Testing in all the Shades of Agile

Lynn McKee – Integritas Solutions Inc. – lynnmckee@shaw.ca
Nancy Kelln – Integritas Solutions Inc. – nancy.kelln@shaw.ca

1 Abstract

There is no cookie cutter solution or step by step guide to follow when determining how to effectively test across varied agile projects. The testing approach needs to be adaptive and scalable to the project methodology, constraints, team dynamics, corporate culture, etc. Although the approach, techniques and tools leveraged need to be flexible there are key success factors that can be applied almost universally.

This summary focuses on the observations of real-world experience to testing successfully within projects of varying degrees of agile adoption. With practical examples, the presentation will provide adaptive test approaches for projects ranging from textbook adoption to experimentation as traditional teams begin their transition to agile.

2 Changing the Tester's Perspective

The tester's perspective on their role, activities and deliverables changes within agile projects. It is arguable much of this change in perspective would be highly valuable on traditional projects as well; however, it becomes critical to the success of a tester on an agile project. Some of the key perspectives are:

- Be quick and nimble; testing within agile needs to be adaptive and scalable. No longer is it pre-planned and prescribed;
- Look at the big picture; maintaining awareness of the big picture and the stakeholder goals are key to ensuring the test effort is highly effective in addressing the priority areas; and
- Encourage collaboration; building strong relationships and focusing on team collaboration is key to the role of testing.

3 Getting Engaged Early

Unlike traditional software development, agile development allows the testing to start earlier in the software development cycle. In order for the tester to understand the requirements, scope, and needs of the project, the tester should be engaged from project inception through closure. The agile manifesto values "individuals and interactions over processes and tools"; (Beck, Beedle, & etal, 2001) therefore the majority of the project scope, requirements, and design will be driven out through discussion and collaboration, rather than via documents. Testers who are a part of these early discussions can jump start their testing strategy and hit the ground running as soon as code is ready to be tested.

4 Helping Build the Plan

As a member of an agile team, the tester is actively engaged to participate in building the plan. The collective team analyzes the customer need and determines the strategy, timeline, resources, etc. It is important the voice of the tester is incorporated to ensure the plan supports an effective test approach.

5 Gathering Requirements from the Source

With agile, gone are the days of pages and pages of documents defining requirements as working software is valued over comprehensive documentation. (Beck, Beedle, & etal, 2001). Without this safety blanket of detailed requirements; how do testers understand how the software should work and provide traceability of test coverage? By working closely with the source of the requirements, testers can quickly understand the expectations and behaviours of the software. More importantly, when questions around the application arise, they can be answered quickly since testers have direct access to the individuals making decisions on the functionality of the product.

6 Taking a Closer Look at the Technical Design

Gone are the days when development teams 'throw code over the wall' at the test team. By working closely with their development teams, testers now have the ability to peek inside the technical design and see exactly how all the bits and bytes are working together. An agile tester will soon find they are learning more about the technical solution and can leverage that within their testing approach and strategy. Since agile testing is often leaner, an understanding of the technical design can assist the tester with focusing their testing on the more technically complex and high risk business areas, rather than treating the application as a black box and testing blindly. Gaining insight into the technical design is powerful knowledge the tester can leverage during testing.

7 Factoring Testing into Sprint Planning

Many sprint planning sessions revolve around a review of the product backlog and then engagement of the developers for their input on the development effort. Estimations will be given and decisions will be made of the feasibility of the sprint stories and tasks with little or no engagement from the test team. Tester's, now is the time to speak up! Give estimates on testing and encourage the team to include these estimates in the sprint. Giving testing estimates about an unclear design and solution can be daunting; however, the estimate needs to be an informed decision leveraging the testers knowledge and experience. More importantly, just as the testers are being given visibility into what the developers are doing, the team needs visibility into the testing activities within a sprint in order to better understand the test effort in order to effectively support it.

8 Ensuring Stand Ups Add Value to the Tester

Testers have commented on the lack of value they receive from their recurring team standups. In observing these standups the testers are often relatively inattentive as they wait for their opportunity to speak and their updates tend to be lightweight and using "tester speak". Stand ups can be the single most valuable tool a tester has in order to better understand the design, target their testing, and ensure a quality product at the end of each sprint.

