



IBM Software Group



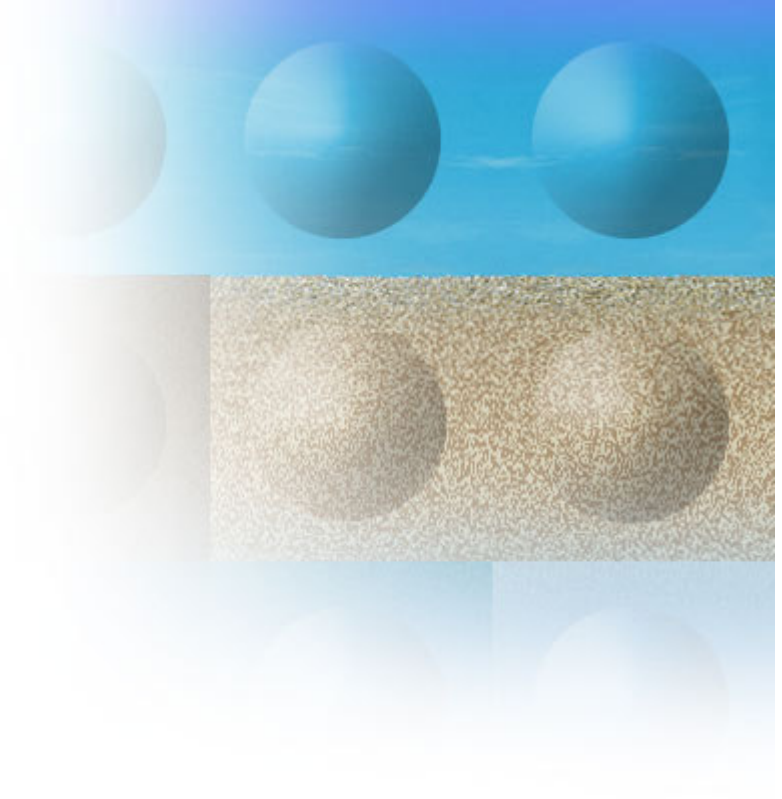
Scaling Agile Software Development

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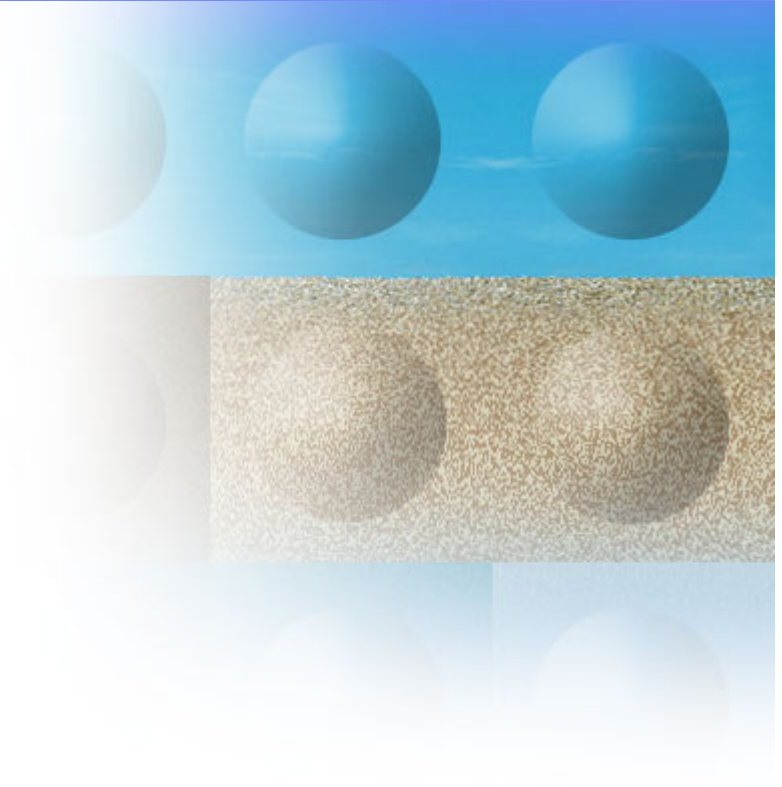
Agenda

- The Astronomy Analogy
- Agility@Scale
- Addressing Scaling Risks



Agenda

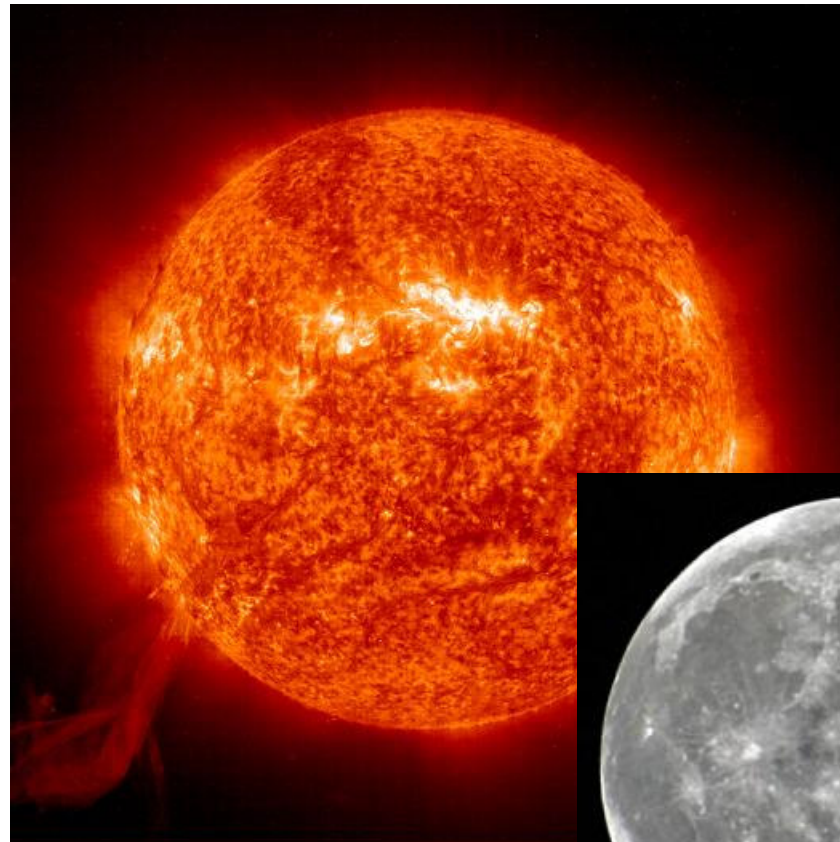
- The Astronomy Analogy
- Agility@Scale
- Addressing Scaling Risks



