

# IBM Rational Software Development Conference 2008

WHERE TEAMS ARE **R-HEROES**



## Scaling Agile Software Development for the Real World

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# Agenda

- Agility@Scale
- Addressing Scaling Risks
- Agile Adoption
- Parting Thoughts

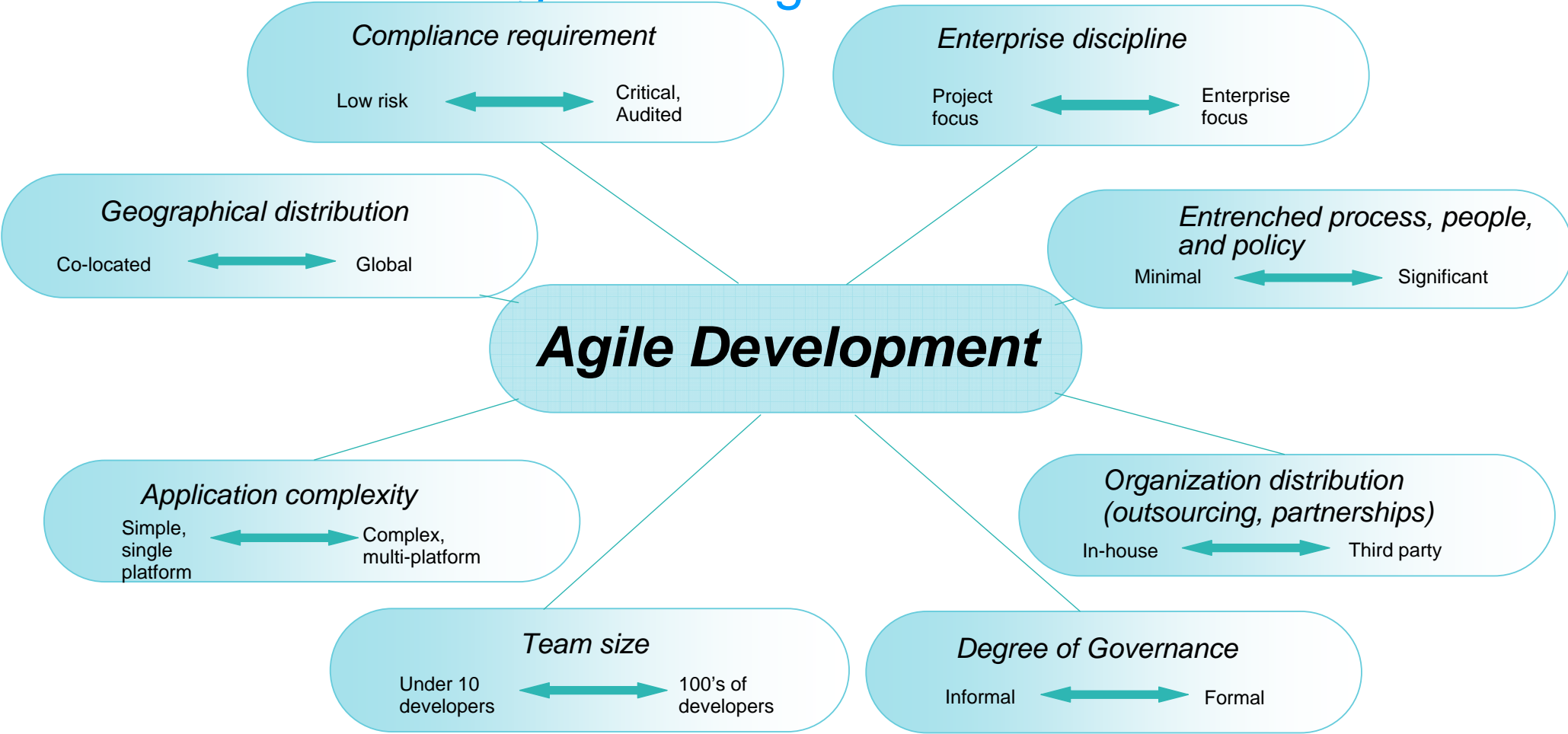


# Agenda

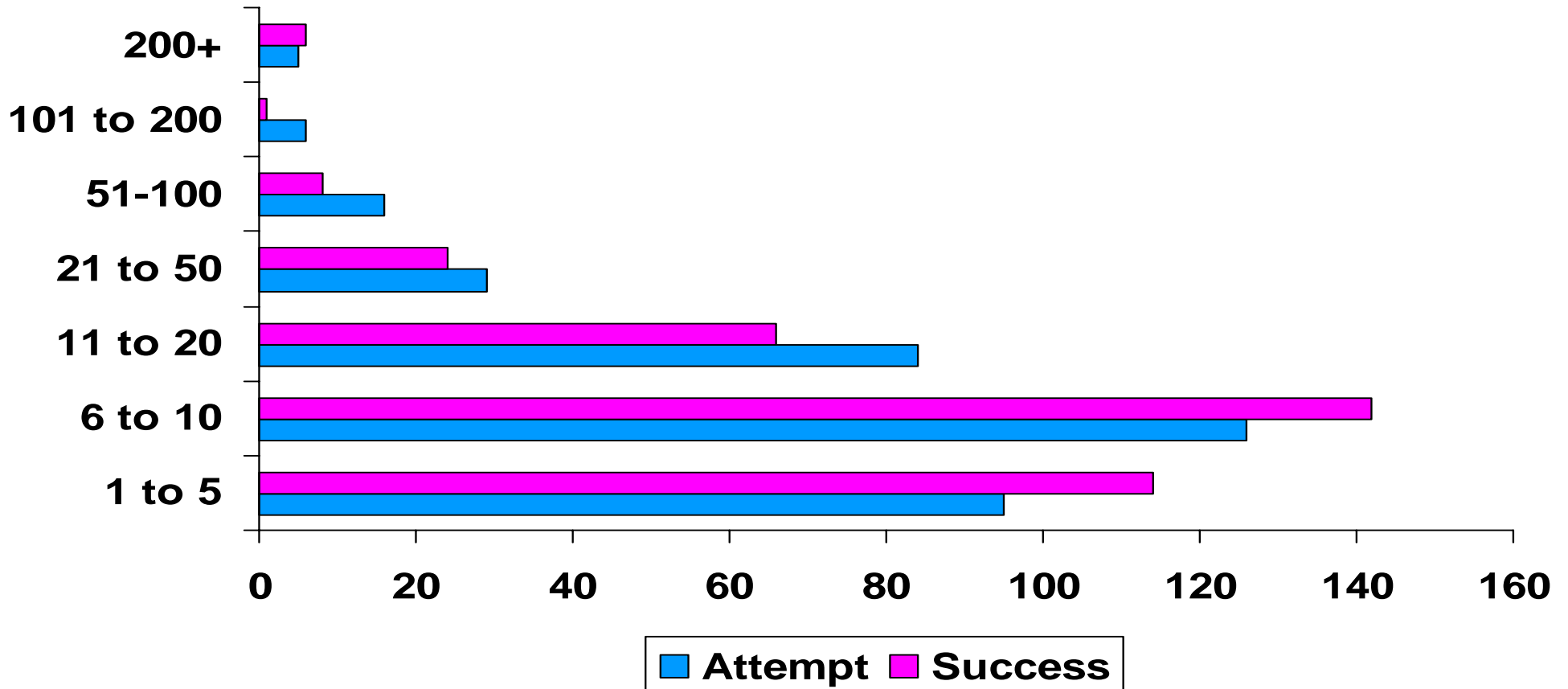
- Agility@Scale
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# Discussion: Challenges with Agile in the Mainstream



