

Project Metrics

Anything you need to quantify can be measured in some way that is superior to not measuring it at all.

7/9/2022

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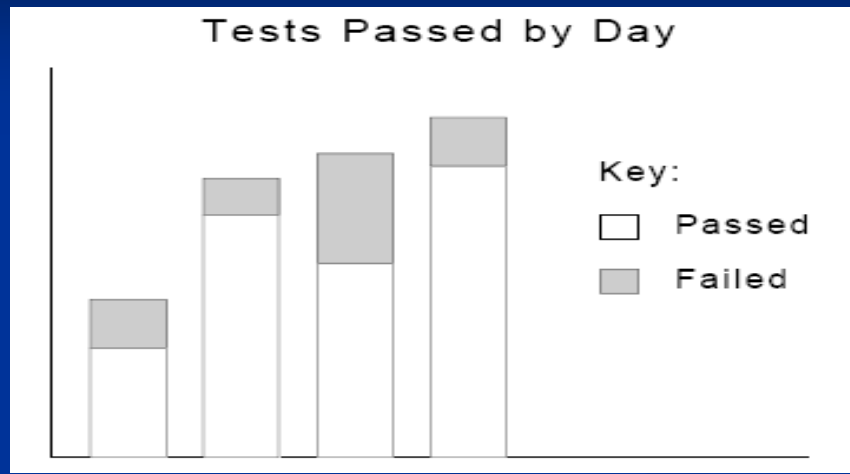
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The purpose of Metrics is so that we can decide how to improve the system.
What is measured, gets managed. What is managed, gets done.

Many teams check and adjust based on gut feelings or some idea from Internet.
They don't use real data to determine their direction.

Retrospectives that use data will likely be more productive than using opinions.

Typical Metric



Sprint Boards



Post-It's:

- White- Feature
- Yellow- Story
- Blue- Task

Dots:

- Blue- Task in progress
- Green- Task complete
- Yellow- Dependency
- Red- **Impediment** / Blocked

White card – Feature

Yellow card – user story

Blue card – Task

The image shows a whiteboard with a Kanban board layout. The board is divided into columns by green lines. The columns are labeled 'Features', 'Tasks', and 'Stories' (written vertically on the left). The board is filled with numerous sticky notes, some yellow and some purple, representing tasks and features. Handwritten notes include 'QA=7 Dev=12', 'QA=10 Dev=12', 'QA=3 Dev=2', and 'QA=1 Dev=2'. The board is divided into sections by green lines, and the word 'Stories' is written vertically on the left side.

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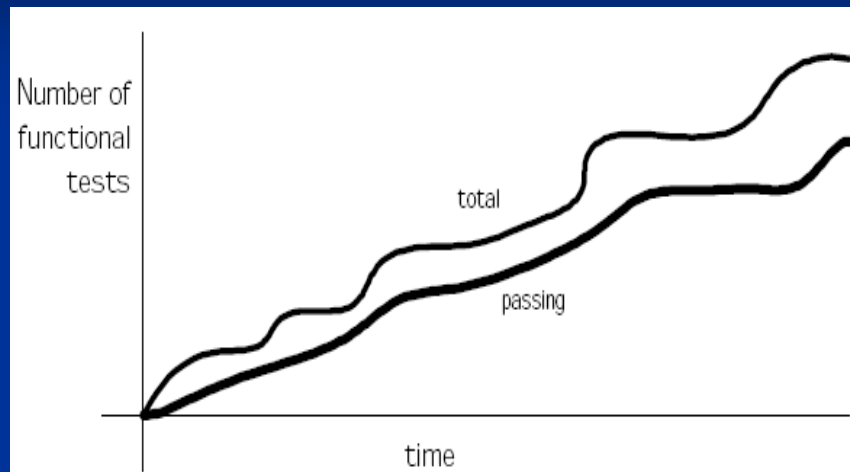
Taken from <http://www.infoq.com/presentations/The-Power-of-Visibility>

