



## **When Agile Becomes a Quality Game Changer; What Data Says from Recent Agile Benchmark Research**

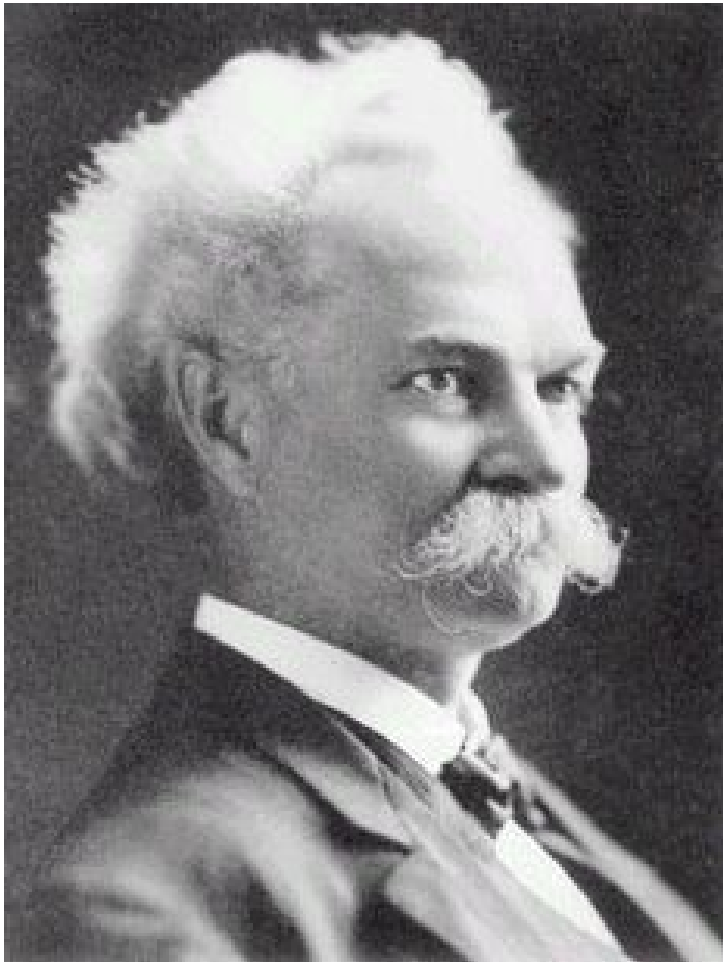


**Software Quality Group  
of New England**

Dedicated to Software Quality Professionals

[www.sqgne.org](http://www.sqgne.org)

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“Frothy  
eloquence  
neither  
convinces nor  
satisfies me.  
I'm from  
Missouri, and  
you have got to  
show me.”

# Background



*"Agile projects can be considered more successful in the sense that they deliver more functionality with fewer defects."*

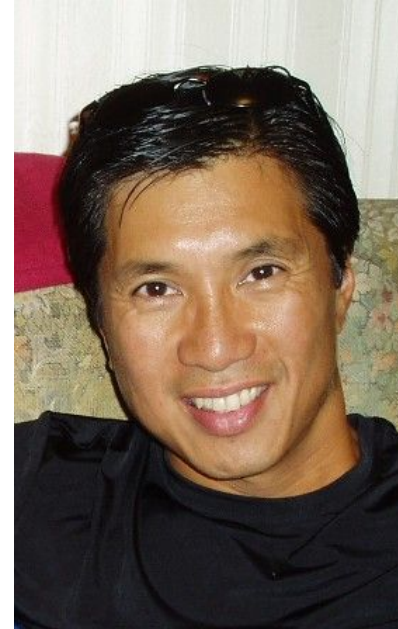
- Kent Beck

# Background



*"We don't need no stinking metrics"*

- Jim Highsmith



*"Without metrics, you're just someone with another opinion"*

- Michael Mah





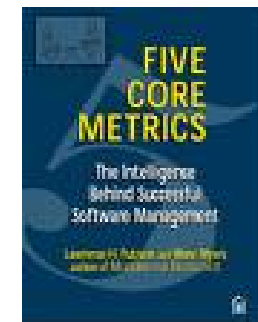
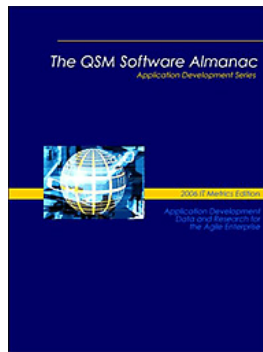


# The QSM SLIM Database

QSM maintains the world's largest benchmarking database of 10,000+ completed software projects collected worldwide. We put industry productivity statistics **on the desktop**.

The QSM SLIM database contains projects in all industries, waterfall, Agile, offshore/outsourced, in-house, new development, and maintenance.

SLIM tools enable managers to measure and estimate Agile and/or waterfall projects, and determine ROI.



