

Quality Assurance in a DevOps World

Enabling Trust



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DevOps is an ecosystem of...

- **People** (relationships)
- **Processes** (activities)
- **Product(s)**



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Ecosystem...

- Applied on top of columnar organizations:
 - Development/SW eng./design/etc.
 - Quality assurance/testing/delivery
 - Product eng./operations/customers



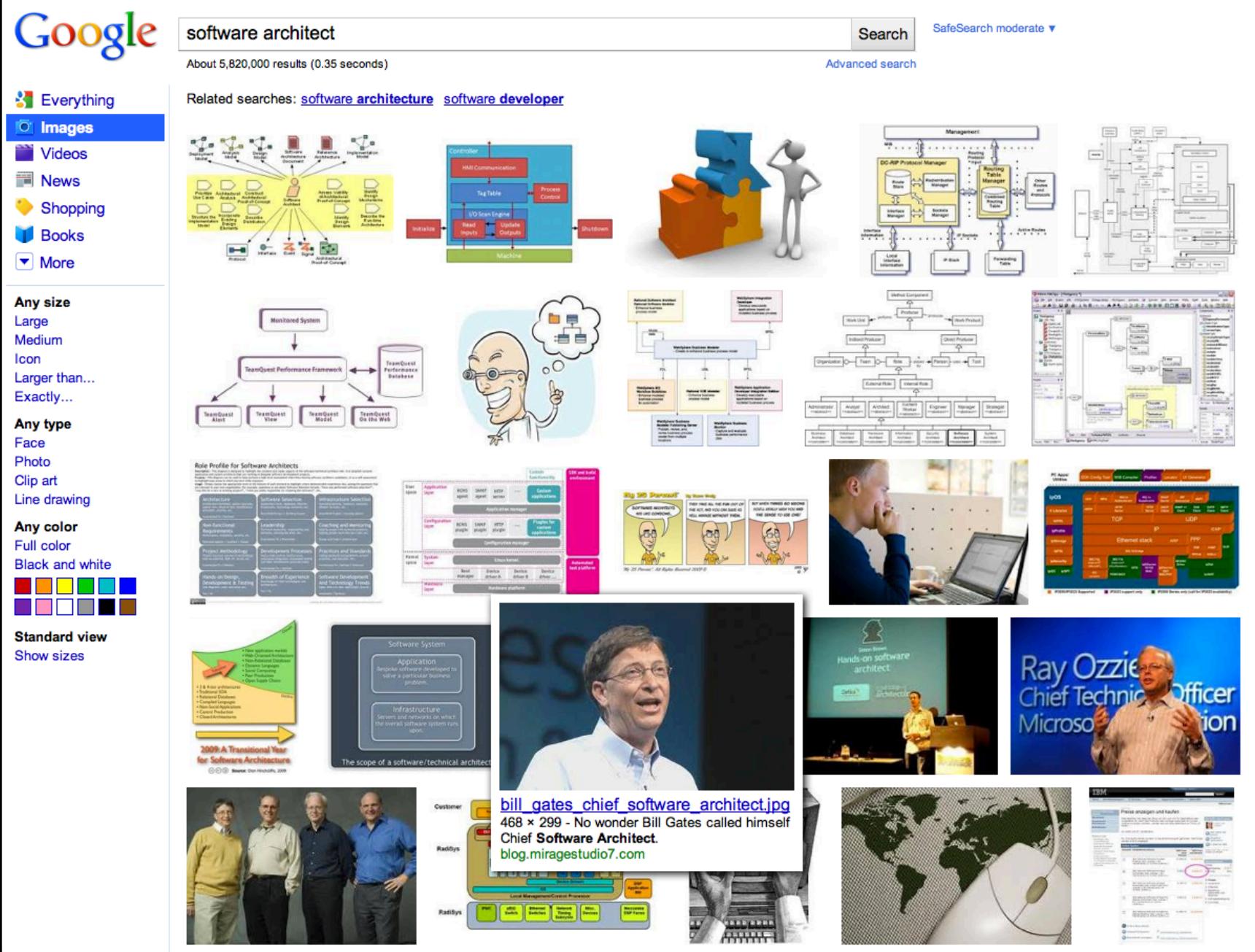
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Current DevOps thinking is...

- aligned with the Agile Manifesto,
- and prescribes itself as
a **Cultural** (organizational) and
Professional (personal) movement
- .



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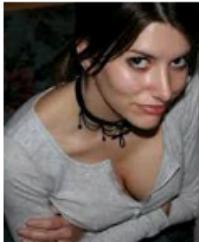
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Quality Assurance Monitoring

Quality Assurance QA

Quality Assurance Monitoring

A REGULATORY BODY IS HERE TO SEE YOU!

DILBERT

Quality Assurance loop

CALL QUALITY FEEDBACK SESSION

Excellent Good Average Poor

Quality & SEI Management Structure

commitment • improve



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Trust is the cornerstone...

- Patrick Debois' math - based on Covey's "4 Cores":
- **trust** = $f(\text{character}, \text{competence})$
- **character** = $f(\text{integrity}, \text{intent})$
- **competence** = $f(\text{capabilities}, \text{results})$



Trust is a QA deliverable...

- **Results** are the indicator
- **Testing** is the apparatus
- **Proof** of quality is the target



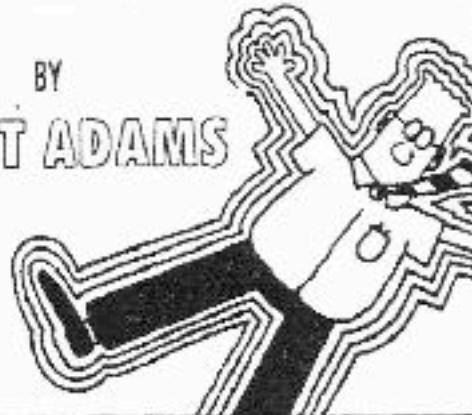
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RATBERT, MY COMPANY
IS HIRING FOR OUR
QUALITY ASSURANCE
GROUP. YOU'D BE PFRFECT.



