or more of the following?

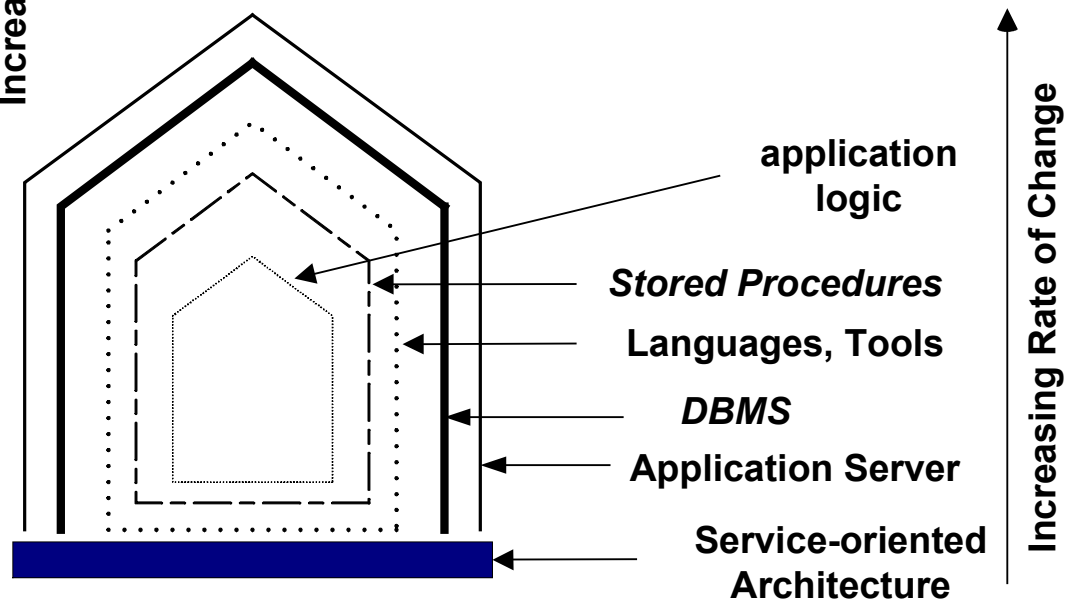
- Assembler programs
- Cobol or Fortran programs
- Mission critical spreadsheet
- Mainframe system
- Client-server system
- Two or more DBMS systems
- Three-tier web-based system
- SOA
- SaaS

