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

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Background

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

- Kent Beck
Rayleigh Curve Defect Rate

Count of Severity

# 7
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.

British Telecom  Fiserv Corp
SAP  IBM Global
Microsoft  Misys Healthcare
Intel  JPMorganChase
AT&T/BellSouth  Boeing
Nationwide  Bank of New York Mellon
Motorola  Lockheed Martin
VerizonWireless  Progressive Insurance
Roche Diagnostics  DirecTV
Finding the Truth
Software Vision

- 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

Agile Metrics Capture – Velocity etc.
**Agile vs Waterfall - Schedule**

C&T Duration (Months) vs Effective SLOC

- **Industriy Average**: 10 mos
- **Elan 3.2 Release**: 6 mos
- **FASTER**: Agile vs Traditional

**Agile vs Waterfall - Quality**

System Test and QA Defect Trendline

- **FEWER BUGS**: Agile vs Traditional

11/30/2013
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
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
Project Sketch – Core Metrics

Input to SLIM

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<tr>
<th>Phase</th>
<th>Start Date</th>
<th>End Date</th>
<th>Months</th>
<th>1000 $</th>
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<table>
<thead>
<tr>
<th>Size</th>
<th>Time</th>
<th>Effort</th>
<th>Defects</th>
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## Follett vs. Industry Average

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<th>Industry Average</th>
<th>Current Performance</th>
<th>Delta</th>
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<td>242</td>
<td>121</td>
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<td>Staffing</td>
<td>35</td>
<td>35</td>
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## Distributed SCRUM – BMC Software
**Project Sketch – Core Metrics**

**BMC vs. Industry Average**

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<th>Current Performance</th>
<th>Delta</th>
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<tr>
<td>Staffing</td>
<td>40</td>
<td>92</td>
<td>+52</td>
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Agile Assessment — Schedule

- Faster Schedules

Agile Assessment — Quality

- Fewer Defects
"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)

OUR TOWN

SLIM-
Estimate:
Size, Schedule,
Cost & Quality
Estimation

SLIM-MasterPlan:
Incremental Development & Project
Aggregation
Variance
Analysis
& Adaptive
Forecasting

SLIM-Metrics:
Industry
Benchmarking
& Process
Improvement

SLIM-DataManager
Software Project Metrics Repository

The SLIM-Suite

The SLIM-Suite
Agile Captures the Right Metrics for SLIM

- Velocity/Burndown
- Headcount
- Stories and Point Sizing
- Bugs
Faster Schedules

Time-to-Market

New + Modified Size (thousands)

Months

All Systems  QSM Business  Avg. Line Style  1 Sigma Line Style
Bugs

Fewer Defects

Short Feedback Loops

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

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

- Ken Schwaber

Avoiding Burnout

XP = Sustainable pace
40 Hour Work Weeks
Prevent productivity collapse for overworked teams
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
For Additional Information

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