DILBERT®

BY
SCOTT ADAMS



YOU WOULD FIND FLAWS
IN OUR NEW PRODUCT,
THUS MAKING YOURSELF
AN OBJECT OF INTENSE
HATRED AND RIDICULE.

E-mail: SCOTTADAMS@AOL.COM

S. Adams

BUT THEN YOU'D FIX
THOSE FLAWS... AND
YOUR RESPECT FOR ME
WOULD GROW INTO
A SPECIAL BOND OF
FRIENDSHIP,
RIGHT?!

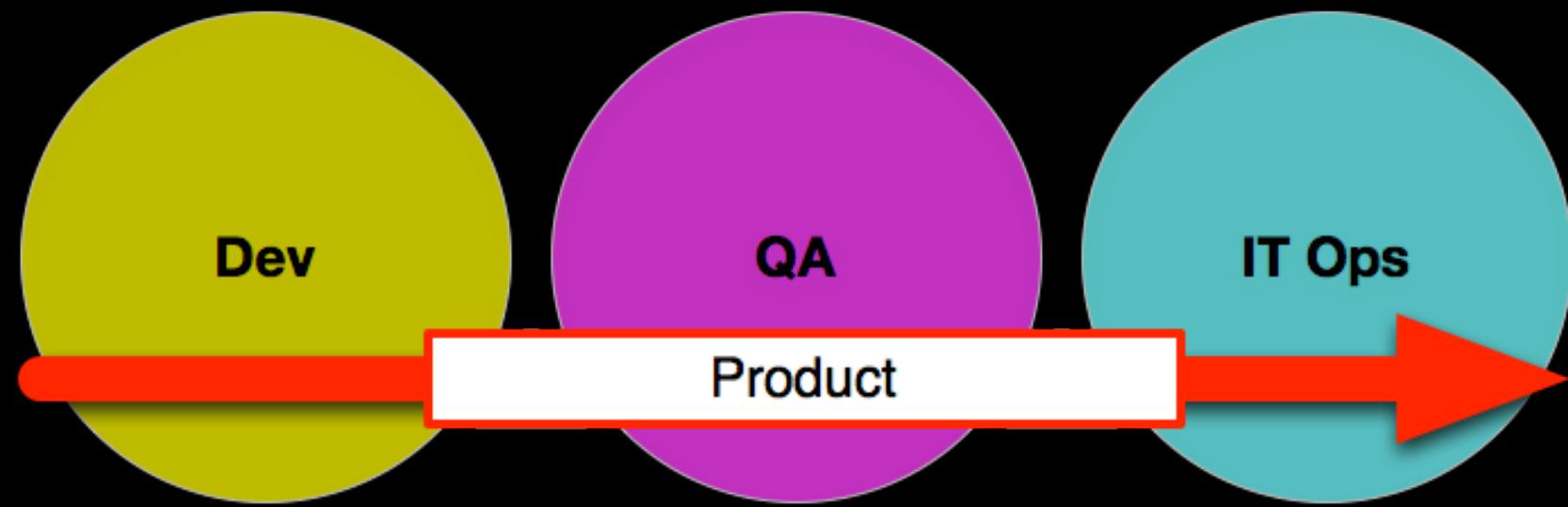
NO, THEN
WE SHIP.



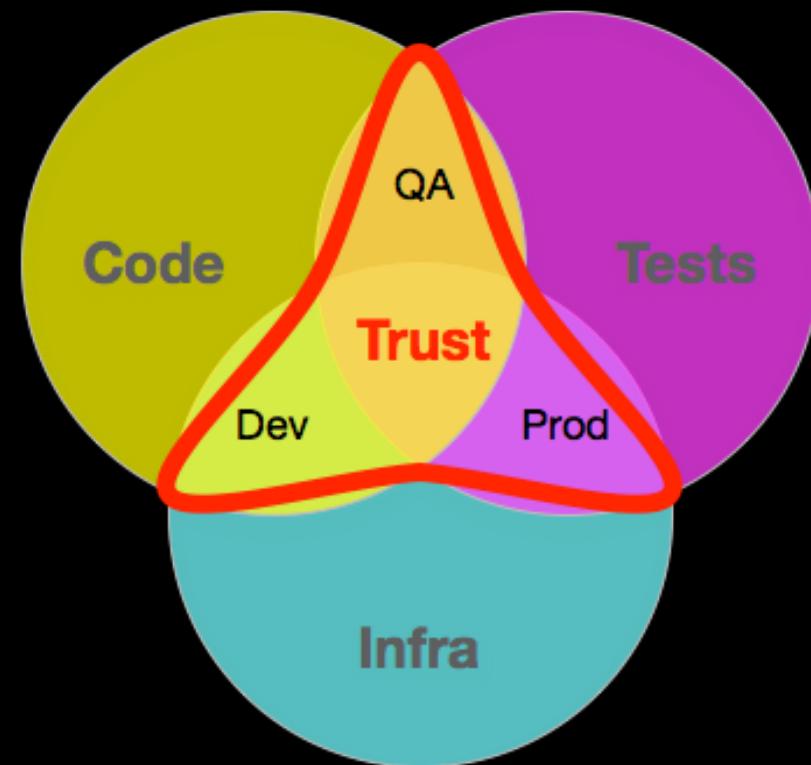
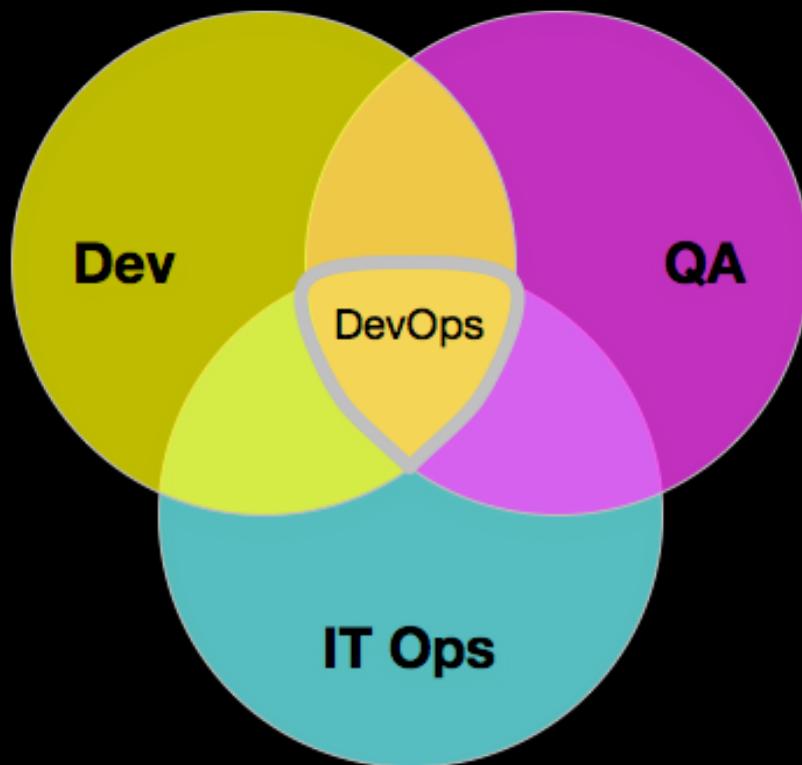
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toDev