**Architectures evolve (or maybe devolve)  
in spite of all our planning.**

# How Buildings Learn (Stewart Brand)



## Building Layers



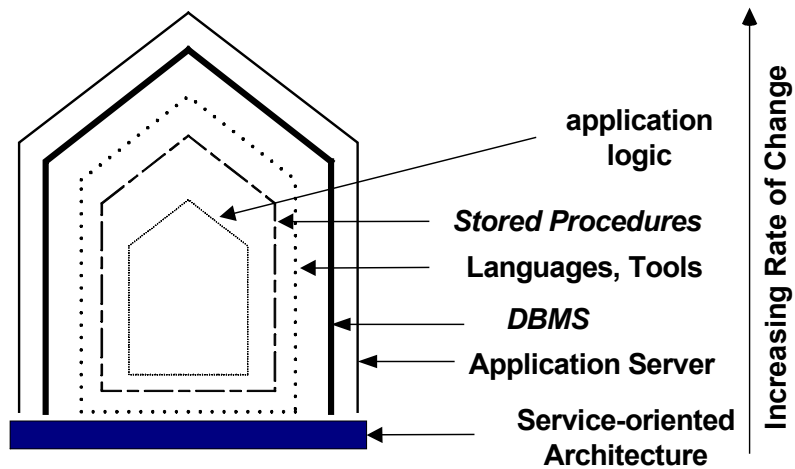
## Software Architecture Layers

## **Architects of Time**

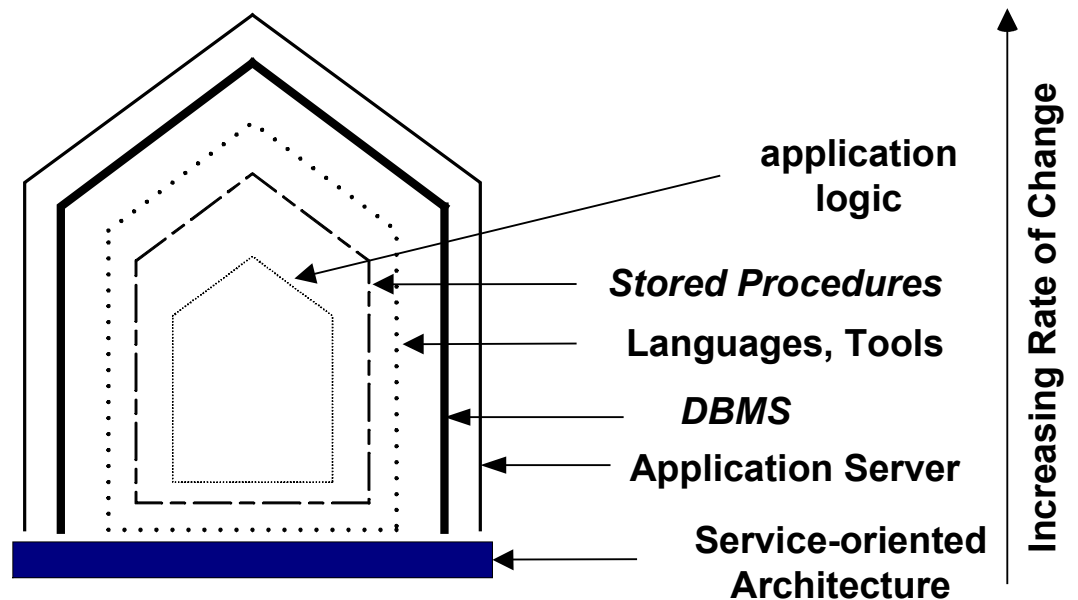
**“Time pacing is one of the least understood facets of strategy in unpredictable industries.”**

