

# Agile Modeling and Documentation “Best” Practices

Strategies for Scaling Agile Development

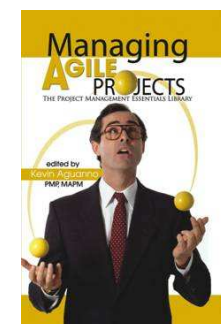
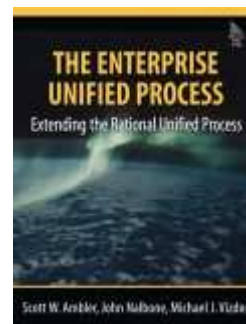
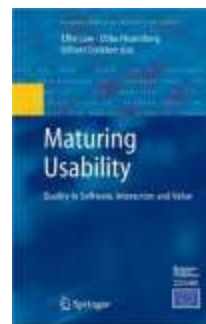
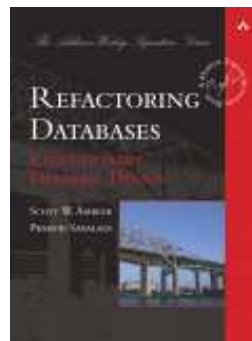
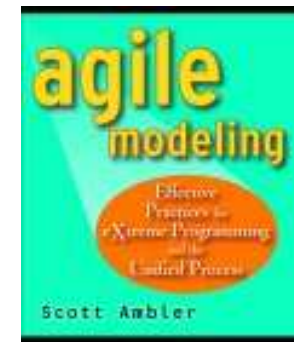
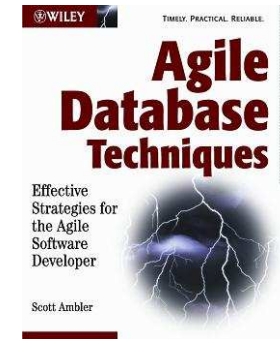


Scott W. Ambler  
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# Scott Ambler - Background

- Chief Methodologist/Agile&SOA
- Senior Contributing Editor, Information Week
- Fellow – International Association of Software Architects
- JavaOne Rockstar
- [www.ibm.com/rational/bios/ambler.html](http://www.ibm.com/rational/bios/ambler.html)
- [www.ibm.com/developerworks/blogs/page/ambler](http://www.ibm.com/developerworks/blogs/page/ambler)
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## Agenda

- Agile Modeling (AM) and Agile Models
- The Agile Scaling Model (ASM)
- Agile Model Driven Development (AMDD)
- Agile Documentation
- Some Industry Numbers
- Parting Thoughts



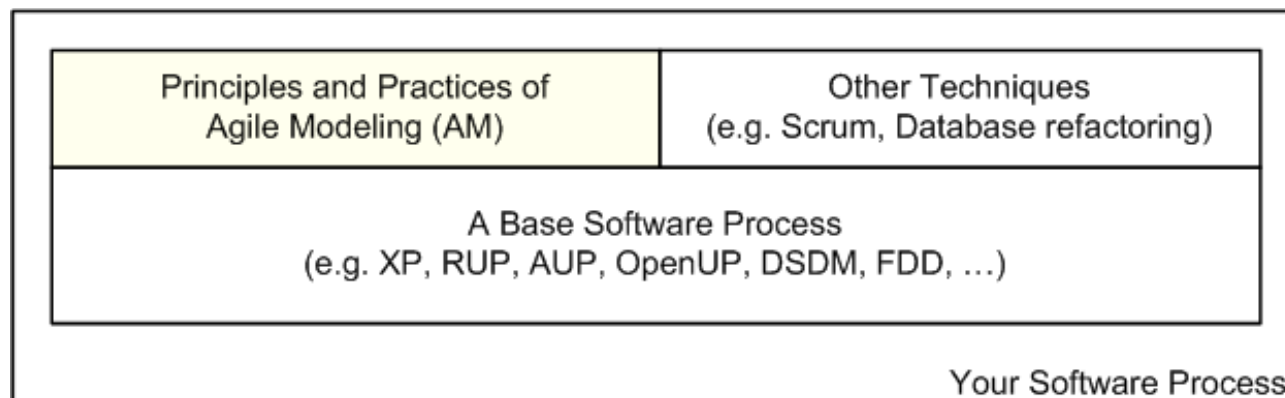
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## Agile Modeling (AM)

- AM is a chaotic, practices-based process for modeling and documentation
- AM is a collection of *practices* based on several *values* and proven software engineering *principles*
- AM is a light-weight approach for enhancing modeling and documentation efforts for other software processes such as XP and RUP



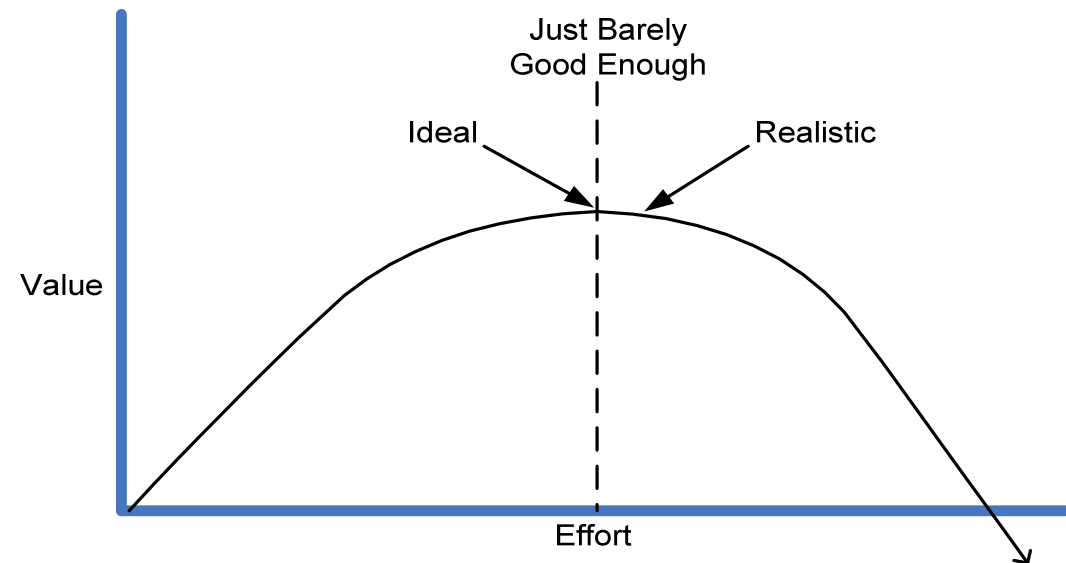
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# What Are Agile Models?