# The QSM SLIM Database



**British Telecom**

**SAP**

**Microsoft**

**Intel**

**AT&T/BellSouth**

**Nationwide**

**Motorola**

**VerizonWireless**

**Roche Diagnostics**

**Fiserv Corp**

**IBM Global**

**Misys Healthcare**

**JPMorganChase**

**Boeing**

**Bank of New York Mellon**

**Lockheed Martin**

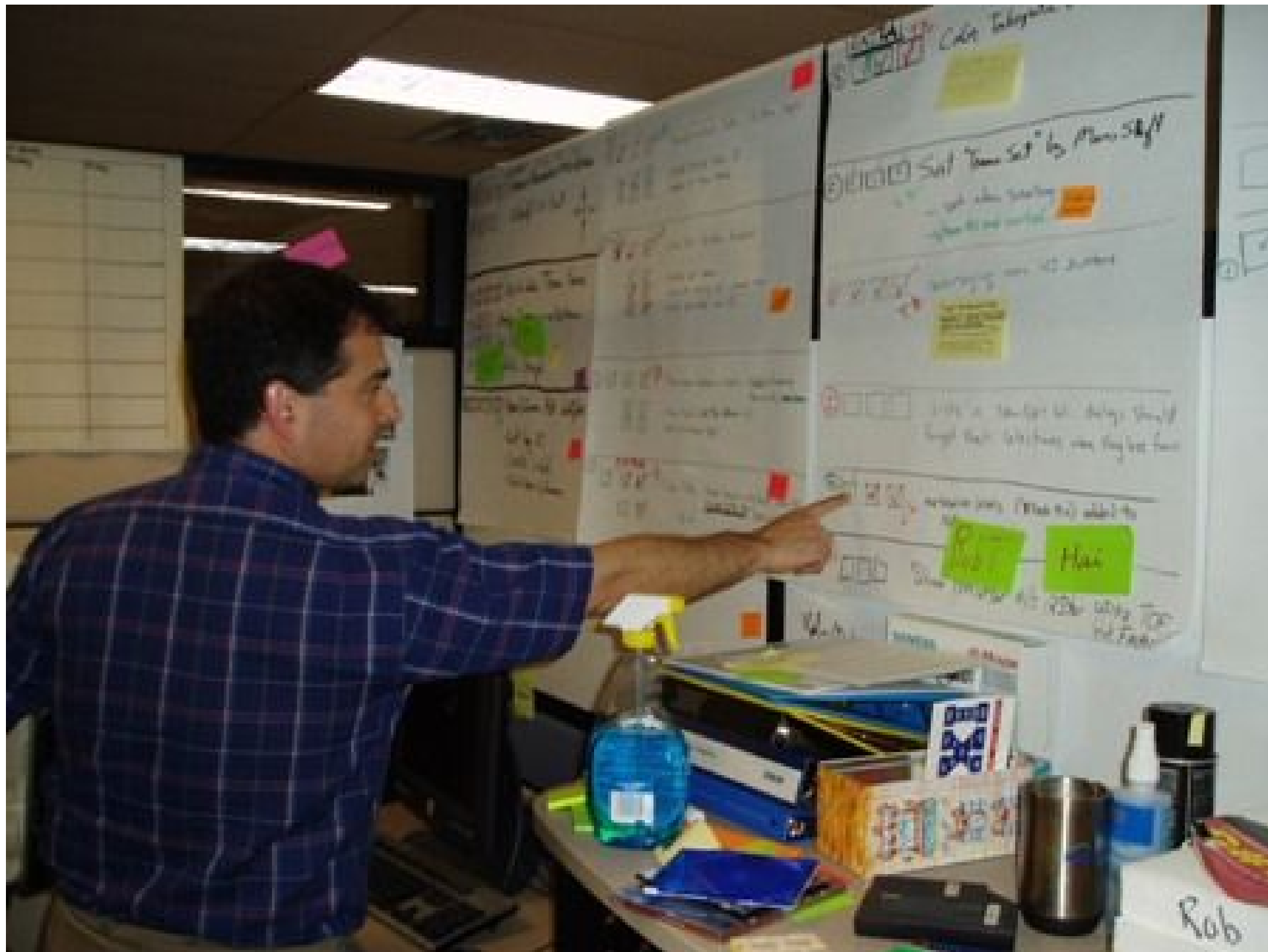
**Progressive Insurance**

**DirecTV**

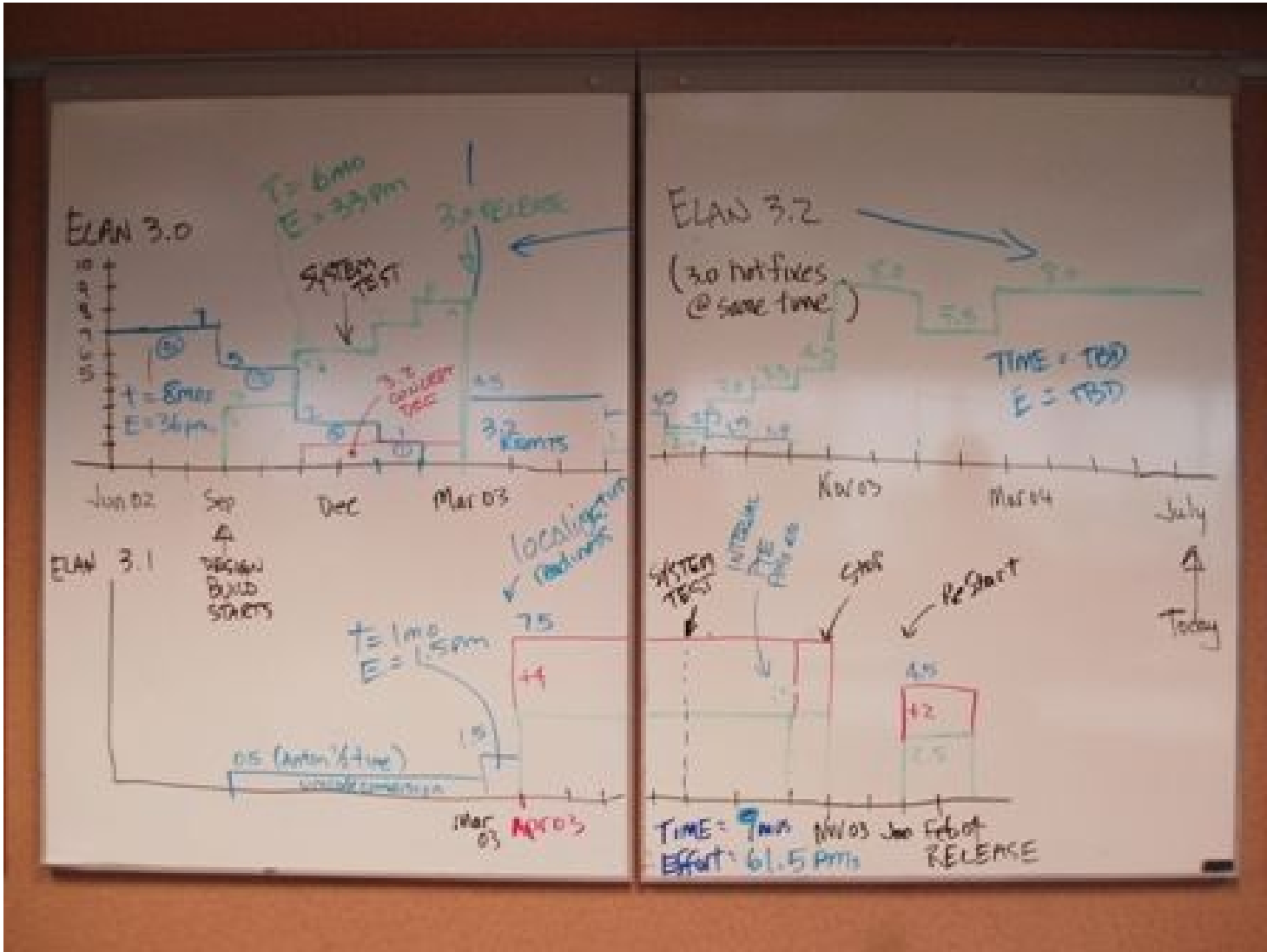






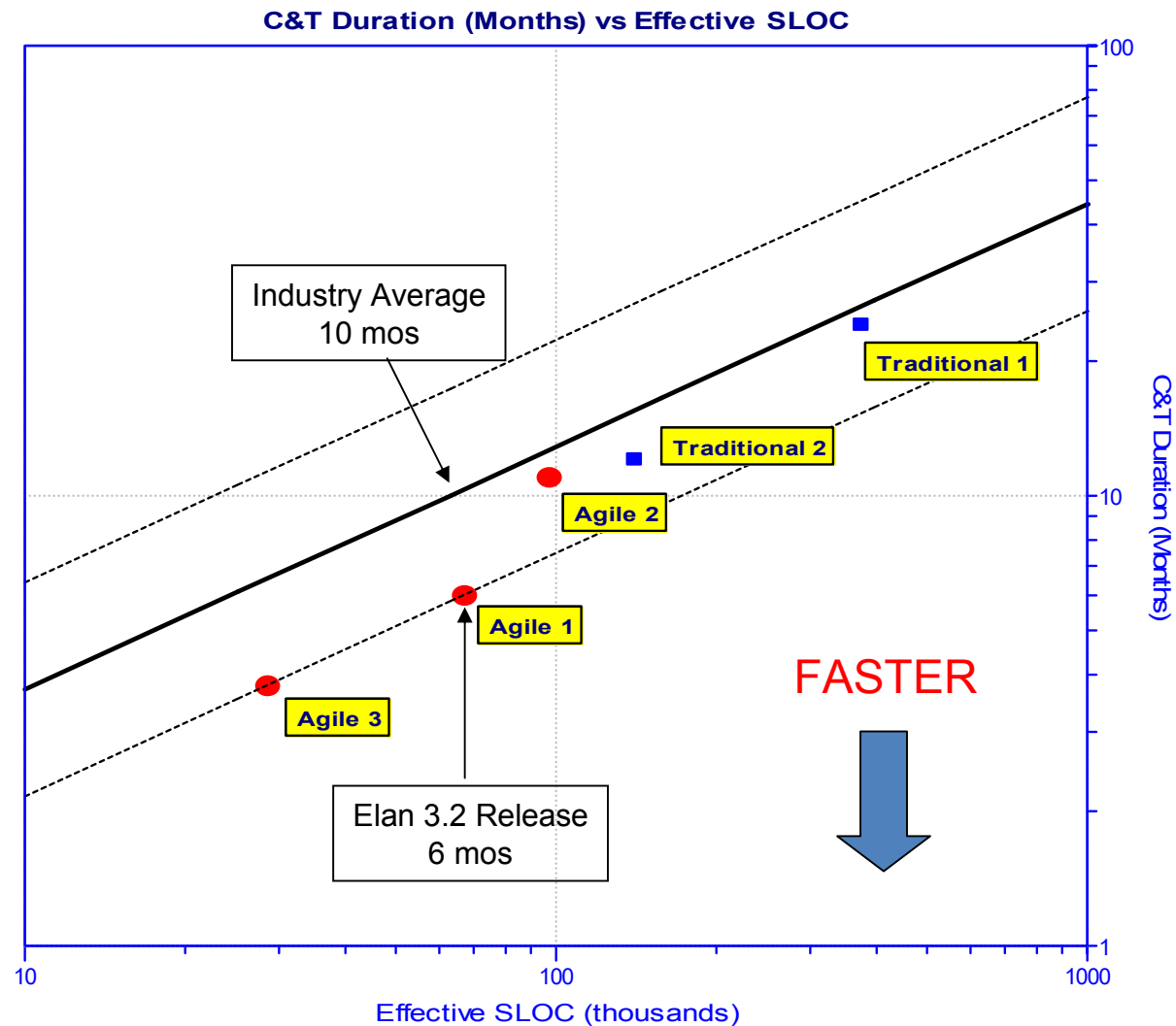


# Agile Metrics Capture – Velocity etc.

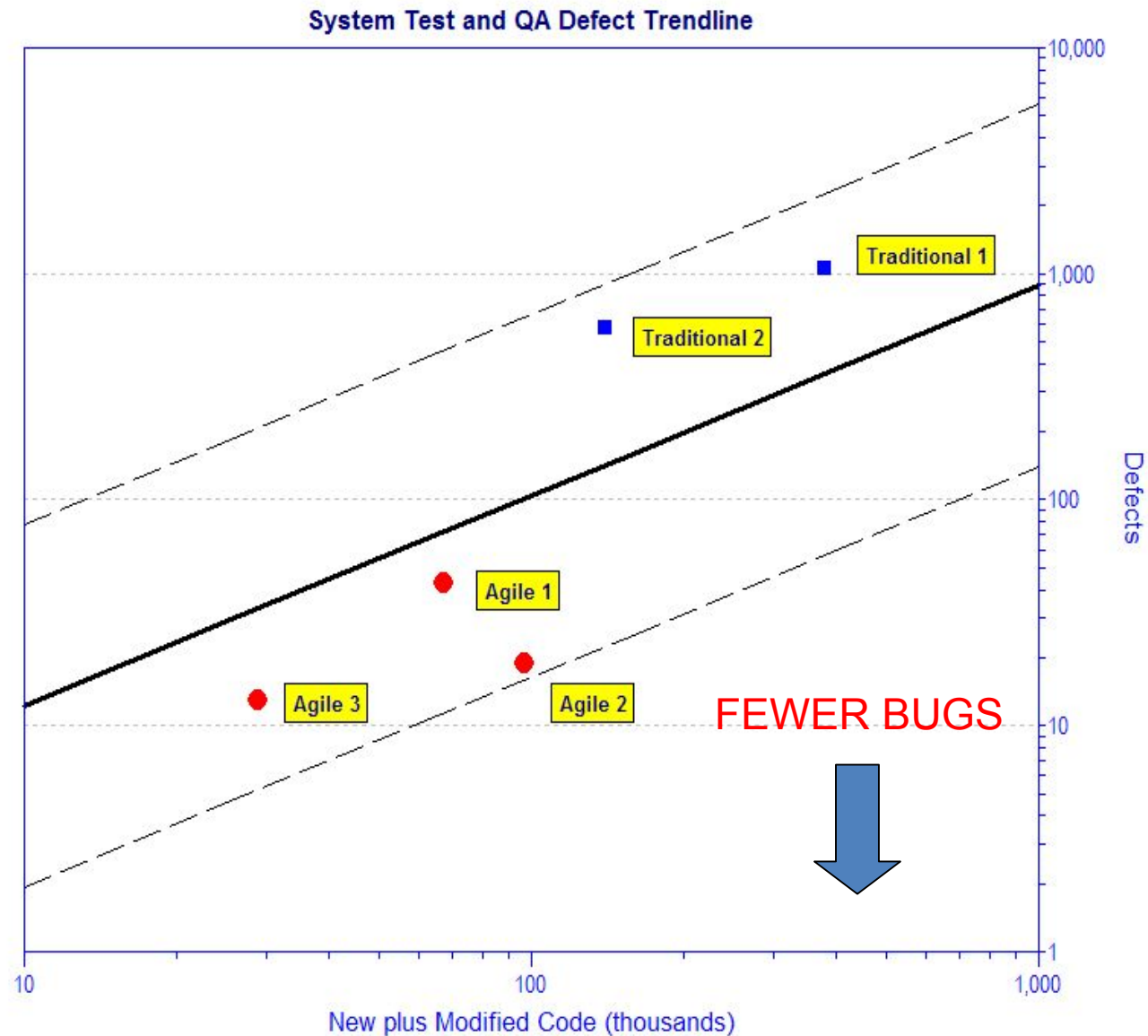




# Agile vs Waterfall - Schedule



# Agile vs Waterfall - Quality



# This Data Says: Kent was **CORRECT**



*"Agile projects can be considered more successful in the sense that they deliver more functionality with fewer defects."*

- Kent Beck