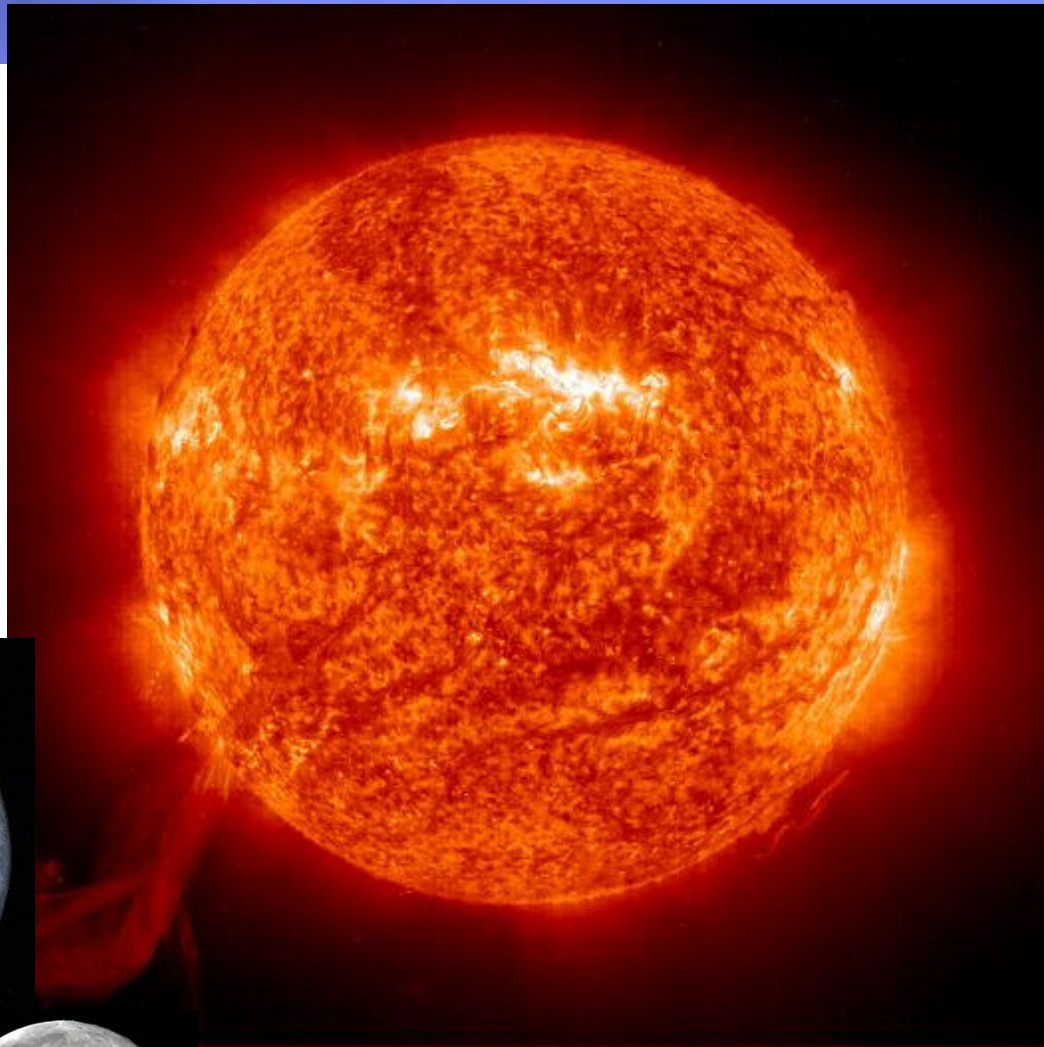
Around 300 B.C. ...



Around 1530...



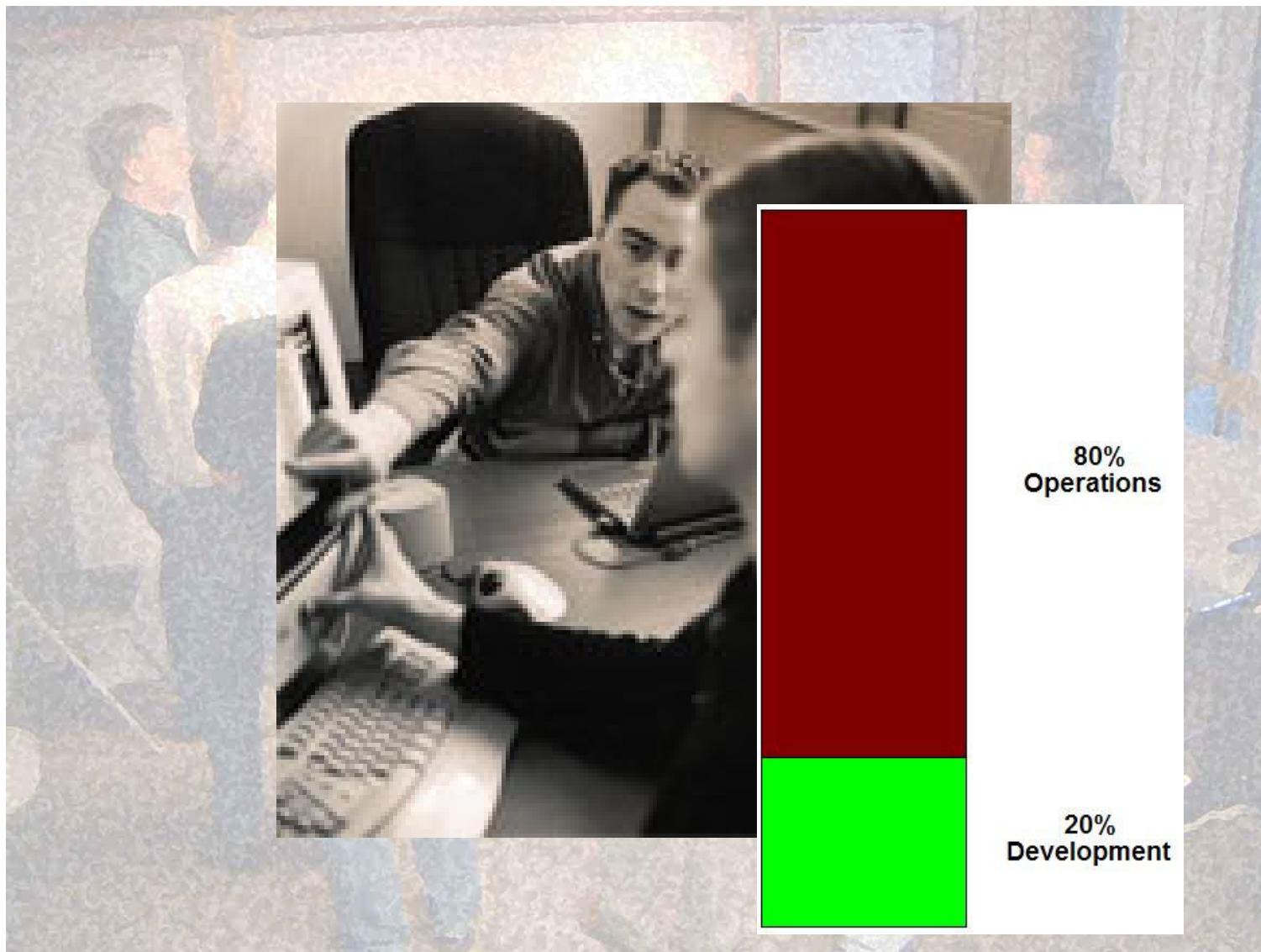
Around 1700...



Around 1970



2001



Around 2050???

- Systems which actually work within a common infrastructure
- Systemic reuse
- High quality across all architectural layers
- IT an integral part of business
- Full system lifecycle
- Systemic process integration
- Effective human resources
- IT as a true profession

Development Disciplines

- Business Modeling
- Requirements
- Analysis & Design
- Implementation
- Test
- Deployment