The Continuum (borked)



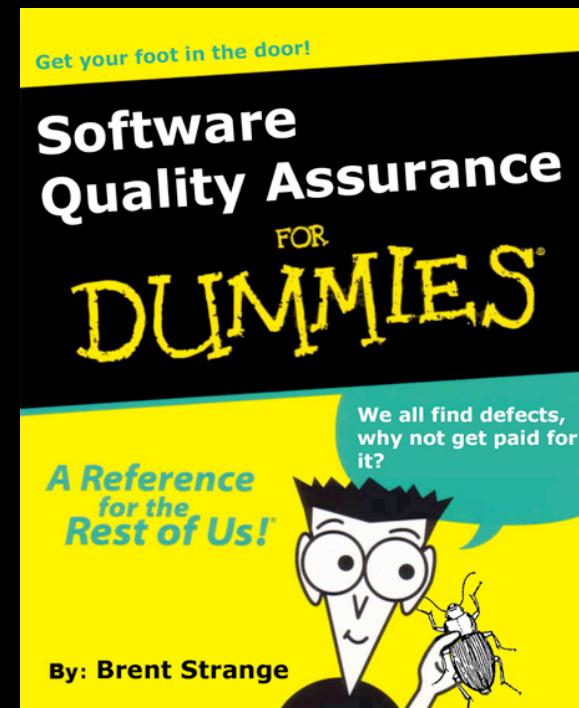
Proof == Trust



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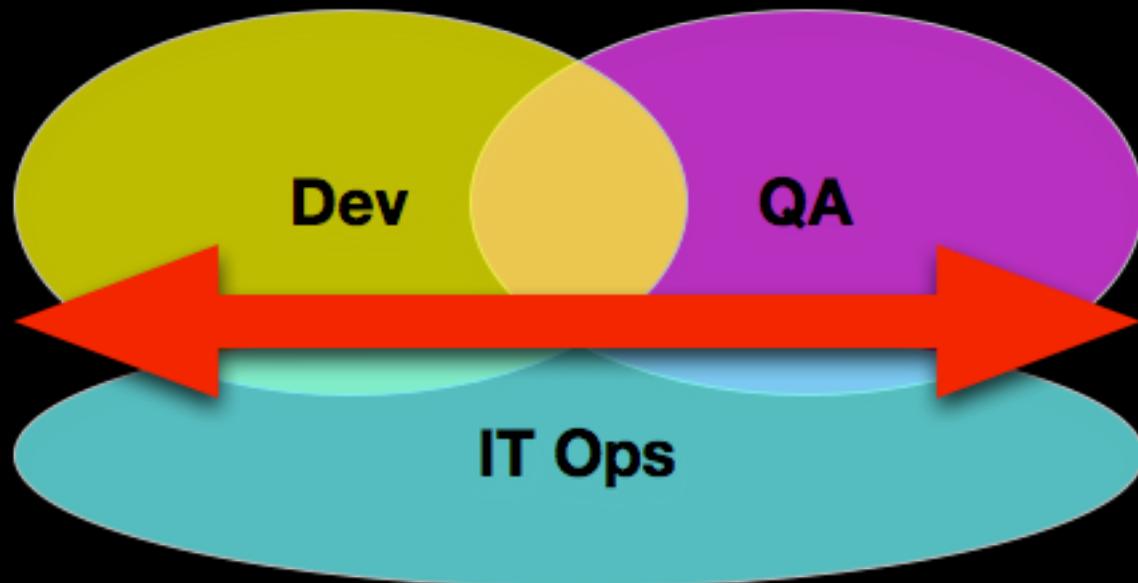
Quality Assurance

- Product Control
 - Requirements
 - Change
 - Release
- Catch “bugs” before presentation
 - Functional AND Non-Functional