- People buy our product because of the software!
  - Our software products help our customers do their work better than our competitors
  - The software component of our product suite will become a significant positive differentiator in the marketplace
  - The quality of our software products will give us a competitive advantage in the marketplace



# Case Study: Co-Located XP - Follett Software

## Team size

- 24 Developers
- 7 Testers
- 3 Customers
- 3 Project Leaders

## Code Base

- 1,000,000 lines of code
- 7,000 automated unit test
- 10,000 automated acceptance test



# Robert Lucas – Nobel in Economics

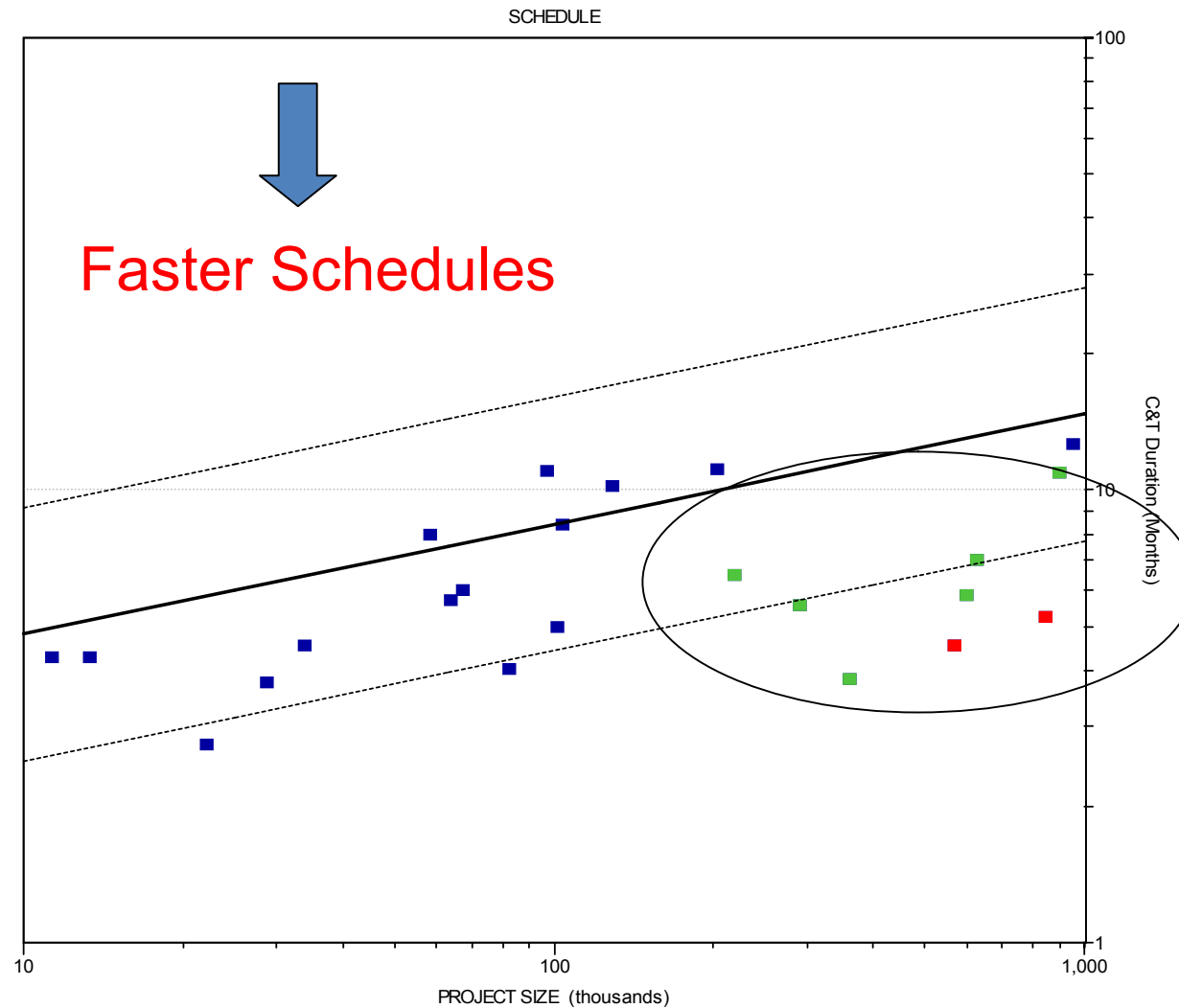
The force of concentration, or “clustering” of human creativity and talent... the powerful (economic) gains that come when smart and talented people (co-)locate in close proximity to one another...