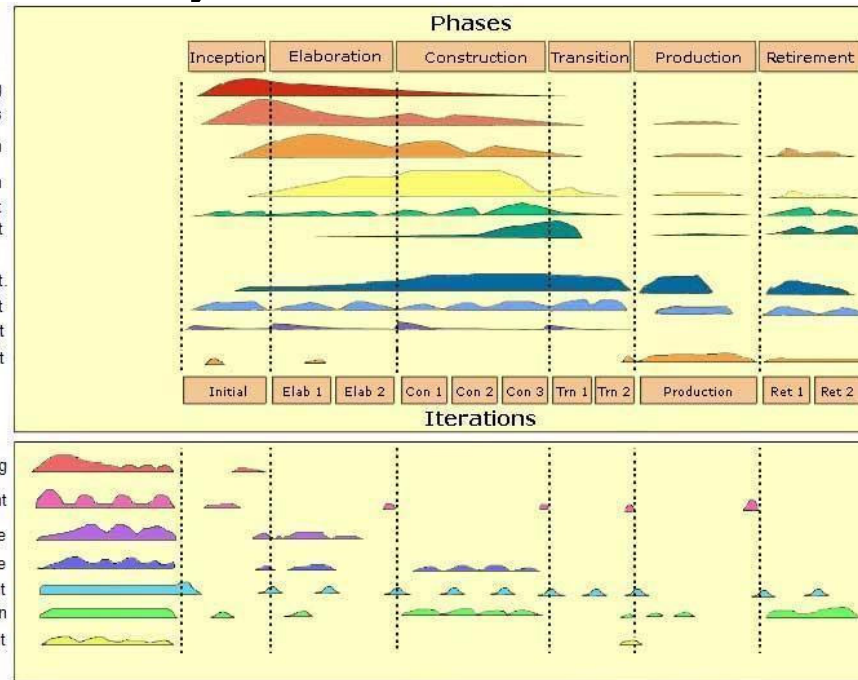
Support Disciplines

- Configuration and Change Mgmt.
- Project Management
- Environment
- Operations & Support

Enterprise Disciplines

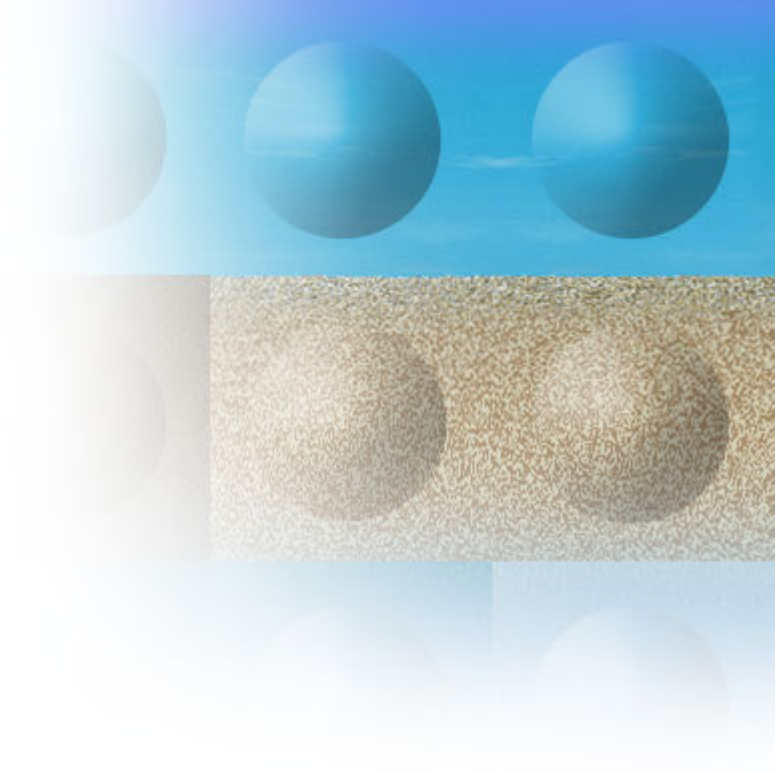
- Enterprise Business Modeling
- Portfolio Management
- Enterprise Architecture
- Strategic Reuse
- People Management
- Enterprise Administration
- Software Process Improvement

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Agenda

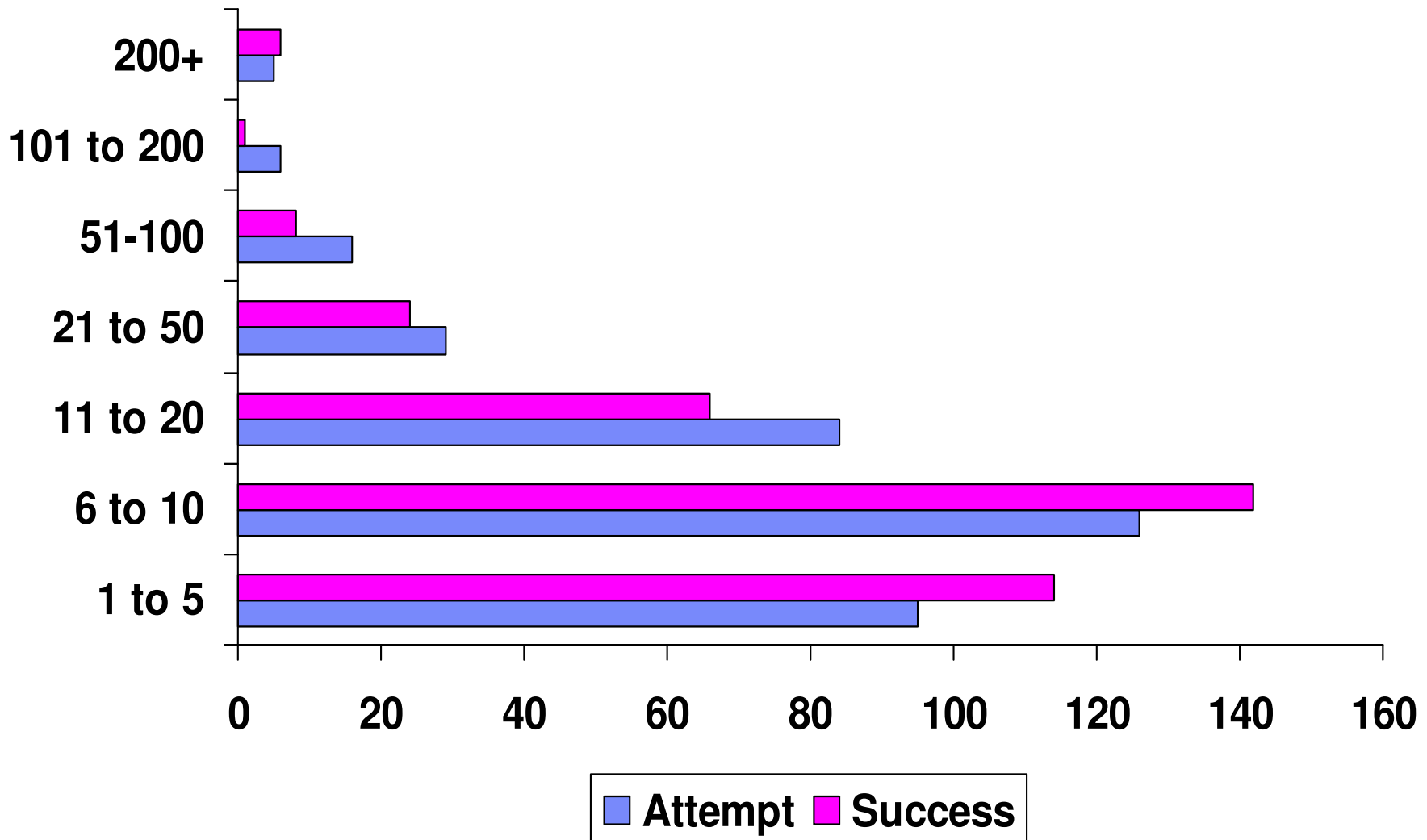
- The Astronomy Analogy
- Agility@Scale
 - ▶ Challenges
 - ▶ Agile works with large teams
 - ▶ Agile works with distributed teams
- Addressing Scaling Risks