- Agile models:

- ▶ Fulfill their purpose
- ▶ Are understandable
- ▶ Are sufficiently accurate
- ▶ Are sufficiently consistent
- ▶ Are sufficiently detailed
- ▶ Provide positive value
- ▶ Are as simple as possible



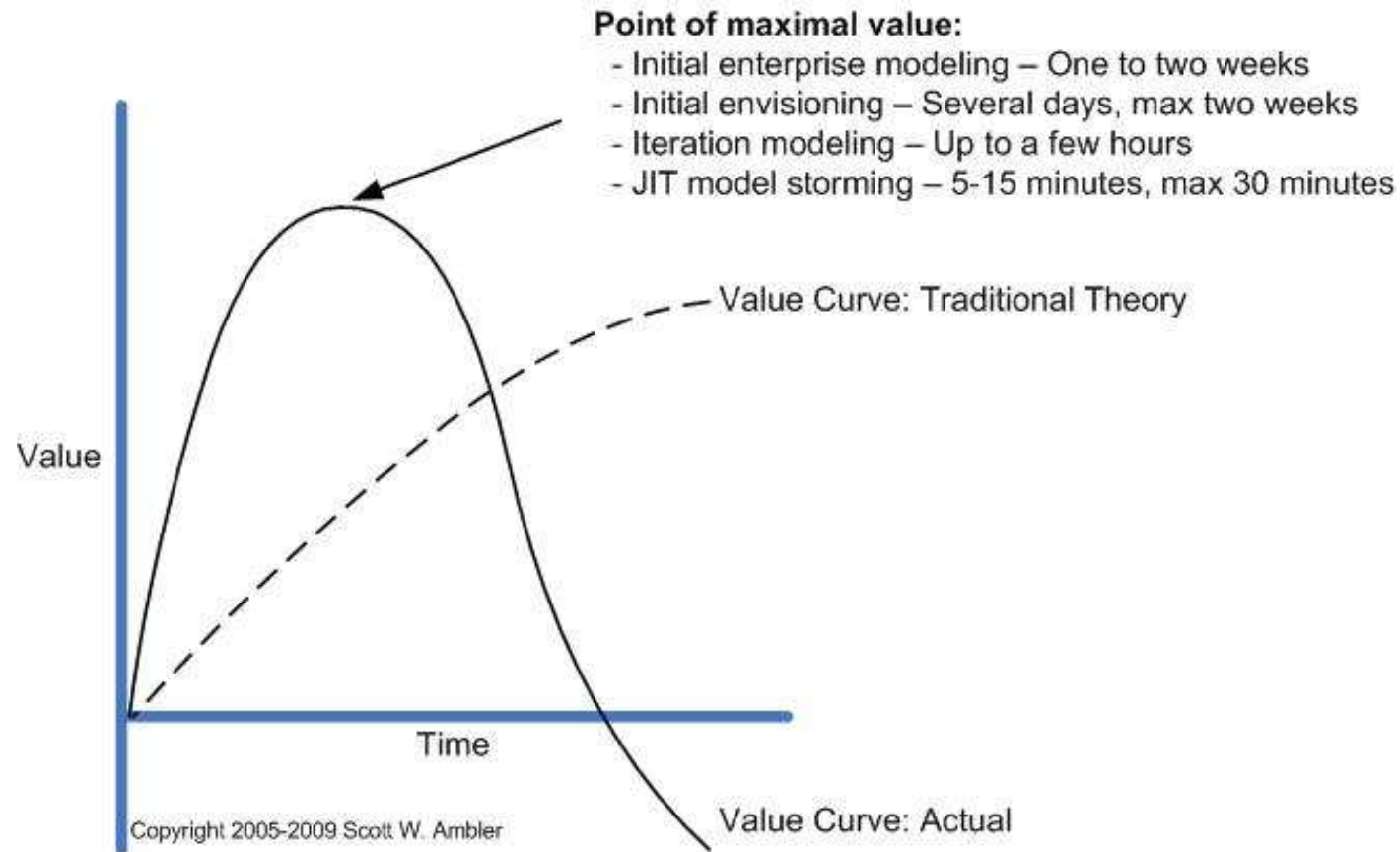
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- Agile models are just barely enough!

- [www.agilemodeling.com/essays/barelyGoodEnough.html](http://www.agilemodeling.com/essays/barelyGoodEnough.html)



# The Value of Modeling – Theory Alert!



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# Agile Scaling Model – Core Agile Development



Construction focused, value driven, self organizing

Small co-located teams developing relatively straightforward systems



# Agile Scaling Model – Disciplined Agile Delivery



Full life cycle, risk and value driven, self organizing with appropriate governance

Small co-located teams developing relatively straightforward systems



# Agile Scaling Model – Agility@Scale



Disciplined agile delivery when one or more scaling factors apply



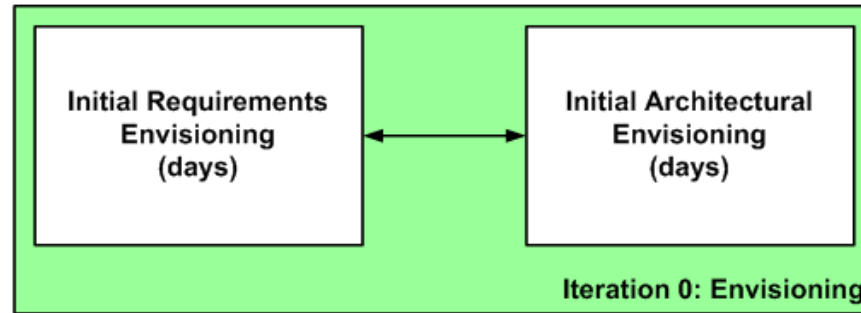
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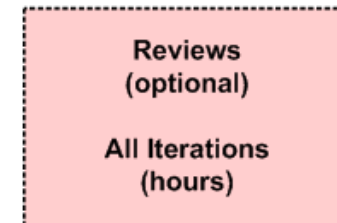
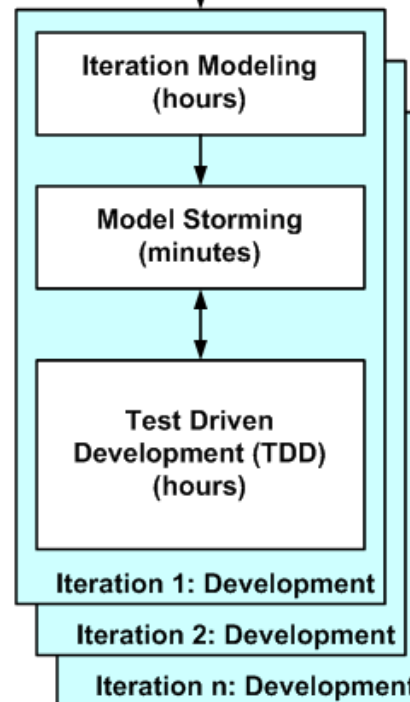