# Distributed SCRUM – BMC Software





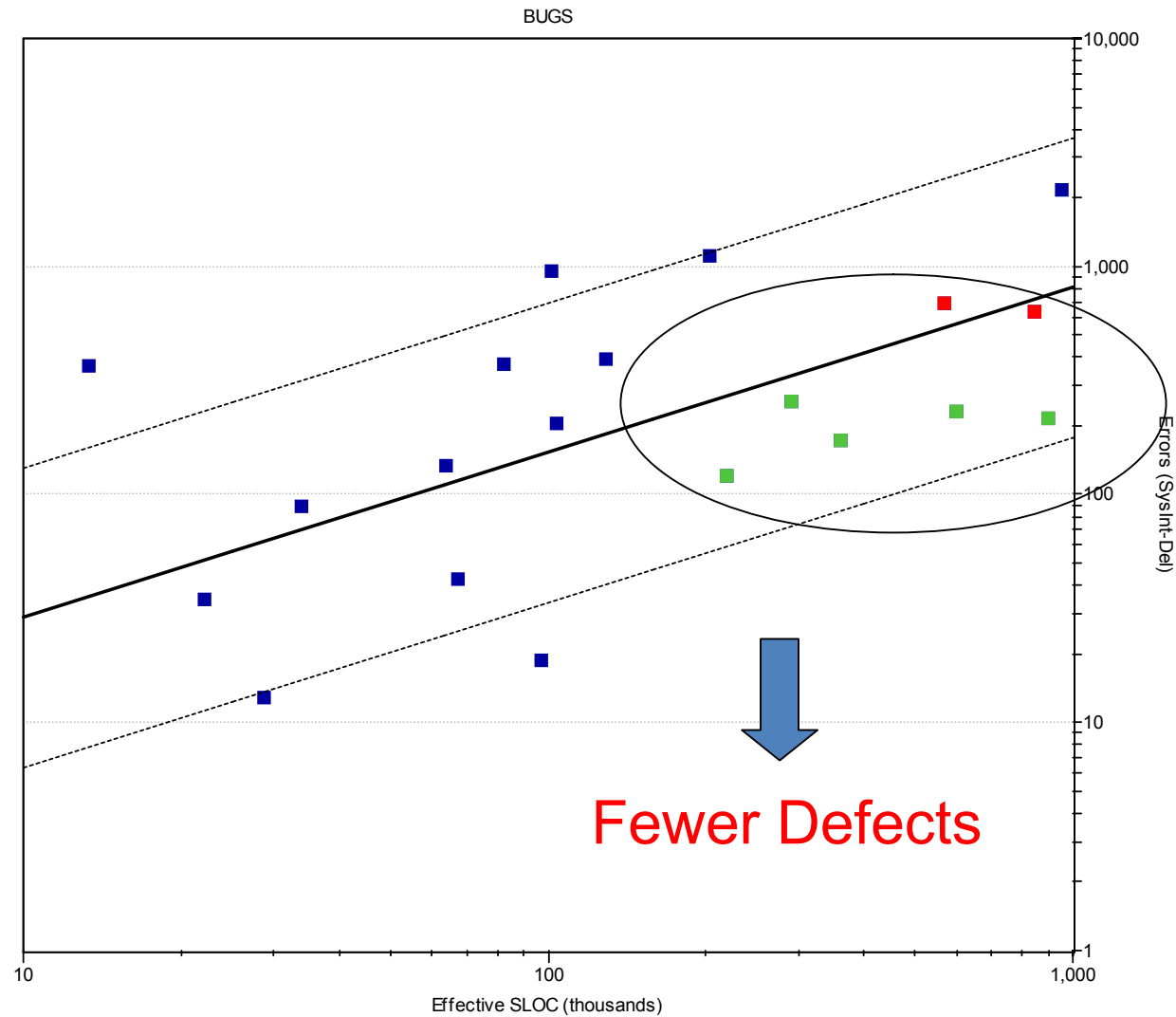
# Agile Assessment – Schedule



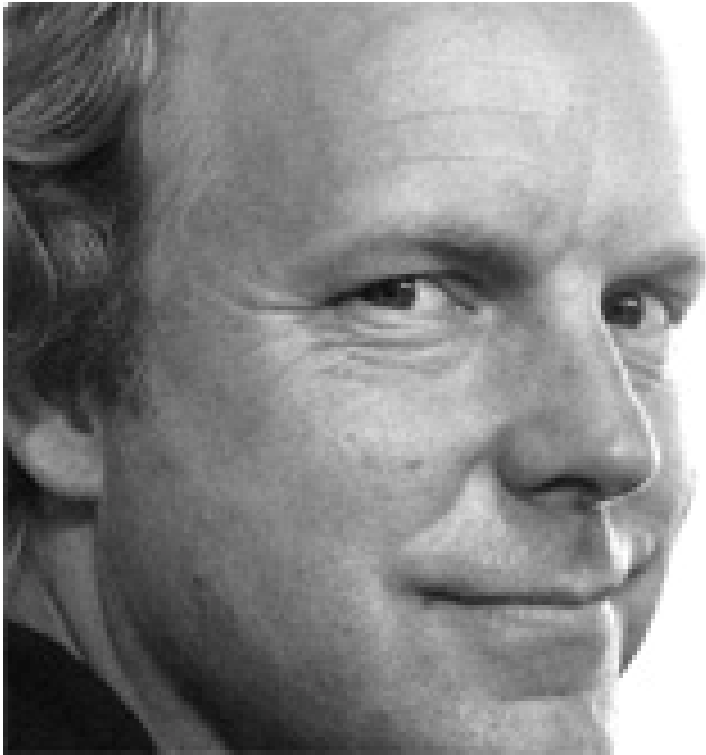
■ Agile Companies ■ Company B SCRUM ■ Company A XP — QSM 2005 Business — Avg. Line Style - - - - - 1 Sigma Line Style



# Agile Assessment – Quality




# This Data also Says: Kent was CORRECT

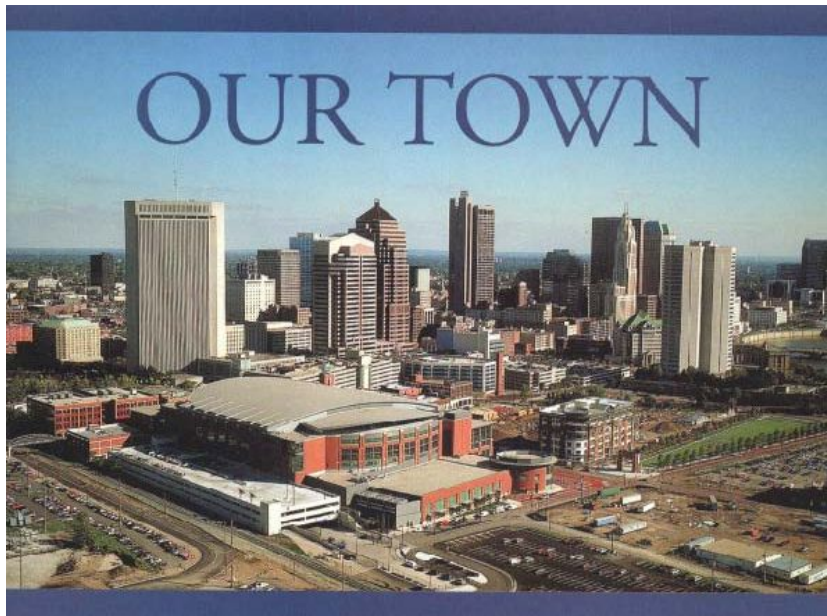


*"Agile projects can be considered more successful in the sense that they deliver more functionality with fewer defects."*

- Kent Beck



# The Columbus Agile Benchmark Study (Columbus vs the World)

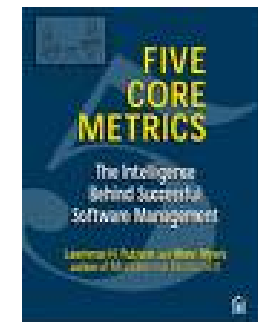
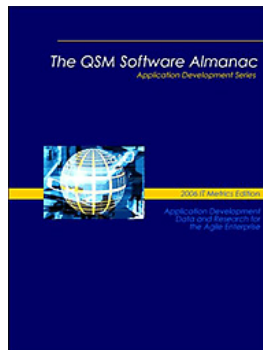