# Transition & Migration

# Be Architects of Structure, Time, Transition



## Software Architecture Layers



## Software Architecture Layers

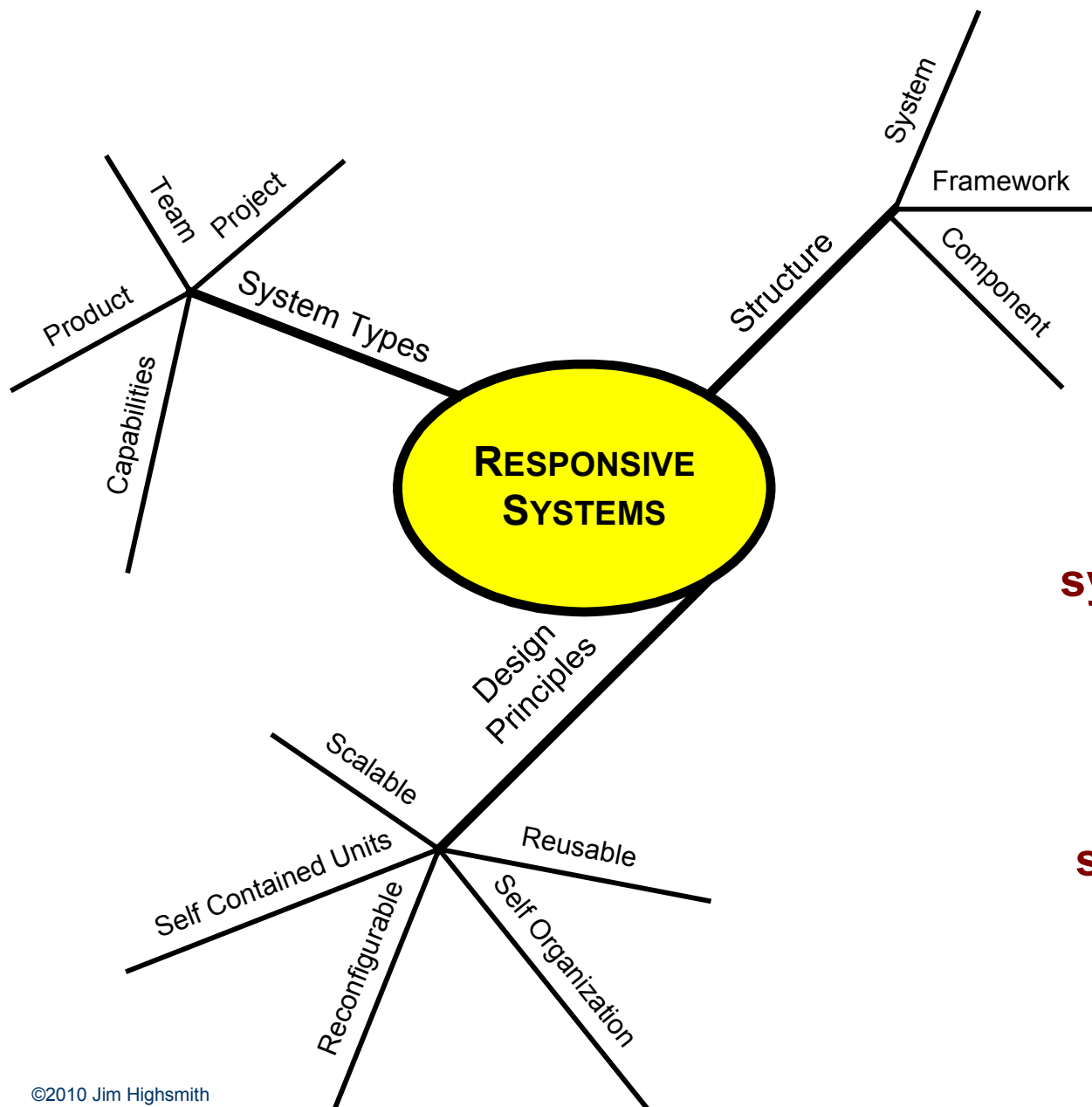
# Create Agile Design Guidelines



# Responsiveness

Anticipated  
(Flexibility)

Unanticipated  
(Adaptability)



**“An organization or systems structure that enables change is based on reusable elements that are reconfigurable in a scalable framework.”**  
**(Rick Dove, Response Ability)**