Challenges with Agile in the Mainstream



Largest Team Size Attempted vs. Successful

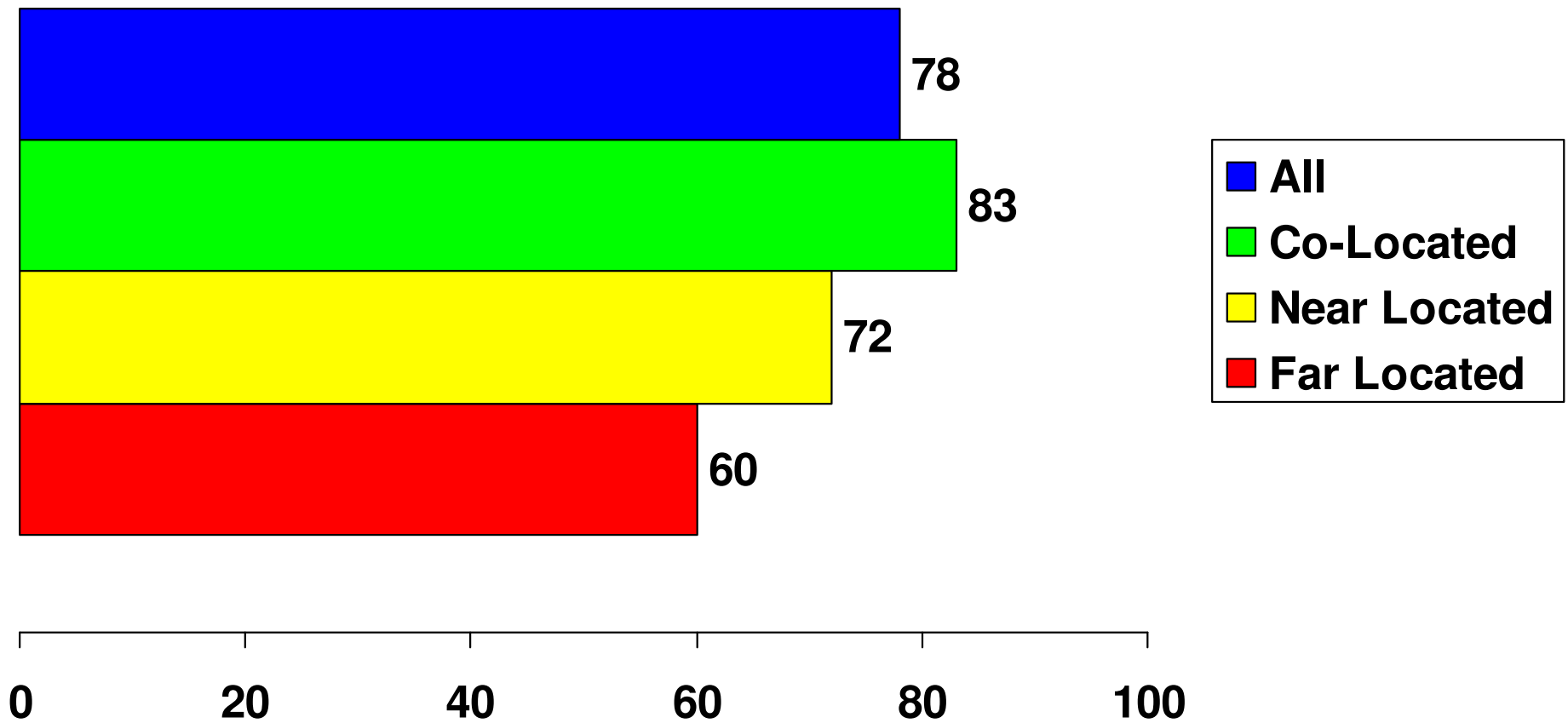


Source: Dr Dobb's 2008 Agile Adoption Survey



Agile Projects Success Rates (%)

(214 co-located projects, 210 near located, 129 far located)

