

An Overview of Agile Testing



Tampere 2009

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With Material from Janet Gregory

Introduction

- Tester on agile teams since 2000
- My teams:
 - Delight customers
 - Deliver production-ready value every 2 weeks
 - Drive development with tests, examples
 - 100% regression test automation



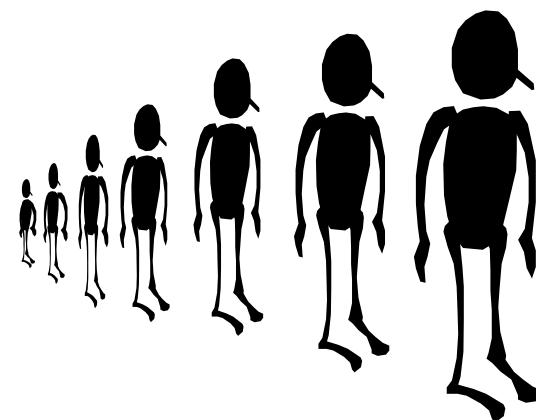
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Your Agile Experience

How about you?

- Managers, testers, developers, ScrumMasters...?
- How long has your team used agile practices/principles?



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Takeaways

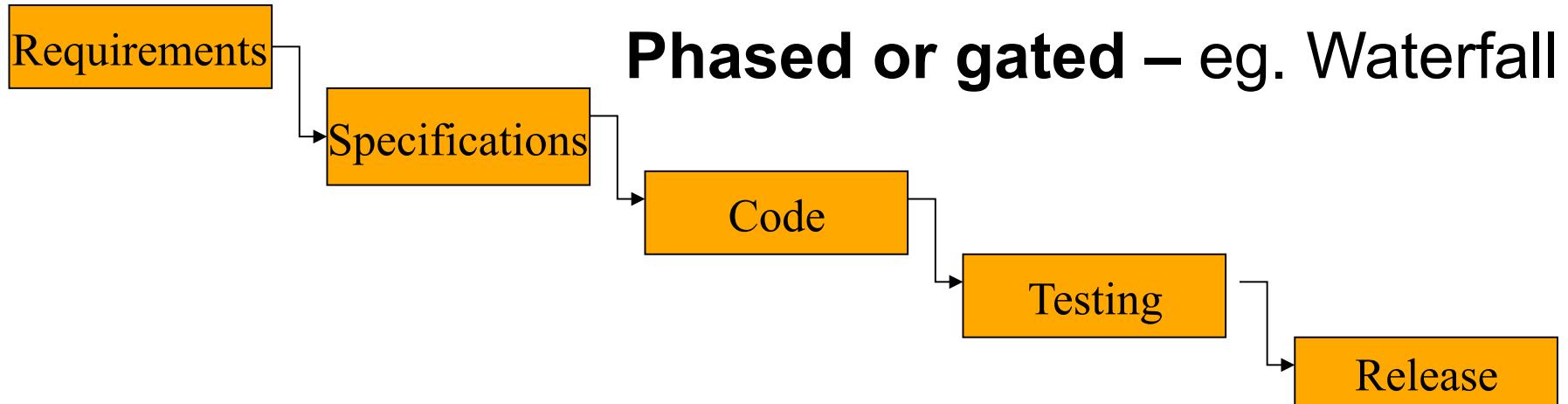
- Transitioning to agile testing
- How testing works on agile teams
- Agile testing tools and techniques
- Key success factors



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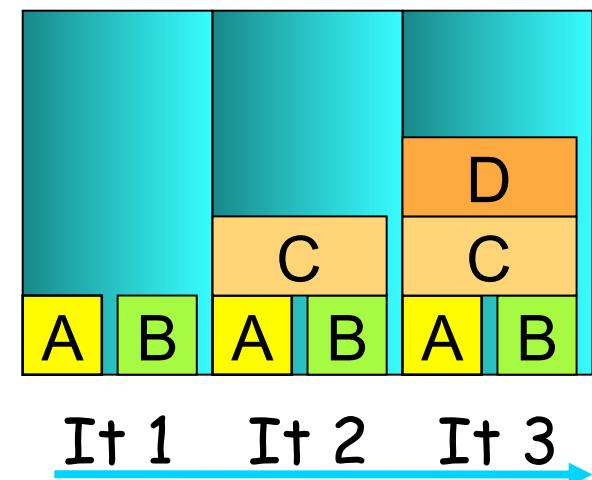


Traditional vs. Agile SDLC



Agile: iterative and incremental

- Each story is expanded, coded and tested
- Possible release after each iteration



