

Agility at Scale: Applying Agile Software Development Techniques on Real-World Projects

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IBM Rational Software Development Conference 2007



What keeps me **Rational**?



9 October – Johannesburg & 11 October – Cape Town

Jaco Viljoen - Background

- Principal Consultant at IndigoCube



- IBM Business Partner

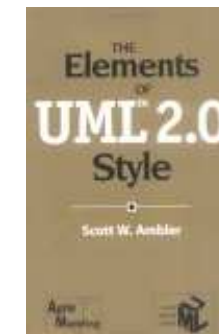
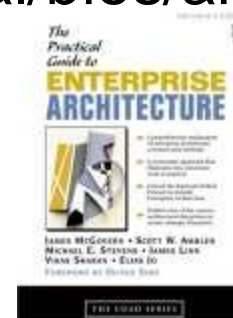
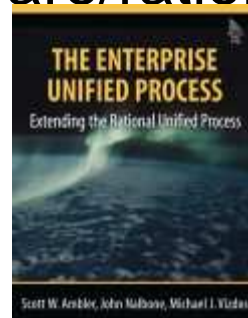
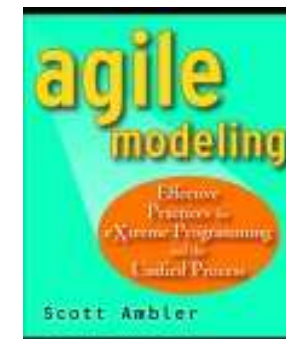
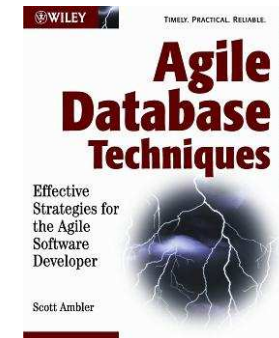
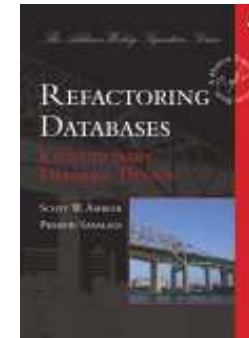


- www.indigocube.co.za



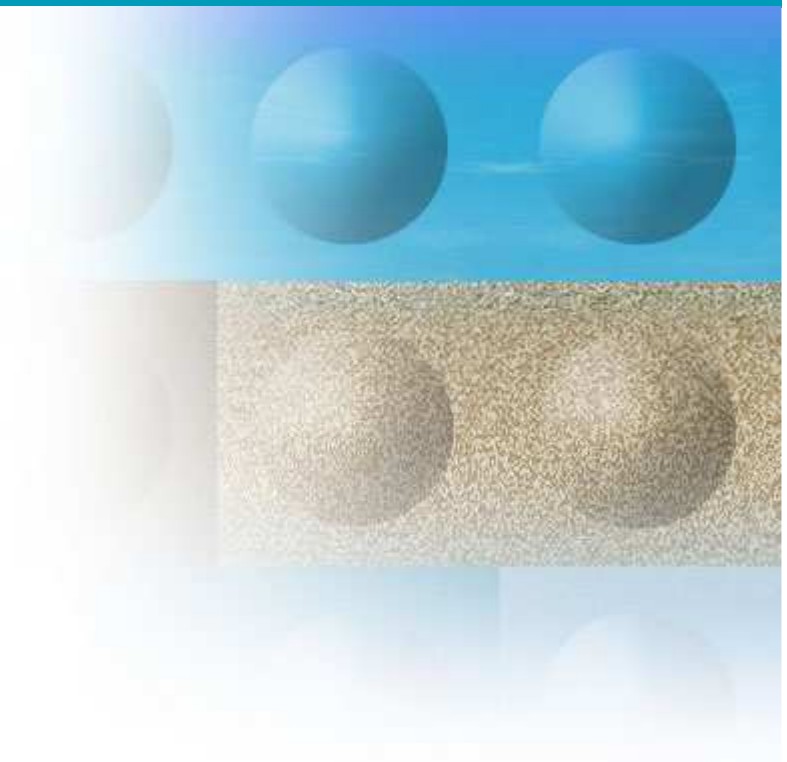
Scott Ambler - Background

- Practice Leader Agile Development
- Fellow – International Association of Software Architects
- WWW-
306.ibm.com/software/rational/bios/ambler.html



Discussion Topics

- Warning!
- Agile Software Development
- Agile Adoption Rate
- Scaling Agile
- Parting Thoughts



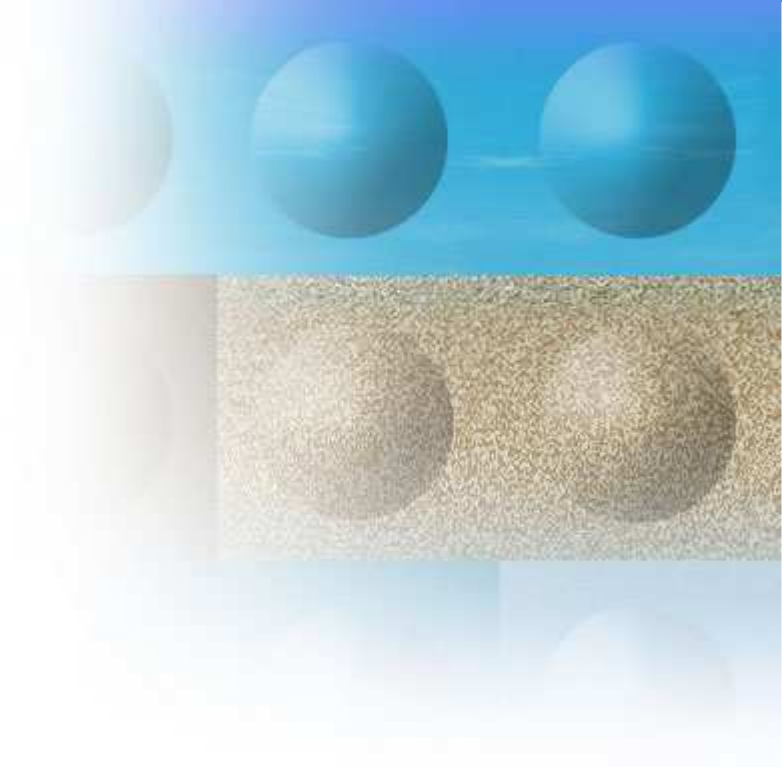
Warning!

- I'm spectacularly blunt at times
- Many new ideas will be presented
- Some may not fit well into your existing environment
- Some will challenge your existing notions about software development
- Some will confirm your unvoiced suspicions
- Don't make any "career-ending moves"
- Be skeptical but open minded



Discussion Topics

- Warning!
- Agile Software Development
 - ▶ What is Agile?
 - ▶ Agile Mythbusters
 - ▶ Agile Practices
- Agile Adoption Rate
- Scaling Agile
- Parting Thoughts



What is Agile?