# Response-able Systems Principles

**Elastic capacity**

**Self–  
contained  
units**

**Facilitated  
reuse**

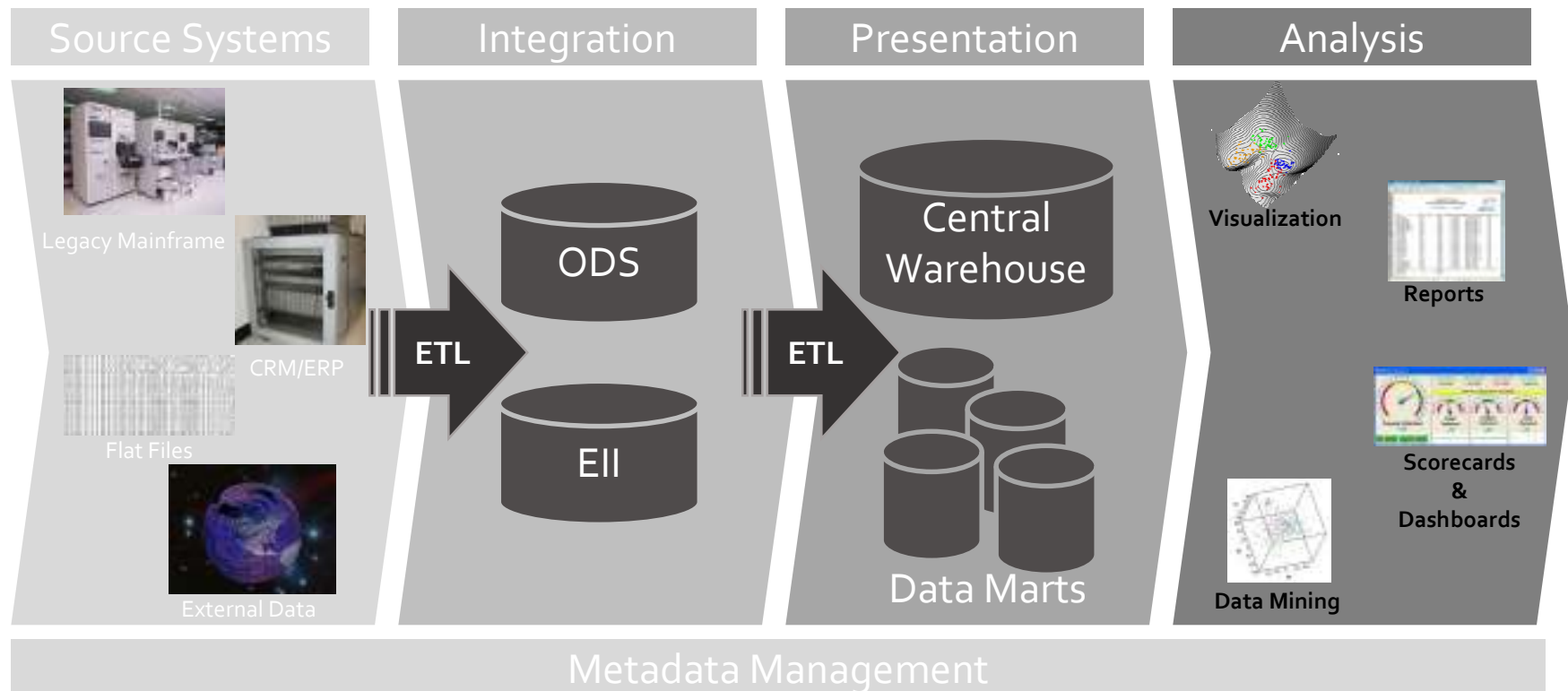
**Self-organization**

# The President of the Internet

## Rules

- The Network effect.
- Power of Chaos.
- Values are the organization.
- ...