# Industry Data from the QSM SLIM-Metrics Database

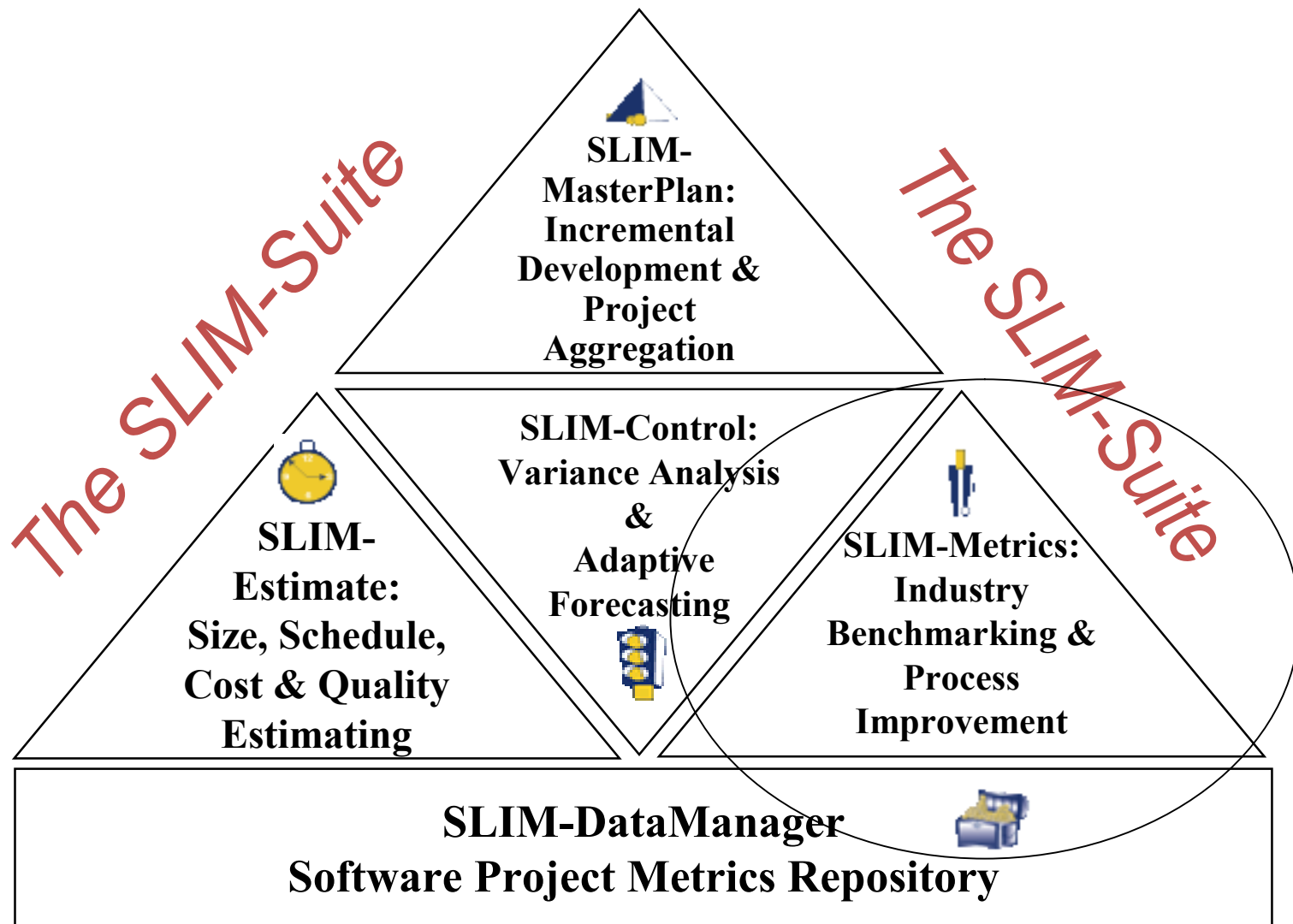
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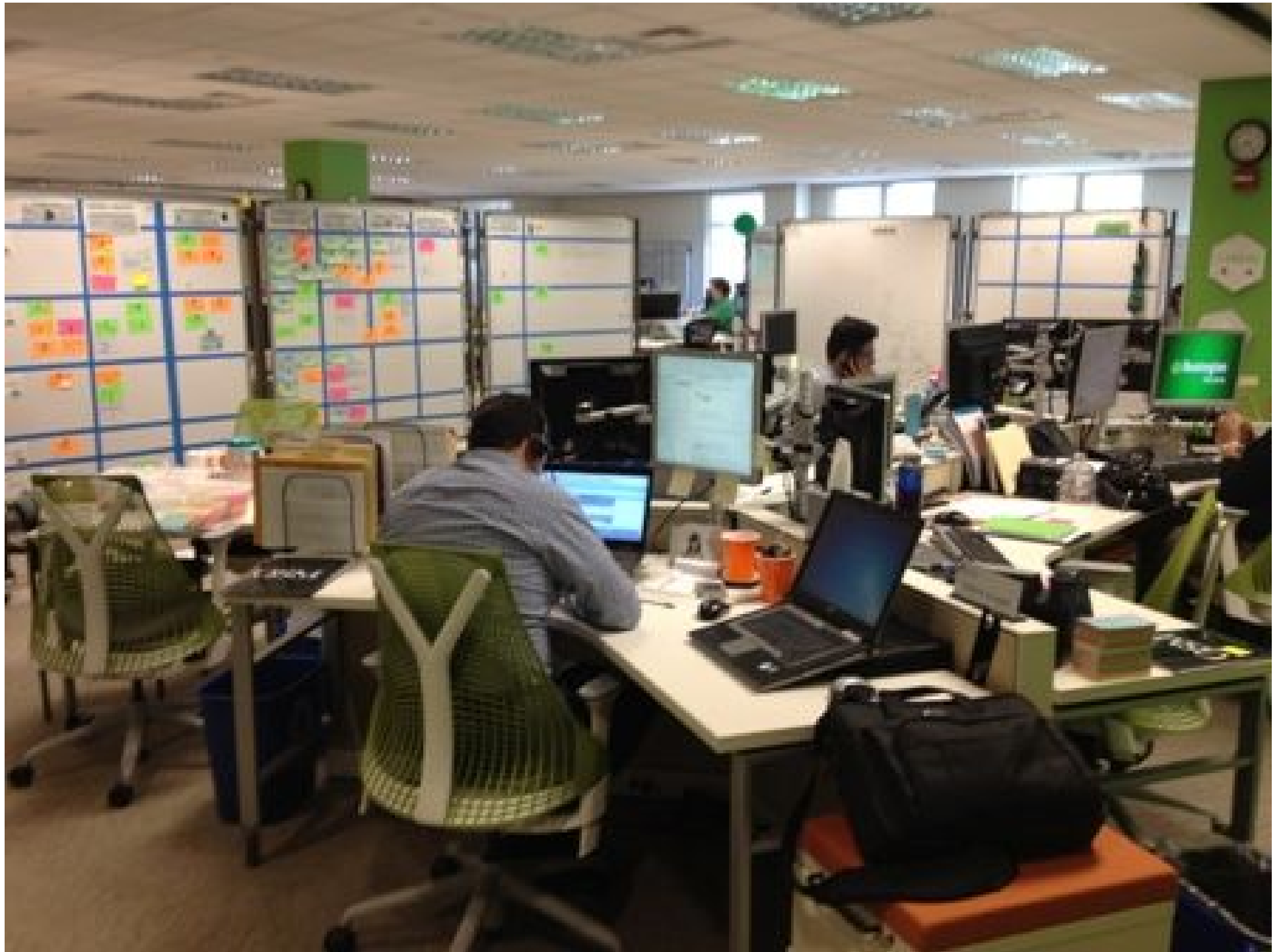