# Largest Team Size Attempted vs. Successful

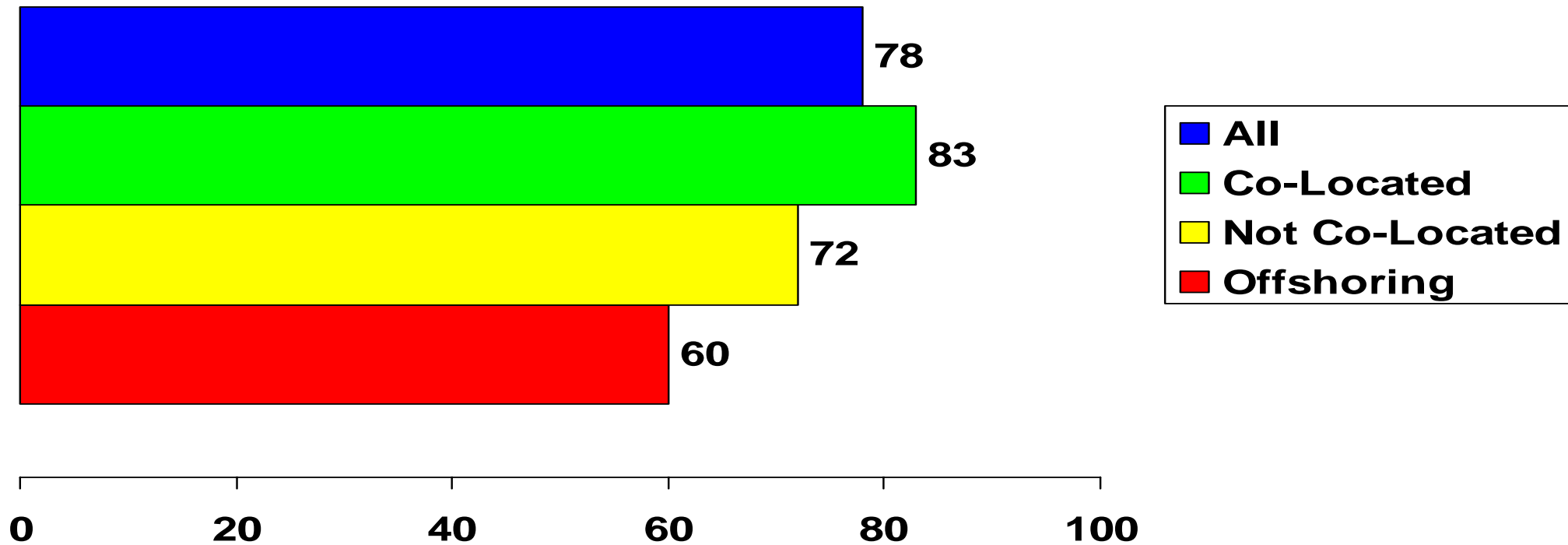


Source: Dr Dobb's 2008 Agile Adoption Survey



# Agile Projects Success Rates (%)

(214 co-located projects, 210 not co-located, 129 offshoring/outsourcing)



Source: Dr Dobb's 2008 Agile Adoption Survey



# Agility is Relative – It Depends on Project Dynamics

## Organizational Drivers

Team Size  
Geographical Distribution  
Organization Distribution  
Entrenched process, people, policy

- Small team
- New projects
- Simple application
- Co-located
- Minimal need for documentation

- Maturing projects
- Multi-platform
- Growing in complexity
- Remote or offshore work
- Greater need for coordination and handoffs

- Mature or existing projects
- Many developers
- Complex, multi-platform applications
- Distributed teams
- Need for scalability, reproducibility, and traceability