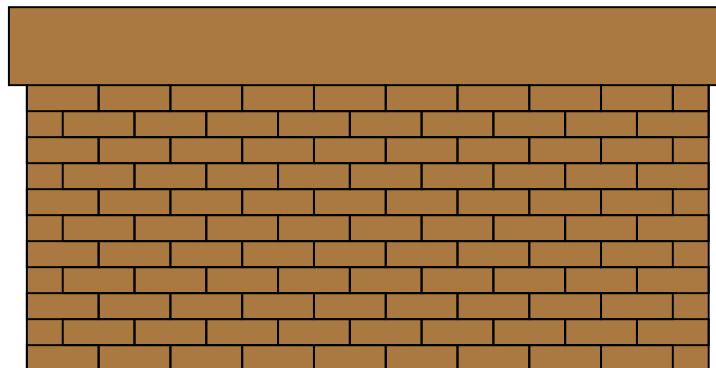
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Testing as a Phase

- Code, then test
- Separate, siloed teams
- Heavyweight process
 - Requirements, design documents
 - Test plans
 - “Traceability”
 - Change review boards
- Testing “bottleneck” at end

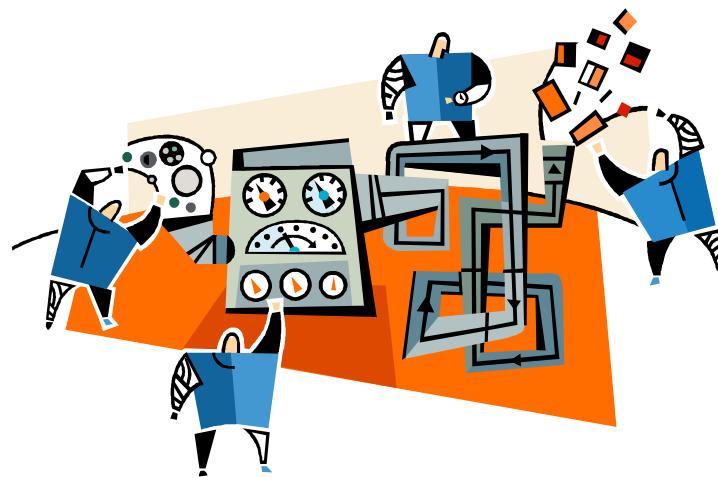


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Automation - After Coding

- Vendor tools
- Record/Playback
- Done by testers or automation team
- If developers automate unit tests – it's after coding
- Expensive



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Exploratory Testing – “agile”

- Exploring reveals unintended consequences and uncovers implicit expectations
 - Elisabeth Hendrickson [http://testobsessed.com/2009/05/18/from-the-mailbox-fully-automated-gui-testing/Careful observation](http://testobsessed.com/2009/05/18/from-the-mailbox-fully-automated-gui-testing/Careful%20observation)
- Critical thinking, no requirements doc needed
- Diverse ideas
- Rich resources
 - Tools, data, people
[source: Jon Hagar]