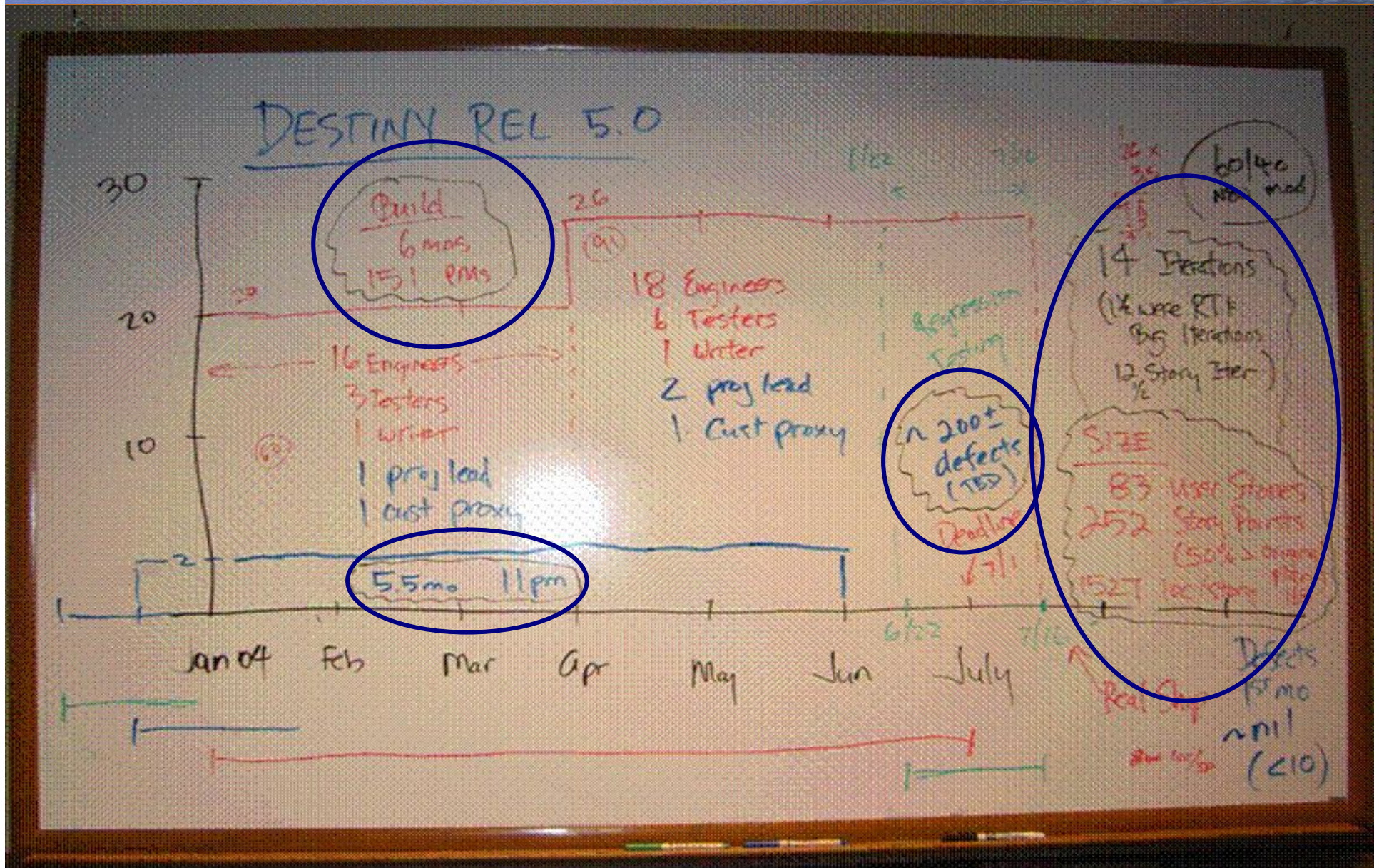








# Project Sketch – Core Metrics





# Input to SLIM

Project ID 1: Destiny Release 5.0 (Record 1 of 3)

Basic Information | Application | Sizing | Accounting | Custom Fields | Environment | Quality | Review

**Project Information**

Project Name:

Status:

Confidence:

Preparer Name:

Record Creation Date:

Date Last Modified:

**Predominant Application Type**

- Payroll
- Trading
- Funds Transfer
- Inventory Control
- Facility Mgmt
- Financial Mgmt
- Materials Mgmt

**Description**

Destiny resource management solution centrally manages library materials, textbooks, instructional media and fixed and portable assets. Districts using all Destiny solutions simultaneously benefit from consolidated reporting and seamless sharing of patron data across all modules. It provides robust, flexible reporting with

**Sizing**

Source Lines of Code

New:

Modified:

Unmodified:

Requirements:

**Defects**

System Integration to Delivery:

First Month after Delivery:

**Table**

	Phase	Start Date	End Date	Months	PM	1000 \$	Peak Staff	Staffing Shape
1.								
2.	STOR	12/15/2003	6/1/2004	5.58	11	104.5	2	Level load
3.	BUILD	1/1/2004	7/16/2004	6.52	151	1434.5	26	Level load
4.								
Life Cycle		12/15/2003	7/16/2004	7.06	162	1,539	26	PI = 23.1 MBI = 5.6