## Technical and Regulatory Drivers

Compliance  
Governance  
Application complexity



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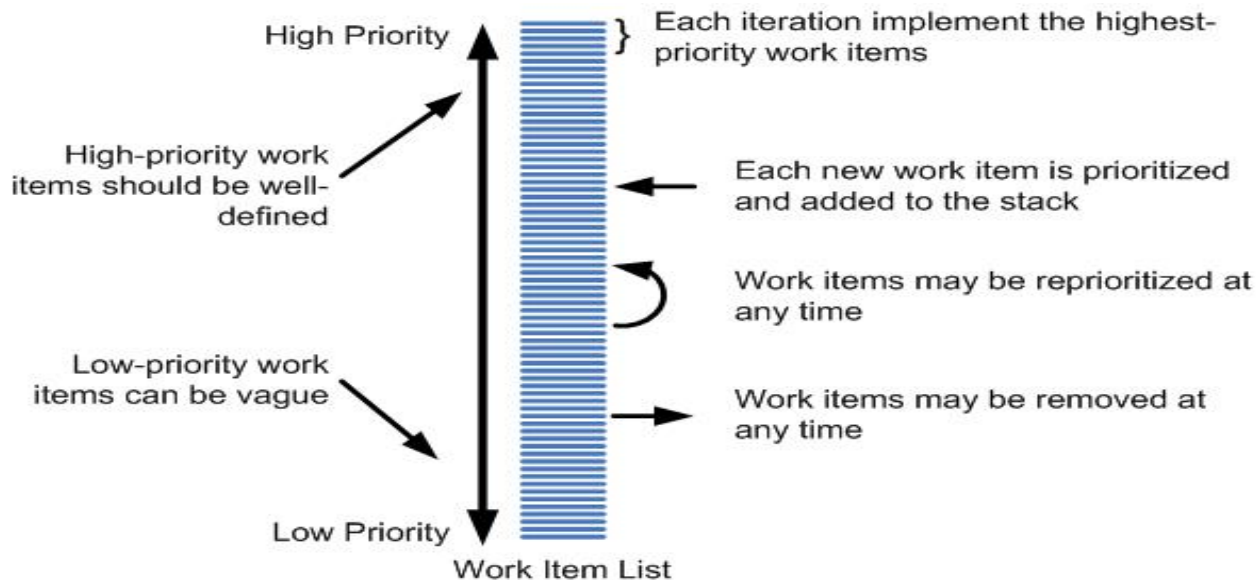


## Discussion: Scaling Risks

- What risks do you perceive?
- Critical risks that I've seen:
  - ▶ You'll build the wrong thing
  - ▶ You'll build it the wrong way
  - ▶ Low quality
  - ▶ Poor data quality
  - ▶ Overly focused on construction
  - ▶ Competing stakeholder concerns
  - ▶ Lack of management oversight
  - ▶ Difficulty transitioning existing staff



## Risk: You'll Build the Wrong Thing Solution: Agile Requirements Management



Requirements are prioritized by stakeholders

Requirements are estimated by the development team

Requirements will evolve throughout the project

Stakeholders see working software each iteration

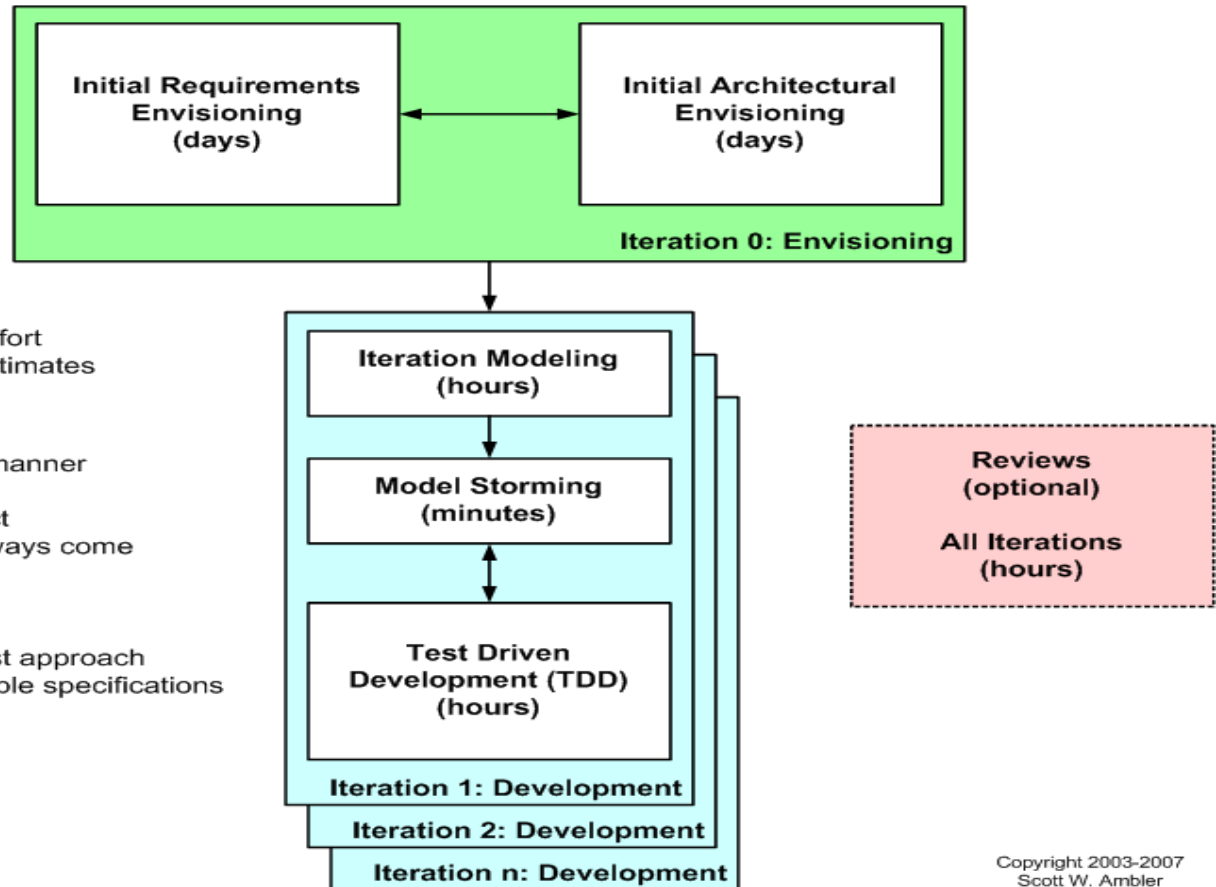
Stakeholders can change the level of funding as appropriate

Stakeholders determine when "enough is enough"