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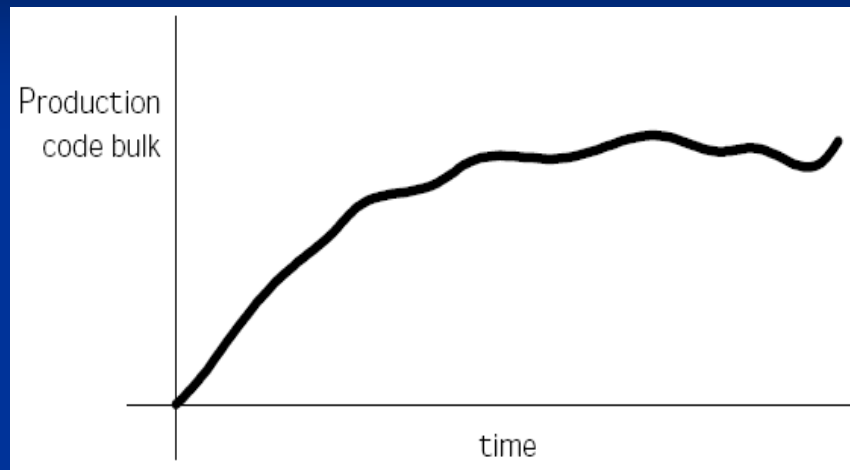
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Taken from <http://www.infoq.com/presentations/The-Power-of-Visibility>

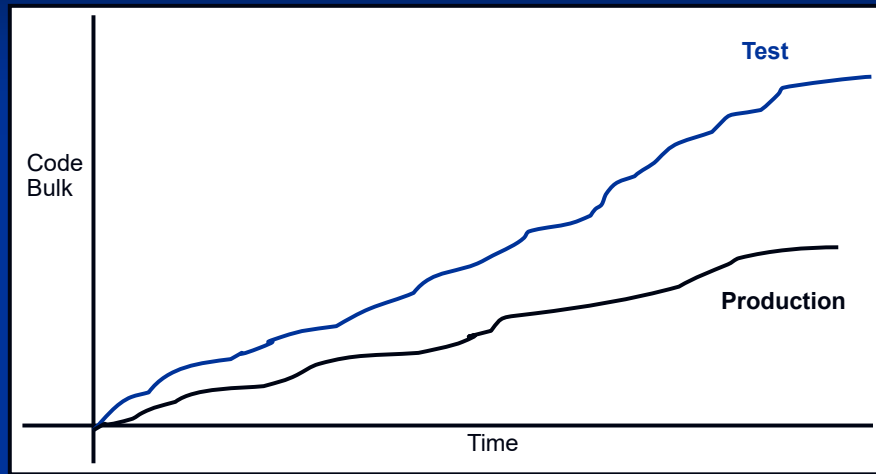
Typical Metric



Typical Metric



Code & Tests LOC



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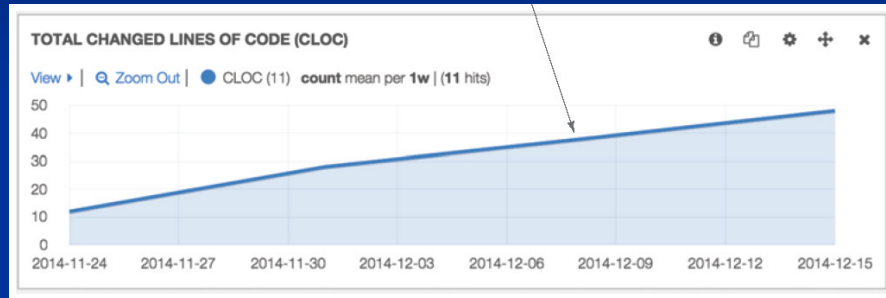
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The size of test code will usually be more than the LOC of the code. If the size of the test code is less than the size of project LOC, then probably the team is not writing enough tests.

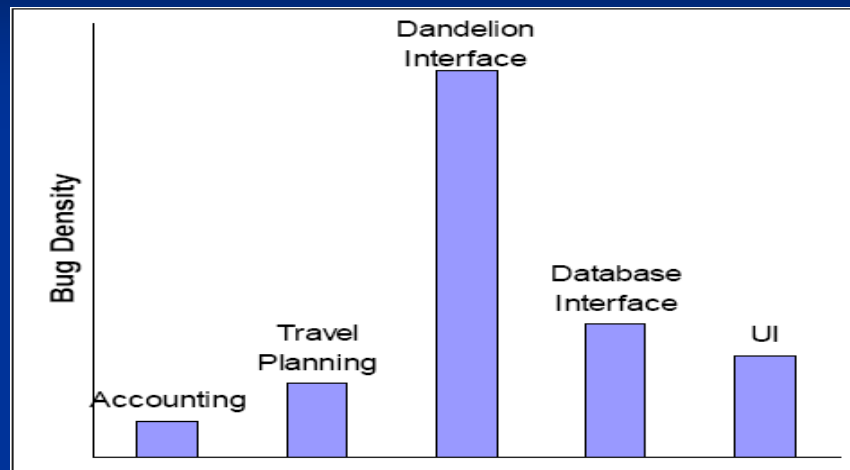
If Production code is 100KLOC, expect the Test LOC to be between 150KLOC to 300KLOC.