# AMDD Project Level [www.agilemodeling.com/essays/amdd.htm](http://www.agilemodeling.com/essays/amdd.htm)

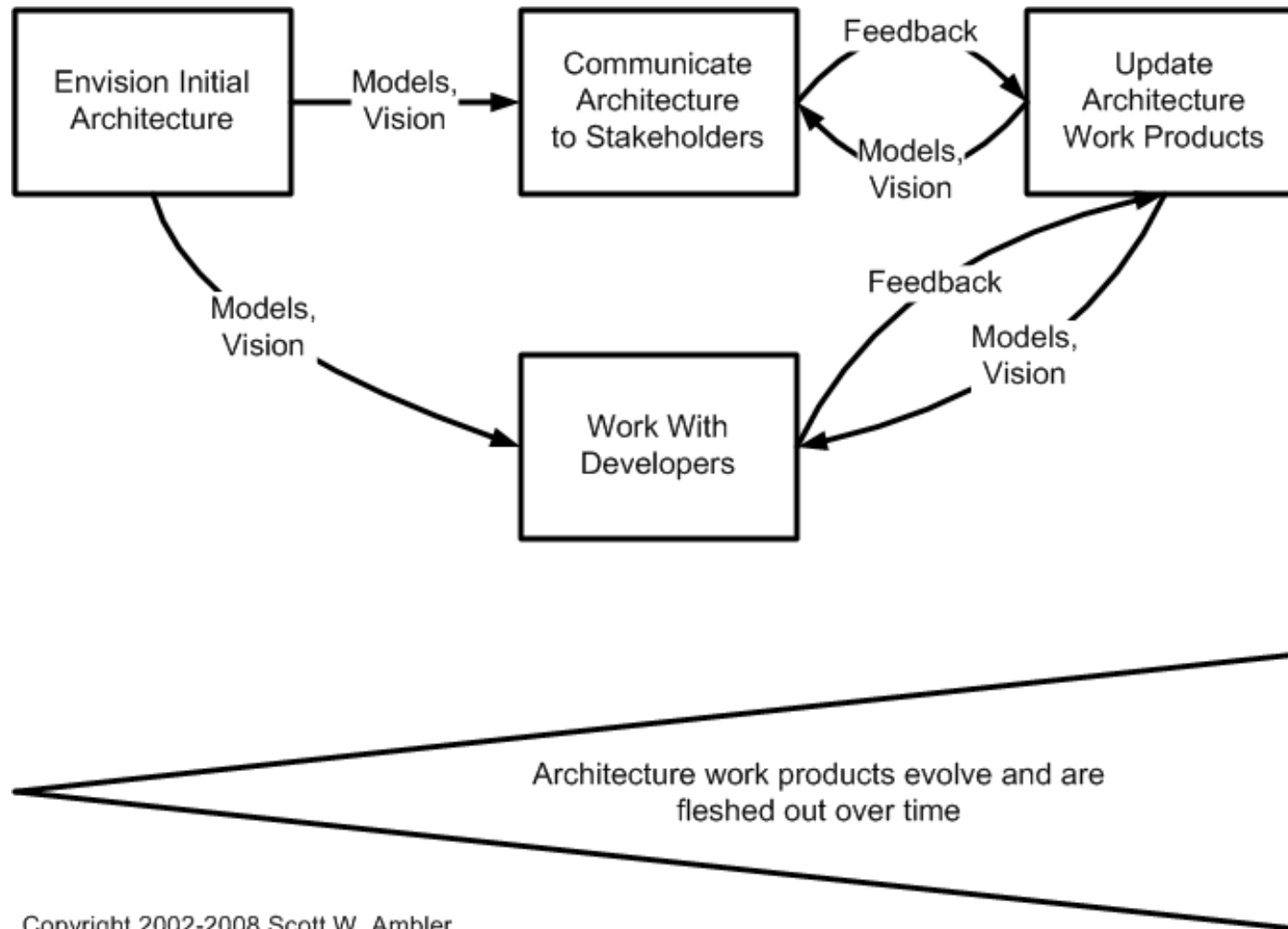
- Identify the high-level scope
- Identify initial "requirements stack"
- Identify an architectural vision



- 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



## AMDD Enterprise/Program Level



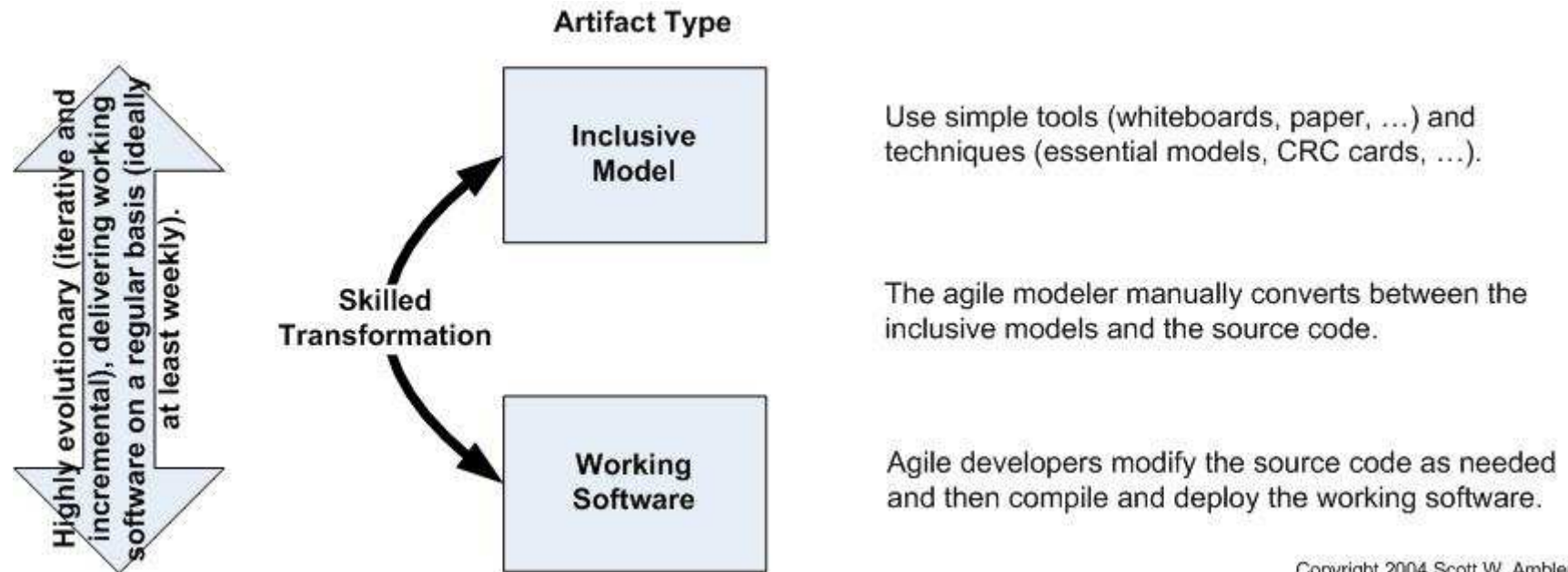
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Source: [www.agiledata.org/essays/enterpriseArchitecture.html](http://www.agiledata.org/essays/enterpriseArchitecture.html)