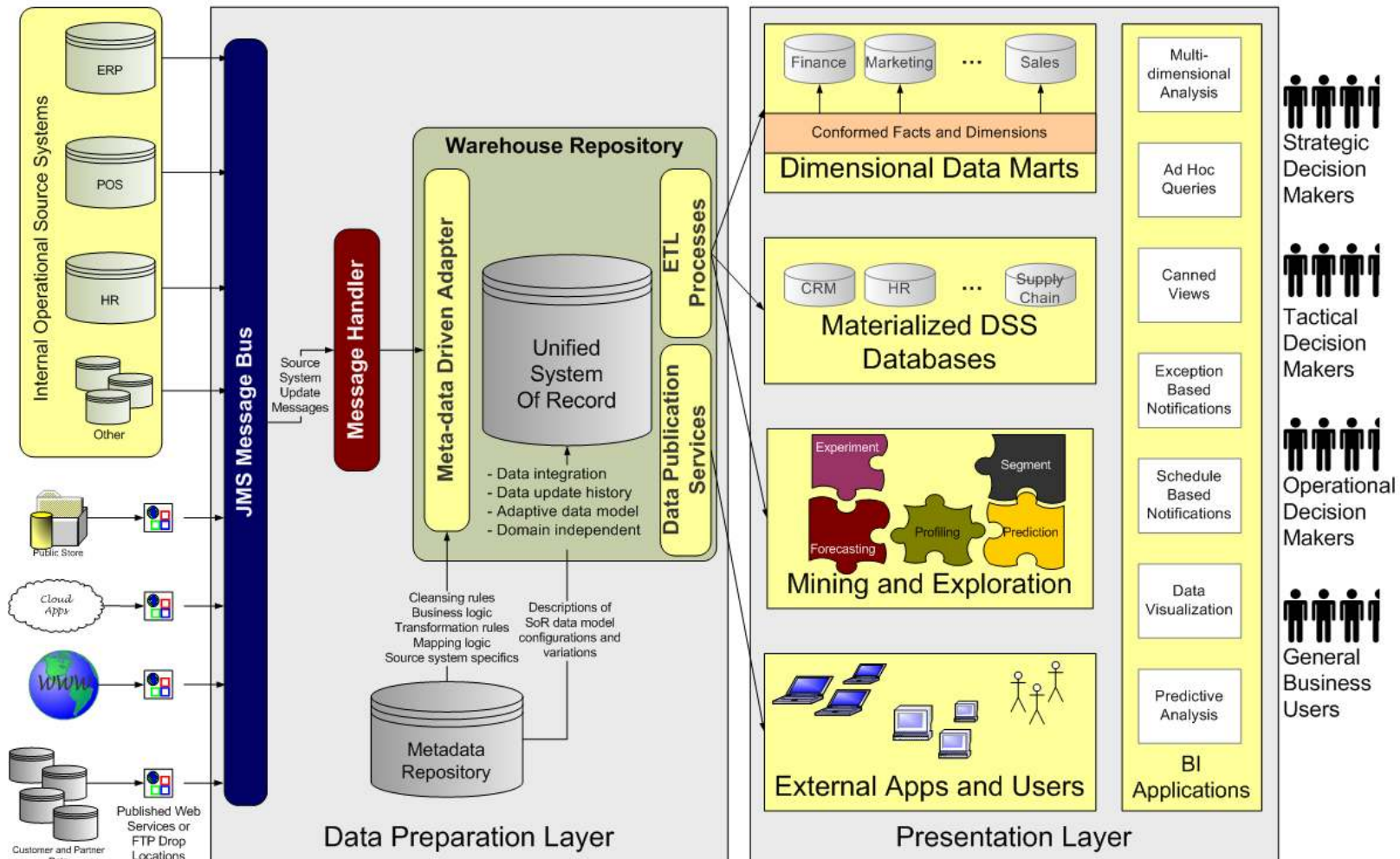
# Applying Guidelines to Adaptive Architectures



## Classic Business Intelligence Architecture

Slides on BI Courtesy of Ken Collier

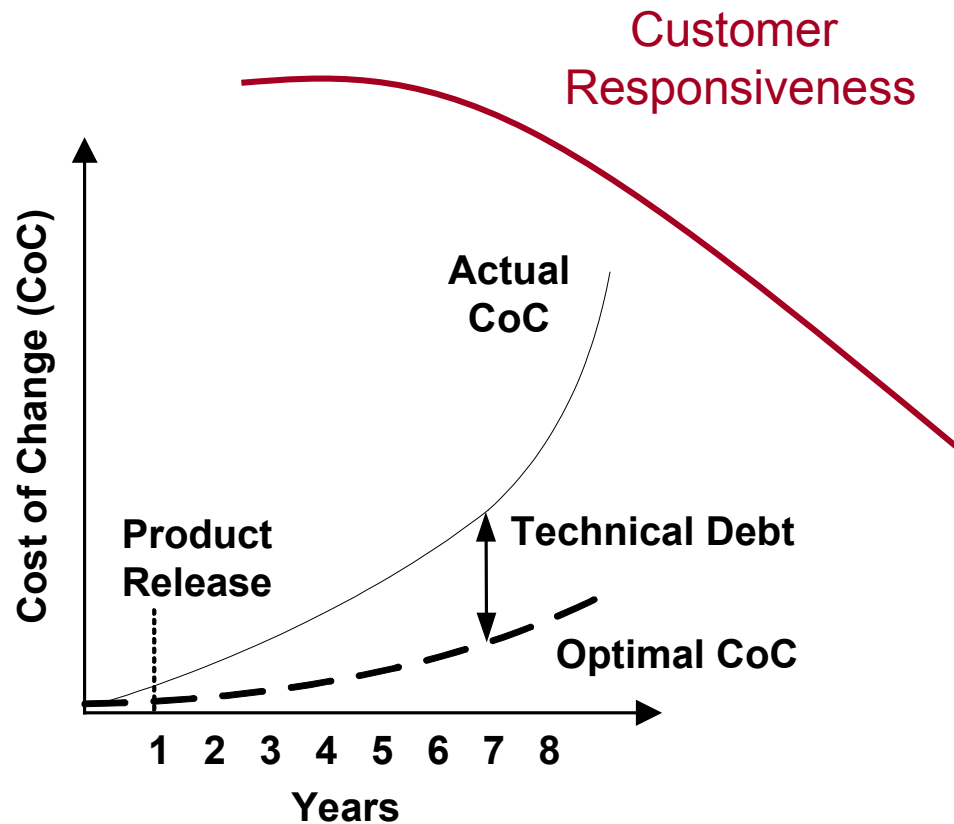
Data updates are pushed to the data warehouse