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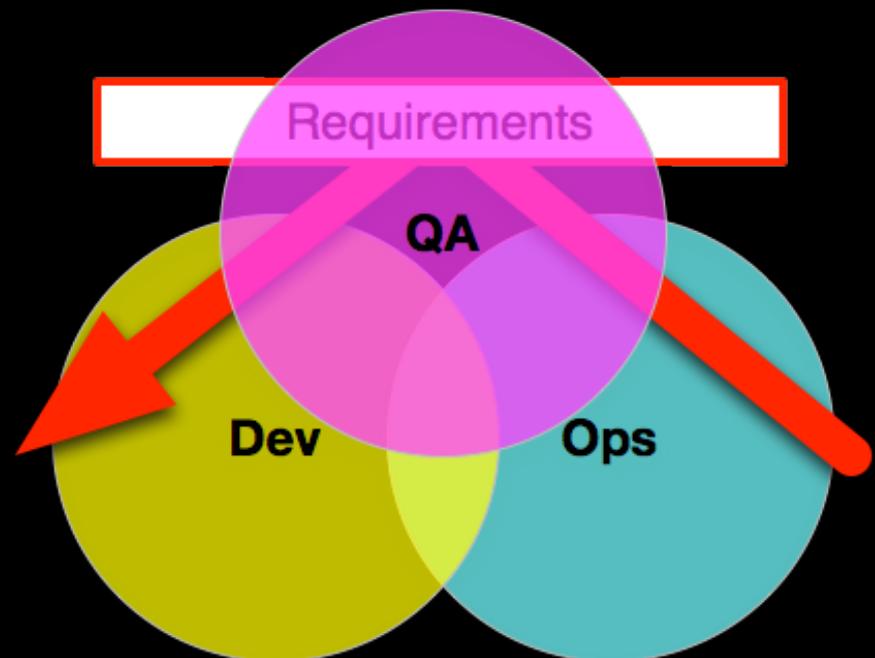
Bi-Directional (required)



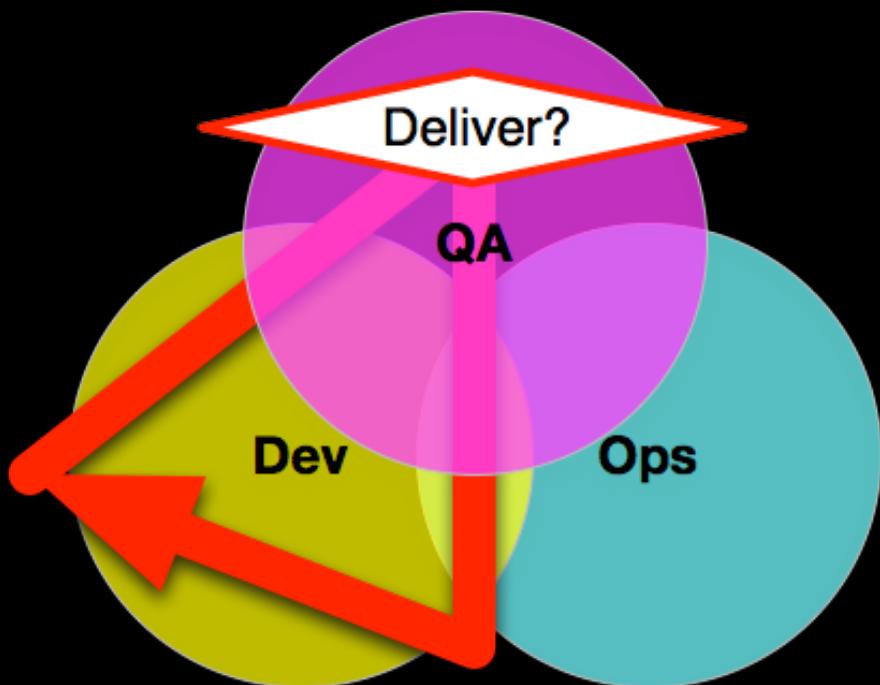
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QA Frontend

- Agile
 - QA/Testers on team
 - Stories -> UAT
 - Continuous Integration



QA Backend



- Test harness(es)
 - Integration
 - Functional
 - Non-functional



QA's DevOp Priorities

- Testing must be a first-class citizen



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QA's DevOp Priorities

- Testing must be a first-class citizen

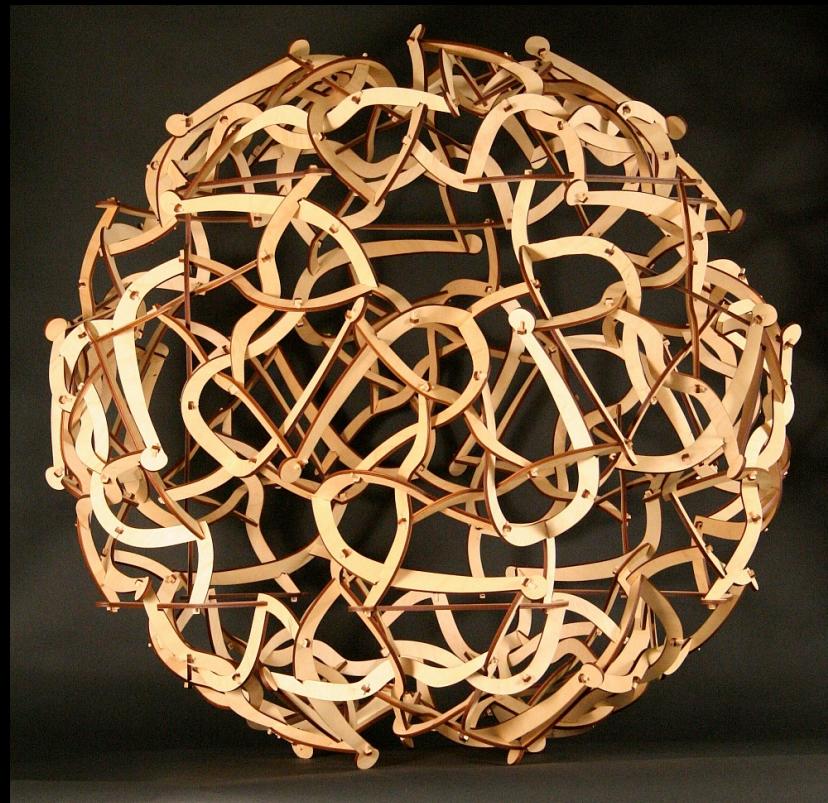
“We’re not worried about testing...our biggest problem is automating deployment”