# Risk: You'll Build the Wrong Thing the Wrong Way Solution: Agile Model Driven Development (AMDD)

- Identify the high-level scope
  - Identify initial "requirements stack"
  - Identify an architectural vision
- 
- Modeling is part of iteration planning effort
  - Need to model enough to give good estimates
  - Need to plan the work for the iteration
- 
- Work through specific issues on a JIT manner
  - Stakeholders actively participate
  - Requirements evolve throughout project
  - Model just enough for now, you can always come back later
- 
- Develop working software via a test-first approach
  - Details captured in the form of executable specifications

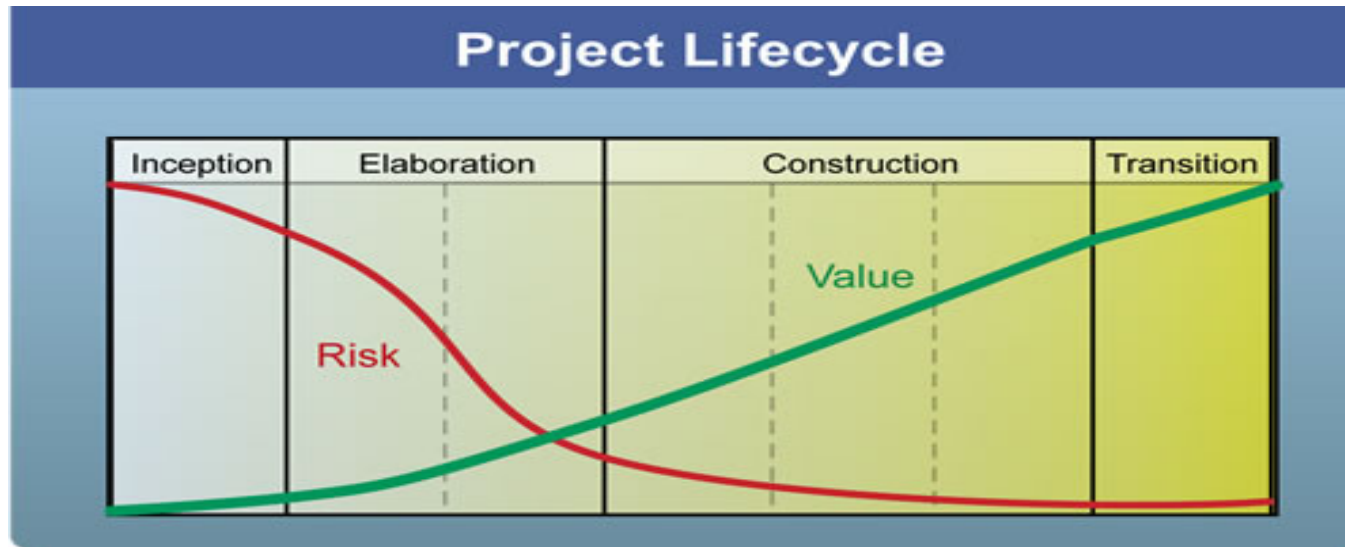


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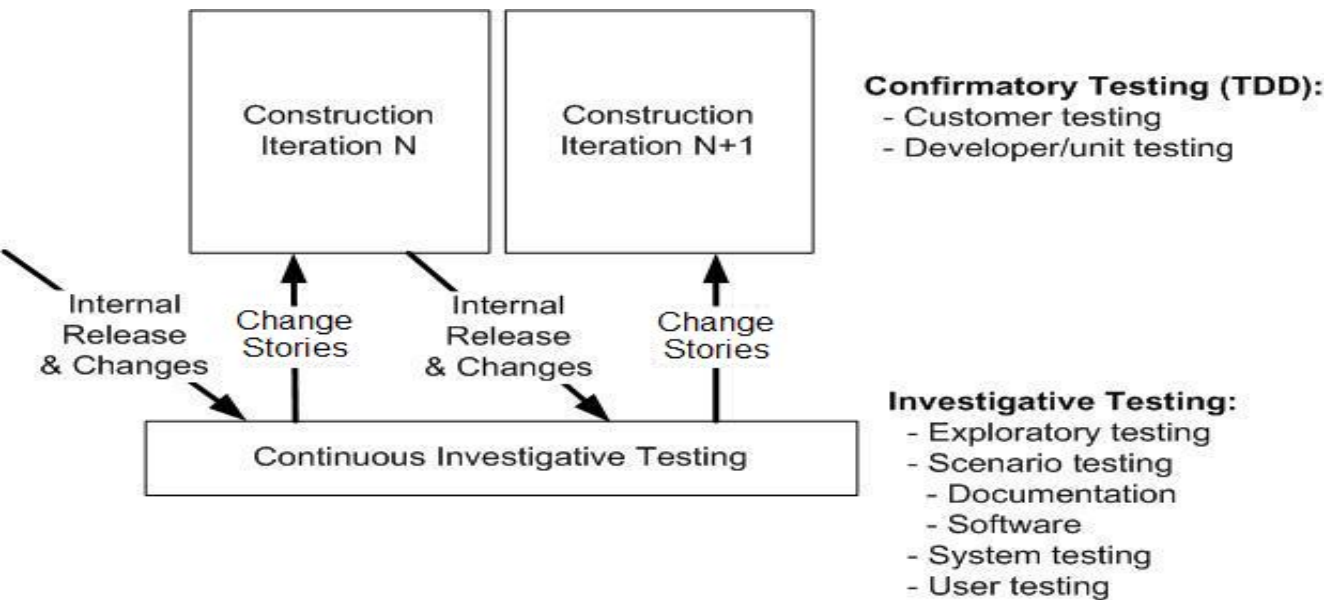
## Risk: You'll Build the Wrong Thing the Wrong Way Solution: Adopt a Risk-Driven Lifecycle