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How Agile Changes Things

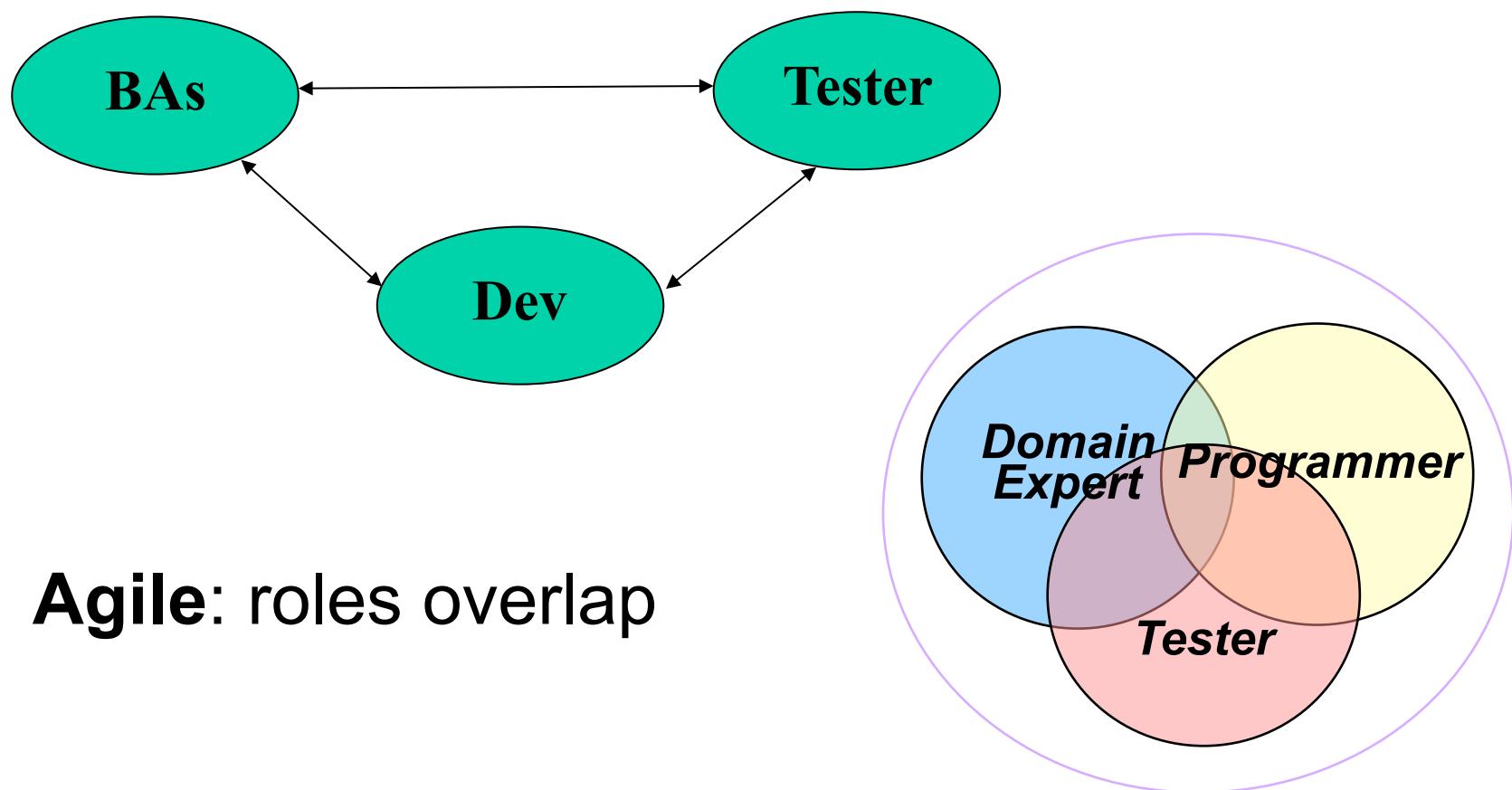
- Whole Team Approach
- Coding and testing are one process
- Feedback, collaboration key
- TDD/ATDD practices
- Test-infected developers, better tools, better-designed tests



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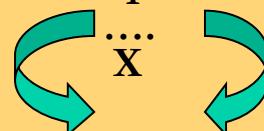
Team Organization - Traditional vs. Agile



Agile: roles overlap



Test Approach - The Agile Way

Project Initiation	Get an understanding of the project	
Release Planning	Participate in estimating stories	Create Test Plan
Each Iteration 	<p>Write and execute story tests Write and execute new functional test cases Pair test with other testers, developers Automate new functional test cases Run automated regression test cases</p>	
System Test / End Game	<p>Perform Load Test Complete Regression Test Perform UAT Perform Mock Deploy Participate in Release Readiness</p>	
Release to Prod/ Support	<p>Participate in Release to Prod Participate in Retrospectives</p>	



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The Whole Team Approach

- Team commitment to quality
- Team responsible for testing
- Testers get support, training
- Developers do testing activities
- Testers and developers pair
- Get the right people