- An iterative and incremental (evolutionary) approach performed in a highly collaborative and self-organizing manner with **just the right amount of ceremony** to produce high quality software in a cost effective and timely manner which meets the changing needs of its stakeholders.
- Core principles
 - ▶ “Fits just right” process
 - ▶ Continuous testing and validation
 - ▶ Consistent team collaboration
 - ▶ Rapid response to change
 - ▶ Ongoing customer involvement
 - ▶ Frequent delivery of working software



Mythbusters

Myth

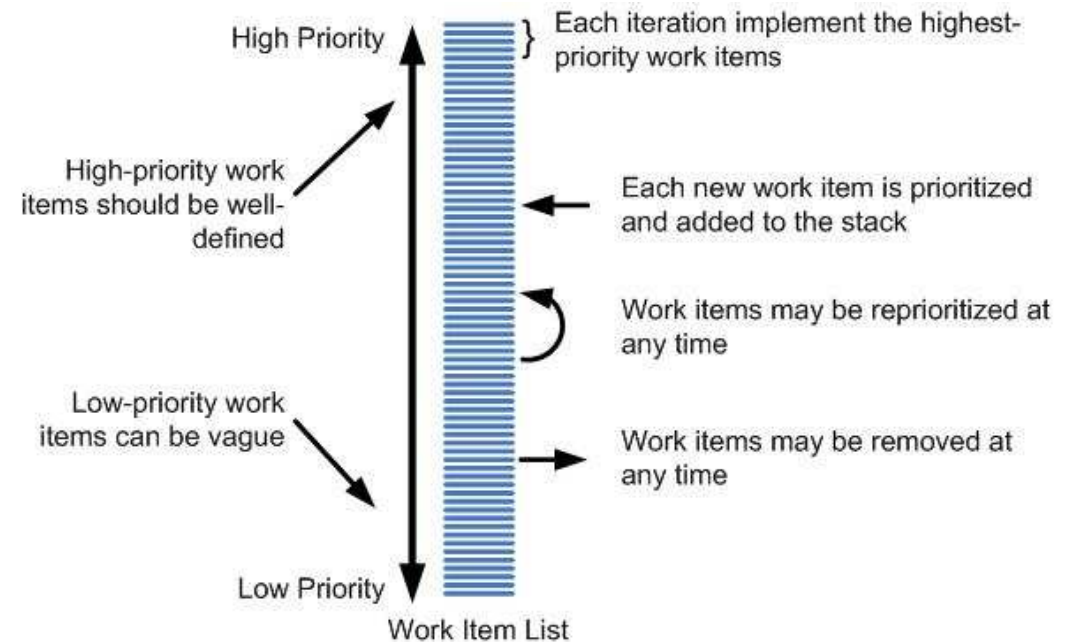
1. No Documentation
2. Undisciplined
3. No Planning
4. Not Predictable
5. Does Not Scale
6. Is a Fad
7. Silver Bullet
8. RUP isn't agile
9. Not Fixed Price

Reality

1. Agile Documentation
2. Requires great discipline
3. Just-in-time (JIT) planning
4. Far more predictable
5. Eclipse is agile
6. It's quickly becoming the norm
7. It requires skilled people
8. RUP is as agile as you make it
9. Agile provides stakeholders control over the budget, schedule, and scope

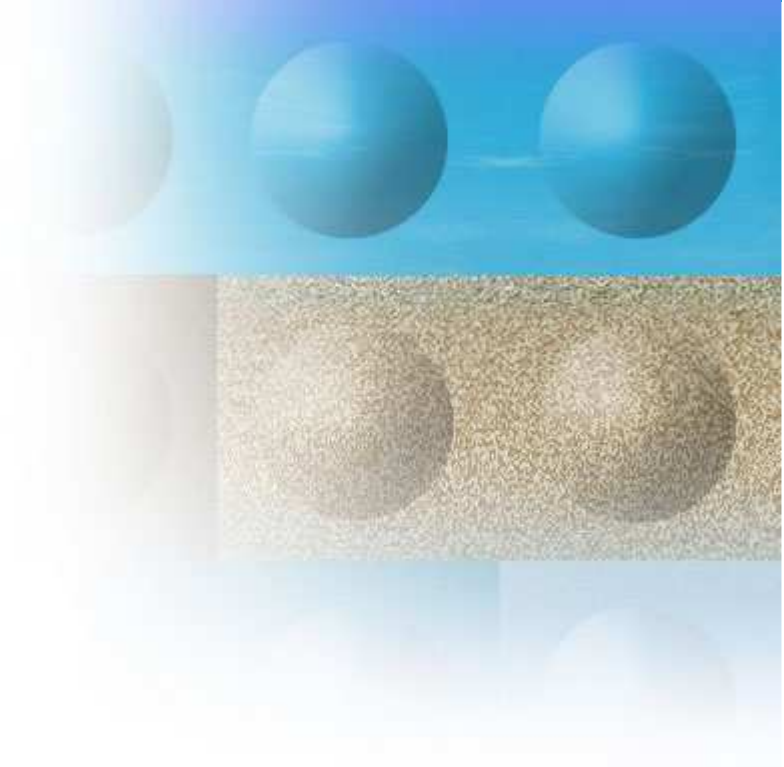
Mainstream Agile Practices

- Regular Deployment of Working Software
- Non-Solo Development
- Refactoring
- Continuous Integration
- Configuration Management
- Test Driven Development (TDD)
- Agile Testing
- Agile Documentation



Discussion Topics

- Warning!
- Agile Software Development
- Agile Adoption Rate
 - ▶ Survey overview
 - ▶ Adoption rates
 - ▶ Success rates
- Scaling Agile
- Parting Thoughts