By Ken Collier Copyright ©2008, all rights reserved

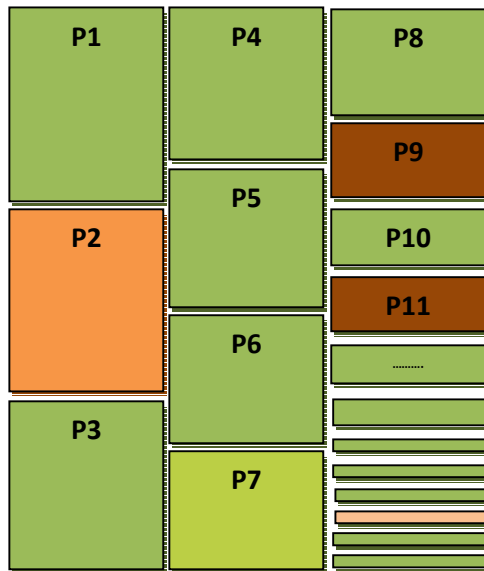
# Adaptive Architectures

# Technical Debt



- Once on far right of curve, all choices are hard
- If nothing is done, it just gets worse
- In applications with high technical debt, estimating is nearly impossible
- Only 3 strategies
  1. Do nothing, it gets worse
  2. Replace, high cost/risk
  3. Incremental refactoring, commitment to invest

# Develop a Technical Debt Prevention and Reduction Strategy



Lines of Code



Duplicated Lines (%)



Project Name	Lines of Code	Total Code Quality	Technical Debt*	Technical Debt Ratio
P1	56,542	78.7%	\$236,741	49.5%
P2	39,768	72.5%	\$178,904	37.4%
P3	14,277	62.5%	\$59,168	12.4%
P4	9,770	92.3%	\$3,401	0.7%