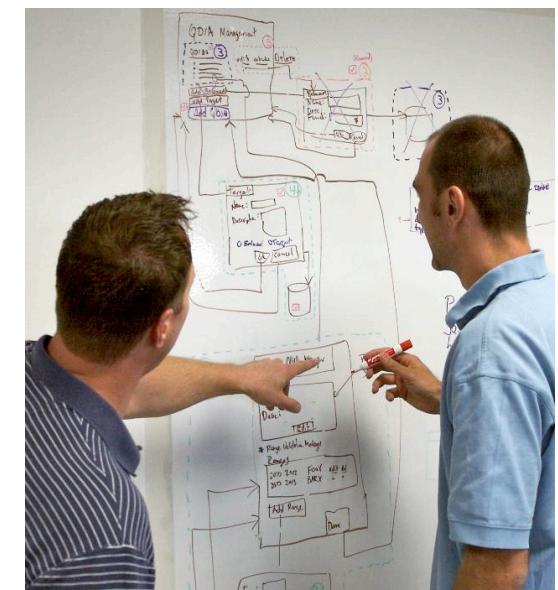


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Testing is Not a Phase

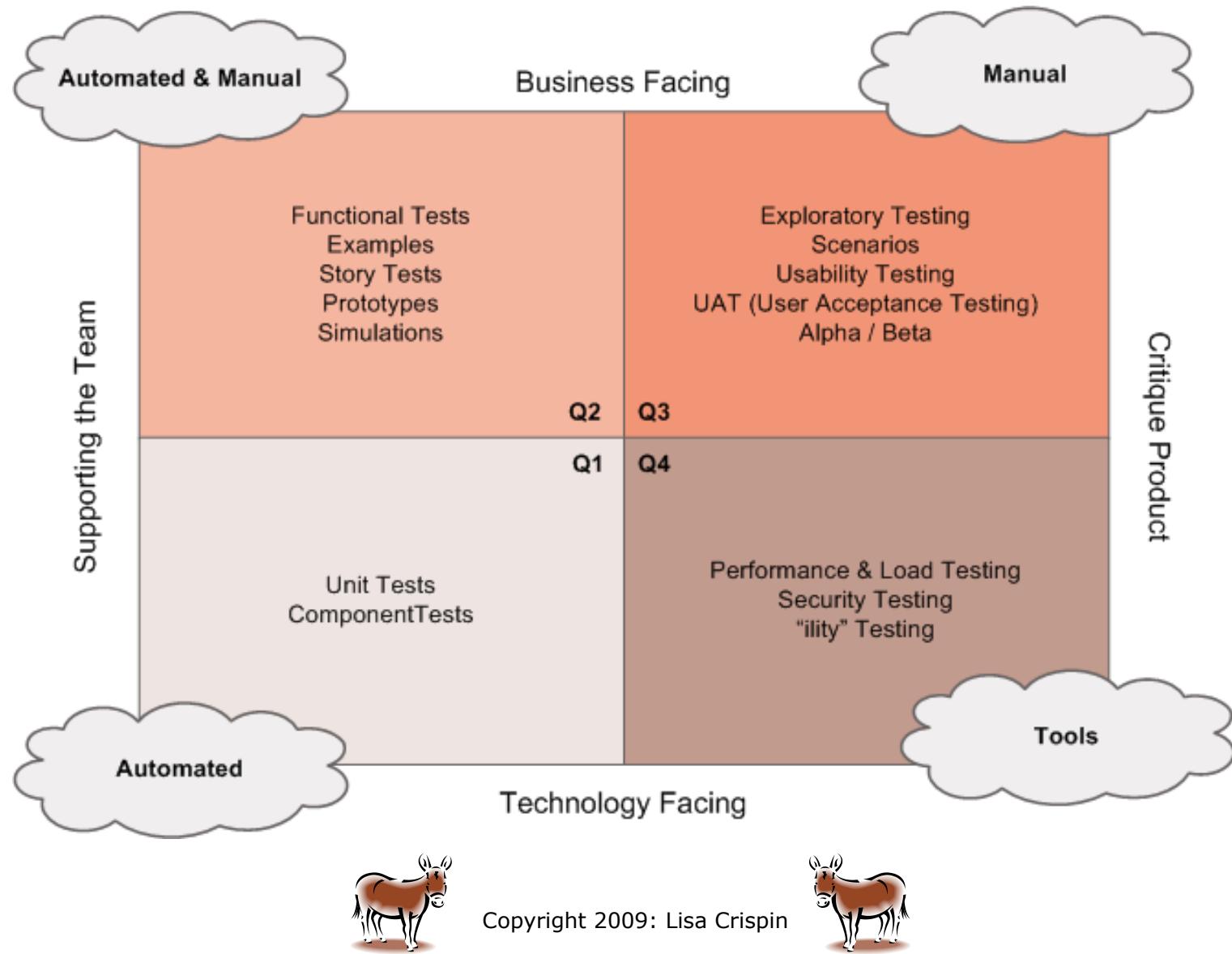
- Development = testing + coding
 - Write test, write code, test
 - At unit and acceptance test levels
- Automated tests
 - Designed for efficiency, maintainability
 - Free time for exploratory testing
- Team plans testing activities
 - All four “quadrants”



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Agile Testing Quadrants



Feedback Guides Development

- Team uses feedback to improve
- Testers are expert feedback providers
- Feedback lets team make course corrections



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Feedback Examples

- Continuous Integration test results
 - Faster is better
- Big Visible Charts
- Retrospectives
- Short iterations facilitate improvement
- Discoveries during exploratory testing
- Collaboration with users, customers