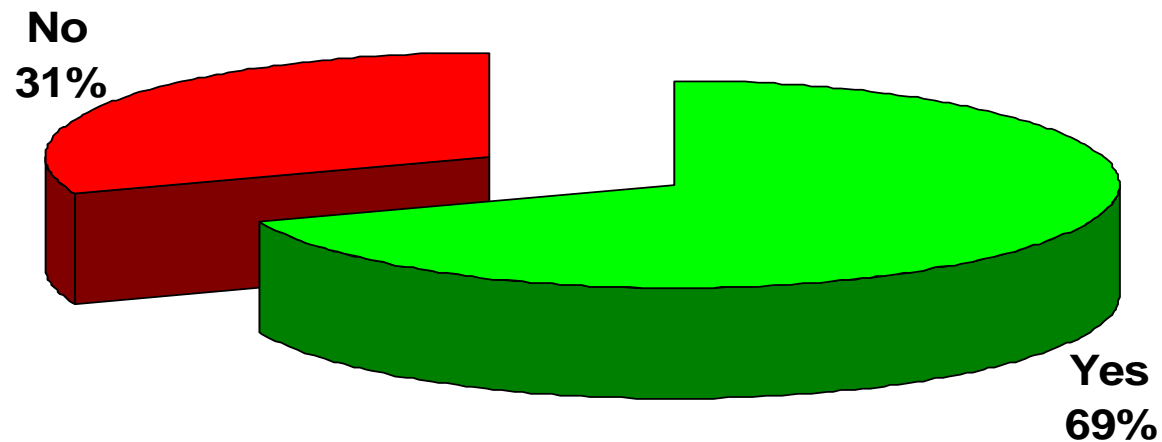


Survey Results

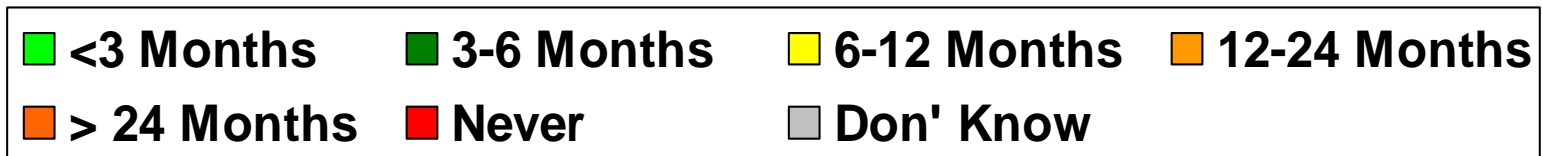
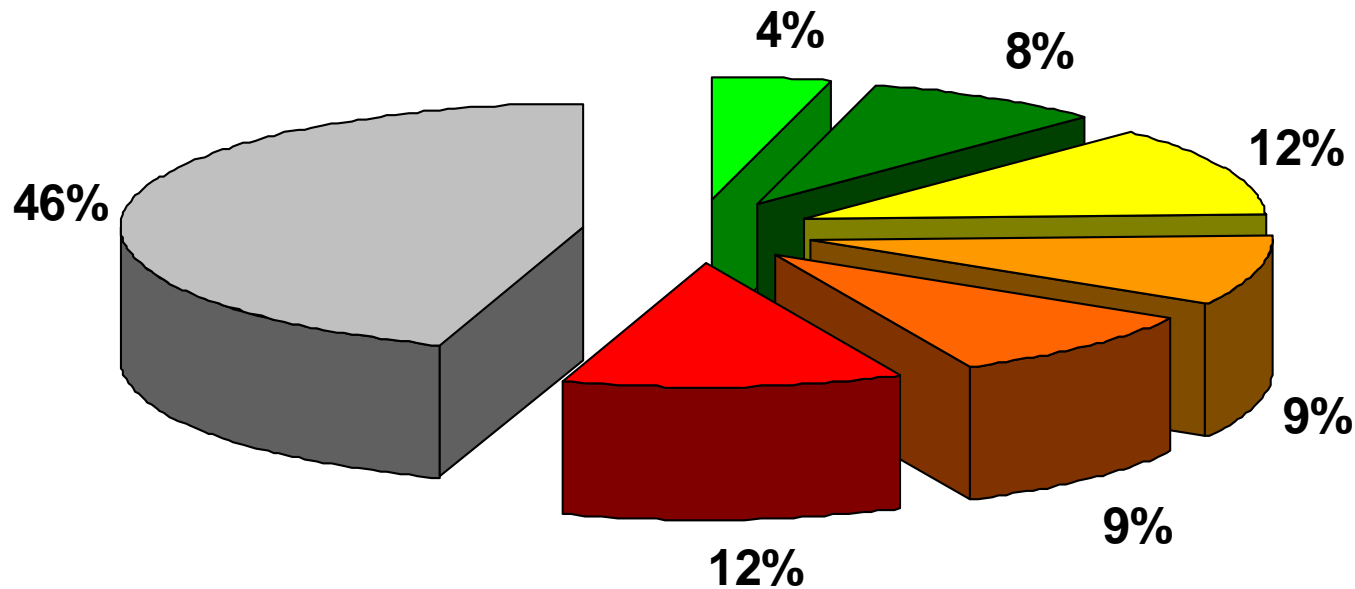
- Agile Adoption Survey
 - ▶ March 2007
 - ▶ Aug 2007 Column
 - ▶ Advertised in Editor's blog on www.ddj.com
 - ▶ 781 respondents
 - ▶ 52% were developers, 22% were in management
 - ▶ 73% had 10+ years in IT
 - ▶ 33% worked in orgs of 1000+ people
 - ▶ 85% worked in commercial firms
 - ▶ 95% North American
- Project Success Survey
 - ▶ August 2007
 - ▶ Dec 2007 Column
 - ▶ Email to DDJ mailing list
 - ▶ 535 respondents
 - ▶ 54% were developers/modelers, 30% were in management
 - ▶ 73% had 10+ years in IT
 - ▶ 13% worked in orgs of 1000+ IT people
 - ▶ 84% worked in commercial firms
 - ▶ 69% North American, 18% European
- Details posted at www.ambysoft.com/surveys/



Has Your Organization Adopted One or More Agile Techniques?

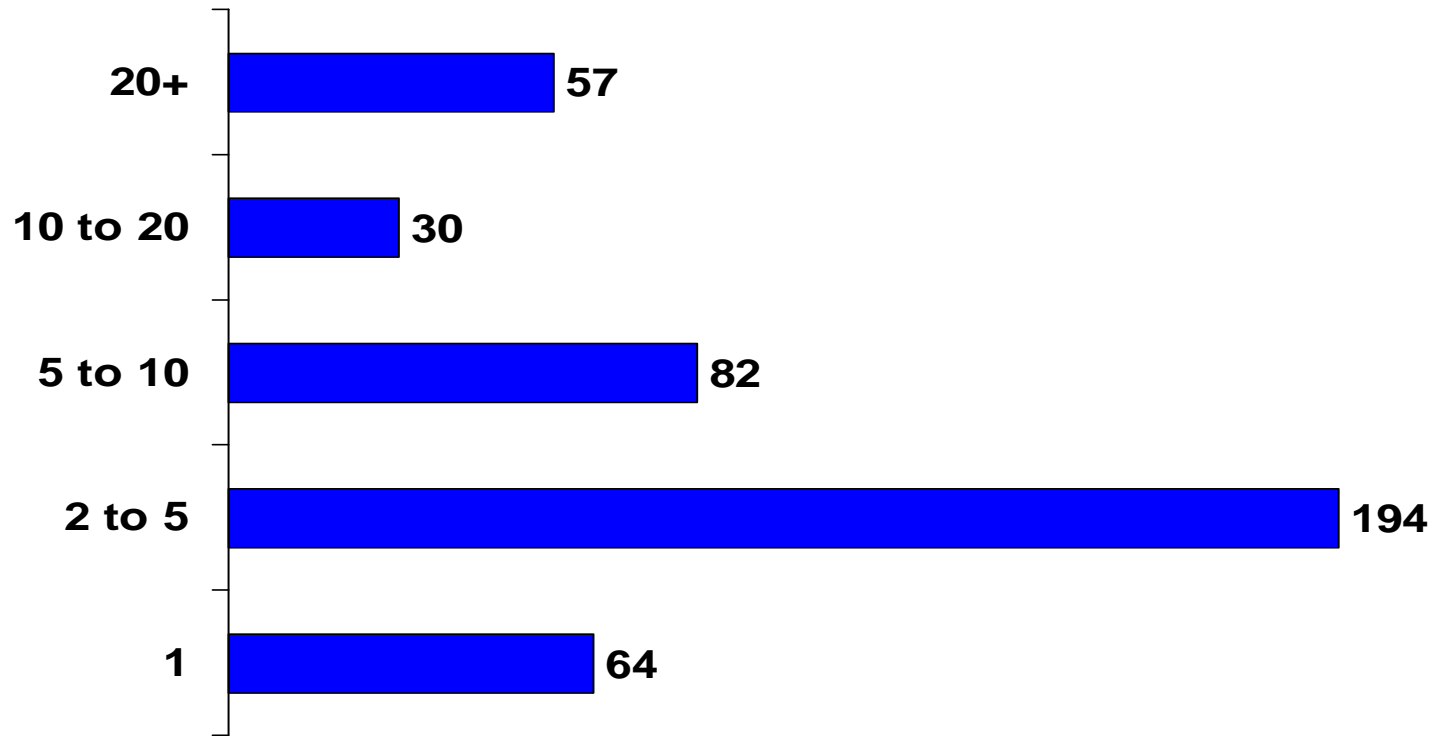


When Will You Adopt Agile? (241 of 781 said they hadn't yet)