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QA's Priorities (cont.d)

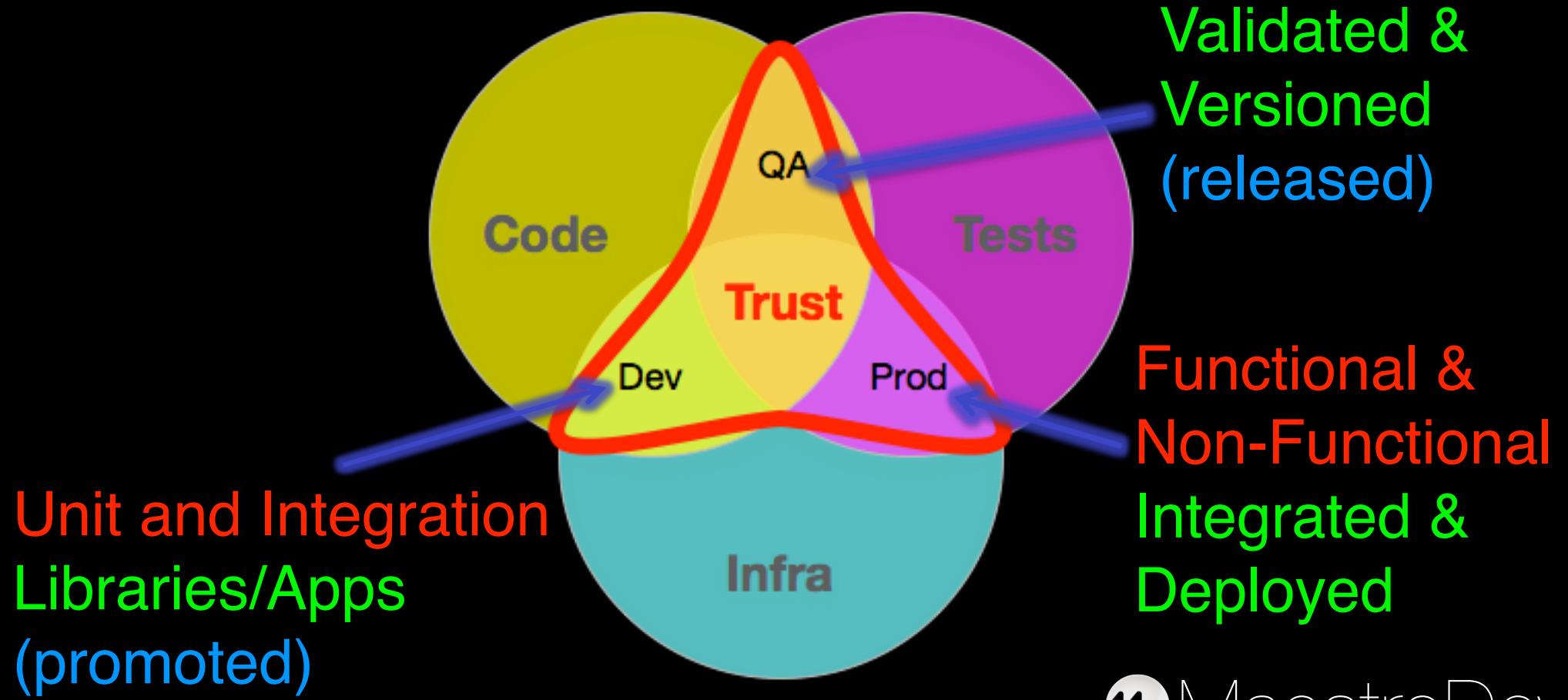
- Release management



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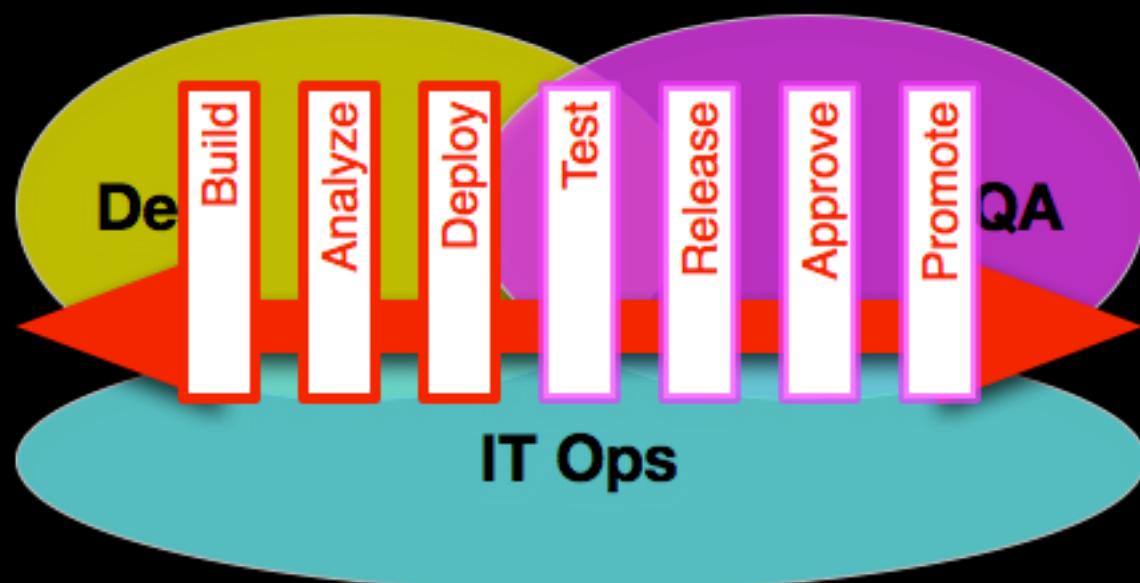
Driving Trust via Releases