CLOC

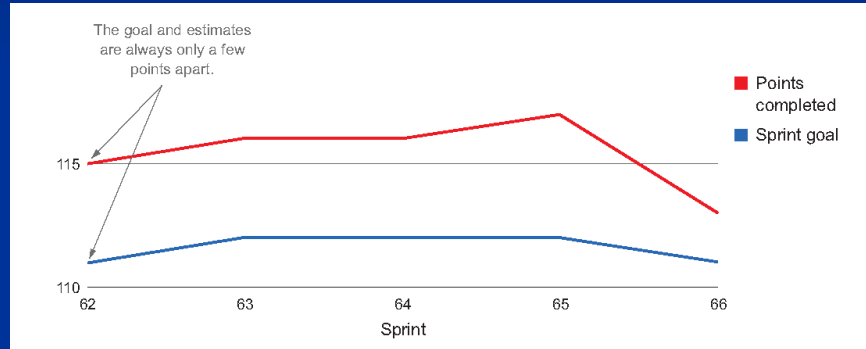


Changed Lines of Code

Cluster for Bugs



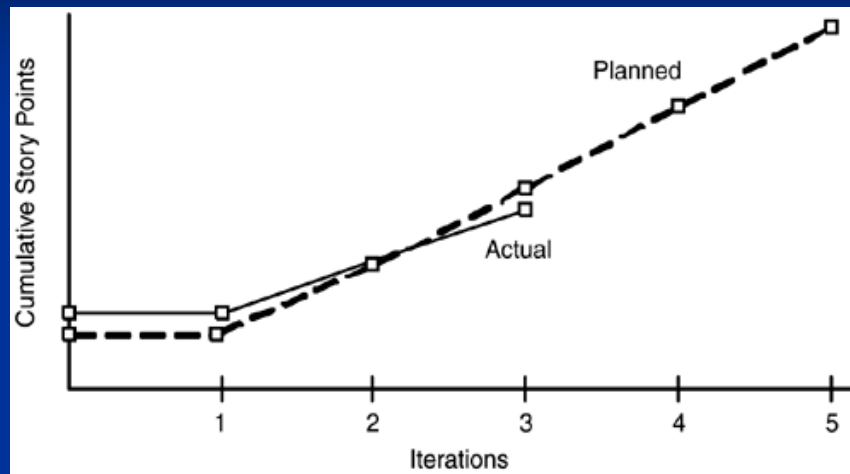
Progress by Iteration



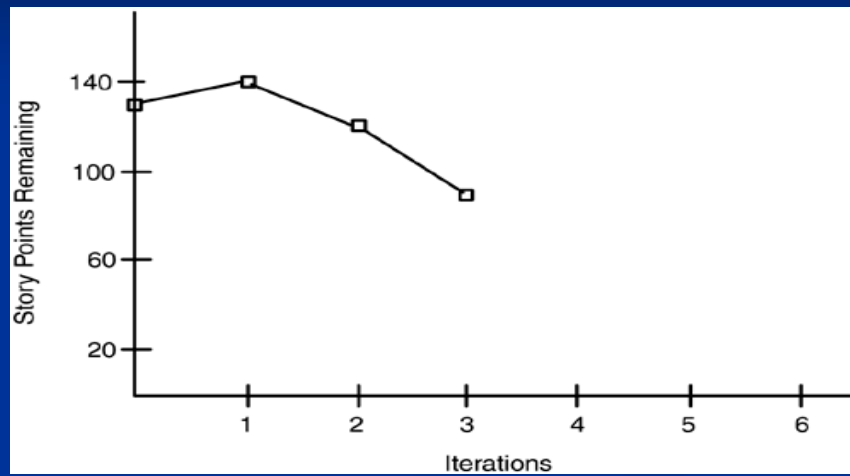
If estimates are this accurate, then team is likely overestimating. Because they have a buffer, they are able to meet their goals.

This tells us about capacity of the team. A Manager, who tries to jack up the velocity by pushing the team, is misusing this metric.