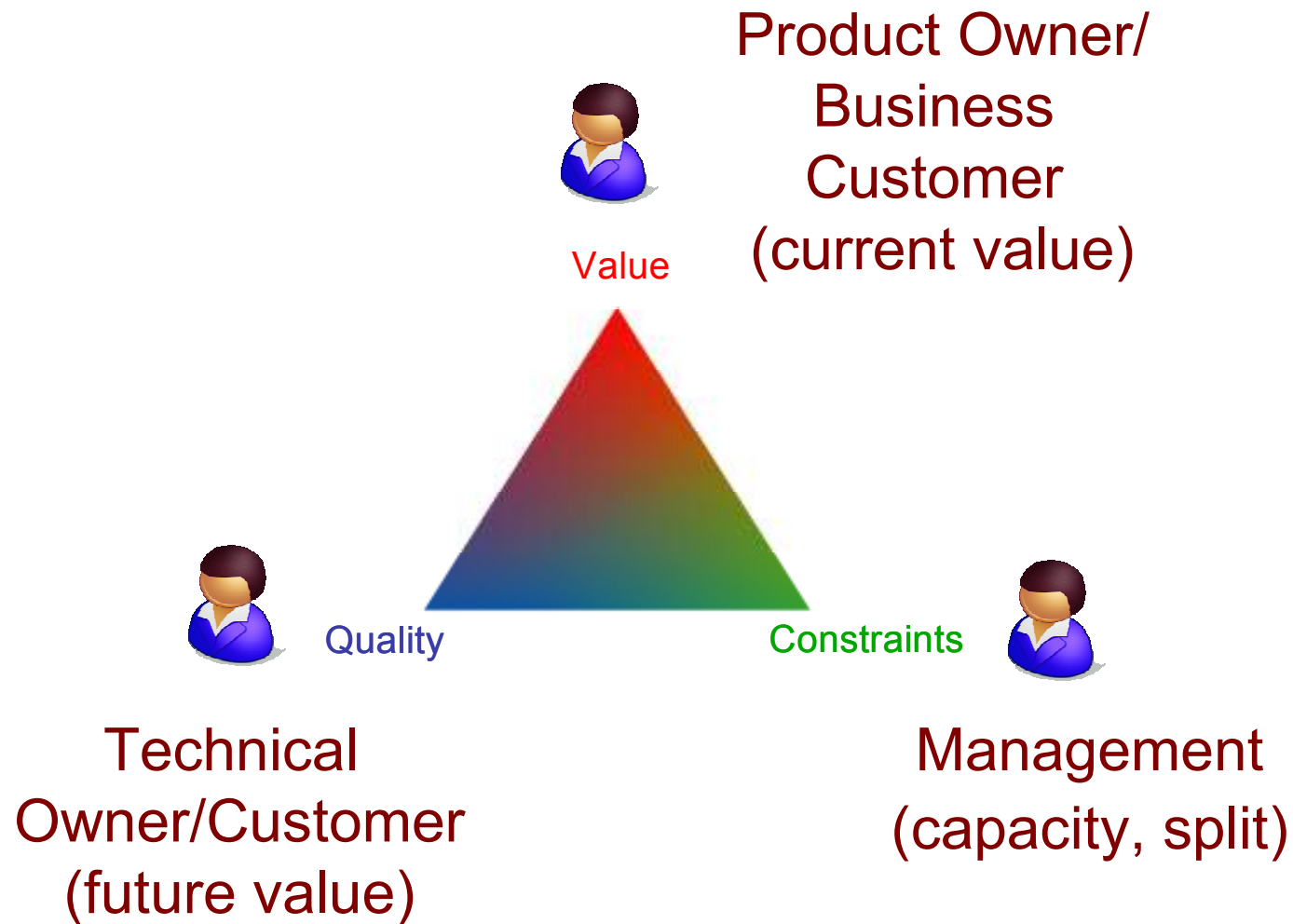


# How can architects accelerate agility in organizations?

- Be Agile
- Be Architects of Structure, Time, and Transition
- Create agile design guidelines
- Develop a technical debt prevention and reduction strategy
- ...