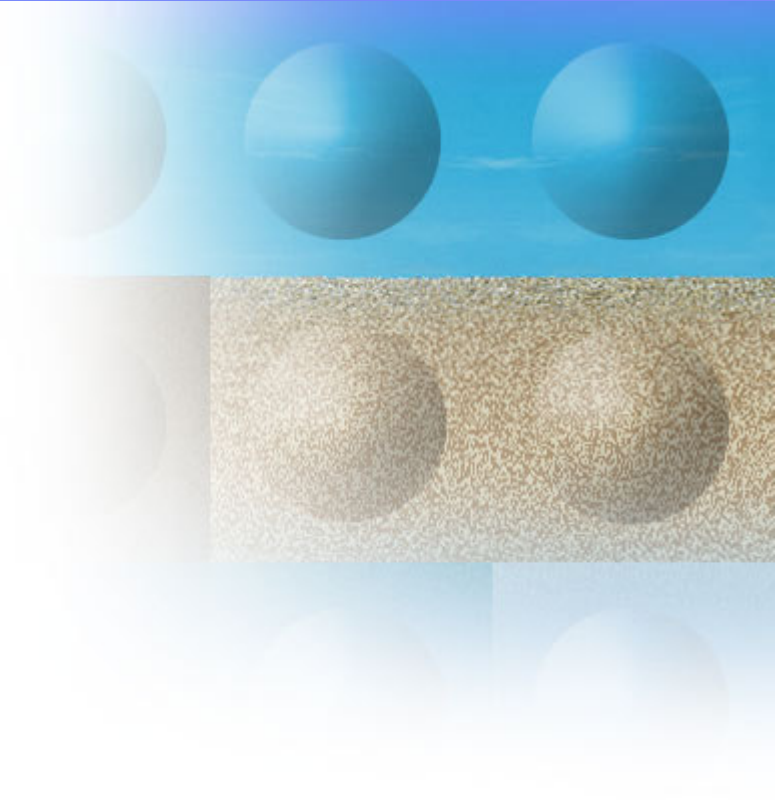


Source: Dr Dobb's 2008 Agile Adoption Survey



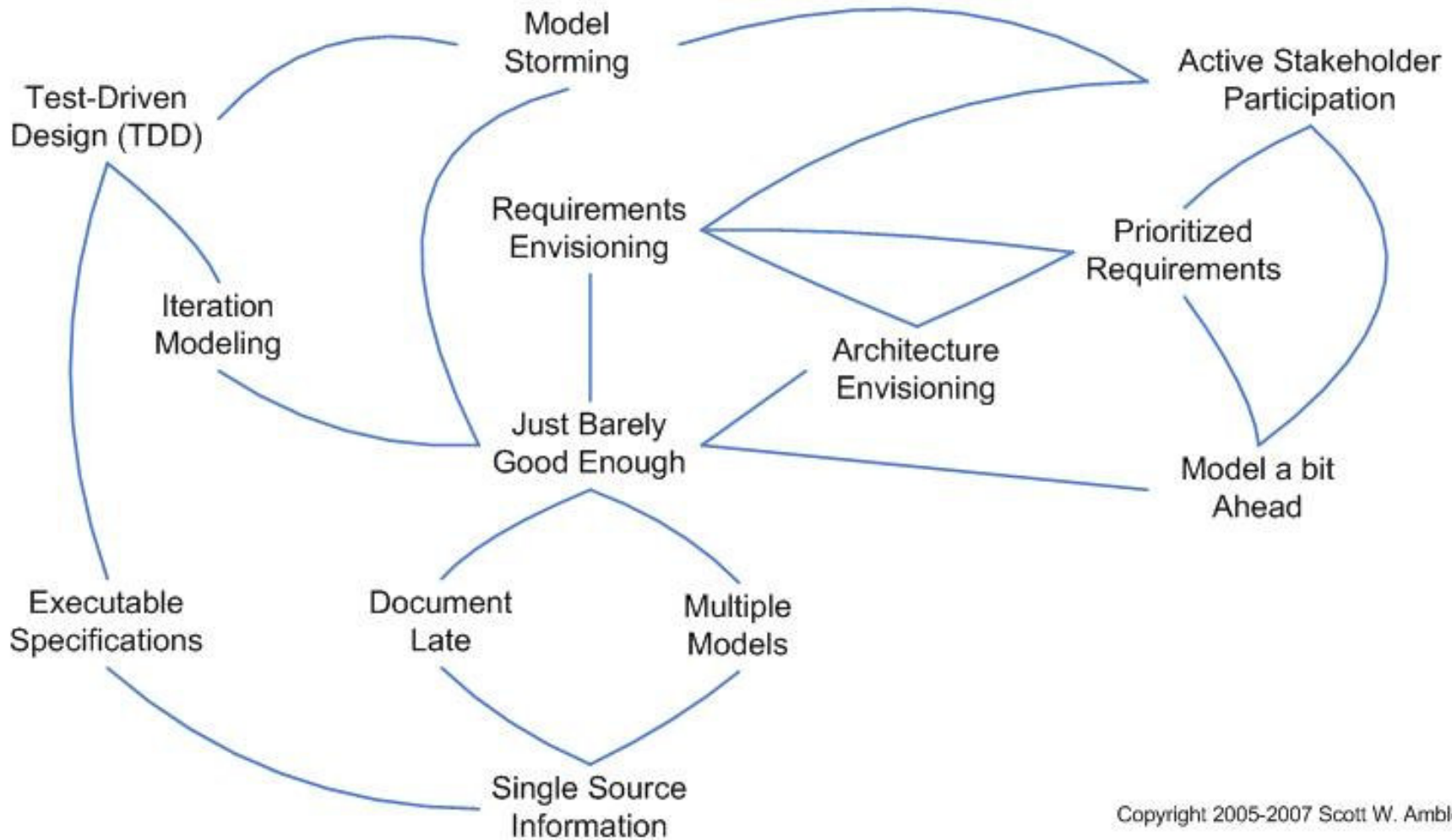
Agenda

- The Astronomy Analogy
- Agility@Scale
- Addressing Scaling Risks
 - ▶ You'll build the wrong thing the wrong way
 - ▶ Low quality
 - ▶ Non-functional requirements and constraints
 - ▶ Overly focused on construction
 - ▶ Competing stakeholder concerns
 - ▶ Lack of management oversight



Risk: You'll Build the Wrong Thing the Wrong Way

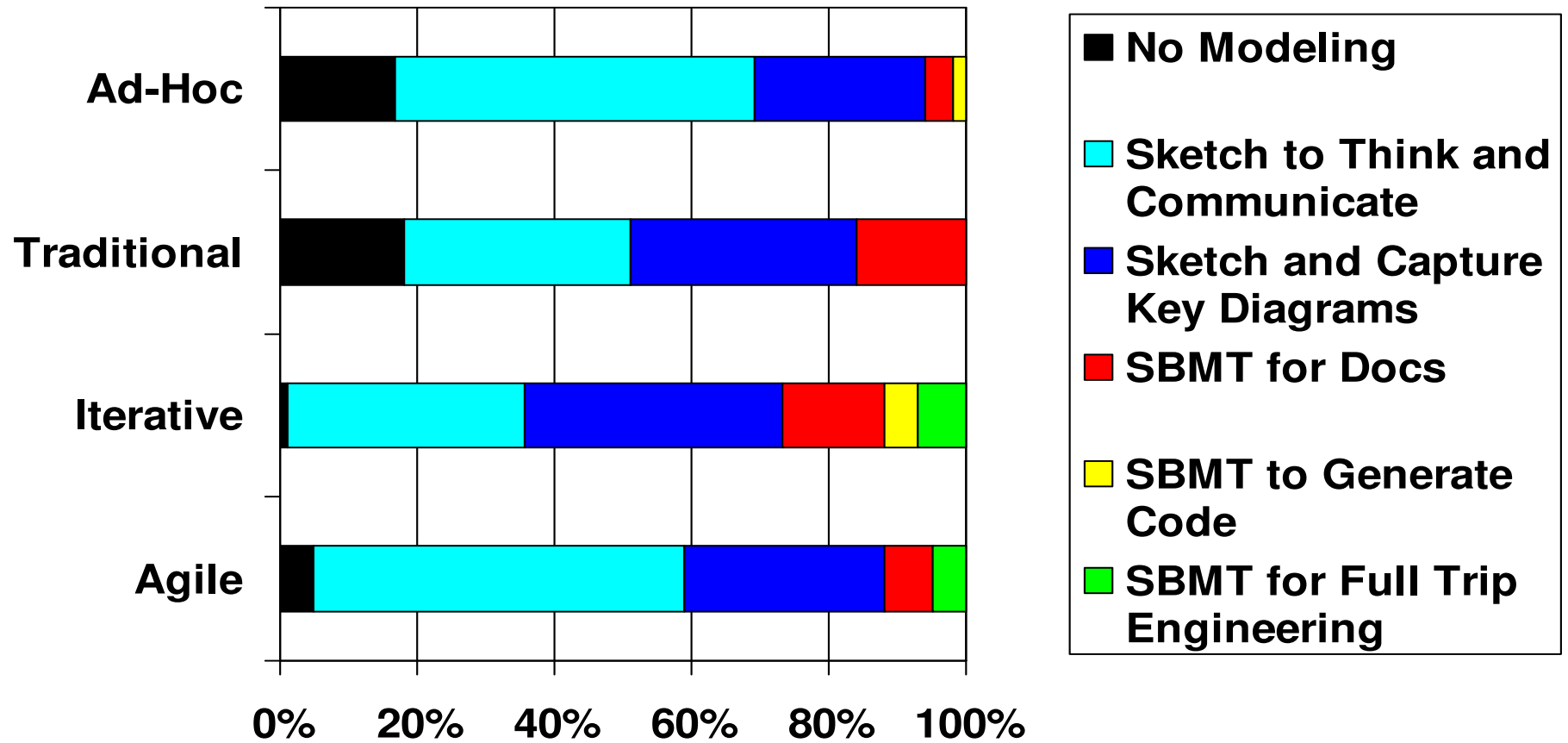
Solution: Evolutionary Architecture, Evolutionary Design