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



## Risk: Low Quality

# Solution: Test Driven Development (TDD) and Continuous Investigative Testing



TDD is a form of confirmatory testing

TDD is a great start, but it's not the full testing picture

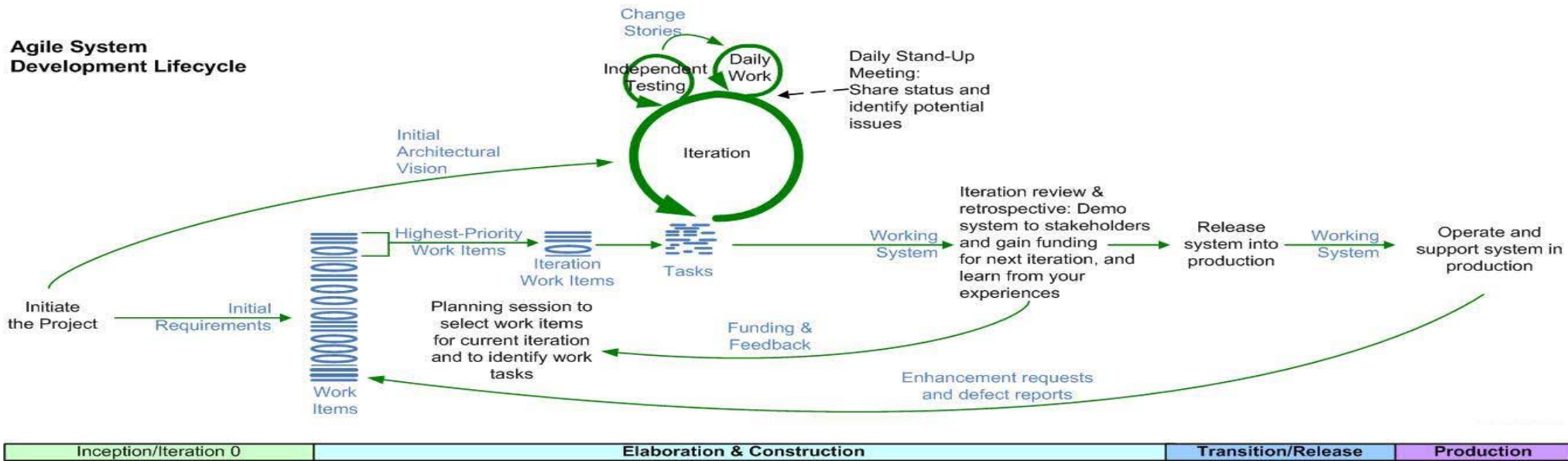
Effective agile teams push their working builds to an independent test team on a regular basis for investigative testing

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

Defects == Requirements

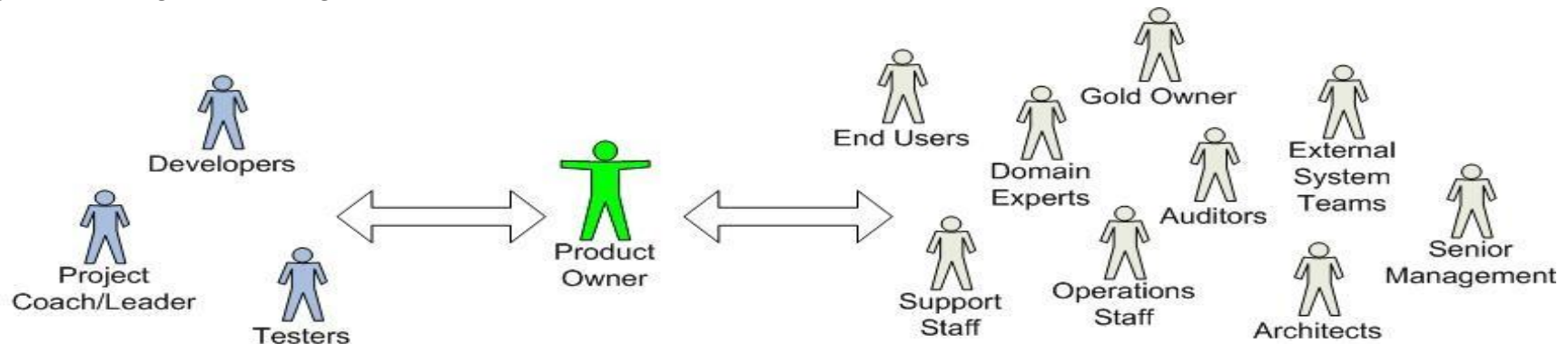


# Risk: Overly Focused on Construction Solution: Look at Full SDLC



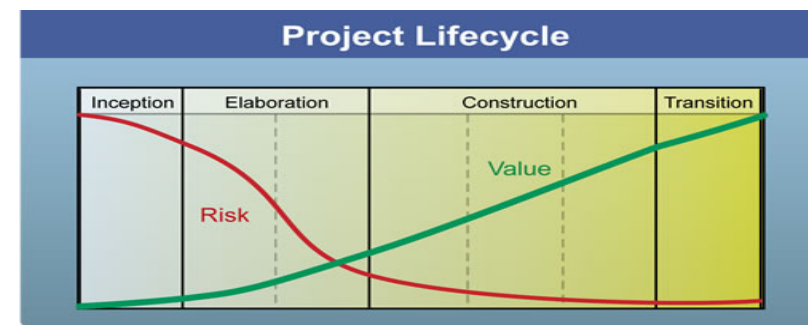
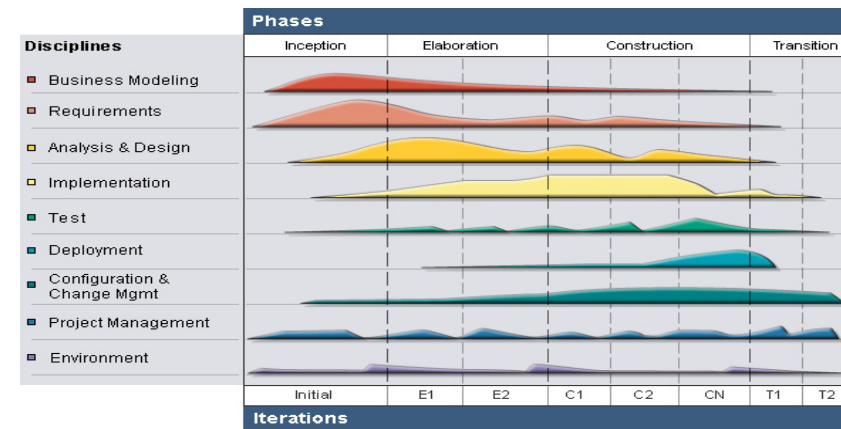
## Risk: Competing Stakeholder Concerns Solution: Agile Business Analysis