# AMDD – Simple Approach

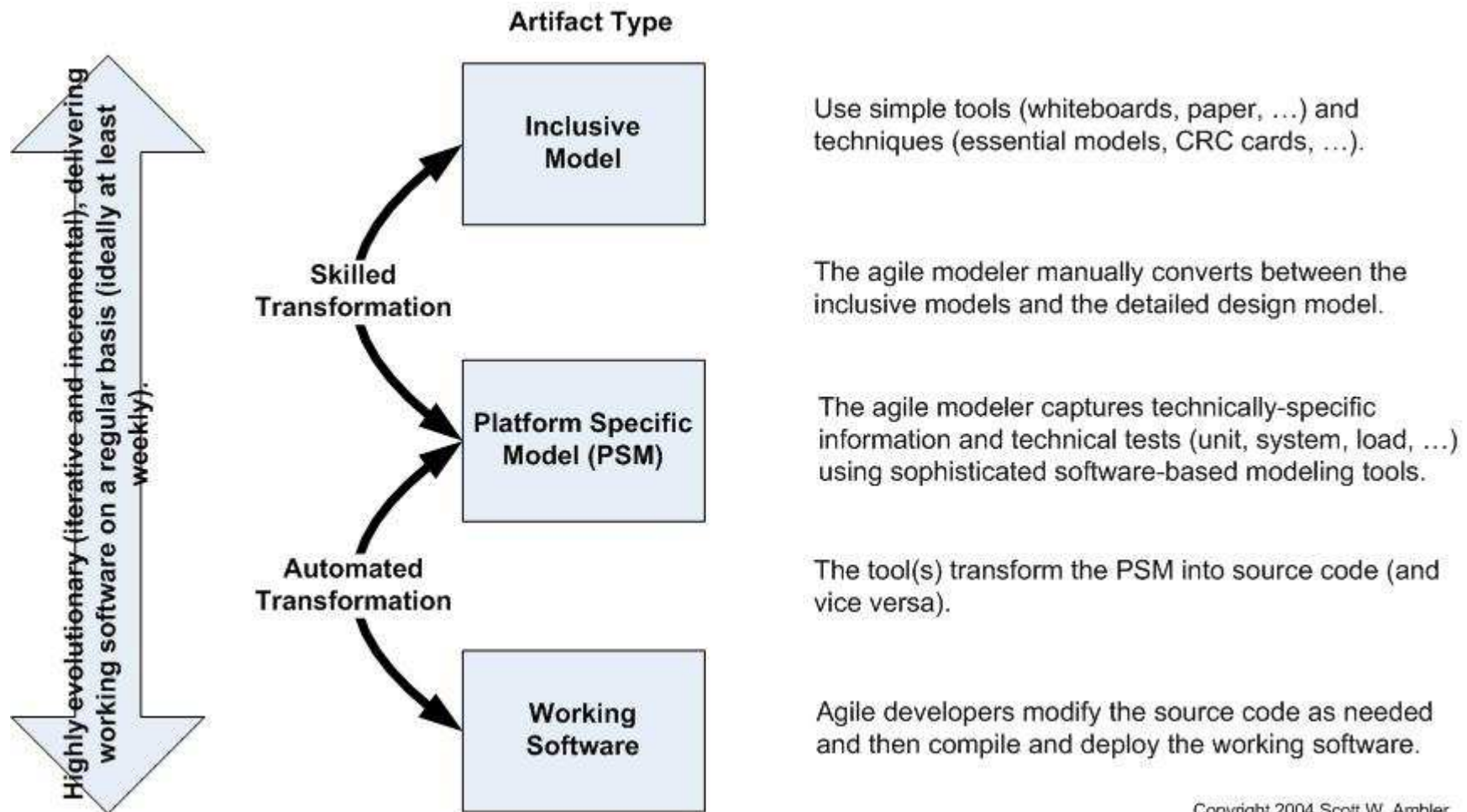
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# AMDD – CASE Approach

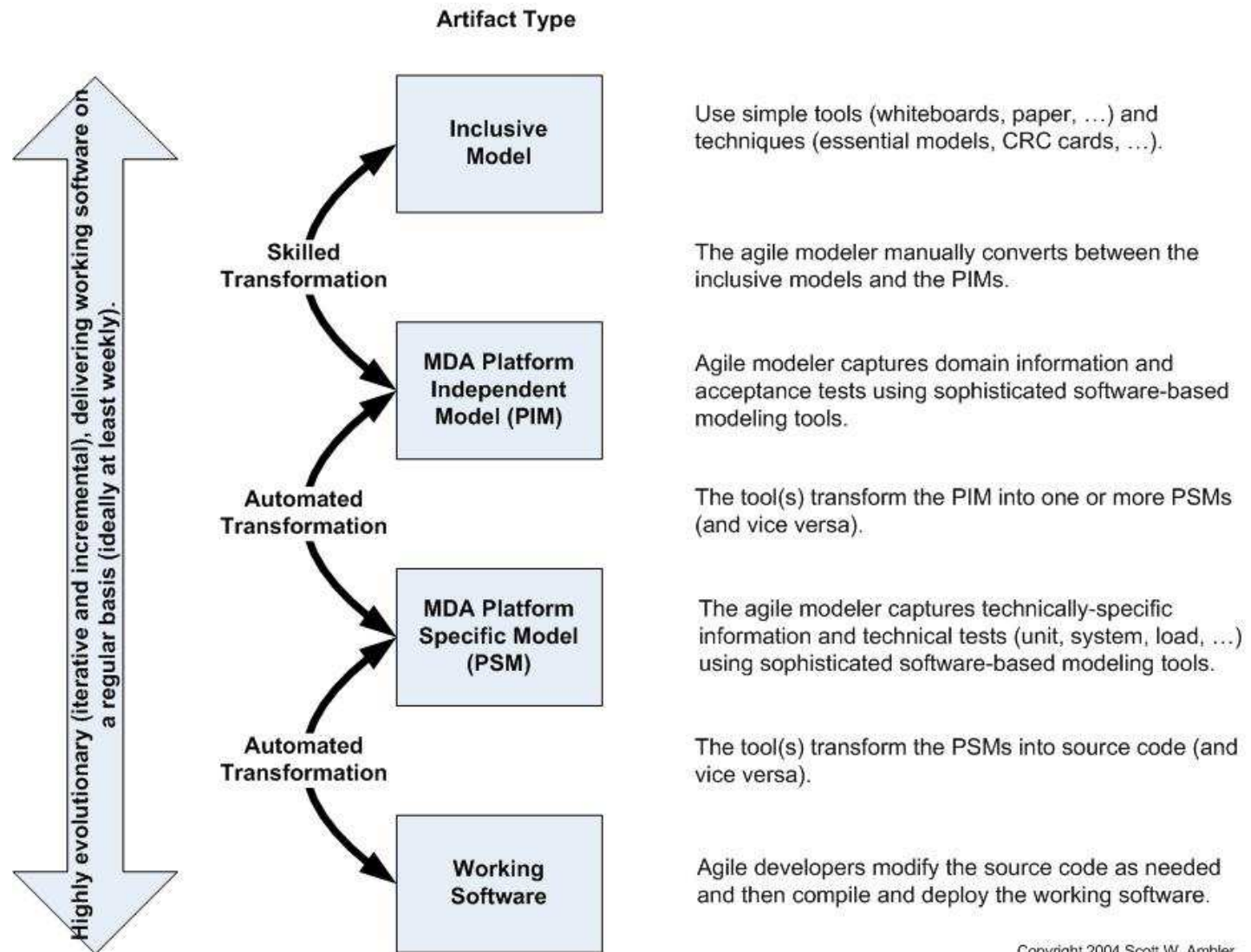


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## AMDD – Agile MDA Approach