- Proof (Testing)



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Dev-QA-Ops Choreography



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Push QA into Ops and Dev

- *DD
 - Behavior DD (Agile QA?)
 - Pulls non-functional from Ops
 - Pushes non-functional to Devs
- Less Unit, Mo Integration, Less Mock
- Automate functional, but to a point
- Ops and QA enable Dev testing



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Push QA into Ops and Dev

- *DD

“BDD has reduced our prerelease bugs by 80%,
in a side-by-side comparo”

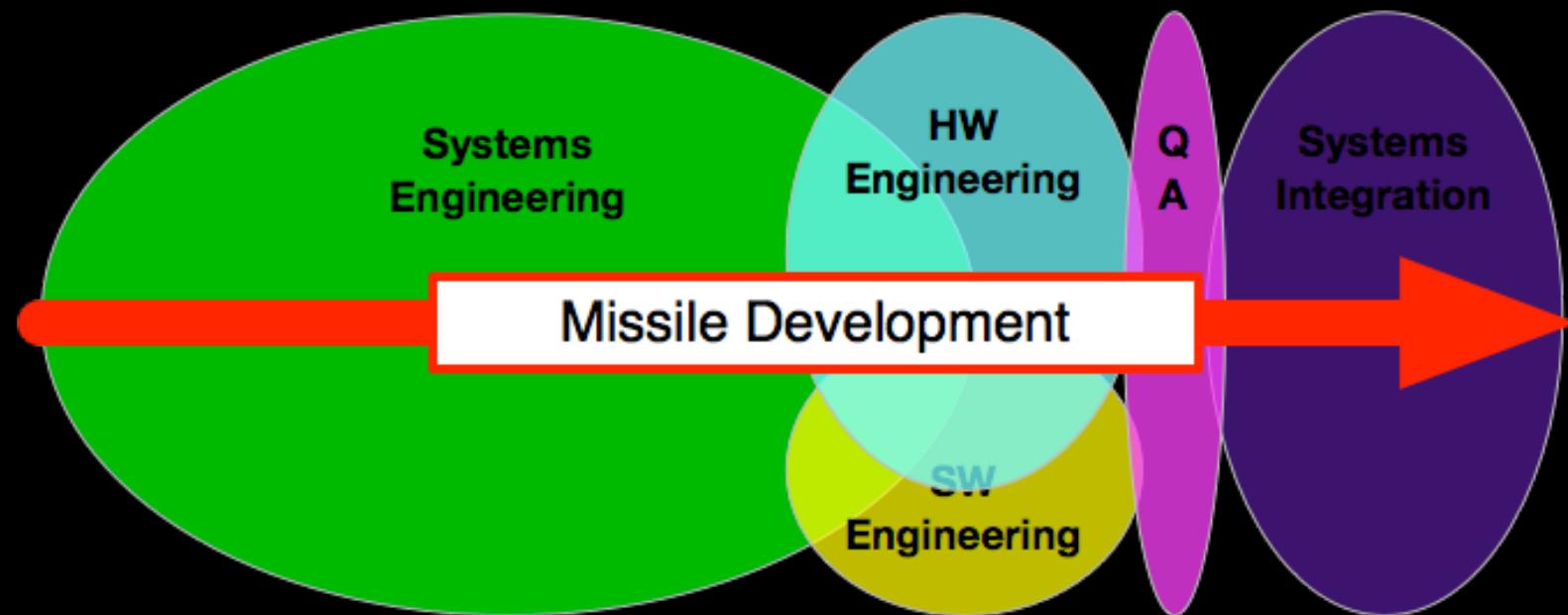
- Behavior DD (Agile QA?)
- Pulls Non-functional from Ops
- Design of functional tests
- Less Unit, More Integration, Less Mock
- Automate functional, but to a point
- Ops and QA enable Dev testing