Number of Agile Projects Run

85% have run multiple agile projects

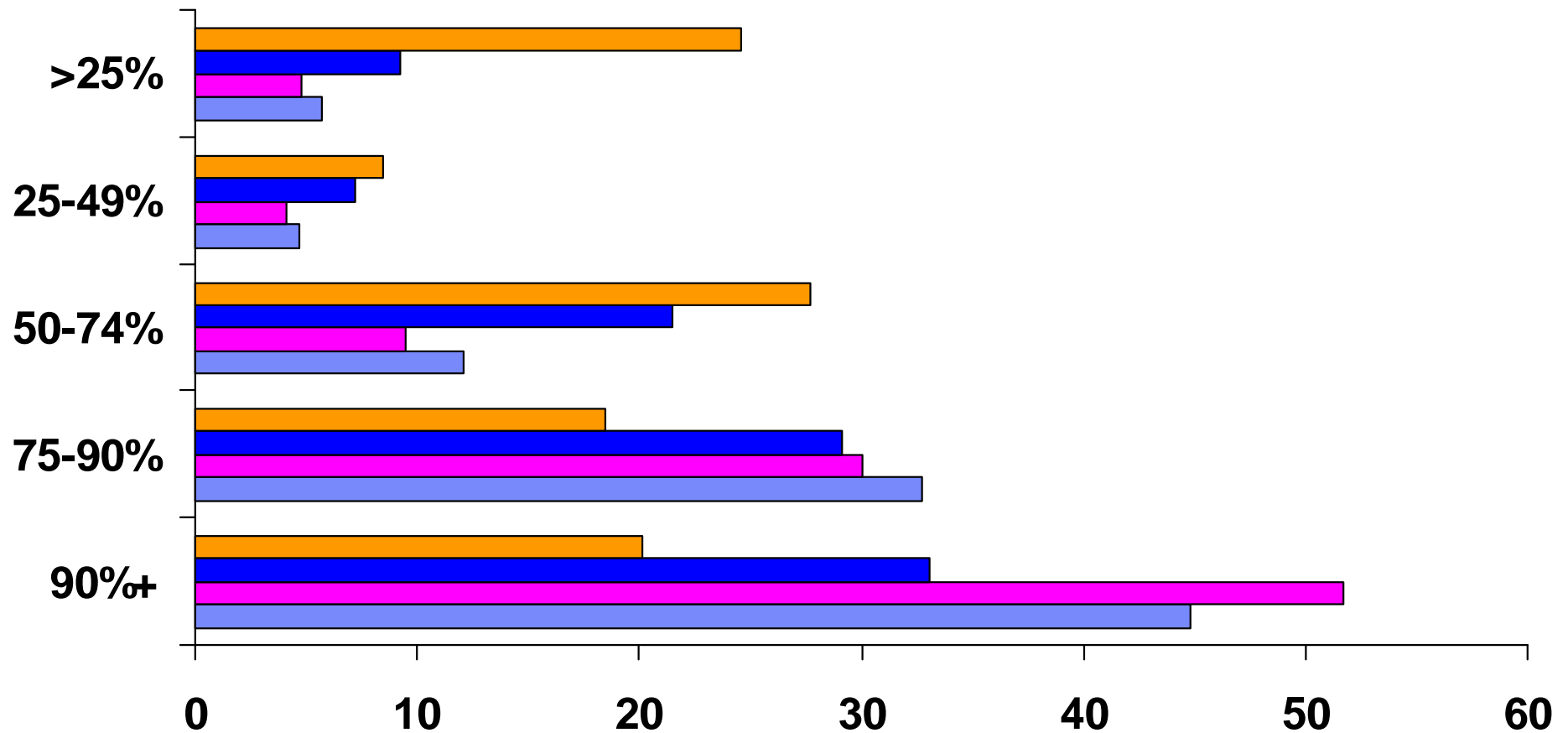


Project Success Rate (%)