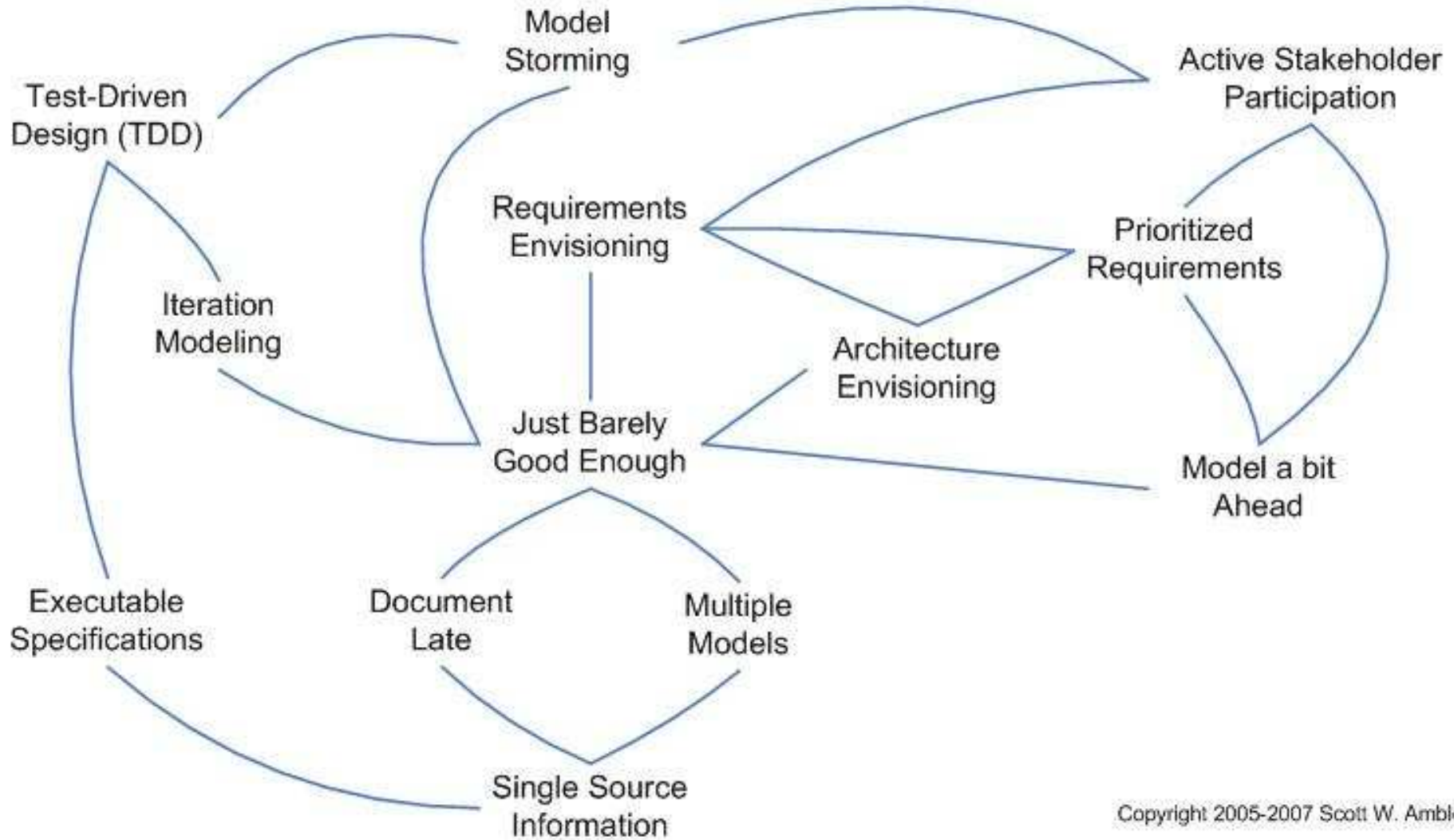


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# Agile Modeling Best Practices

[www.agilemodeling.com/essays/bestPractices.htm](http://www.agilemodeling.com/essays/bestPractices.htm)



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# Agile Documentation Strategies

1. Prefer executable specifications over static documentation
2. Simple, concise documentation
3. Single source information
4. Work directly with the “real” audience of the documentation
  - ▶ Give them options, their “traditional” experiences often lead to low expectations
5. Document stable things, not speculative things
6. Recognize the documentation is the least efficient form of communication
7. You need a bit more documentation than the “extremists” may care to admit
8. You need a lot less documentation than the bureaucrats realize



## How CRUFTy Are Your Documents?

Calculating the effectiveness of a document:

$$\text{Effectiveness} = C * R * U * F * T$$

Where:

C = % of the document that is Correct

R = Chance that the document will be Read

U = Chance that the material will Understood

F = Chance that the material will be Followed

T = Chance that the document will be Trusted

Source: [www.agilemodeling.com/essays/agileDocumentation.htm](http://www.agilemodeling.com/essays/agileDocumentation.htm)



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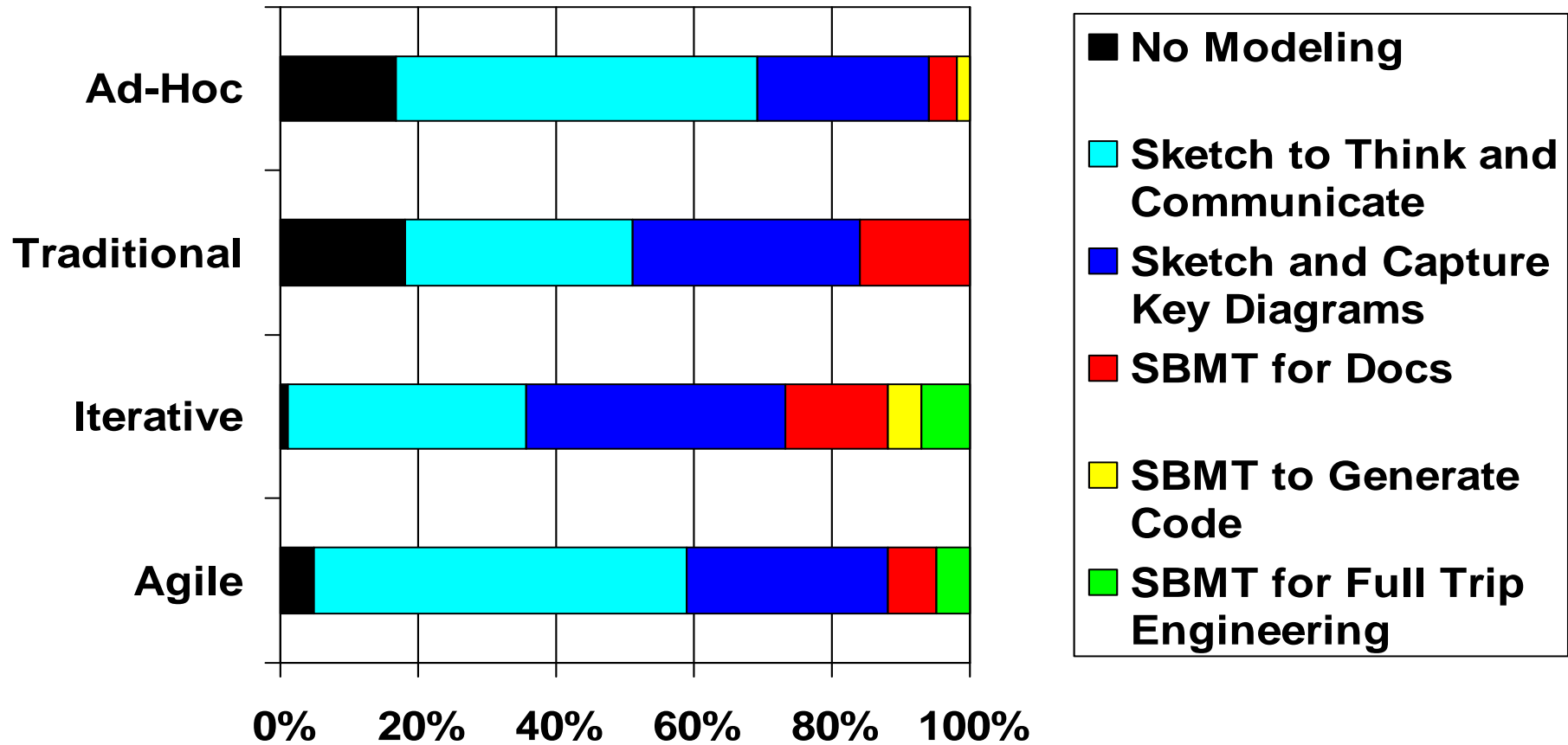