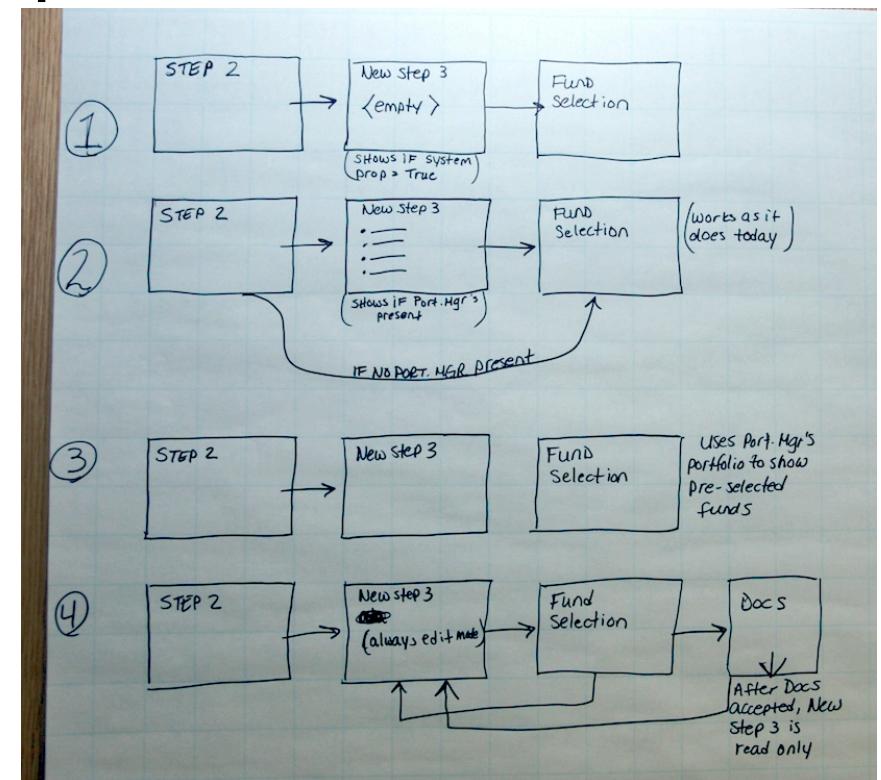


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Core Practices for Success

- Continuous integration
 - Frequent and fast feedback
- Coding and testing one process
- Test environments
- Manage technical debt
- Work incrementally
- Synergy



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Where Is It Taking Us?

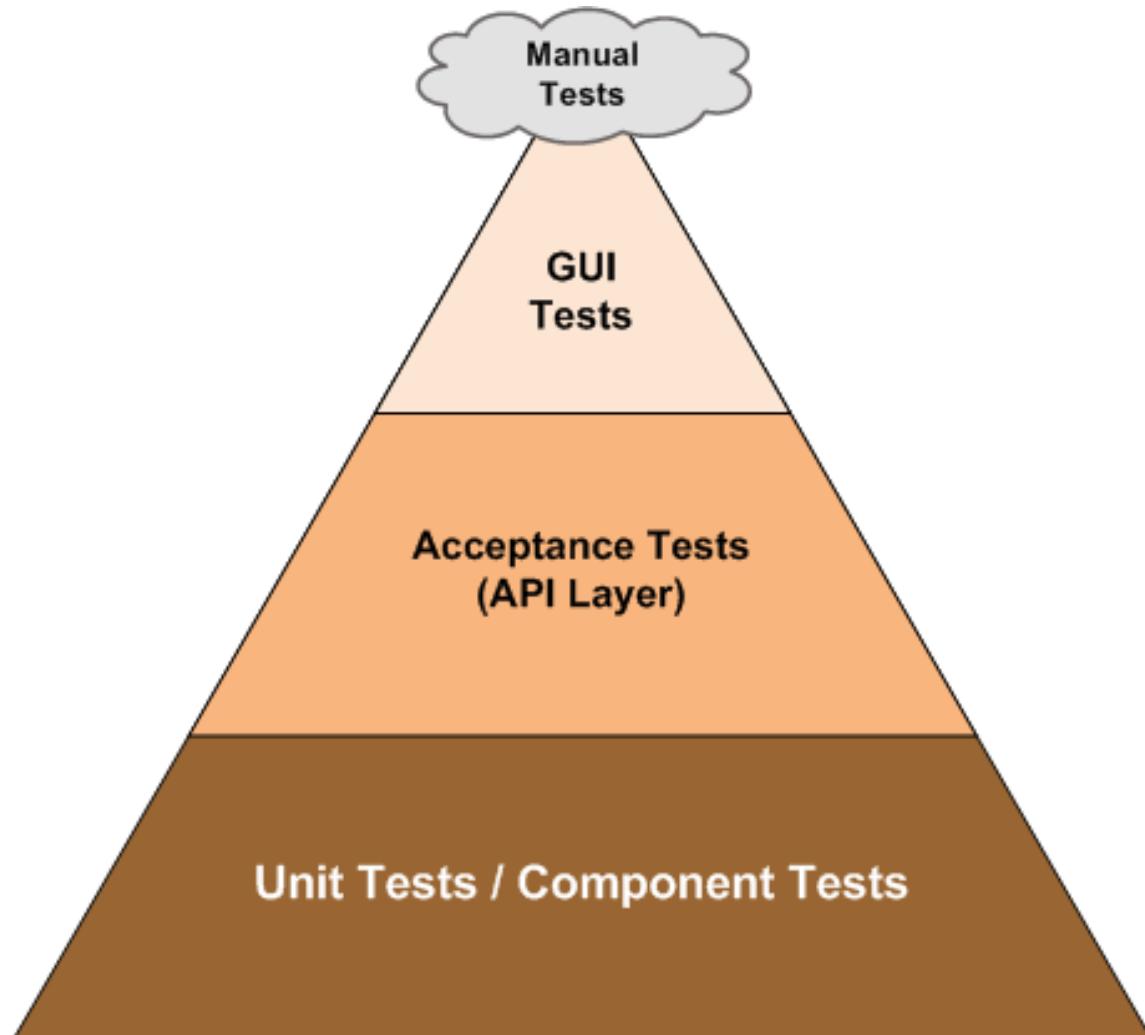
- Lines between roles blurred
- More focus on tests to drive coding
- Examples as requirements
- Find ways to control technical debt
- Tests pushed to lower levels
 - Less end-to-end automation
 - Automate based on ROI
 - Maintainable tests
 - Failures easier to debug