- 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



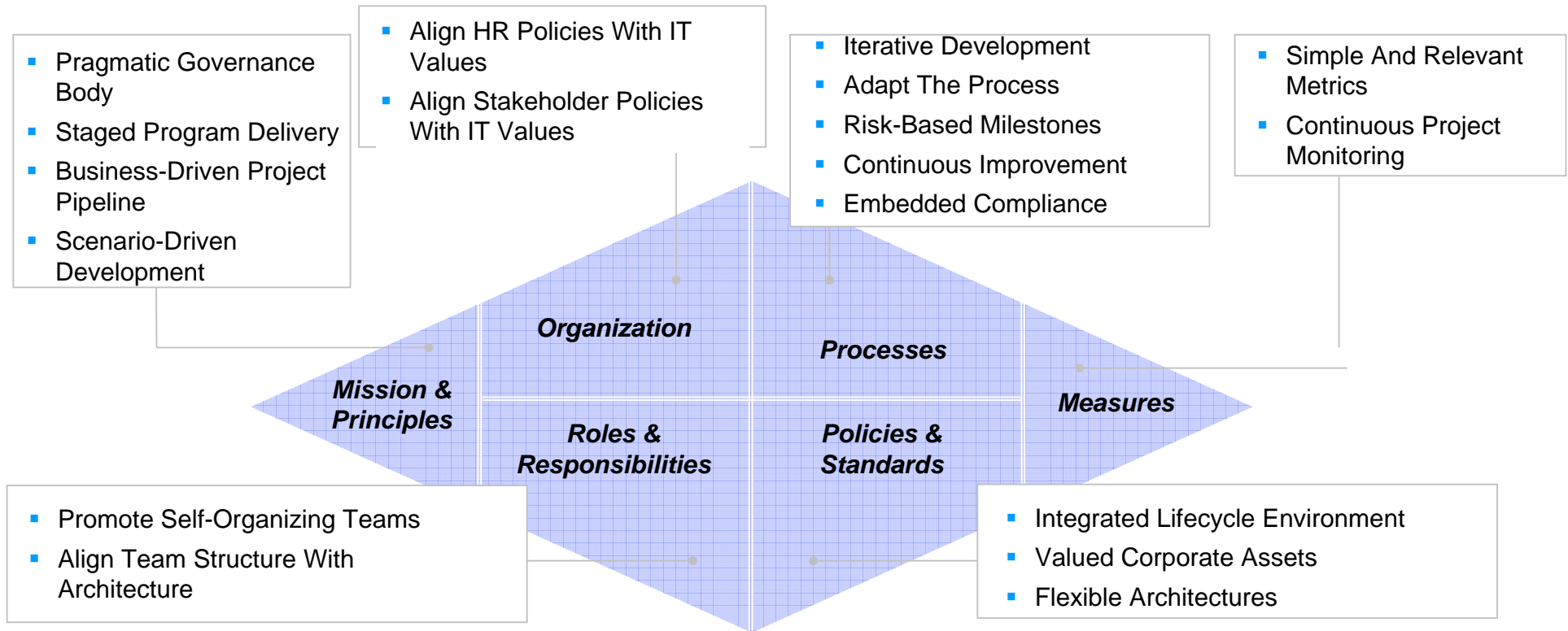
## Risk: Lack of Management Oversight Solution: Scale Agile via RUP

- 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



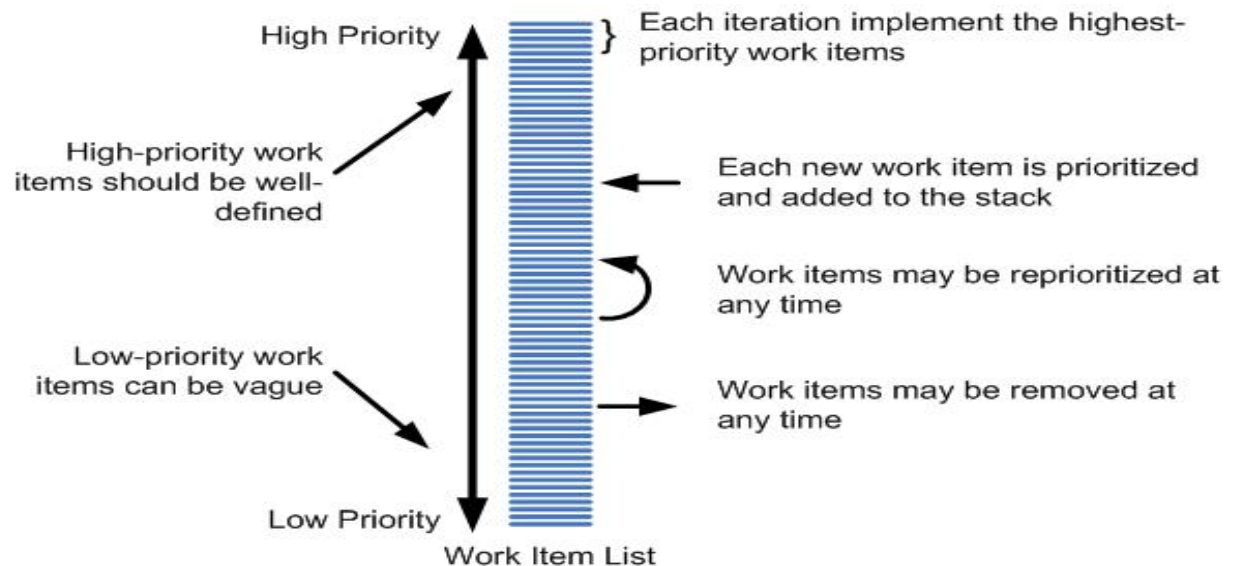
# Risk: Lack of Management Oversight

## Solution: Increased Visibility and Control

Stakeholders gain greater visibility via the regular delivery of working software

Stakeholders can have complete control over the schedule, scope, and budget

Stakeholders must now be accountable for their decisions



Agile projects are easier to govern than traditional projects!