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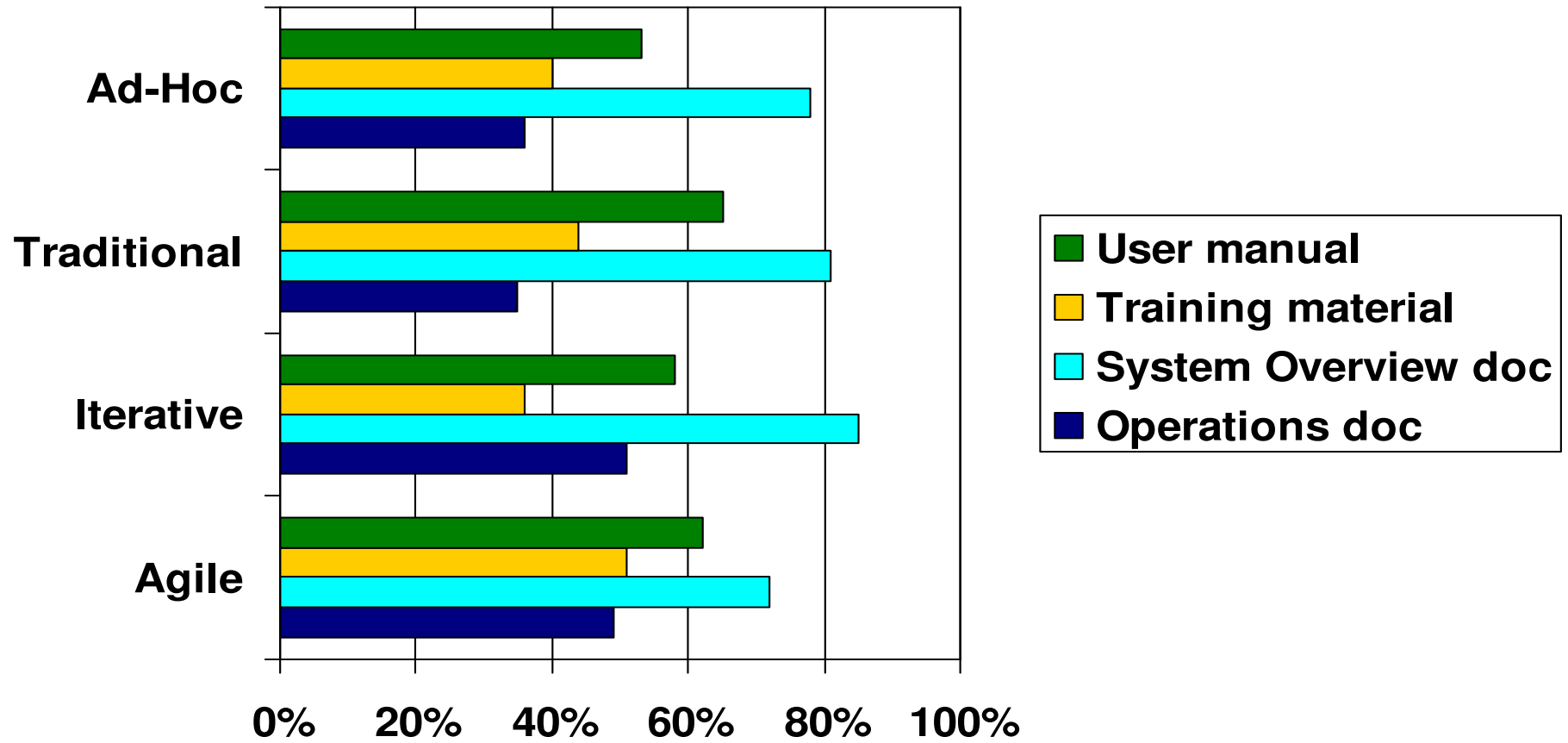
Primary Strategy for Modeling



Source: Dr Dobb's 2008 Modeling and Documentation Survey



Percentage of Teams Creating Deliverable Documentation

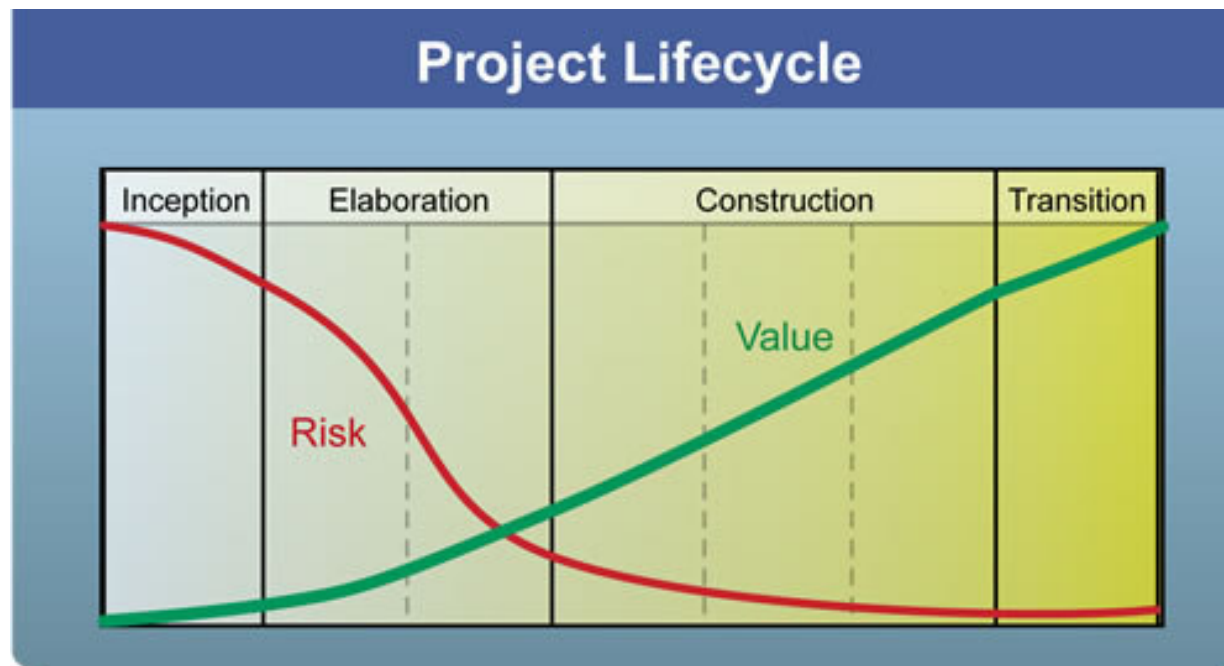


Source: Dr Dobb's 2008 Modeling and Documentation Survey



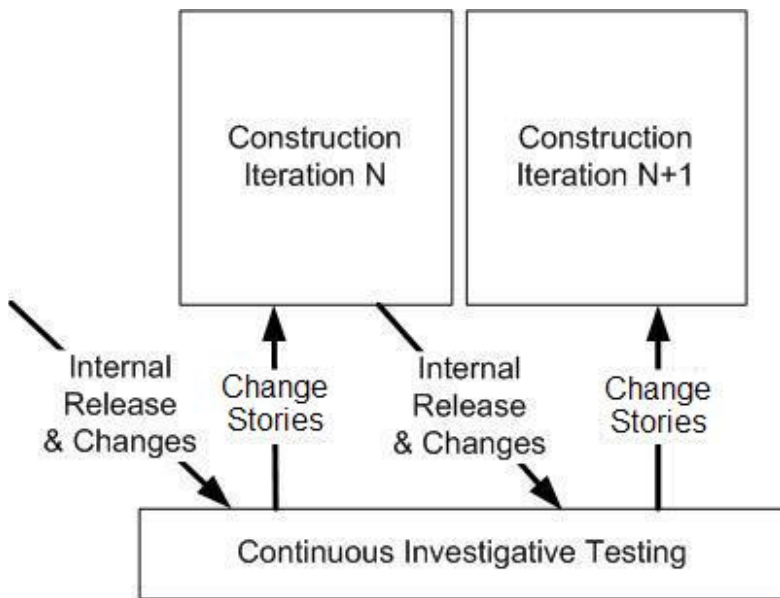
Risk: You'll Build the Wrong Thing the Wrong Way Solution: Adopt a Risk-Driven Lifecycle

- Stakeholder concurrence gained during Inception
- Architecture proven via working software during Elaboration



Risk: Low Quality

Solution: Test Driven Development (TDD) and Independent Testing



Confirmatory Testing (TDD):

- Customer testing
- Developer/unit testing

Investigative Testing:

- Exploratory testing
- Scenario testing
- Documentation
- Software
- System testing
- User testing

Effective agile teams push their working builds to an independent test team on a regular basis for investigative testing