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Test Automation Pyramid



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Current Trends in Testing/Development

- Pomodoro technique for pairing, planning
 - www.pomodorotechnique.com
- More exploratory testing
 - As automated regression tests free time
 - context-driven-testing.com
- Lean approaches
 - Kanban, scrumban
 - Poppendiecks' books



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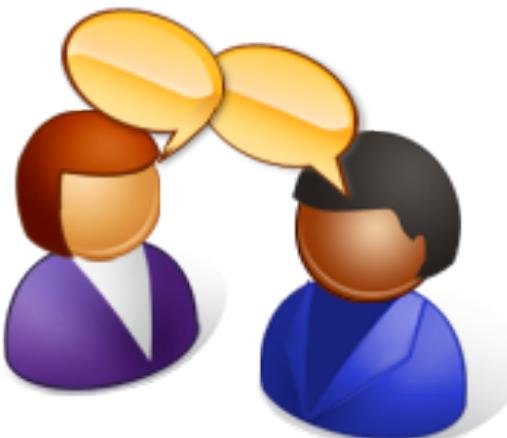


More Current Trends

- Continuous Integration is a given
- More frequent releases
- Expanded test tool options
- Low-tech prototyping, tracking
- More early collaboration
- Behavior-Driven Development (BDD)



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BDD/Narrative/Scenario Example

Given that the FitNesse wiki is a Wiki

Given that the FitNesse User is a Web User

Given that the FitNesse wiki was able to start for
the first time

When the FitNesse User attempts to go to the
Home Page

Then the content of the Home Page for the
FitNesse User should be Welcome to the
Wonderful World of FitNesse!

*From: Antony Marcano, Andy Palmer,
testingreflections.com, pairwith.us*

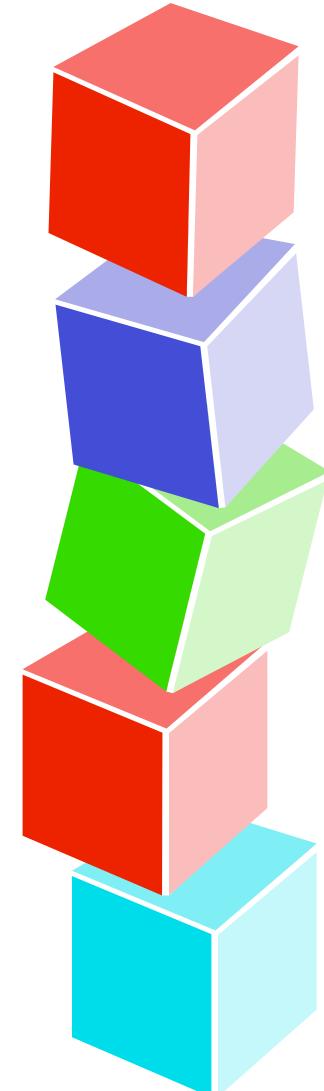


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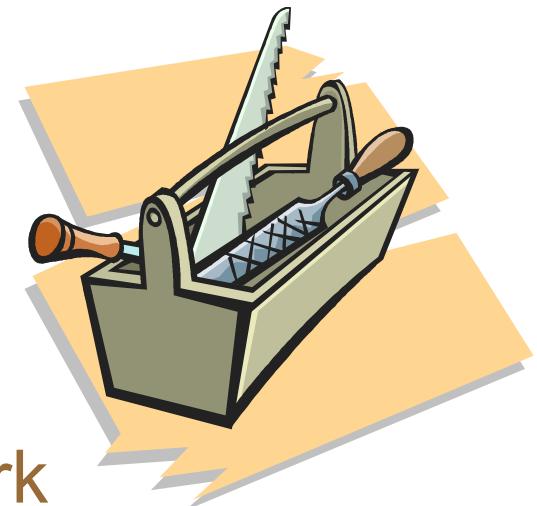
Scaling Up and out

- Larger organizations adopt agile
 - My company has 28 Scrum teams
- More remote team members
 - Need the best people, so...
 - Hire them where they live
 - Technology enables
 - NOT remote test teams!