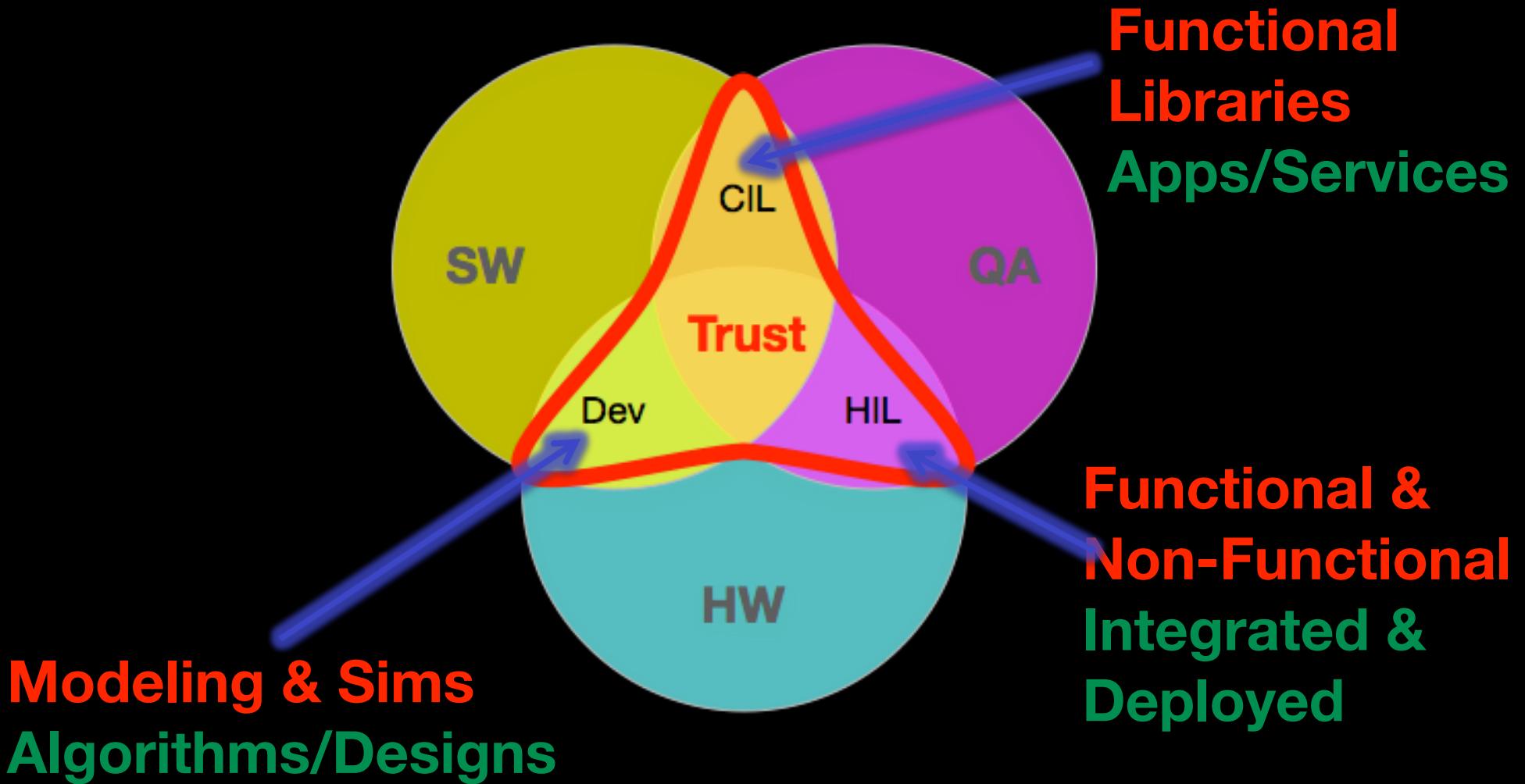
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Alternative Perspective

- Building missiles
 - Platform shall have a maximum range of 100km



Validation and Verification



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Quality Quality

- Tests must be good
 - More to it than just assertions
- True negatives? False Positives?
 - Testing for Failure
- Brittle Tests? Avoid testing content
- Changes should come with tests (open sourcey way)



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Truth isn't Good Enough

- Regressions (read blame)
 - A single version change affects truth
- Measuring/Monitoring
 - Earlier the better
- Trending (continuous improvement)
 - Continuous improvement



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Dev/QA Reporting

http://nemo.sonar.codehaus.org/project/index/ch.qos.logback:logback-parent

RSS Configuration Login

Home Search projects Logback-Parent

Version 0.9.16-SNAPSHOT on Apr. 5, 2009 00:55, using profile Nemo rules with findbugs.

Dashboard

- Violations drilldown
- Time machine
- Coverage clouds
- Settings

sonar

Lines of code 12'545 ▲ **Comments** 39.1% **Duplications** 1.5% **Complexity** 2.3 /method **Alert**

72 packages 8'053 lines ▲ 310 lines 11.2 /class 4'813 decision points ▲

430 classes ▲ 8 blocks 8 files

Rules compliance 82.4%

Violations 735 ▲

Efficiency
Maintainability
Portability
Reliability
Usability

Rel.
Usa.
Bif
Par.
Mal.