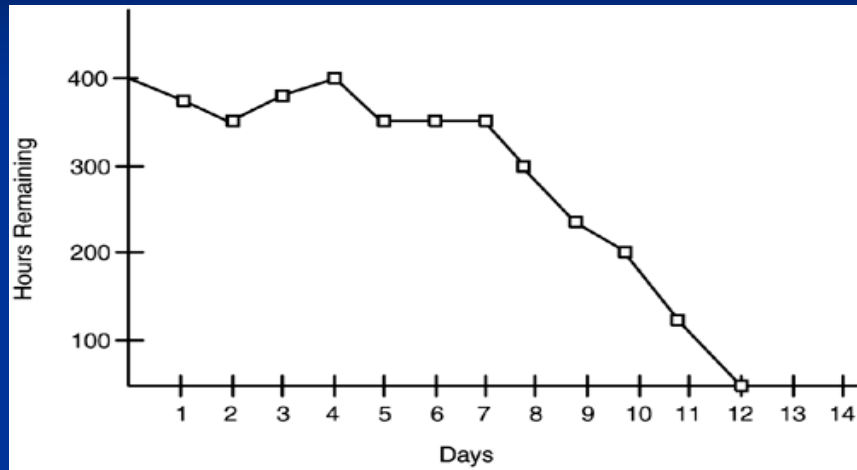
Cumulative Progress



Product Burndown Chart



Sprint Burndown Chart



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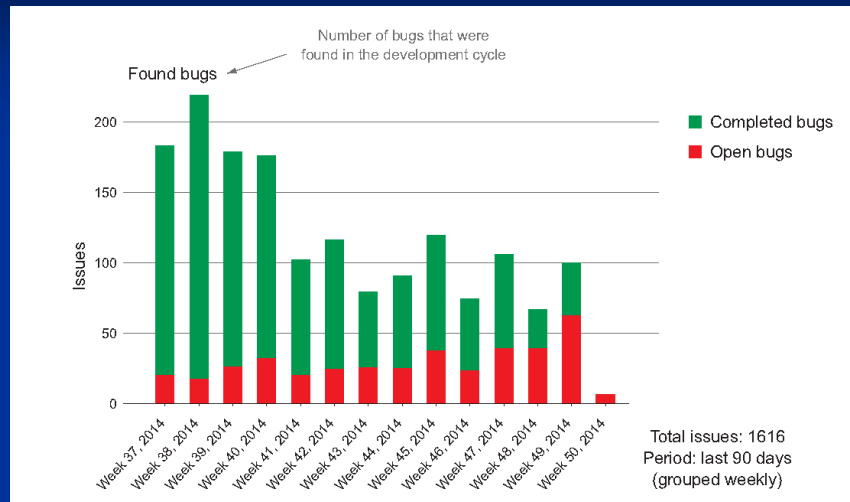
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To generate these reports automatically, tools exist. However for a small project, paper tracking seems easier.

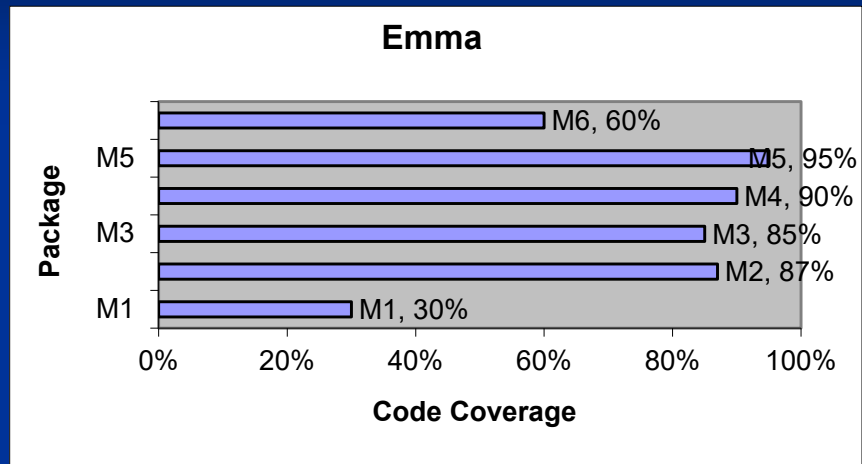
For large teams these tools are useful.

Some of the tools are VersionOne, Rally Software, ScrumWorks, XPlanner.

Bugs

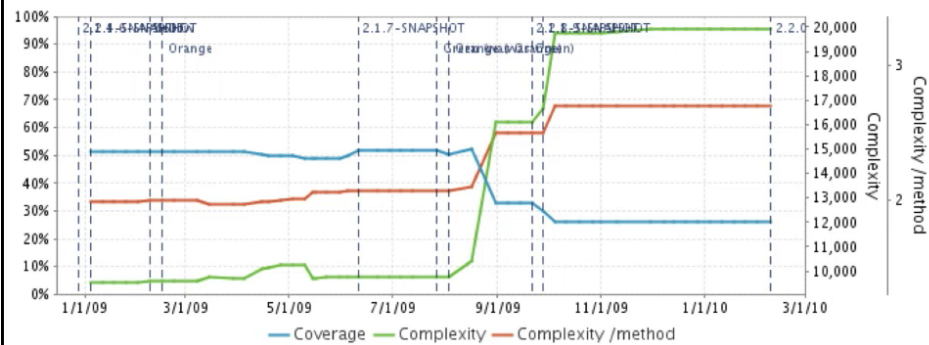


Code Coverage



Code coverage in automated tests using tools like Emma, Cobertura, Clover, etc.