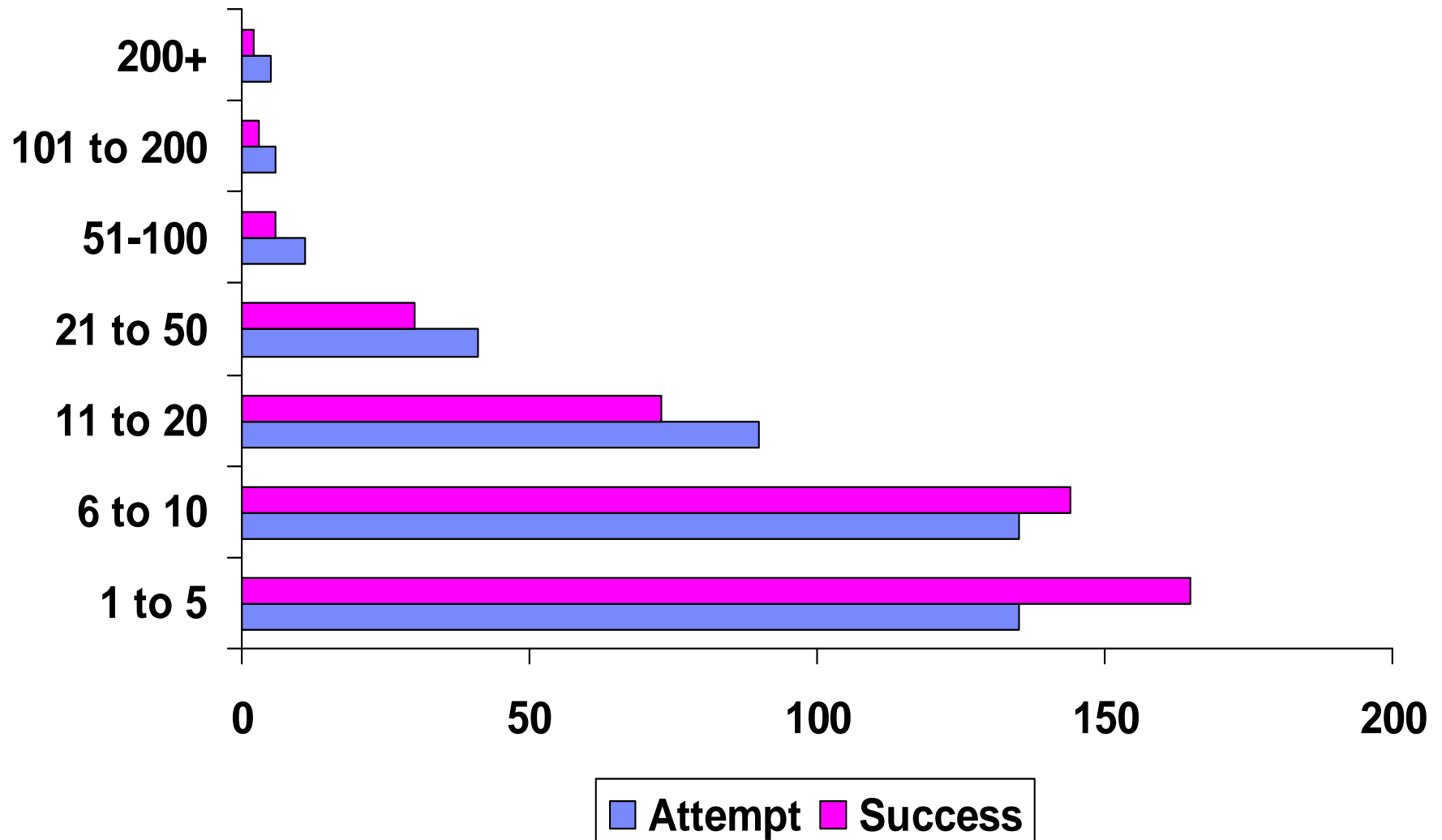
% of Successful Agile Projects

(296 co-located, 251 not co-location, 130 offshoring): Agile Adoption Survey



■ All
 ■ Co-Located
 ■ Not Co-Located
 ■ Offshoring

Largest Team Size Attempted vs. Successful

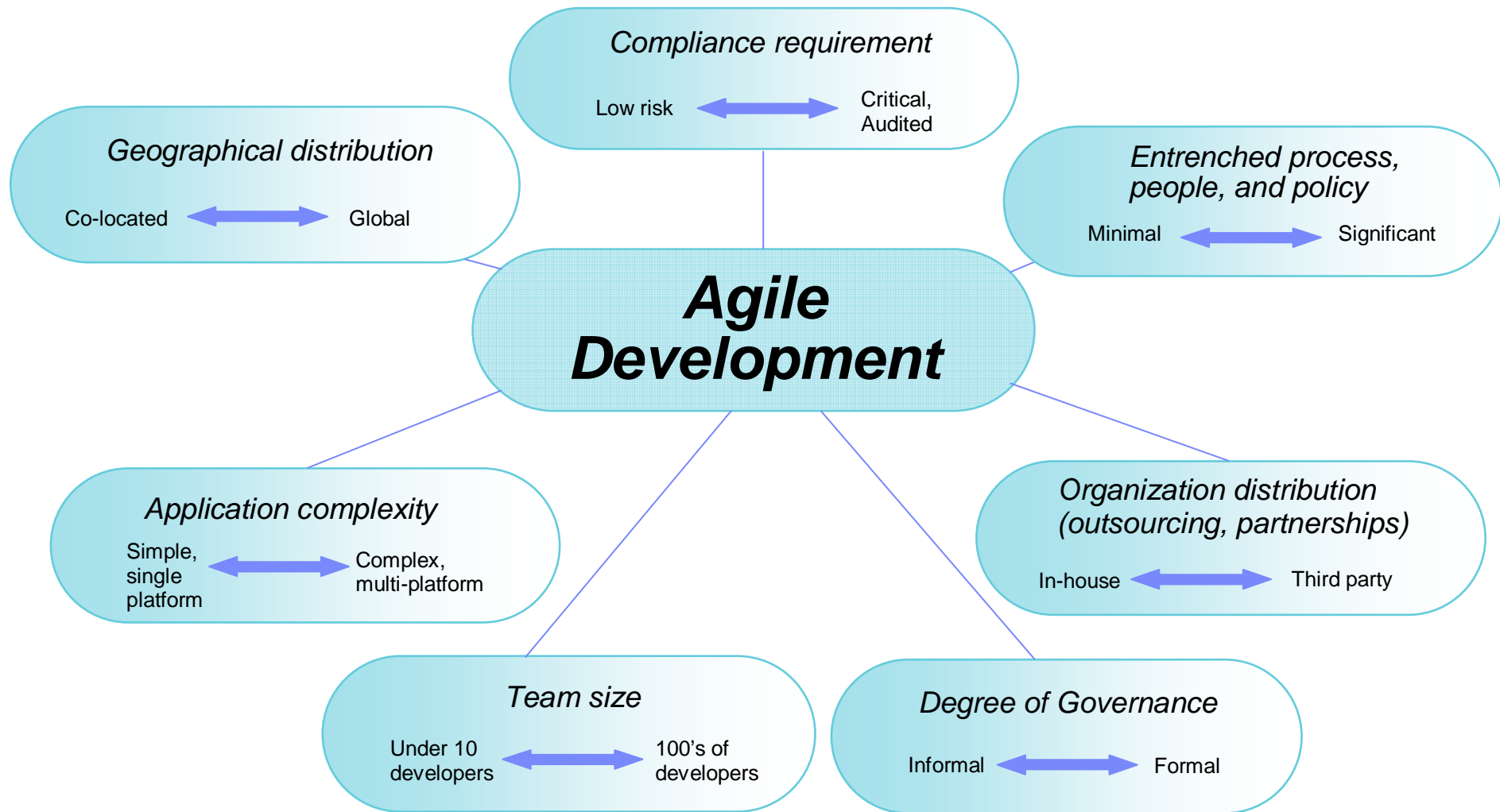


Discussion Topics

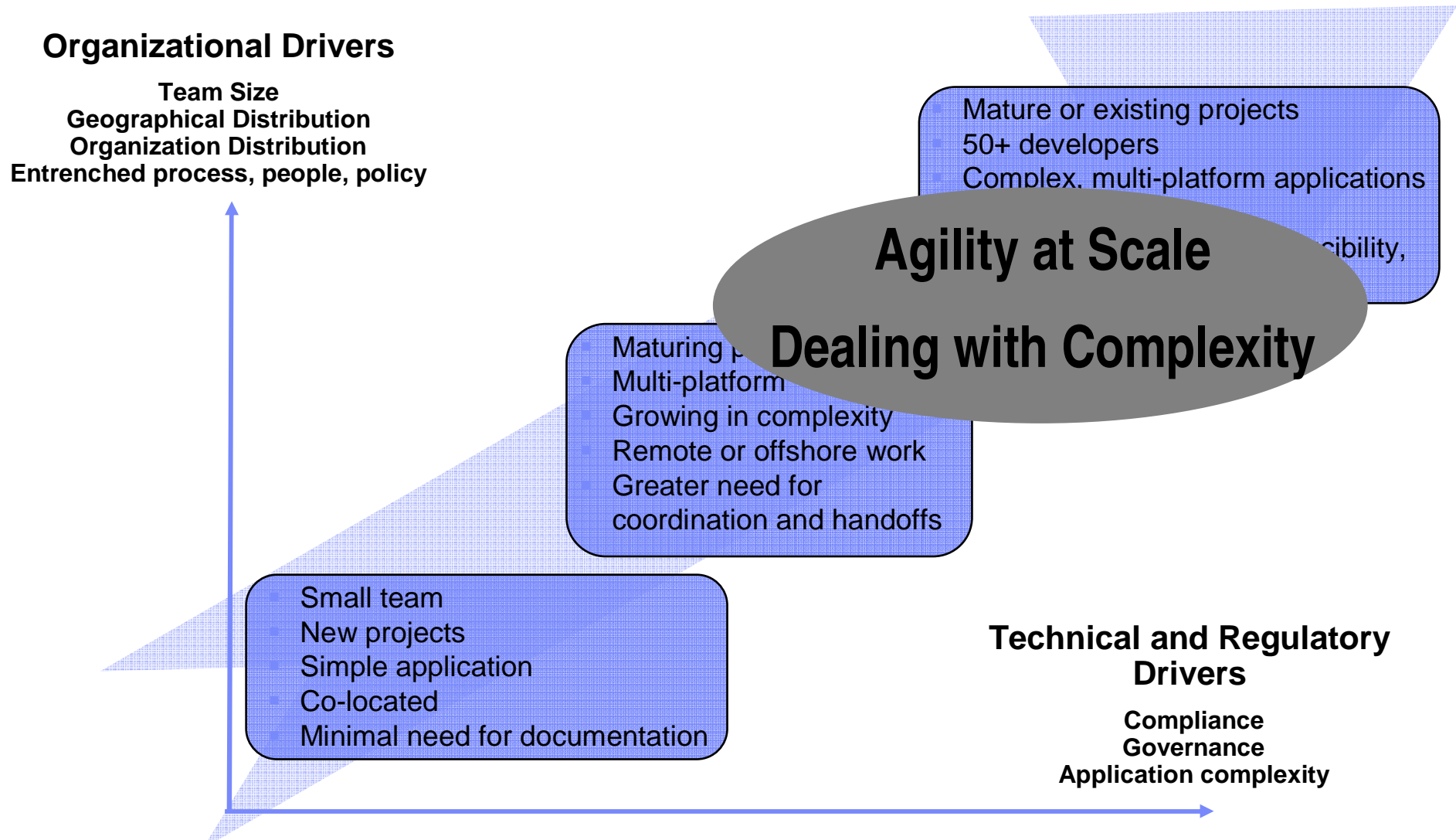
- Warning!
- Agile Software Development
- Agile Adoption Rate
- Scaling Agile
 - ▶ Challenges with Agile in the Mainstream
 - ▶ Agility is Relative
 - ▶ Process and Tooling
 - ▶ AMDD Practices
 - ▶ RUP Agile
 - ▶ Agile Data Practices
 - ▶ Lean Governance
- Parting Thoughts