Change stories must be prioritized and put back on the team's work stack

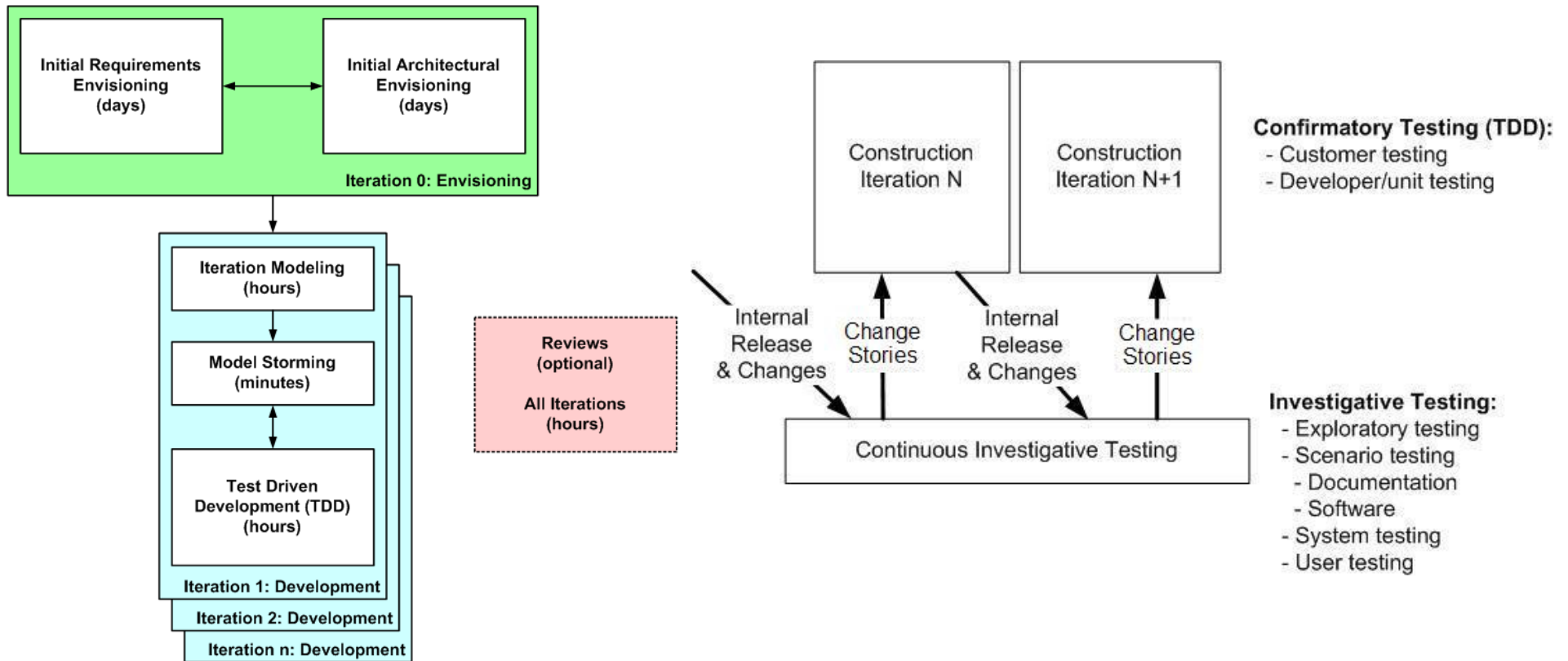
Defects == Requirements

Scales TDD: TDD is a form of confirmatory testing. TDD is a great start, but it's not the full testing picture

Critical strategy for addressing non-functional requirements

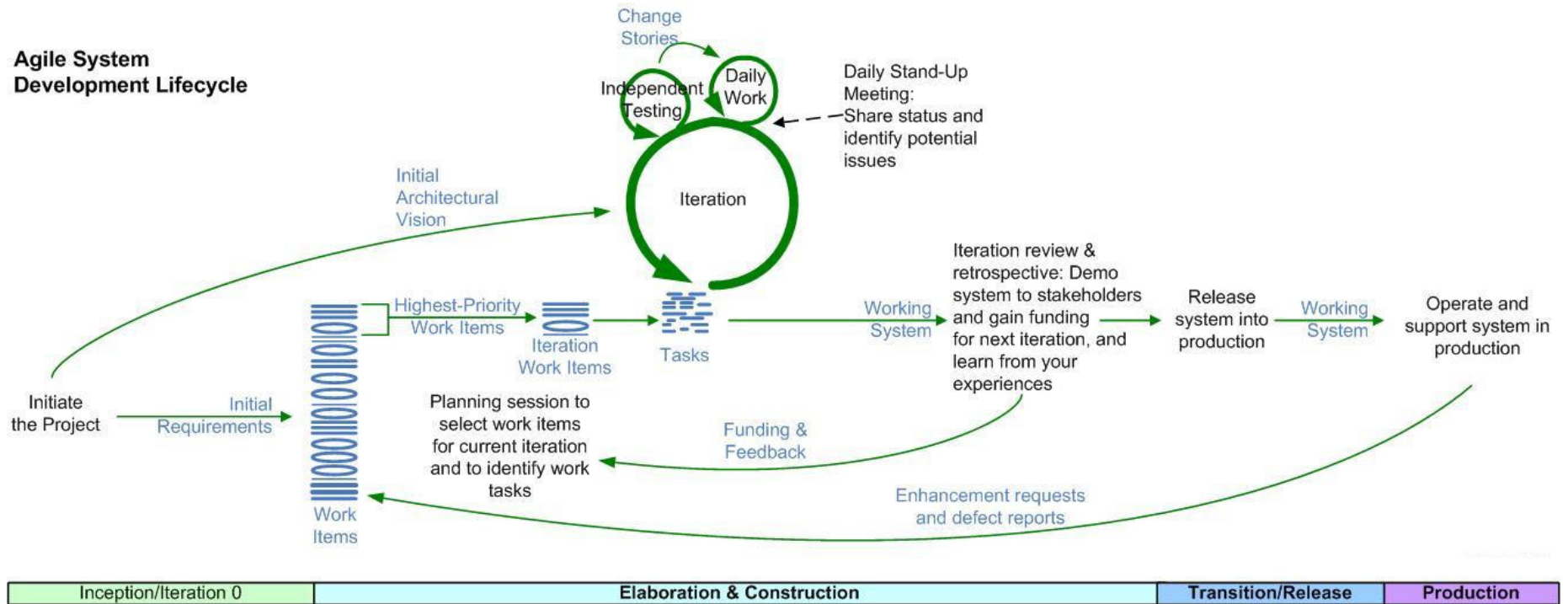
Risk: Non-Functional Requirements and Constraints