Struts – Time Machine



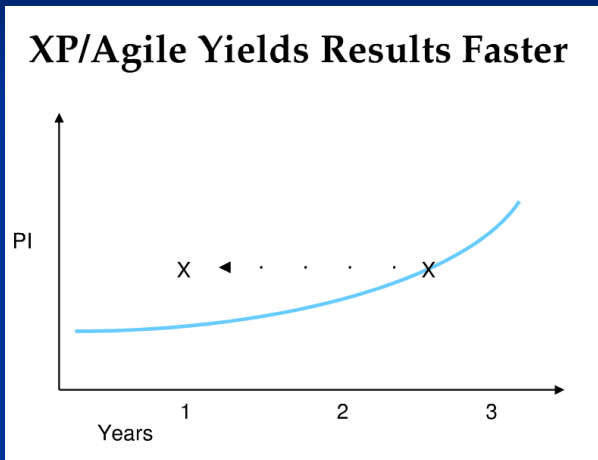
Mentioned in “Software Architecture Fundamentals” part 2 by O’rielly. Author Neal Ford, Mark Richards.

Something horrible happened on the project on 1-Sep-2009.

Metrics for Finance Managers

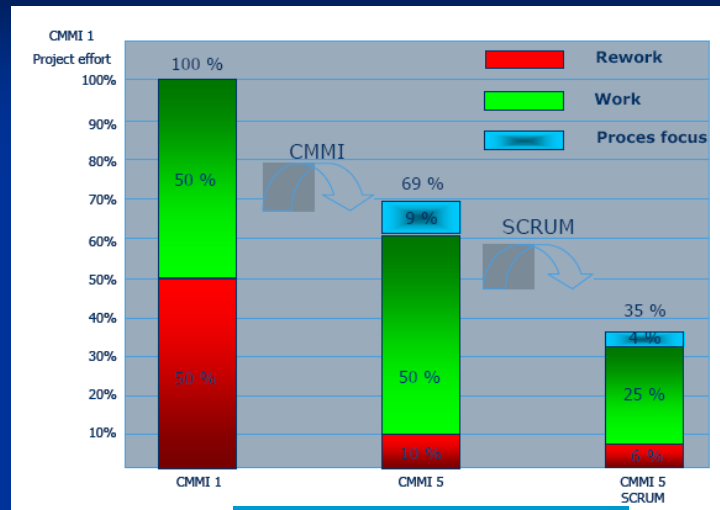
- Revenue / Person
- Profit / Person
- ROI
- Cycle Time - Time lag between the beginning of investment in an idea and when the idea first generates revenue.
- PI (Process Productivity)
 - $PI = (Size\ in\ KLoc) / (Time\ in\ months * Effort\ in\ Person\ Months)$

Example usage of PI Metric



After doing agile, the PI index moved for a company. See details at <http://www.infoq.com/presentations/10-tips-for-agile-transitions>

Productivity at Systematic



Source: ScrumPapers20070424.pdf

Systematic was established in 1985 and employs 371 people worldwide with offices in Denmark, USA and the UK. It is an independent software and systems company focusing on complex and critical IT solutions within information and communication systems. Often these systems are mission critical with high demands on reliability, safety, accuracy and usability.

Customers are typically professional IT-departments in public institutions and large companies and service industries. Systematic was appraised 11 November 2005 method and found to be CMMI level 5 compliant.

This is documented in a presentation on Infoq website. Presentation by Jeff Sutherland.

Summary

Information is the currency of democracy –
Thomas Jefferson

Agile is

- A set of Methods & Skills
- OR
- A leadership mindset & culture

Cultural change is the hardest part of the Scrum – Jeff Sutherland.
A co-operative game – Alistar Cockburn.

References

- Extreme Programming Explained –
Kent Beck, Cynthia Andres
- Enterprise and Scrum – Ken Schwaber
- User Stories Applied – Mike Cohn
- Maverick & Seven day weekend - Ricardo Semler

The End

"Believe nothing, no matter where you read it or who has said it, not even if I have said it, unless it agrees with your own reason and your own common sense."
- Buddha