include opt. rules

Code coverage 51.7% **Test success** 98.7%

465 tests ▲
+10 skipped
4:13 min ▲

6 failures
0 errors

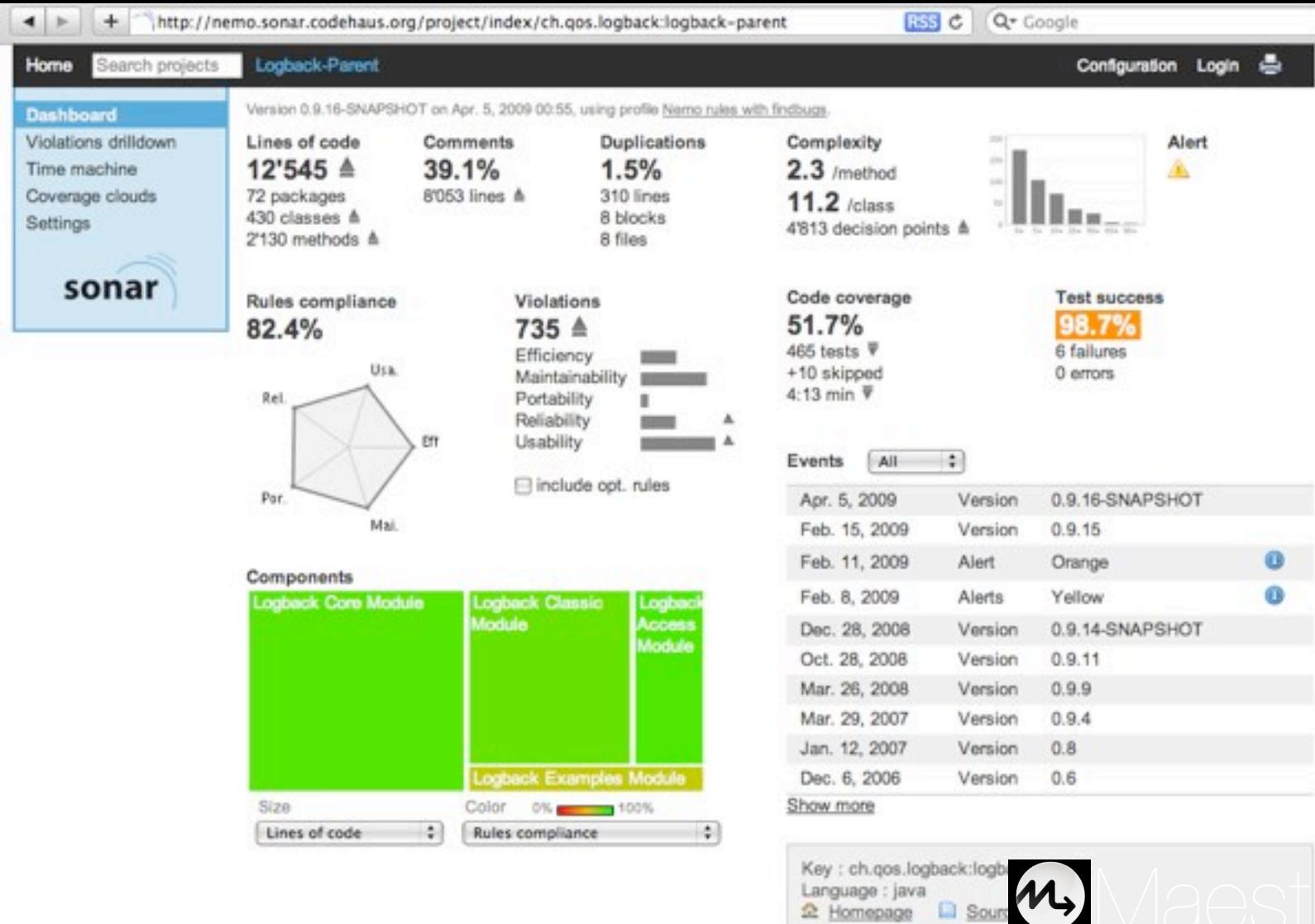
Events All

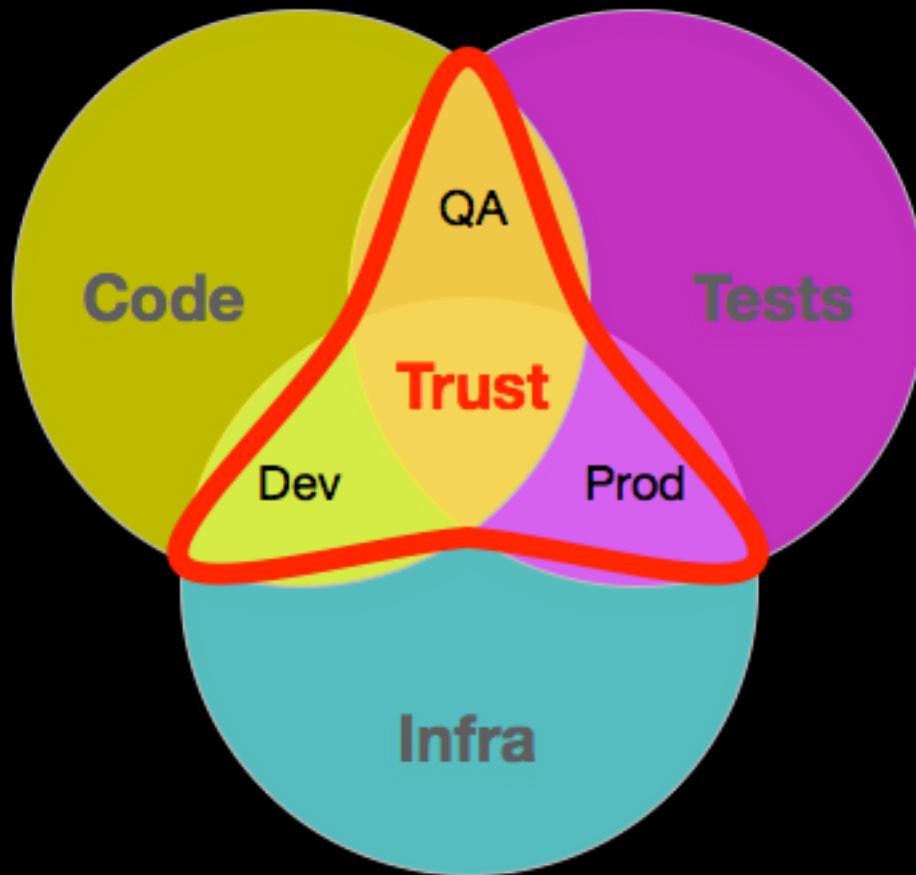
Date	Type	Version	Message
Apr. 5, 2009	Version	0.9.16-SNAPSHOT	
Feb. 15, 2009	Version	0.9.15	
Feb. 11, 2009	Alert	Orange	(i)
Feb. 8, 2009	Alerts	Yellow	(i)
Dec. 28, 2008	Version	0.9.14-SNAPSHOT	
Oct. 28, 2008	Version	0.9.11	
Mar. 26, 2008	Version	0.9.9	
Mar. 29, 2007	Version	0.9.4	
Jan. 12, 2007	Version	0.8	
Dec. 6, 2006	Version	0.6	

Show more

Key : ch.qos.logback:logback-parent
Language : java
[Homepage](#) [Source](#)

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Questions

<http://devopsweekly.com/>



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