## Risk: Difficulty Transitioning Staff

- As always, people issues are the difficult ones
- Recognize that:
  - ▶ You've done similar paradigm shifts before:
    - Structured to object technology
    - Centralized to client/server
    - Client/server to services-based
  - ▶ You have significant cultural issues to overcome
  - ▶ All positions, including management, potentially needs to move to agile
  - ▶ Not everyone needs to be agile, but most will become so
- The Obvious Strategies:
  - ▶ Hire experienced people
  - ▶ Mentoring
  - ▶ Training and education

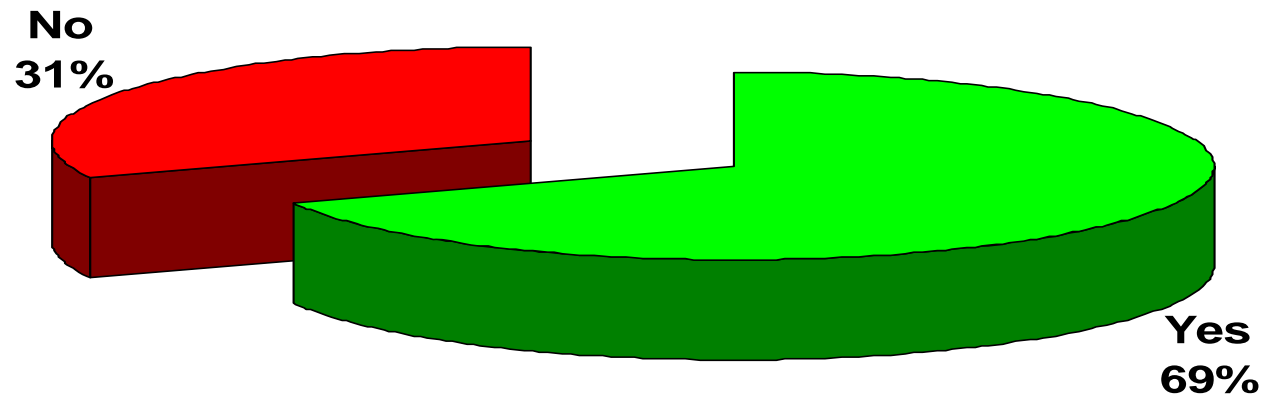


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## Has Your Organization Adopted One or More Agile Techniques?



61.4% of developers thought they were doing Agile

78.2% of IT management thought they were doing Agile

18.3% of respondents indicated they're still in the pilot stage

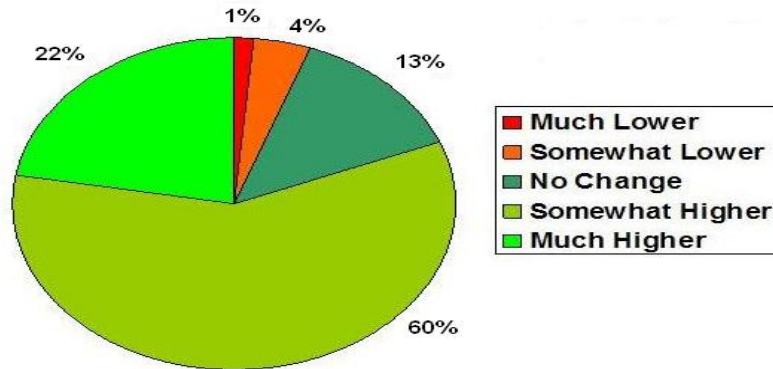
15% of "No" respondents hope to do Agile this year