Solution: Shared Vision (Requirements Envisioning) and Independent Testing



Risk: Overly Focused on Construction Solution: Look at Full SDLC

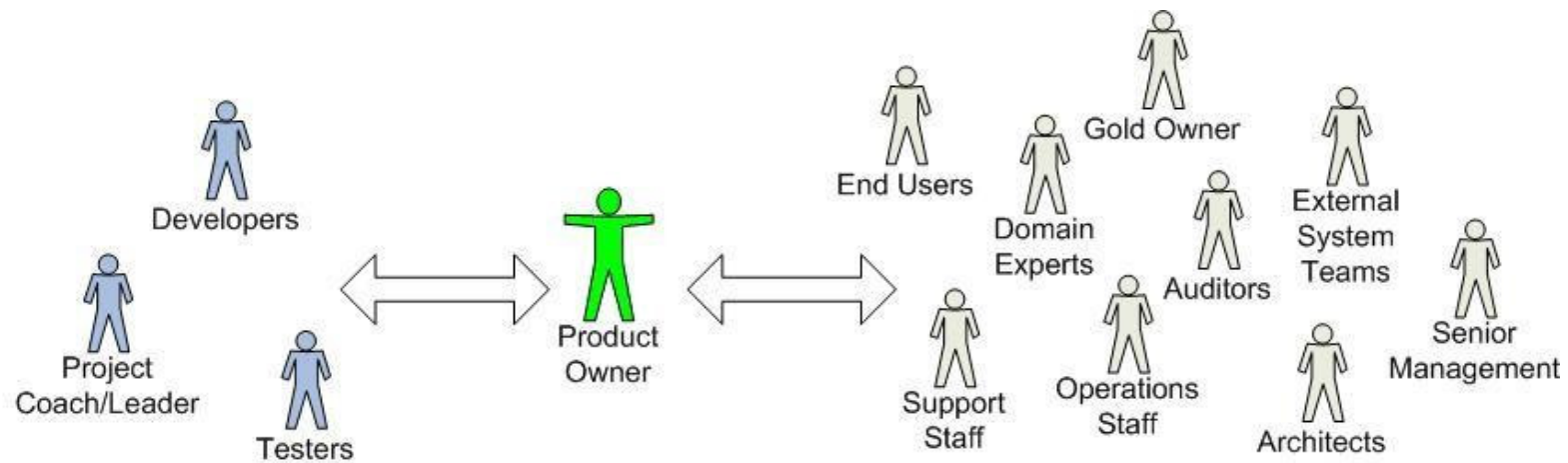
Agile System Development Lifecycle



Risk: Competing Stakeholder Concerns

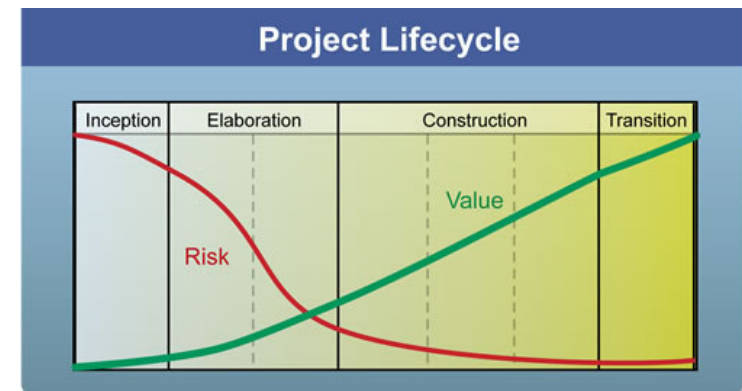
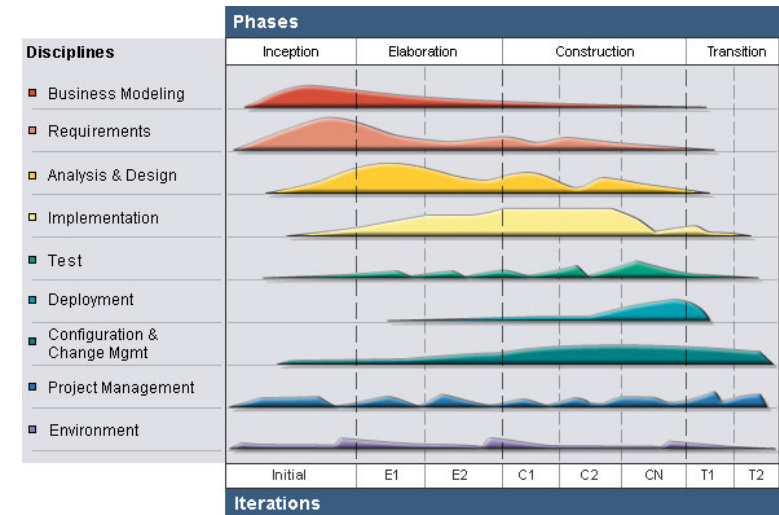
Solution: Agile Business Analysis

- On-site customer is nice, so put them to work
 - ▶ Stakeholders can be active participants in modeling
- Product owner is really a communication conduit between the team and stakeholders
 - ▶ Must have agile business analysis skills
 - ▶ PO gets the team access to the relevant stakeholders just in time
 - ▶ Negotiate, negotiate, negotiate



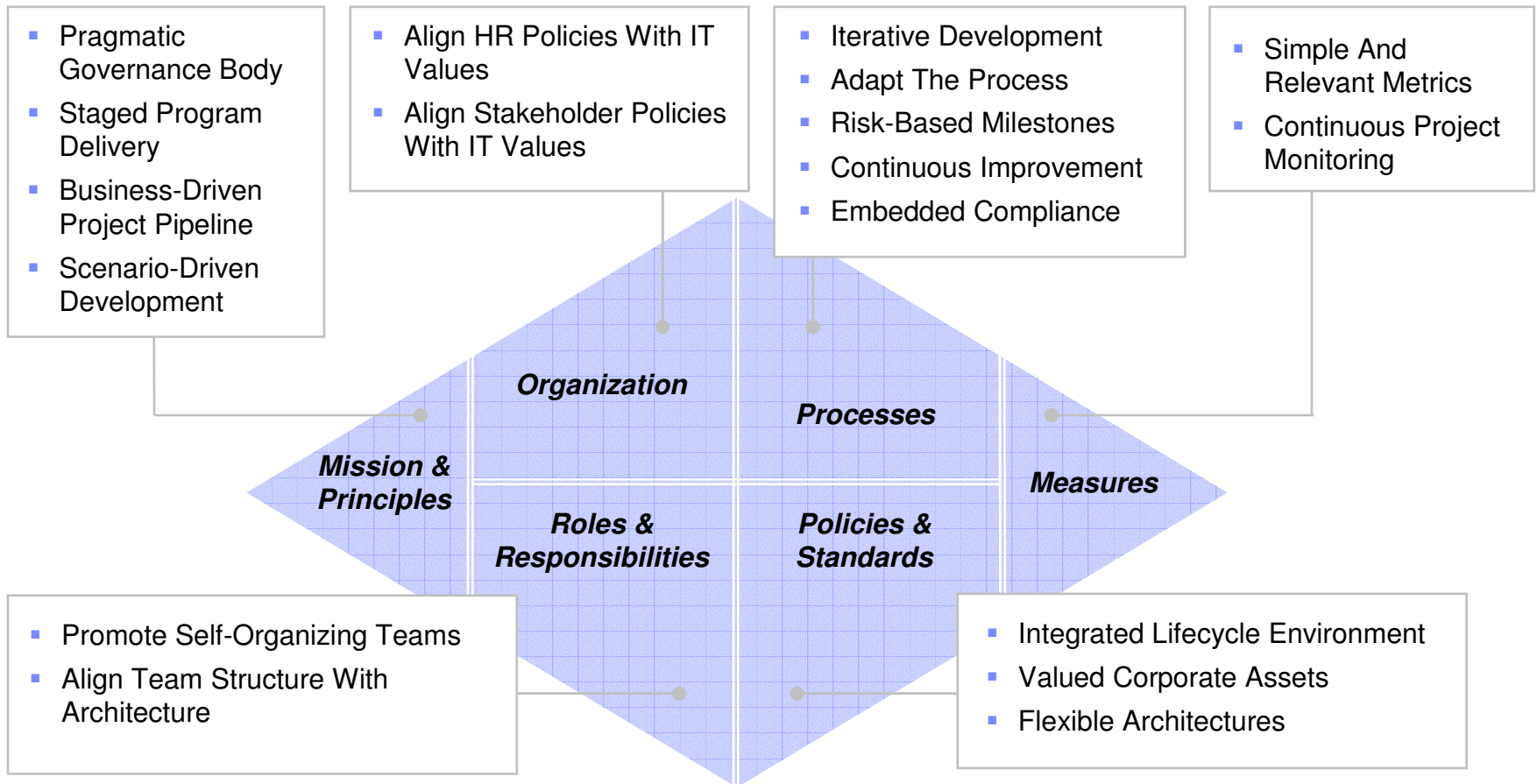
Risk: Lack of Management Oversight Solution: Scale Agile via RUP

- Organizations have instantiated RUP to be very agile
- Scaling strengths:
 - ▶ Risk-driven milestones
 - ▶ Explicit “go/no-go” decision points
 - ▶ Stakeholder concurrence gained during Inception
 - ▶ Architecture proven via working software during Elaboration
 - ▶ Managed deployment during Transition



Risk: Lack of Management Oversight

Solution: Lean Development Governance





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Scott Ambler - Background

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