# The Customer of the Future





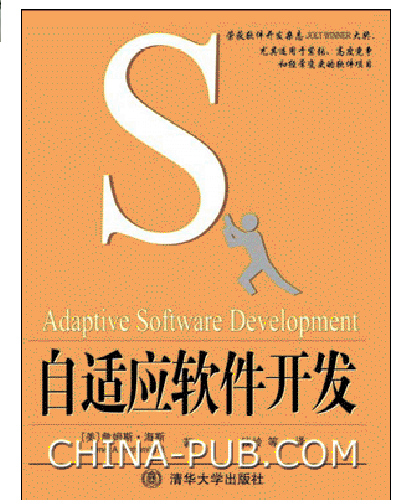
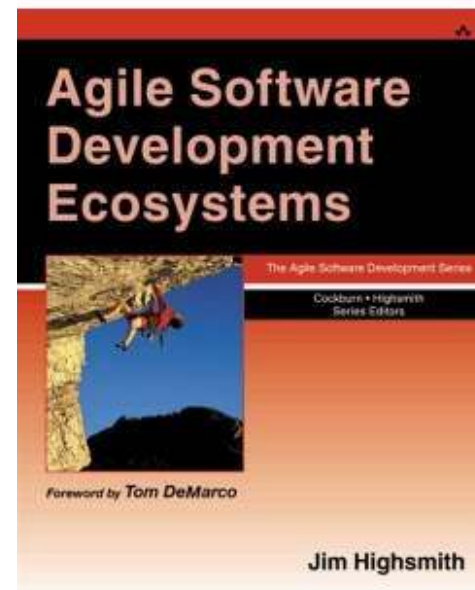
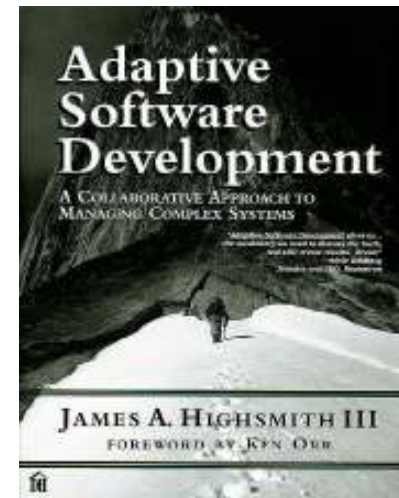
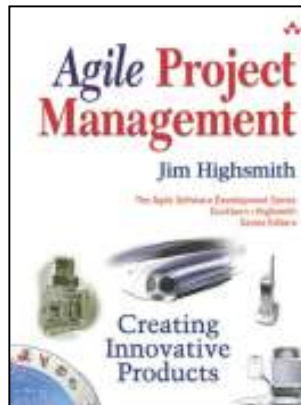
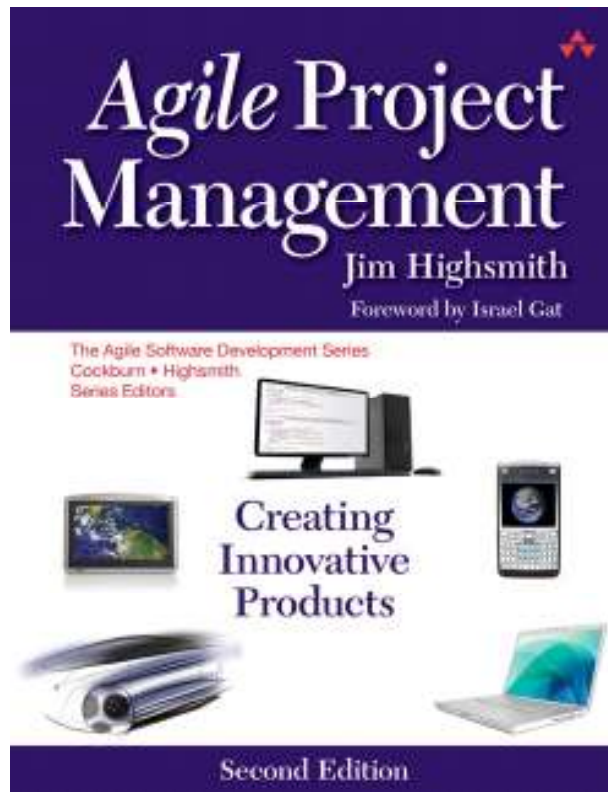
**What is agility and should your organization have more of it?**

**Are architecture and agile development compatible?**

**How can architects accelerate agility in organizations?**

## The Agile Architect

# Thanks You!



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