Test Tools

- Mix & Match open source frameworks/drivers
- Vendor tools getting lighter weight
 - GUILdancer – object-oriented
- FitNesse/Slim/Fit widely used
 - Framework for many other tools
- BDD tools growing in popularity
 - Cucumber, easyb, nbehave
- GUI test drivers standardizing
 - Watir, Selenium, Robot Framework



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Testing Tool Spectrum (Paul King, asert.au)

Utilities

All Pairs Combinations
Polyglot languages
Logic programming
Threads, Parallel concurrency libraries
Data-driven libraries
Networking libraries
XML Processing
Read/write files,
Excel / Word / CSV,
Reporting, Logging

Runners

Native Groovy, JUnit, TestNG, Spock, EasyB, JBehave, Cucumber, Robot Framework, Slim

Web Drivers

WebTest
WebDriver
JWebUnit
Tellurium
Selenium
HtmlUnit
Watij
HttpBuilder
Cyberneko

Database Drivers

DbUnit
DataSets
SqlUnit
groovy.sql
JPA
JDO
BigTable
JDBC

SOAP / REST Drivers

GroovyWS
XML-RPC
CXF
Axis2
JAX-WS
JAX-RS

Other Drivers

FEST
Email
FTP
AntUnit
Telnet
SSH
Exec

Tools

iTest2, SoapUI, Twist,
GUiDancer, IDEs,
JMeter, Text editors,
Recorders, Build Tools,
CI



Trends in Test Automation

- Record/Playback as “trainer” only
- Test architecture/design critical
- Planning and tracking tools – online and low-tech
- Open source, agile tools explosion
 - Plenty of good browser test drivers
 - Other problems now being solved
- Scenario, Narrative style



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Testing Techniques

- Team writes acceptance tests together
- Programmers and testers pair to automate tests
- ROI guides automation
- Testers do exploratory testing
- Customers participate
 - Pair with customers for ET
 - Frequent demos



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What Does It Mean for Us?

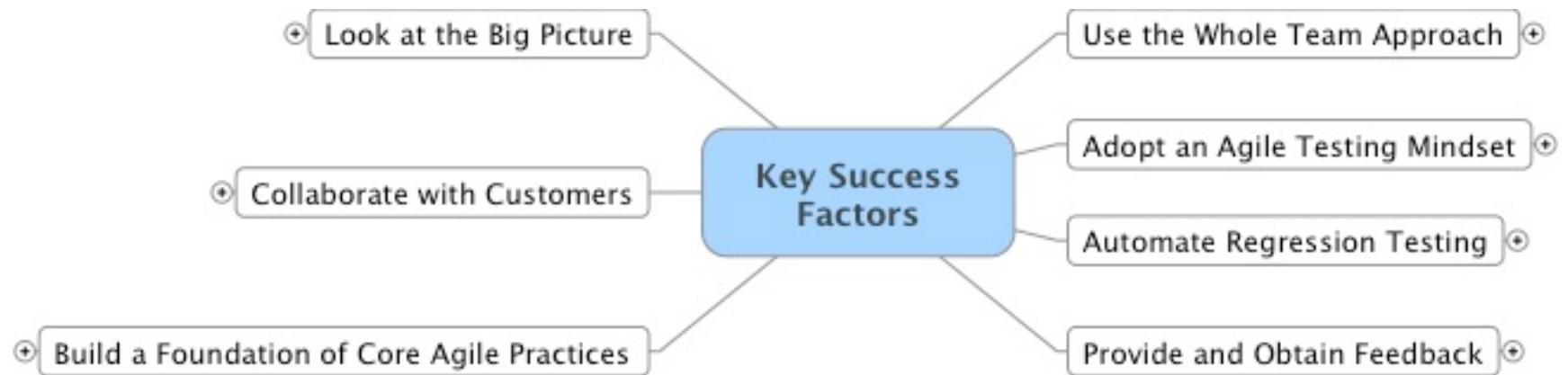
- Values more important than process, practices
- Testers need to adopt new mindset
 - Ramp up skills
- More creative thinking, problem-solving
- Do what works for your team
 - Don't blindly follow trends



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Key Success Factors

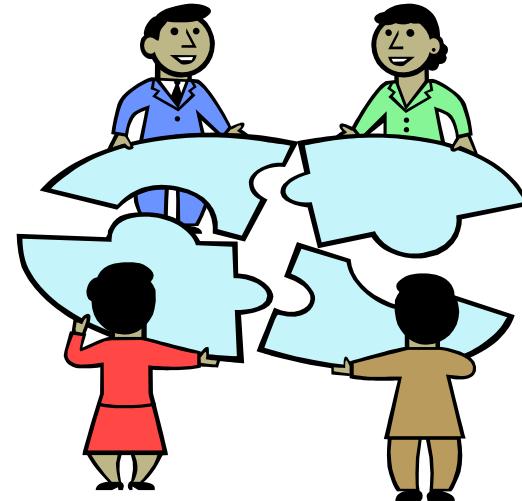


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Do Your Best Work

- Whole Team approach
 - Testers, customers, developers collaborate
- Business examples, turned into tests
- Agile Testing Quadrants
- Test Automation Pyramid
- Exploratory testing