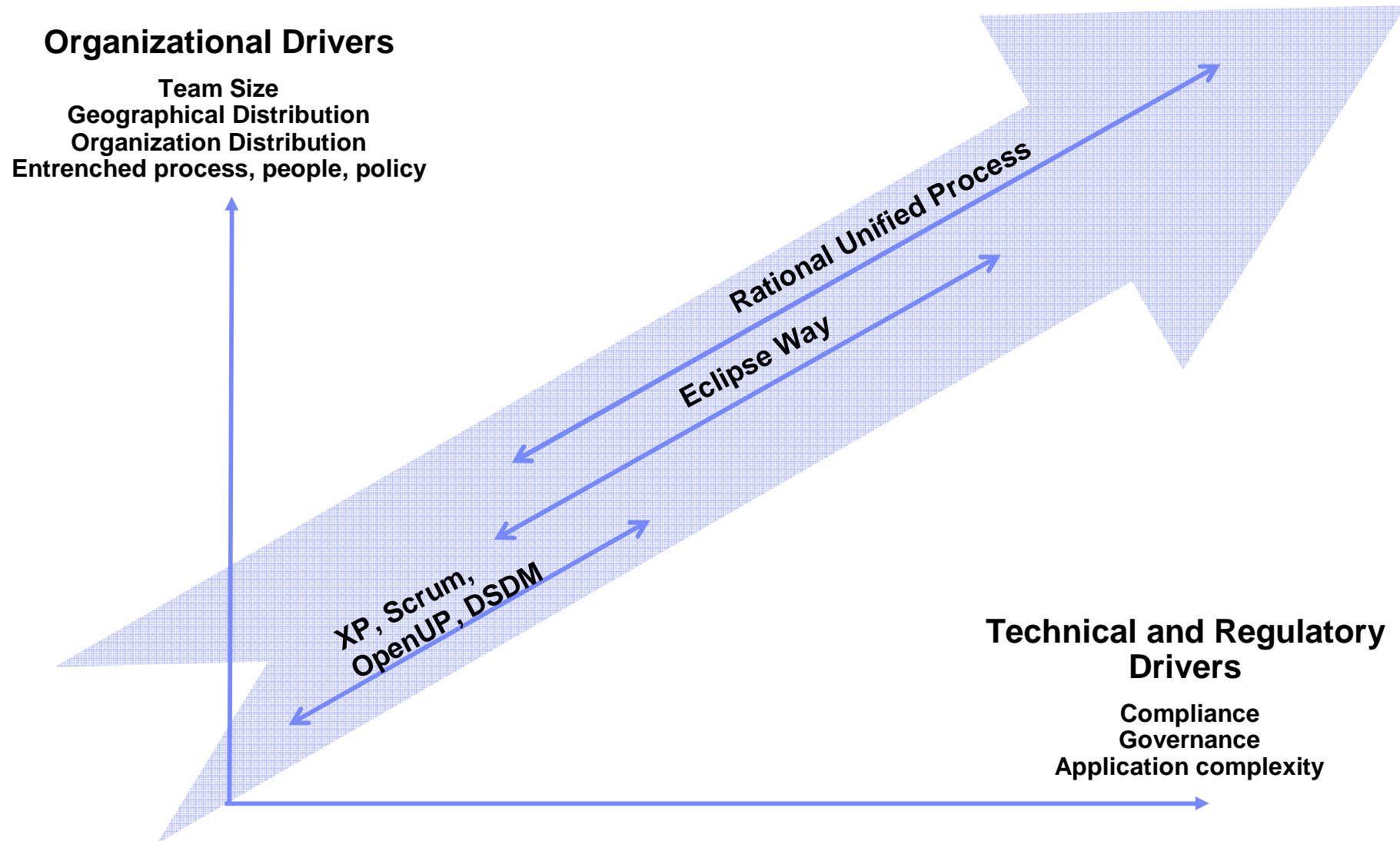
Challenges with Agile in the Mainstream



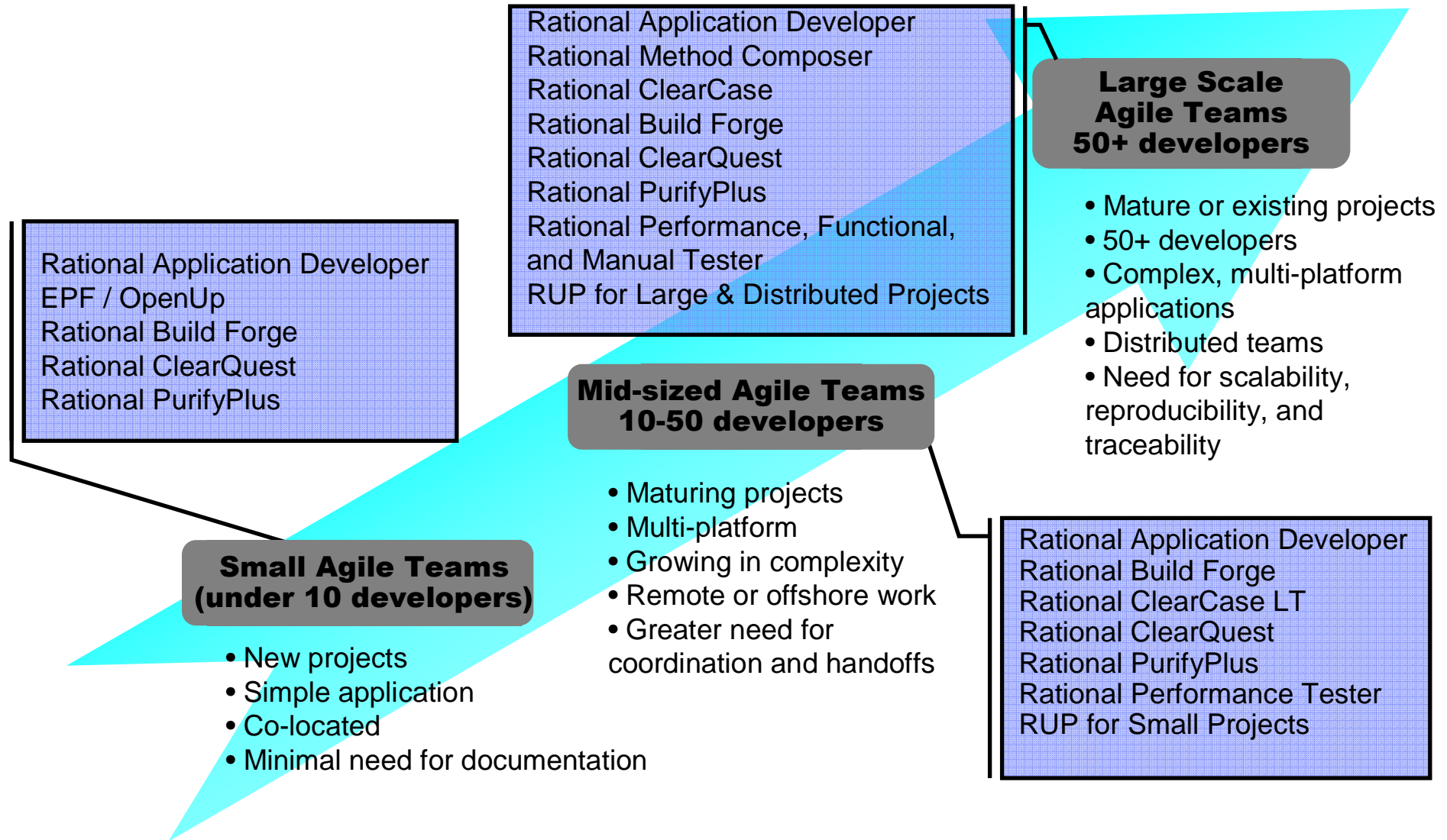
Agility is Relative – It Depends on Project Dynamics