## The Surveys

- All survey data, original questions, and summary slide decks can be downloaded from [www.ambysoft.com/surveys/](http://www.ambysoft.com/surveys/)
  - ▶ If you can't look at the original questions and analyze the data yourself, how can you trust the survey results?
- DDJ surveys are taken across a broad audience
- Ambysoft surveys are taken within the agile community



# Primary Strategy for Modeling



Source: Dr Dobb's 2008 Modeling and Documentation Survey





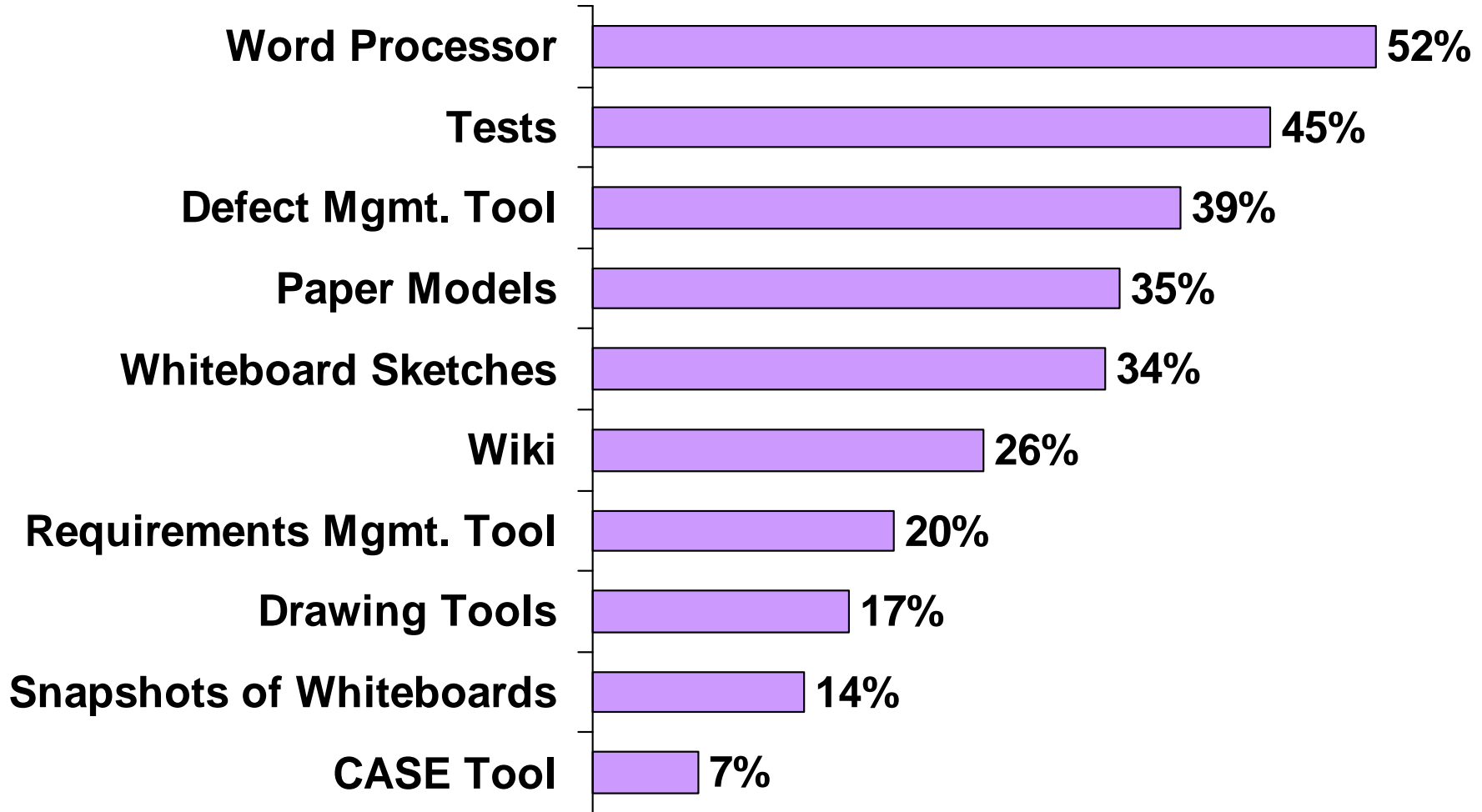
## Agile Approach to Initial Requirements

76%	High-level initial requirements modeling
30%	Detailed initial requirements modeling
12%	Have initial requirements models supplied to them
10%	Use enterprise models as a reference
12%	Use industry models as a reference
88%	Do some sort of initial modeling or have initial models supplied to them
89%	Do some sort of initial modeling, or have initial models supplied, or leverage reference models