PI = 23.1 MBI = 5.6

Delete First Prior Next Last Add OK Cancel Help

# Agile Captures the Right Metrics for SLIM

Velocity/Burndown

Headcount

Stories and Point Sizing

Bugs





**The Answer to Life, the Universe,  
and Everything**

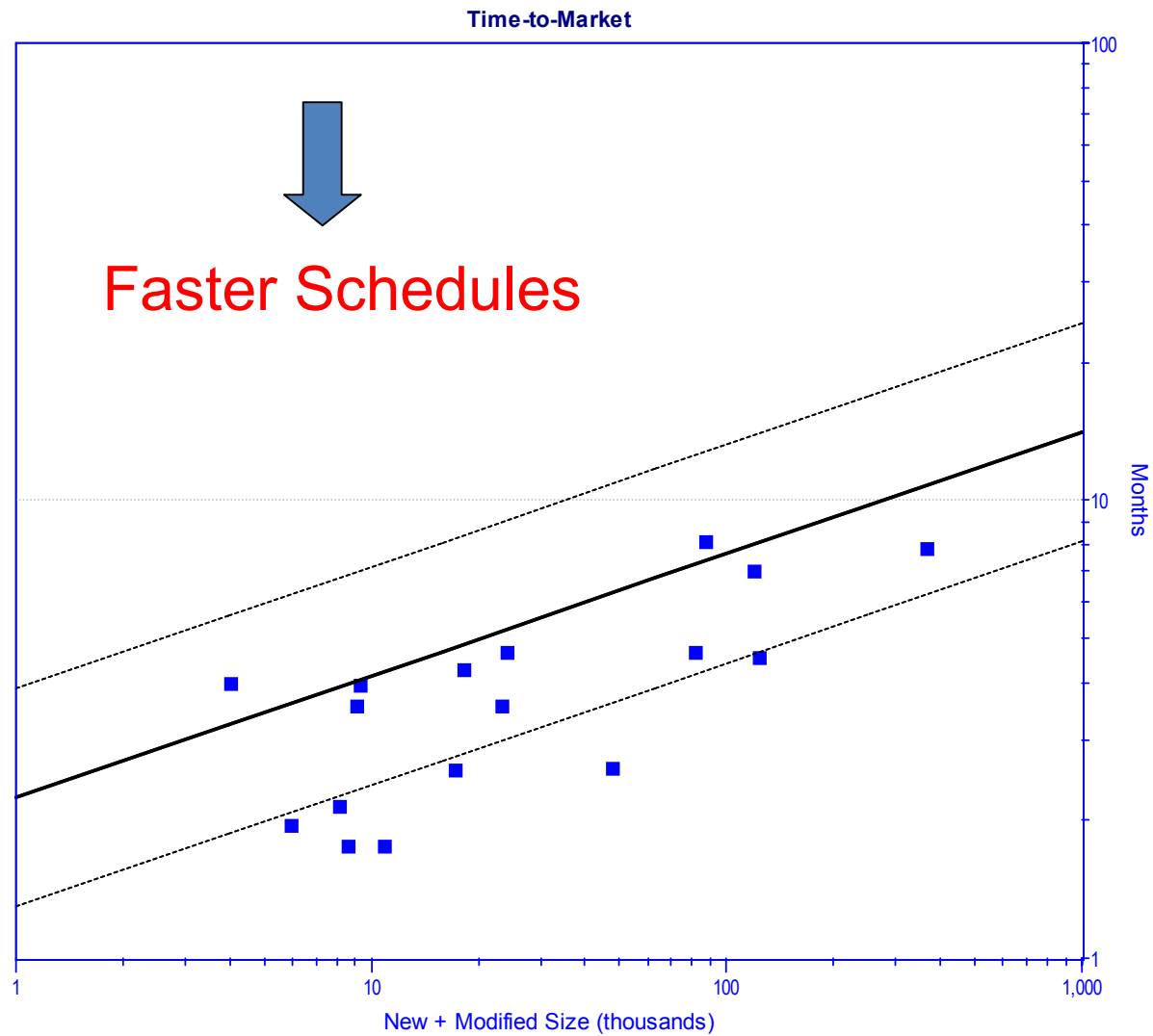




# This is only An Initial Progress Report



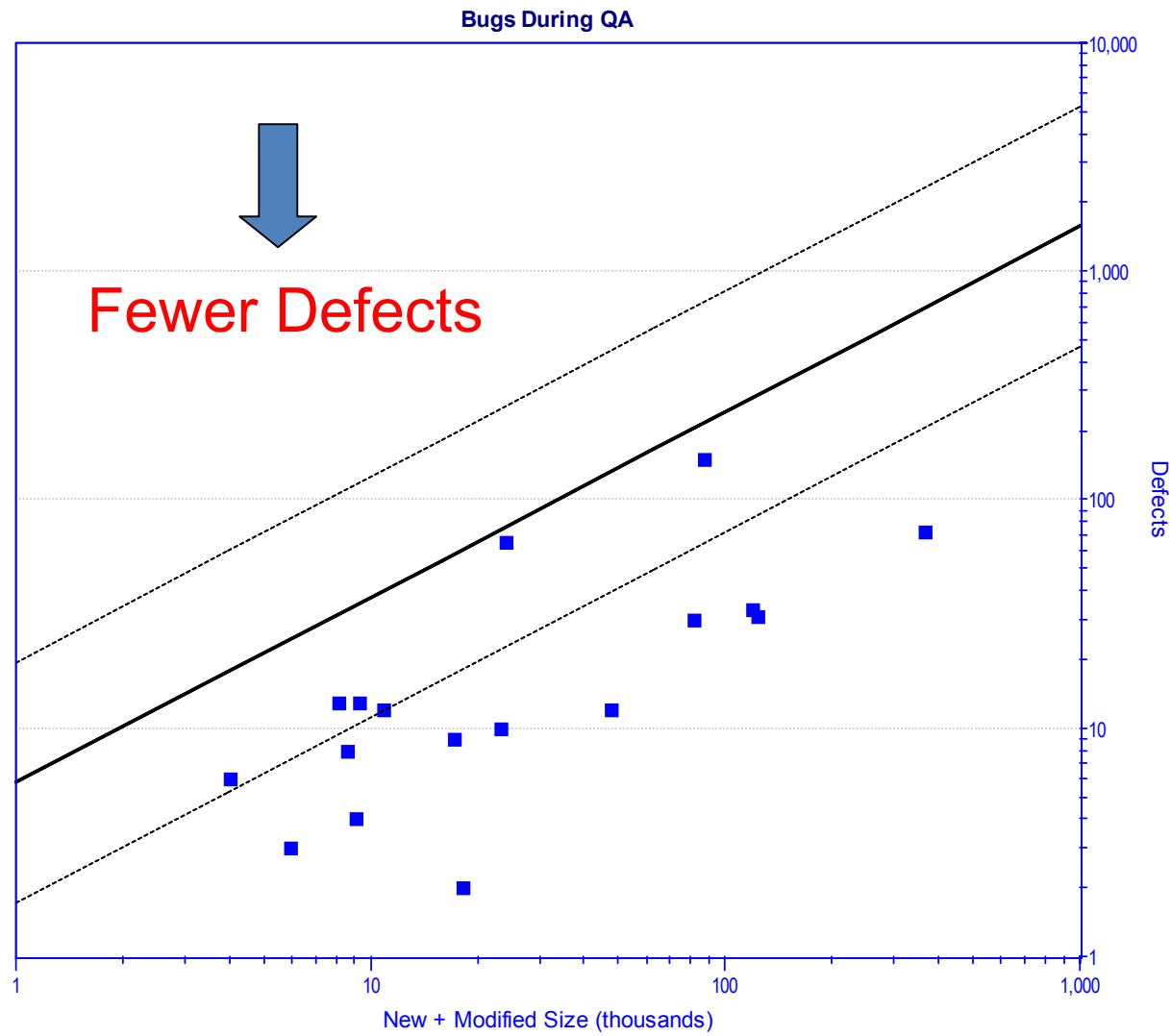
# Speed



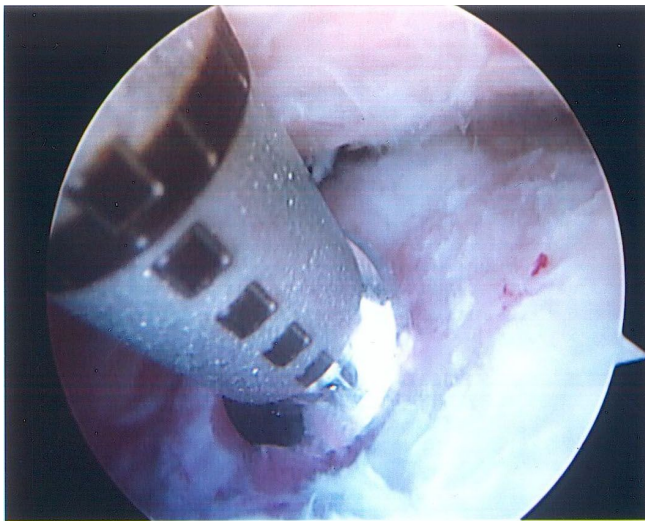
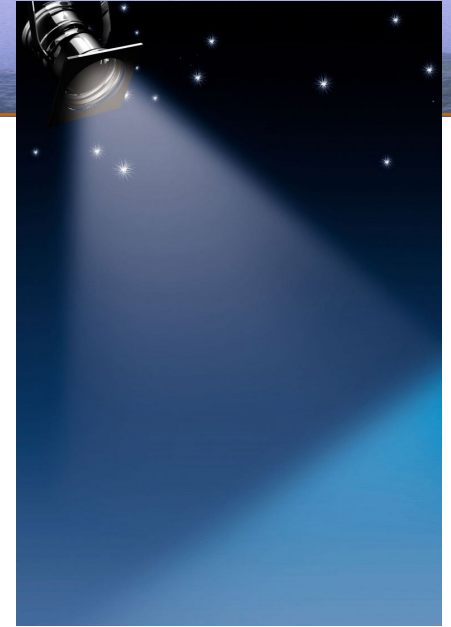
■ All Systems    — QSM Business    — Avg. Line Style    - - - - 1 Sigma Line Style



# Bugs







# Short Feedback Loops

Paired programmers  
Instantaneous code  
reviews  
Accelerated learning  
and execution  
Face to face  
communication  
channel



# Domain Knowledge

Smart people,  
experienced people  
Coding is moving  
knowledge from mind  
into the machine  
Inexperience costs  
money