The Agile Process Continuum

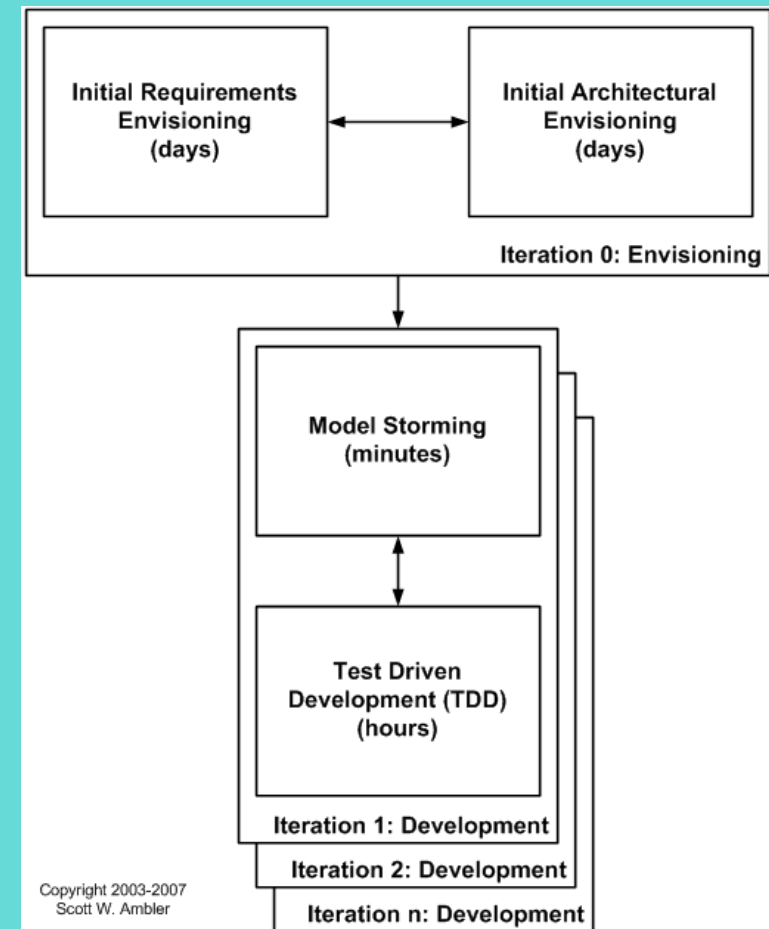


Solutions for Agile Teams of Every Size



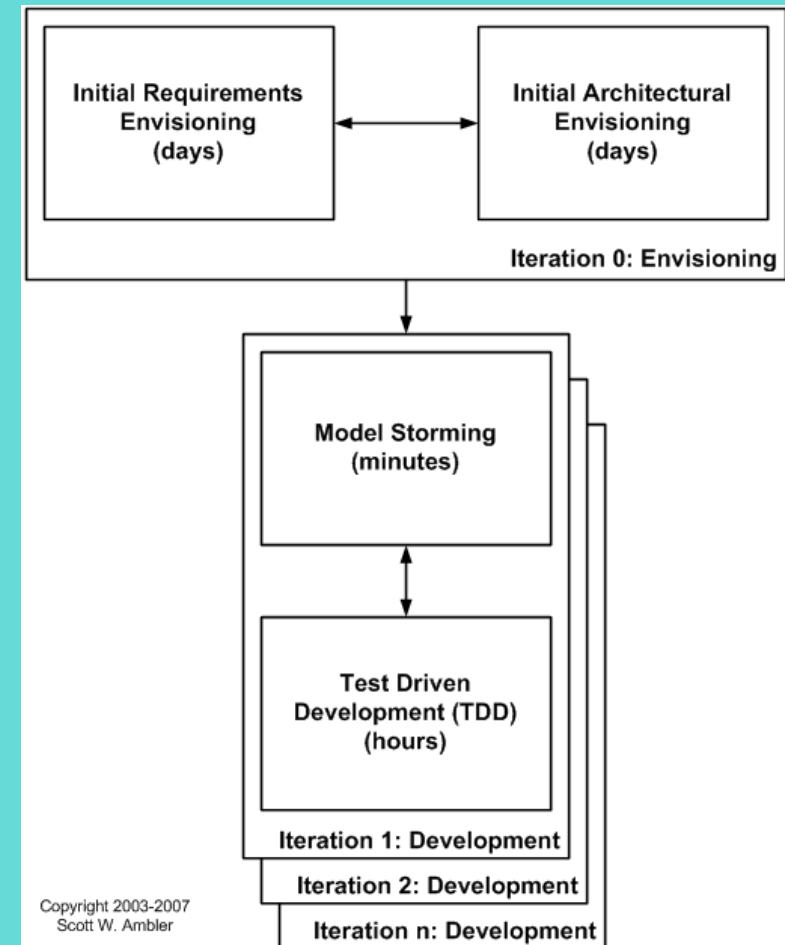
Initial Requirements Modeling

- Your goals are to:
 1. Identify and agree to the initial scope of your project
 2. Develop the initial stack of requirements
 3. Gather enough information to address initial scheduling and estimating concerns
- Critical models for business application development:
 - ▶ Some sort of usage model (use cases, user stories, ...)
 - ▶ Conceptual/domain model
 - ▶ Some UI sketches



Initial Architectural Modeling

- Your goals are to:
 1. Identify and agree to a potential initial architecture of your system
 2. Provide sufficient technical vision for estimating and scheduling concerns
- Critical models for business application development:
 - ▶ Some form of deployment diagram
 - ▶ A free-form “technology stack” diagram



Model Storming

- Just-in-time (JIT) modeling
- Model when you run into “difficulty”
 - ▶ You have a new feature to implement, and need to “analyze” the details
 - ▶ You need to think through a technical issue
- Most modeling on agile projects is done in 10-15 minute bursts followed by hours or days of programming
- Waiting to model is more effective:
 - ▶ You understand the domain better
 - ▶ Stakeholders understand the current solution better
 - ▶ You can focus only on what you need to build

Tooling strategies:

- Choose tools based on skill and need
- Sometimes the “simplest” tool is a complex one
- Whiteboards and paper are great for thinking things through, not so good for capturing information permanently
- Different teams will have different tooling needs



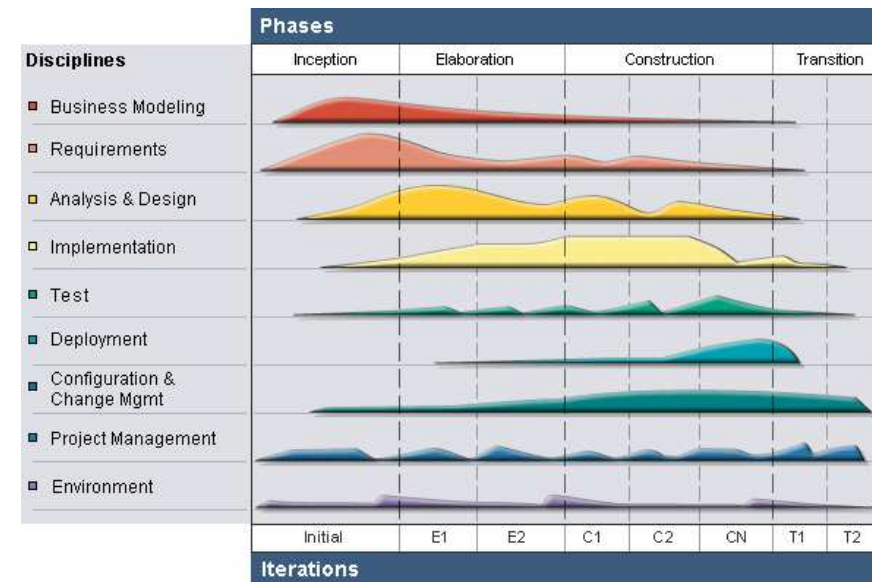
Agile Database Practices

- Database Refactoring
 - ▶ www.agiledata.org/essays/databaseRefactoring.html
- Database Regression Testing
 - ▶ www.agiledata.org/essays/databaseTesting.html
- Continuous Database Integration
 - ▶ www.martinfowler.com/articles/evodb.html



