Objectives

This presentation will discuss:
- Key terms and techniques that make a project “Agile”;
- The roles of testers, from the Test Manager through to the Test Analyst;
- Approaches to consider when testing, giving context to the “traditional” test approaches in an Agile project;
- Hints and tips for estimating the testing effort.

Agile Overview

The Agile Manifesto

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

That is, while there is value in the items on the right, we value the items on the left more.

Agile Defined

Iterative development, where requirements and solutions evolve through collaboration between self-organizing cross-functional teams.

The Agile Approach

- No pre-defined requirements ~ evolutionary requirements
- Small teams ~ close communication
- Customers and developers working together on small iterations
- Focus on functionality rather than GUI
- Rapid turn around ~ working software faster
- Morning meetings for “today’s” activities
- Test Driven Development
What is Agile Testing?

“Traditional” Testing

- The aim of testing is to provide information about the system under test
- Testing is about reporting on the level of confidence we have in the quality of the system
- Based on “How will we know?”
- Focus on ensuring “Requirements” are met
- Focus on results of tests
- Focus on coverage and defect metrics

“V Model” Testing

- The V-Model Model
- Testing at the end
- Based on Analysis of documents (Requirements / Designs) – Early analysis and options for change
- Earlier involvement in the life cycle
- Clearly defined test levels and objectives:
  - Unit
  - Integration
  - System
  - Acceptance
**Agile Testing - early years!**

- Tests are derived by the developers as they are designing the system.
- Automated tests are used.
- Then they build the software to pass the tests.
- Then they move onto the next iteration.

**“Real” Agile Testing**

- Tests are derived by the team as they are analysing and designing the system.
- Automated tests are used by developers AND testers.
- Testers run more tests.
- The team showcases to the Key Stakeholders.
- Then the team move onto the next iteration.

**Agile Testing**

- Agile Testing – treating development as the customer of testing, emphasising the test-first design paradigm.
- Test Driven Development – test cases are developed, and often automated, before the software is developed to run the test cases.

*ISTQB Standard Glossary of Terms used in Software Testing*

**Testing Roles**

<table>
<thead>
<tr>
<th>Traditional Roles</th>
<th>Agile Roles</th>
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<tbody>
<tr>
<td>Test Manager</td>
<td>Test Manager</td>
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<tr>
<td>Senior Tester / Test Lead</td>
<td>Senior Tester / Test Lead</td>
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<tr>
<td>Test Analyst</td>
<td>Test Analyst</td>
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<td>Technical Tester</td>
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<td>Performance Tester</td>
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<td>Test Toolsmith</td>
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<td>Security Tester</td>
<td>Security Tester</td>
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<tr>
<td>Rep / Customer</td>
<td>Iteration Manager</td>
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<tr>
<td>Senior Tester / Test Lead</td>
<td>Showcase Tester</td>
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**Estimation Factors**

- The standard test factors need to be considered when estimating an Agile project also...
- scope, risks, key milestones, key test focuses (functional or non-functional), static testing, entry criteria, exit criteria, metrics, test case preparation, test tracking, documentation requirements, data needs, environment needs, team skills, training needed, tools used...
Agile Testing
- The standard test levels and targets need to be applied.
- Testing is done in a slightly different order.
- Some testing is MANDATORY – the “showcase” activity.
- Defect management is more obvious but takes practice.
- No story is “DONE” until both Development and Testing have been completed.

Estimation Planning
- 50% Through 1st Release
- 50% Through 2nd Release
- New Product Candidate

Estimation Factors
- They have to be considered both for the overall project AND for the specific iteration!
- Big Picture planning still has to happen!
- Test plans may still have to be written!
- Test results may still have to be archived!
- The formats may be different though…

Agile Testing - Unit Testing
- Estimates are incorporated into the estimates for each story.
- Developers mainly do the unit testing.
- Testers can work with Developers while defining the unit tests to be both Positive and Negative test cases – where appropriate.

Agile Testing - Integration Testing
- Estimates are incorporated into the estimates for each story – when more than one iteration has been developed.
- Testers may need to define a “task” that takes the specific integration into account – for this ITERATION.

Agile Testing - System Testing
- Estimates are developed for specific System Tests when the “system” will be available.
- Specific “system testing” iterations may be needed.
- Can be based on the acceptance criteria defined for each story – or parts of it.
- The first step in defining “done”.

Each story – when more than one iteration has the specific Integration into account – for this
Agile Testing - Acceptance Testing

- Clearly defined step in the development lifecycle.
- May be a specific series of activities focused on Acceptance by the business.
- Based on the acceptance criteria defined for each story by the customer.
- The last step in defining "done" — until it passes it is not "done"!

Agile Testing - Regression Testing

- Huge impact in Agile Projects
- Provision MUST be made for AUTOMATED UNIT TESTING...for Regression purposes.
- Continuous Integration sees these Regression Tests run before any build is delivered to a tester — if the regression test fails — the build cannot be passed on.
- Impact and risk grows as project continues.

Agile Testing

- Need to be able to clearly articulate all of the phases of testing required
- Testers need to make specific stands about quality when required
- Understand there may not be time, or the need for documentation.

Making Agile Testing Work

- All team members clearly understanding their roles and responsibilities
- All team members valuing the roles and responsibilities of other team members
- The team remembering that it is about the product NOT the process
- The business understanding that it is about the product NOT the process
- The business making the commitment to be involved

Questions or Comments?

What’s Next?