Agile As a Quality Game-Changer: What Data Reveals from Recent Agile Benchmark Research

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Comparing Columbus AGILE projects vs. Industry Averages*
-- 75% Fewer Defects, 30% Quicker Schedules --
The Columbus Agile Benchmark Study (Columbus vs the World)
The Munich Agile Benchmark Study
(Munich vs the World)
The NY Metro Agile Benchmark Study
(New York vs the World)
Agile’s Quality Aim

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

- Kent Beck
Agile vs Waterfall - Quality

System Test and QA Defect Trendline

FEWER BUGS

New plus Modified Code (thousands) vs Defects
The QSM SLIM Database

QSM maintains the world’s largest benchmarking database of 12,000+ 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 and in-flight forecast Agile and waterfall projects.
# The QSM SLIM Database

<table>
<thead>
<tr>
<th>British Telecom</th>
<th>Fiserv Corp</th>
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<tr>
<td>SAP</td>
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<td>Microsoft</td>
<td>Misys Healthcare</td>
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<td>Intel</td>
<td>JPMorganChase</td>
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<td>Bank of New York Mellon</td>
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<tr>
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<td>Lockheed Martin</td>
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<td>Progressive Insurance</td>
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<tr>
<td>Roche Diagnostics</td>
<td>DirecTV</td>
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</table>
The SLIM-Suite

SLIM-MasterPlan: Incremental Development & Project Aggregation

SLIM-Control: Variance Analysis & Adaptive Forecasting

SLIM-Metrics: Industry Benchmarking & Process Improvement

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

SLIM-DataManager: Software Project Metrics Repository
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

Destiny Rel 5.0

Build
6 mos.
151 Pm

18 Engineers
6 Testers
1 Writer

2 Project lead
1 Cust proxy

5.5 mo. 11 pm

Jan 04 Feb Mar Apr May Jun Jul

14 Iterations
(1/2 were RT
Big Iterations
12 Story Items)

in 2005
defects (755)

SIZE
83 User Stories
252 Story Points
(50% effort)

Defects
1st mo.
April
<100
Input to SLIM

Project Information:
- Project Name: Destiny Release 5.0
- Status: Completed
- Preparer Name: Kim Wheeler
- Record Creation Date: 5/18/2006
- Date Last Modified: 6/26/2006

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: 126748
  - Modified: 91783
  - Unmodified: [Blank]

Requirements:
- [Blank]

Defects:
- System Integration to Delivery: 121
- First Month after Delivery: [Blank]

Sizing:
- [Blank]

Time:
- [Blank]

Effort:
- [Blank]
**Trendline Assessment – Defects/Quality**

**Defects During Test**

Far Fewer Defects: 50% - 66% Below Industry
Trendline Assessment – Build Phase Schedule

Main Build Phase Duration vs Size

Schedules are Half Industry
# Follett vs. Industry Average

<table>
<thead>
<tr>
<th></th>
<th>Industry Average</th>
<th>Current Performance</th>
<th>Delta</th>
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<tbody>
<tr>
<td>Project Cost</td>
<td>$3.5 Million</td>
<td>$2.2 Million</td>
<td>-$1.3M</td>
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<tr>
<td>Schedule</td>
<td>12.6 months</td>
<td>7.8 months</td>
<td>-4.8 mos</td>
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<tr>
<td>QA Defects</td>
<td>242</td>
<td>121</td>
<td>-50%</td>
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<tr>
<td>Staffing</td>
<td>35</td>
<td>35</td>
<td>n/a</td>
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</table>
The Columbus Agile Benchmark Study (Columbus vs the World)
Agile Captures the Right Metrics for SLIM

Velocity/Burndown

Headcount

Stories and Point Sizing

Bugs
July Release:

- 4 months duration
- 10 FTE staff
- 139 Stories, 553 Story Points
- Delivered by Adding/Creating (an additional)
  - 26,579 New Code, plus 7,615 Changed Code
  = 34,194 New and Changed Code
  (Other code = same/unchanged or deleted)
- 45 Defects during QA Testing
The Answer to Life, the Universe, and Everything
Speed - Columbus

Faster Schedules

Time-to-Market

New + Modified Size (thousands)

Months

United States  QSM Business  Avg. Line Style  1 Sigma Line Style
Speed - Columbus

Faster Schedules

Time-to-Market

New + Modified Size (thousands)

Months

1 10 100

United States QSM Business Avg. Line Style 1 Sigma Line Style
Bugs - Columbus

Fewer Bugs
Bugs - Columbus

Fewer Bugs
Comparing Columbus AGILE projects vs. Industry Averages*
-- 75% Fewer Defects, 30% Quicker Schedules --
But wait, there’s more…
WHAT ABOUT YOU?
QSM SLIM Agile Benchmark Trends
Show Me The Monkey!

Curious George

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FOR YOUR COMPANY

WHEN Anytime

WHERE The Web Michael Mah

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How Agile Measures Up

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