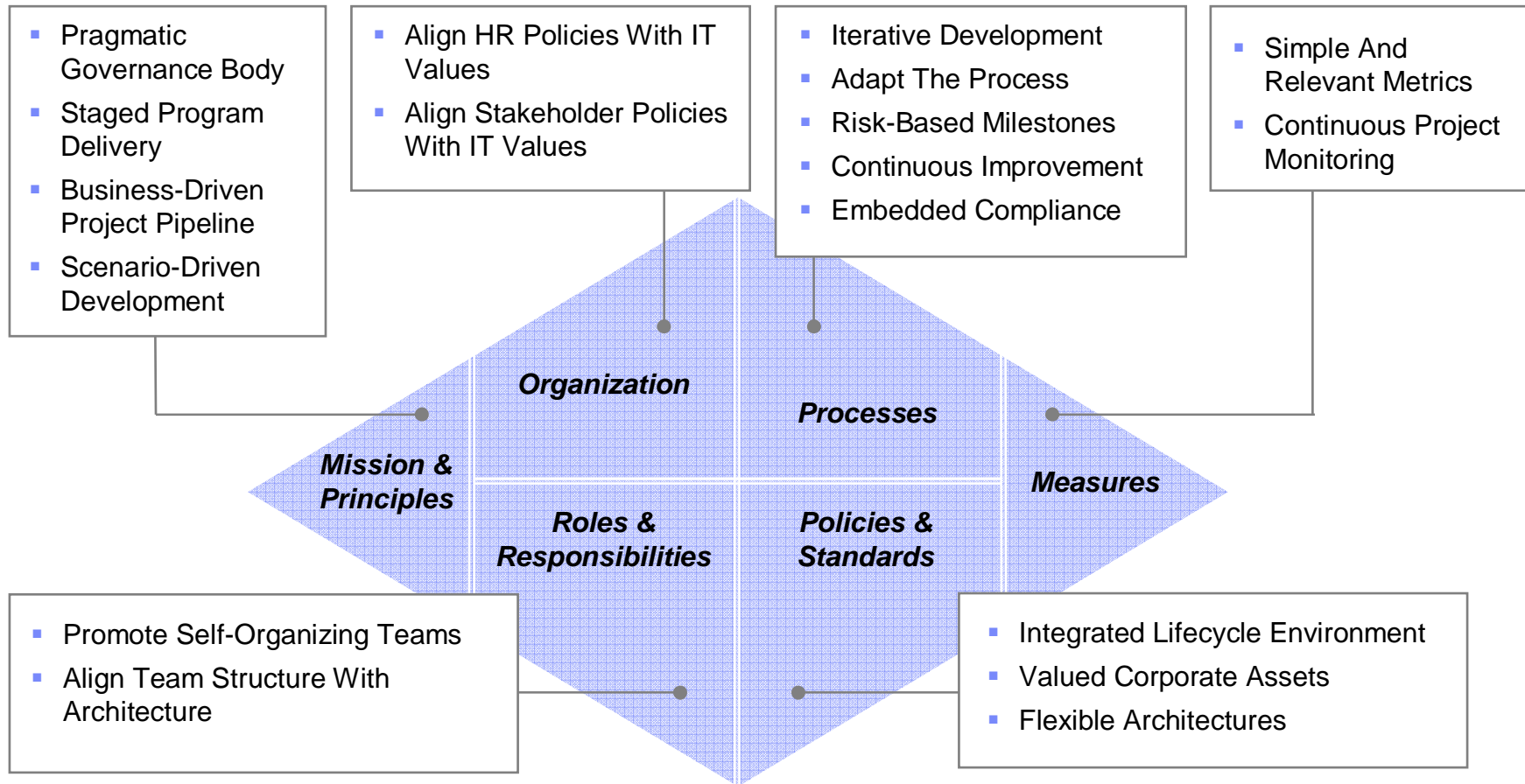
Scale Agile via Rational Unified Process (RUP)

- Organizations have instantiated RUP to be very agile
- Adopt:
 - ▶ Regular delivery of working software
 - ▶ Active stakeholder participation
 - ▶ Daily stand up meetings
 - ▶ Test-Driven Development (TDD)
 - ▶ Continuous builds
 - ▶ Agile documentation techniques
- Scaling strengths:
 - ▶ Business risk addressed in Inception
 - ▶ Technical risk addressed in Elaboration



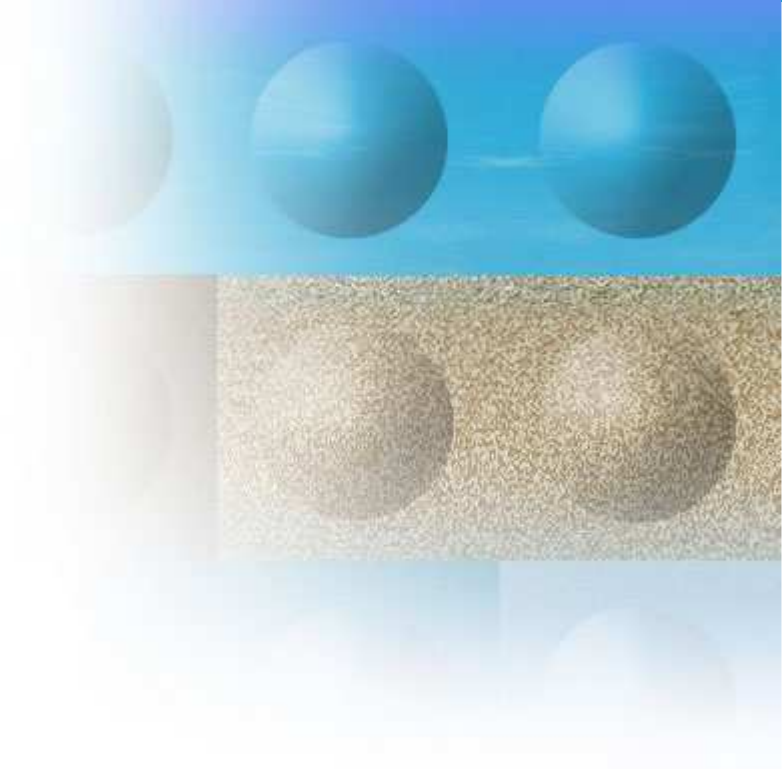
Lean Development Governance

www.ibm.com/developerworks/



Discussion Topics

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- Parting Thoughts
 - ▶ Succeeding with Agile
 - ▶ Critical IBM Agile Resources
 - ▶ A Call to Action



Succeeding with Agile

- **Agile Development is transforming how development is done**
 - ▶ Placing greater demand on processes and tools
- **Agile can scale to accommodate technical and organizational complexity**
 - ▶ Agility at Scale has unique needs
 - ▶ IBM Rational brings a wealth of knowledge to help companies succeed in complex environments
- **IBM Rational is forging new ground in Agile Development**
 - ▶ Bringing technology, services and best practices to help customers reduce the risk of Agile projects
 - ▶ Investing significant resources to improve Agile success



Critical IBM Agile Resources

www.ibm.com/rational/agile/

www.ibm.com/developerworks/



A Call To Action

- **Consider an Agile Pilot Project**
 - ▶ See it work for yourself
 - ▶ Get mentoring help
- **Get some Agile 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







Thank You

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(Scott W. Ambler)