Source: Dr Dobb's 2008 Agile Adoption Survey

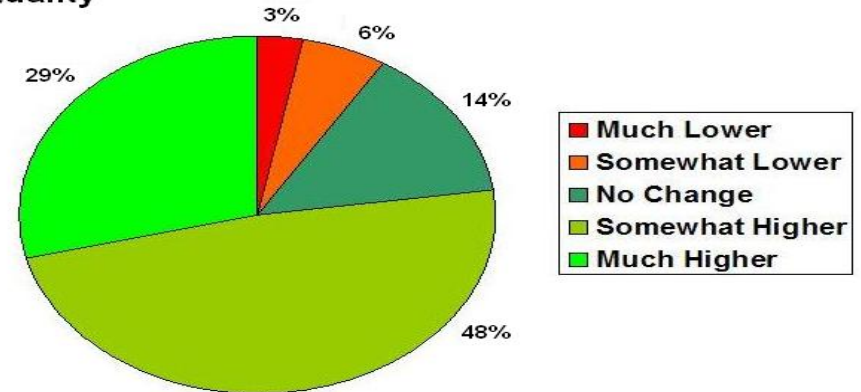


# Why Agile? Because it Works!

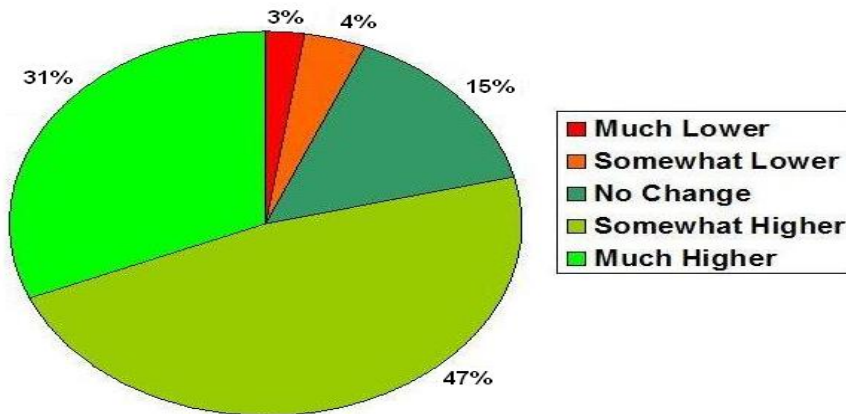
**Productivity**



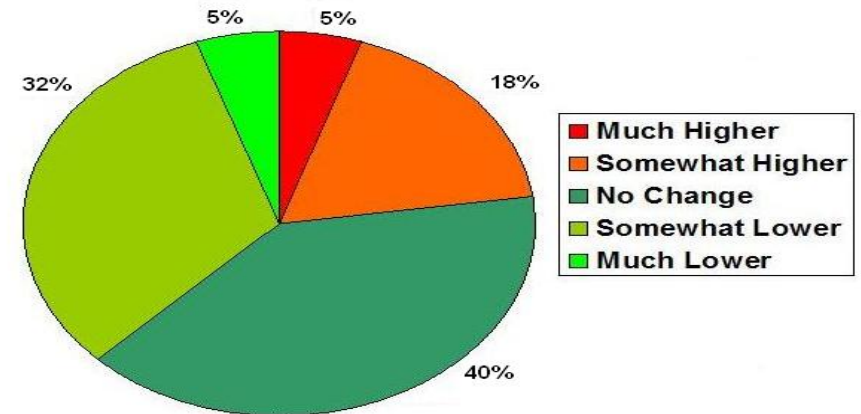
**Quality**



**Business Stakeholder Satisfaction**



**Cost of System Development**



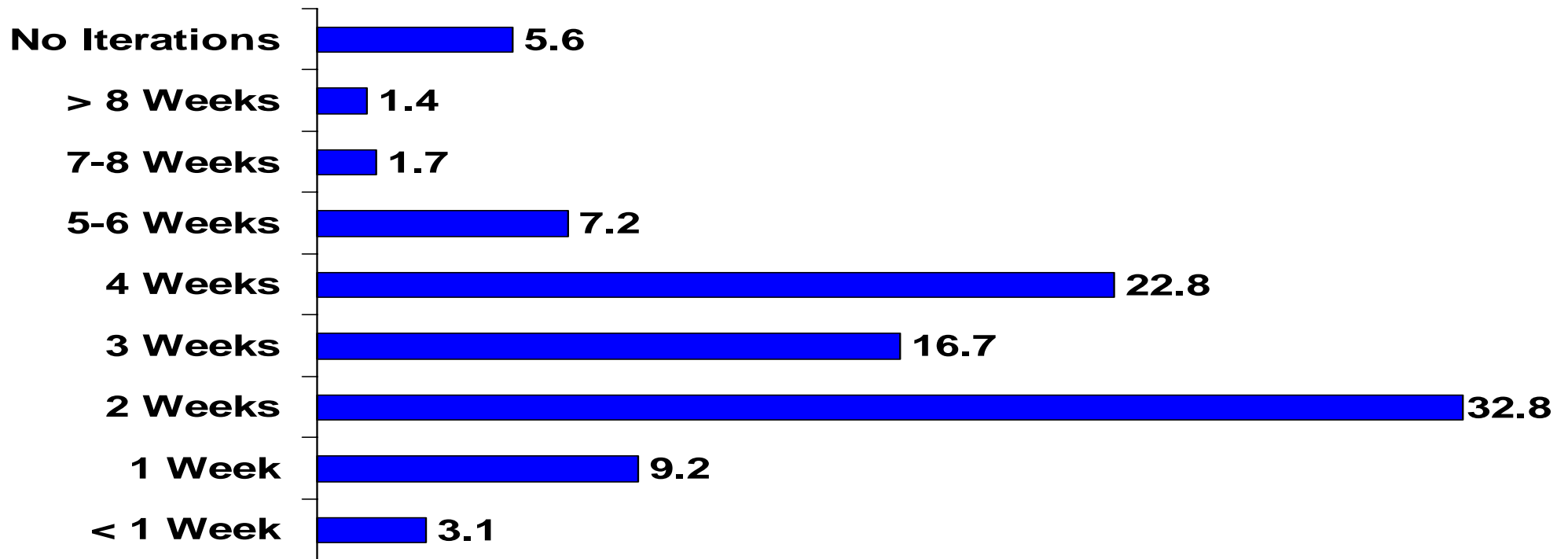
Source: Dr. Dobb's Journal 2008 Agile Adoption Survey

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## Length of Iterations (% respondents)

73% have iterations between 2 and 4 weeks in length



Source: Dr Dobb's 2008 Agile Adoption Survey



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- Agility@Scale
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- Parting Thoughts
  - ▶ A Call to Action
  - ▶ Critical IBM Agile Resources
  - ▶ Questions



## A Call To Action

- **Look beyond the Agile rhetoric**
  - ▶ Are you being helped, or being sold consultantware?
  - ▶ The IT landscape is very complex
- **Agile can scale to accommodate technical and organizational complexity**
  - ▶ Agile@Scale has unique needs
  - ▶ IBM Rational brings a wealth of knowledge to help companies succeed in complex environments
- **Get some Agile mentoring and training**
  - ▶ Project management training is critical
  - ▶ Training modelers, developers, ... is also critical
- **Adopt an Agile Form of RUP**
  - ▶ RUP done right is agile
  - ▶ RUP provides the control mechanisms and risk-mitigation strategies that other agile methods lack

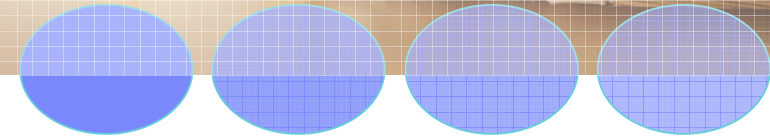


## Critical IBM Agile Resources

[www.ibm.com/rational/agile/](http://www.ibm.com/rational/agile/)

[www.ibm.com/developerworks/](http://www.ibm.com/developerworks/)

[www.ibm.com/developerworks/blogs/page/ambler](http://www.ibm.com/developerworks/blogs/page/ambler)





# QUESTIONS





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