Source: Dr Dobb's 2009 Project Initiation Survey



## Approaches to Capturing Requirements Specifications (Multiple Responses)



Source: Ambysoft 2008 Test-Driven Development Survey



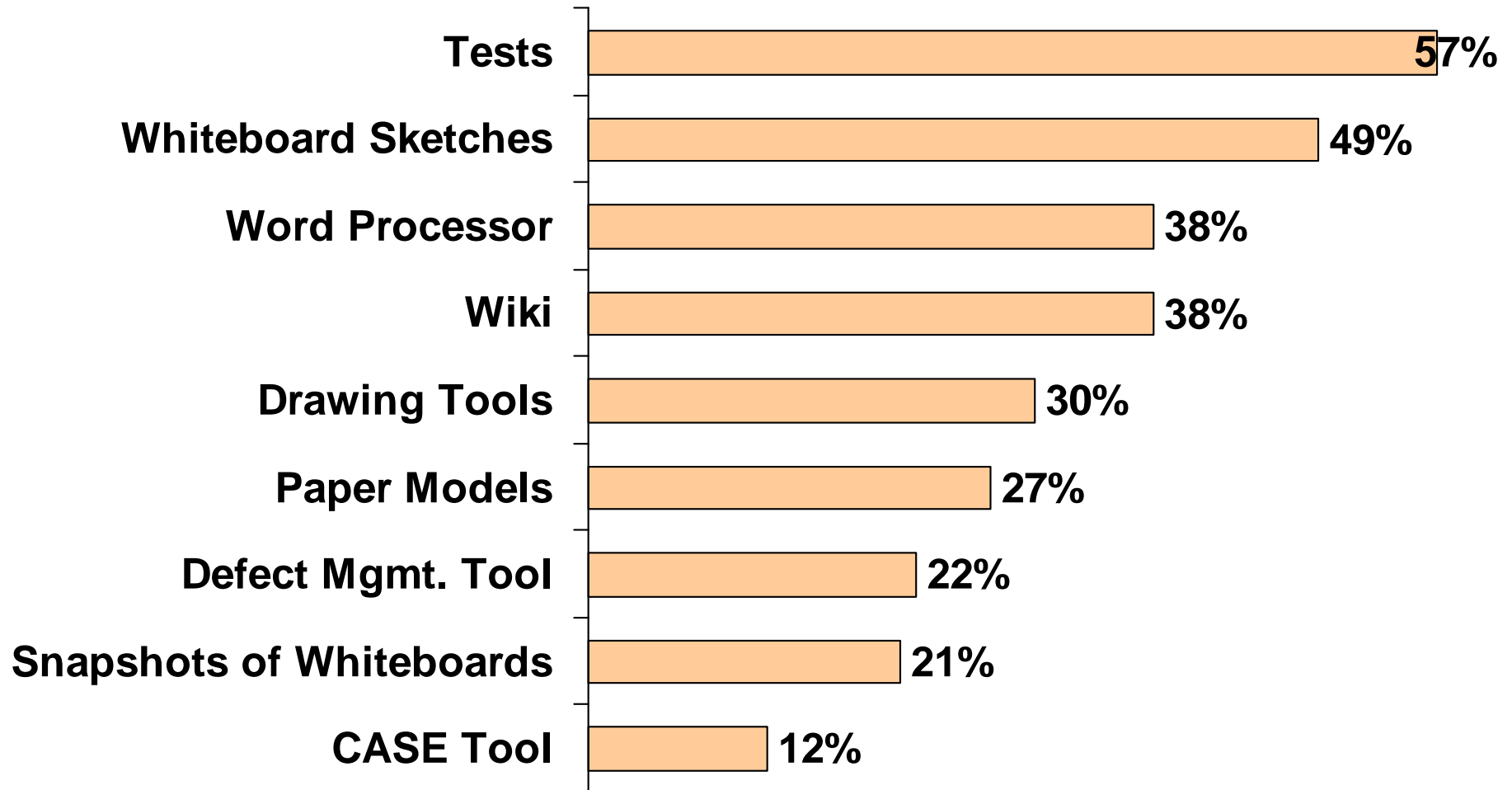
## Agile Approach to Initial Architecture

70%	High-level initial architecture modeling
25%	Detailed initial architecture/design modeling
12%	Have initial architecture/design models supplied to them
14%	Use enterprise models as a reference
12%	Use industry models as a reference
83%	Do some sort of initial modeling or have initial models supplied to them
86%	Do some sort of initial modeling, or have initial models supplied, or leverage reference models

Source: Dr Dobb's 2009 Project Initiation Survey



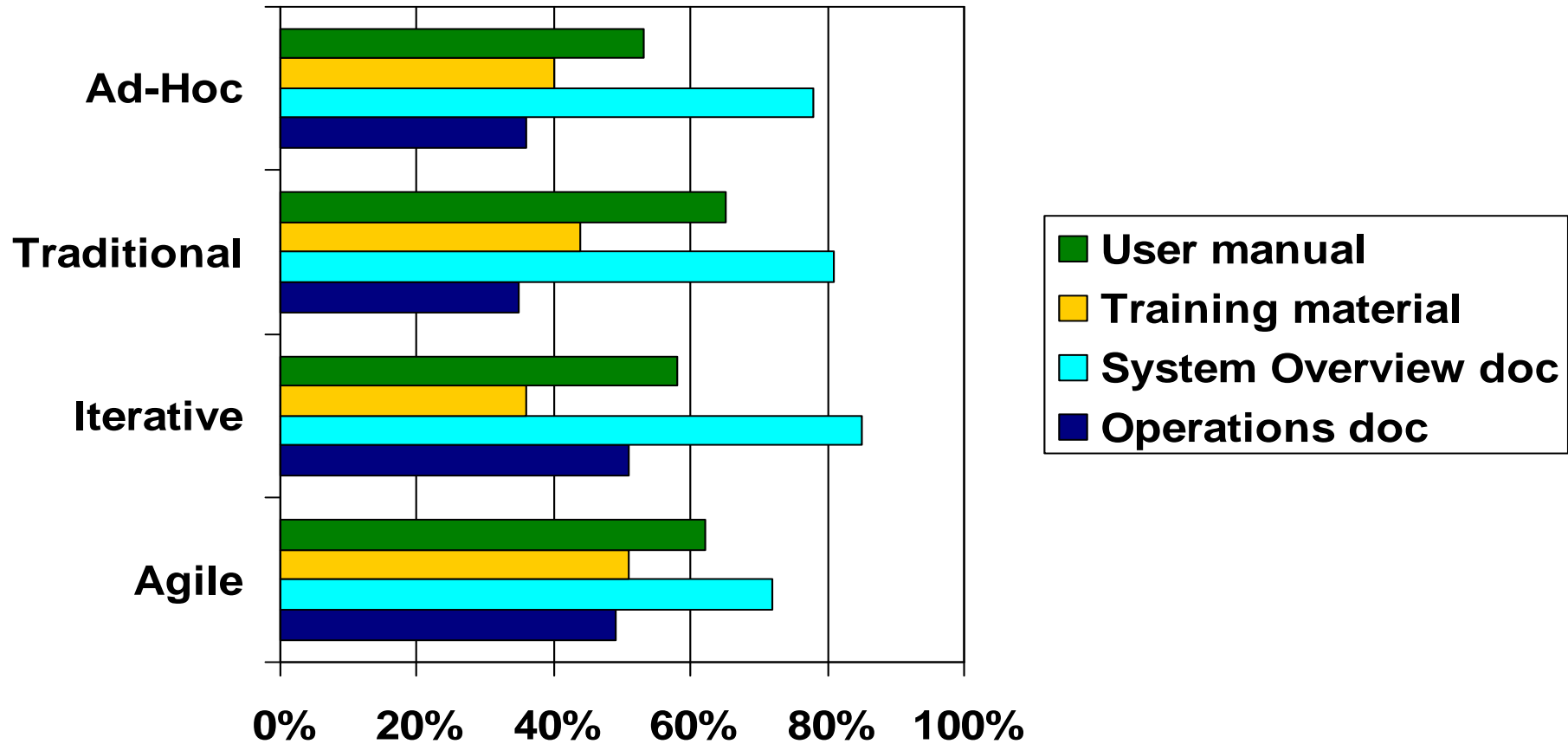
## Approaches to Capturing Design Specifications (Multiple Responses)



Source: Ambysoft 2008 Test-Driven Development Survey



## Percentage of Teams Creating Deliverable Documentation



Source: Dr Dobb's 2008 Modeling and Documentation Survey



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# Blatant Advertising Alert!