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The Future is What You Make It

- Get out of your chair – see how you can help
- Learn a new test framework or scripting language today - build your skills
 - Lots of free resources, just takes time
 - Leave your comfort zone
- Bring testing problems to the whole team
 - Benefit from multiple skill sets
- How can your expertise help the team?



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Questions?



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Some Agile Testing Resources

- lisacrispin.com
- janetgregory.ca
- exampler.com
- agile-testing@yahoogroups.com
- testobsessed.com
- Antonymarcano.com



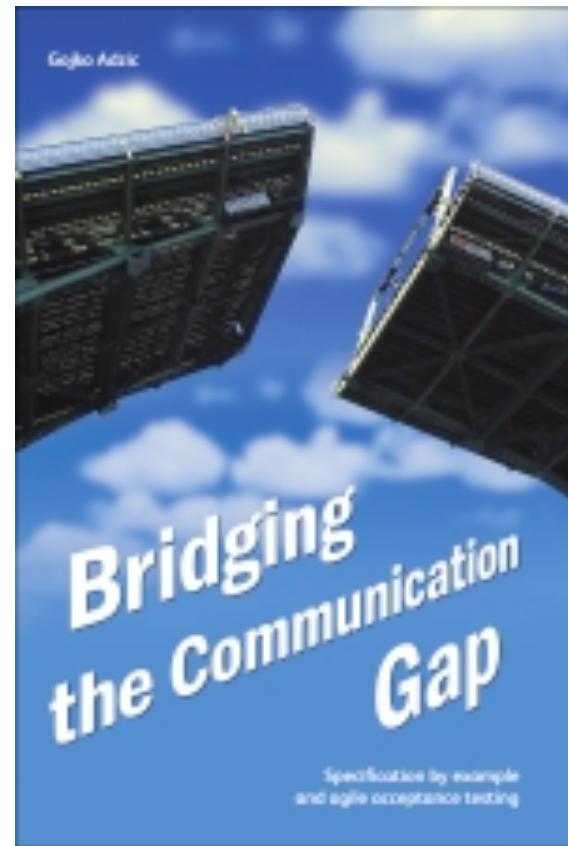
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Bridging the Communication Gap

Specification By Example and Acceptance
Testing

Gojko Adzic

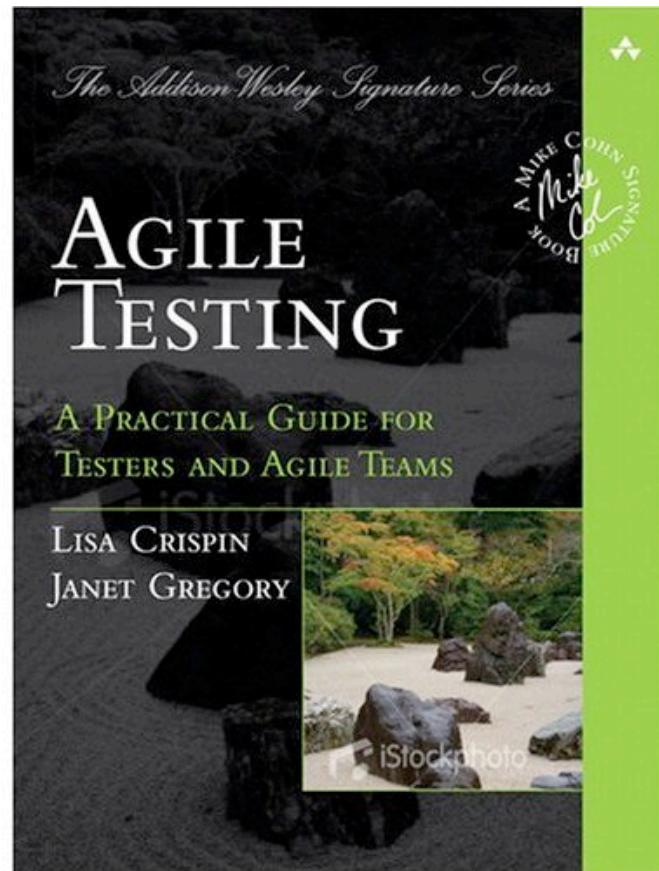


Now Available

Agile Testing: A Practical Guide for Testers and Agile Teams

By Lisa Crispin and Janet Gregory

www.agiletester.ca



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