# Time Boxing

Short iterations

Clear and  
discernible  
progress

Anticipation of the  
next important  
feature

Efficiency

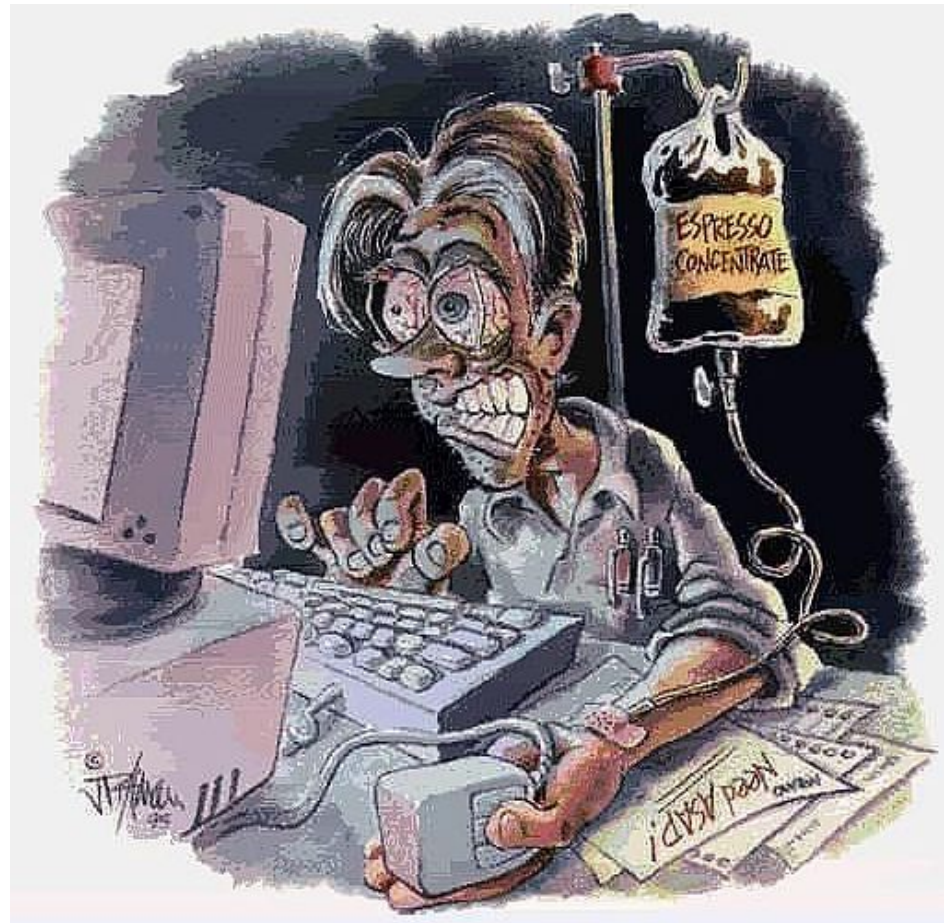


# Avoiding Burnout

XP = Sustainable  
pace

40 Hour Work  
Weeks

Prevent productivity  
collapse for  
overworked  
teams





# Craftsmanship Over Craft

Take pride in what you do

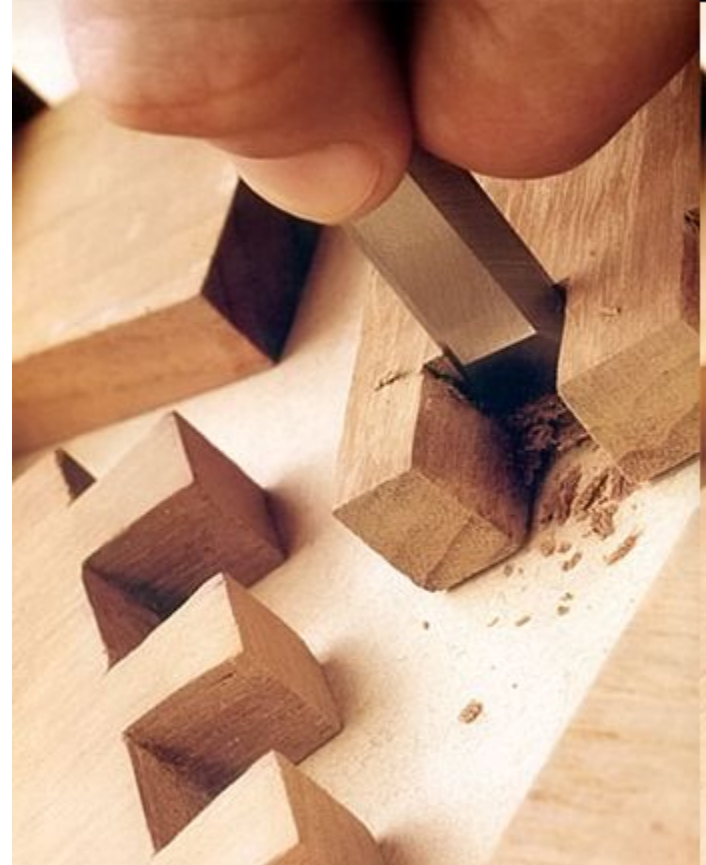
Do not compromise  
professionalism

Simple design

Upfront testing

Prevent costly rework

Build it right the first time



# Transparency

“Transparency is a great floodlight. People who thrive in political maneuvering hate SCRUM...”

- Ken Schwaber



# High-bandwidth Communication

The best teams have  
“wide-open pipes”

Domain knowledge  
moves among the  
team

Information flows  
rapidly and  
accurately





But wait, there's more...

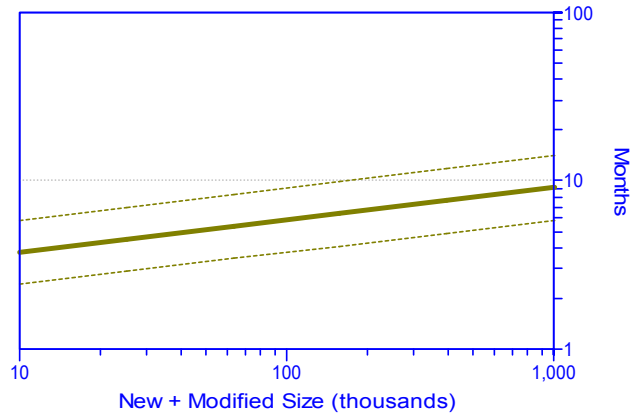




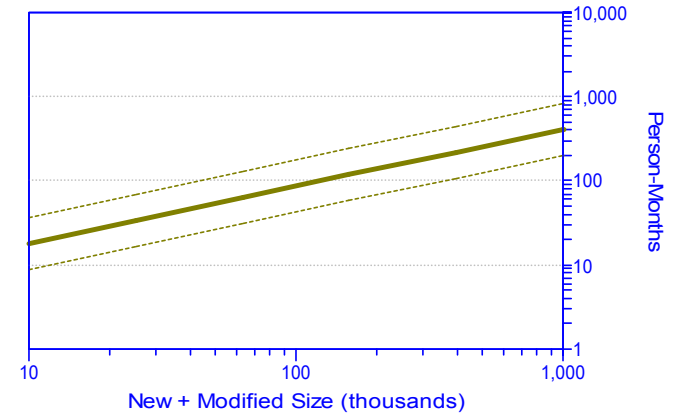
# New Agile Benchmark Trends

## Agile Trends - Iterations/Build Phase

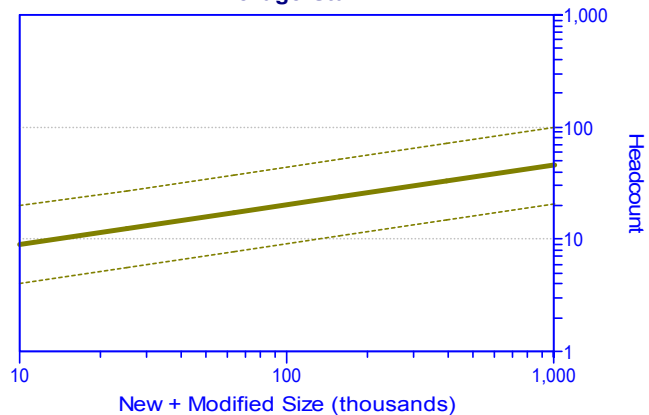
Time-to-Market



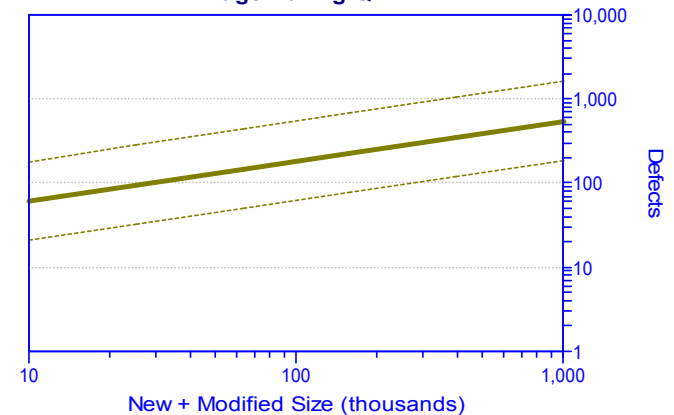
Effort



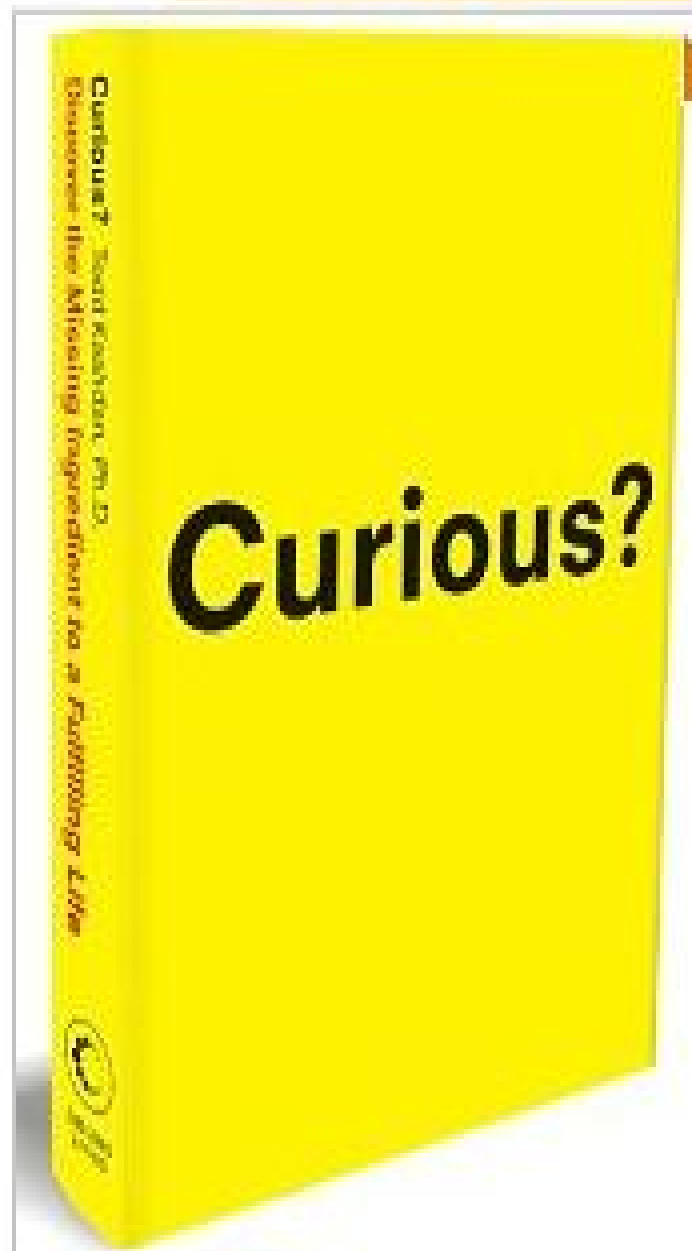
Average Staff



Bugs During QA



Click to **LOOK INSIDE!**



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# Show Me The Monkey!



**Curious George™**



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**IN THEATERS FEBRUARY 10**  
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