If you break down a stand up, there are really two components: Listening and Communicating. Although the technical developer speak can be hard to understand, the tester needs to challenge themselves to listen and understand what the developer is saying. As each member of the team speaks, the tester needs to think about how the information will add value to the testing tasks. When the tester communicates, they need to consider the message and what it means to the team. They should provide enough detail so the team knows what areas of the application have been tested, the outcome of the testing, and where the testing will continue. If the development team is listening, the tester should notice a change in the response to their standup updates and find the team will be more active in bringing valuable updates forward such as changes in requirements, areas of the application that may not be ready for testing, resolution on defects found the day before, etc.

9 Partnering with Developers

Testers need to develop relationships and then partnerships with their developers. Successful agile testing leverages this relationship and can even result in testers and developers testing side by side as soon as pieces code are completed long before it is committed to a build or test environment. Developers provide insight into the technical design and complexity that canl be highly valuable in developing the test strategy. Testers may even notice side benefits as their developers gain appreciation for the kinds of information that are valuable to testing, and begin actively providing updates on changes in scope, design, builds, etc to keep testing informed. This introduces great efficiencies, reducing the time and energy spent constantly chasing down the latest product changes.

10 What Testers can Learn from Demos

Testers should be a part of the product demonstrations to the customer. If testers are not being included, they need to ask to be invited! Depending on the agile team, demos have a wide variety of attendees and even varied goals and outcomes. The benefit for testers in attending these demos is the opportunity to get in the same room as their stakeholders and hear direct feedback on the suitability of the product to the defined business need. As with any form of communication, once it has been passed through several layers or individuals as occurs within projects, sometimes the message can change somewhat along the line. All members of an agile team benefit from the direct engagement with stakeholders and the demos are a great way to see their live responses including body language, feedback, questions, concerns, etc.

These sessions can also generate very useful discussions on the stakeholder goals and expectations, market drivers, regulatory drivers, financial drivers, etc that provide invaluable insight to the testing effort. Testers may learn during the course of a demo that areas of the application once thought to be low priority may indeed become a higher priority to the stakeholders as the product matures or as business drivers change.

11 A New Approach to Test Documentation

There is very limited opportunity on agile projects for detailed test plans and test cases. Testers quickly find agile projects do not allow for weeks of endless test case writing. Agile projects may find themselves more successful by defining test outlines guided by an analysis of priority, risk, impact, etc.

From the outline, high level scenarios can be documented for execution and if required additional details can be added during test execution. This approach places the emphasis on the tester's ability to interpret the results within the context of the solution as they understand it should be. An important reality to bear in mind is that much of the test design forms as the tester is engaged in the actual test execution and reacts to the outcomes. Preplanned and prescribed test approaches often lose sight that testing is an interactive thinking process rather than the adherence of a well documented script. "Good testers think technically, creatively, critically and practically". (Cem, James, & Bret, 2002)

12 Evaluating and Communicating Testing Progress Effectively

Traditional approaches to the measurement of test progress are through metrics applied to the outcome of test planning vs. the test execution. Without extensively documented test cases this traditional approach of measuring the test effort primarily through execution metrics is stammered. The evaluation of the testing effort should be multi dimensional considering factors of risk, coverage, test intensity, metrics, defect metrics, test team perspective and an alignment to the release readiness criteria.

13 Summary

Testing on dynamic, fast paced agile projects with collaborative, quality focused teams can be a very rewarding experience. Leveraging the key success factors outlined above will enable the test effort to be adaptive and scalable, and ensuring stakeholders are provided valuable insight into the quality of the solution from inception through implementation.

14 References

Beck, K., Beedle, M., & etal. (2001). *Agile Manifesto*. Retrieved April 28, 2009, from Manifesto for Agile Software Development: http://agilemanifesto.org/

Cem, K., James, B., & Bret, P. (2002). *Lessons Learned in Software Testing.* New York: John Wiley & Sons Inc. .