## Modeling, Documentation, and Agile: Reality Over Rhetoric

Thursday, 13:00-16:00



## Conclusion

- Recognize that:
  - ▶ “Model” != “Document”
  - ▶ Modeling is a key scaling strategy for agile development projects
  - ▶ Modeling is an important part of every software process, including agile ones
  - ▶ Modeling is an important communication technique
  - ▶ Your teams are likely doing more modeling than you realize, but could be better at it







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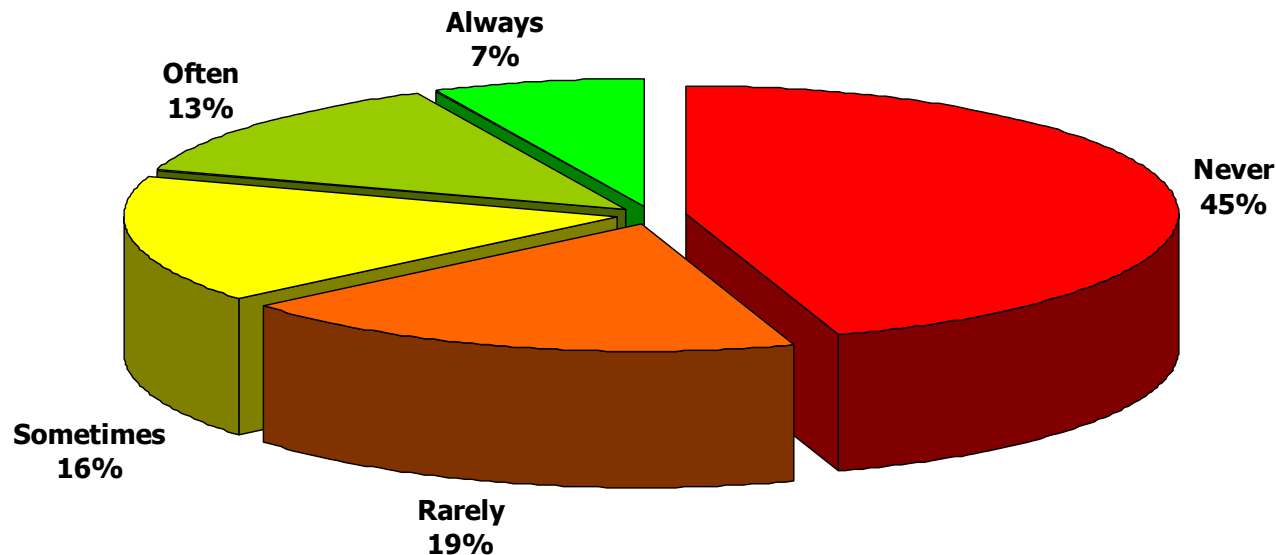
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# Questioning Big Requirements Up Front (BRUF)

## Feature Usage Within Deployed Applications



Detailed requirements specs increase project risk

Traditional “change mgmt” approaches are little more than “change prevention” strategies

Stakeholders want software which fulfills their needs, not software that fulfills a spec

The real goal is to understand and then implement requirements, not document them

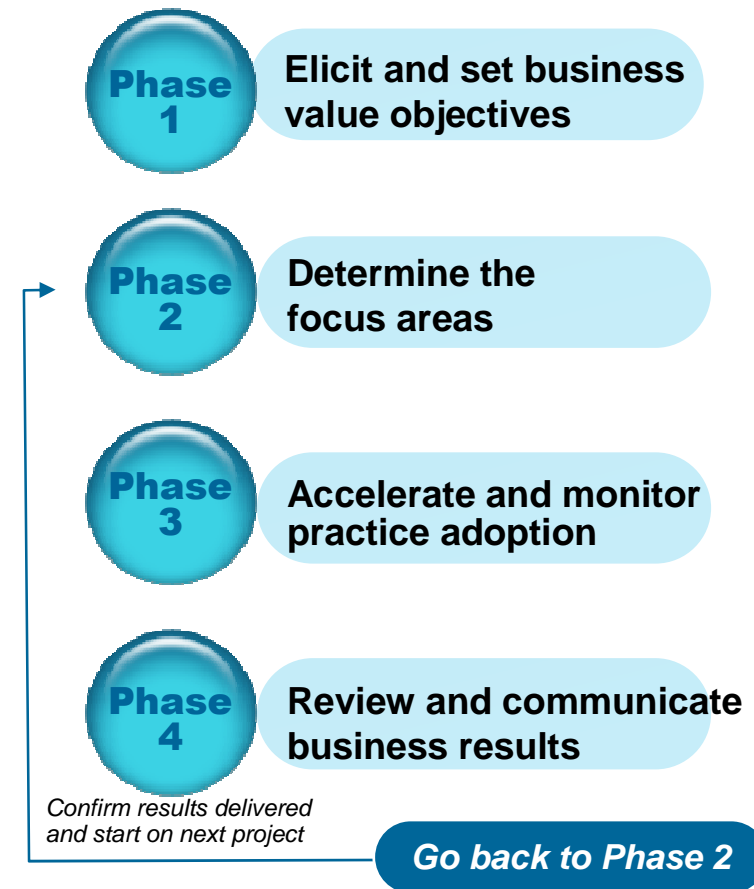
Source: Chaos Report v3, Standish Group

[www.agilemodeling.com/essays/examiningBRUF.html](http://www.agilemodeling.com/essays/examiningBRUF.html)



## Effective Agile Adoption: Measured Capability Improvement Framework (MCIF)

- Objective: Drive business innovation and reduce costs through measured and continuous process improvement
- A phased approach that helps teams
  - ▶ Adopt an incremental, measured approach to transformation
  - ▶ Focus on the core practices that matter most
  - ▶ Accelerate adoption through out-of-the-box assets
  - ▶ Articulate capability improvements in terms of business value
  - ▶ Support any method
    - Optimized for Agile practices



***Empower teams to measure, manage and incrementally improve their software delivery capability.***

## References and Recommended Reading

- [www.agilealliance.com](http://www.agilealliance.com)
- [www.agilemodeling.com](http://www.agilemodeling.com)
- [www.agiledata.org](http://www.agiledata.org)
- [www.ambyssoft.com](http://www.ambyssoft.com)
- [www.databasesrefactoring.com](http://www.databasesrefactoring.com)
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