Coveros Approach to Agile Testing

A Pragmatic Approach for Improving Agile Testing Practices

INTRODUCTION

While many companies are attracted to the concept of agile, they fail to embrace a true agile methodology. When the whole process is agile, organizations are able to iteratively release quality software at a much more rapid pace than traditional waterfall methods. Unfortunately, oftentimes organizations push testing to the end of their agile development cycles, meaning that their cycles are now effectively just smaller waterfall cycles. In these situations, software is blindly handed to the testers for verification at the end of a sprint without the organized, logical direction of a test plan or even a detailed understanding of feature requirements. Testers are left to complete work on weekends or outside of normal work hours, all at once, at the end of the sprint. This scenario allows no opportunity to fix bugs within the same sprint in which they are detected. We hear stories like this all the time from testers - experiences which negatively impact quality and prevent the benefits of agile from being realized. *To fully achieve the benefits of agile development, appropriate testing methods are needed.*

The focus of agile testing is on having the entire team participate in software testing activities throughout the development cycle. The role of testers in agile software development encompasses working with product owners, developers, and end users or end user representatives. Product owners and testers collaborate to define acceptance criteria and the definition of done. Agile software testers actively work with developers to clarify the intent of feature requirements, and to ensure their testability and completeness. Involving testers in the early stages of planning allows the organization to accurately predict risks as well as the amount

of time needed to successfully complete a feature. Earlier awareness of these details can prevent future unexpected costs or delays and lead to the creation of a higher-quality product. Finally, testing is defined as a part of every user story, and the story is not considered done until all story-level tests (unit, smoke, acceptance, functional, and non-function) have been written and successfully executed.

COVEROS GUIDELINES FOR AGILE TESTING

Coveros focuses on empowering testers to work on stories in conjunction with developers and non-technical stakeholders. A key point of agile testing is to understand how to integrate software testing early in the development and planning process. Testers are included in all sprint planning and team retrospectives as a proxy for the user, they help the team to properly identify risks, and work closely with development to provide a short feedback loop. This early integration ensures well-planned user stories that address stakeholder needs, thereby increasing quality and significantly reducing the risk of unplanned work.

Coveros focuses the following activities when coaching and implementing tests to improve agile testing practices:

Shifting testing activities left—Aligning the work of developers and software testers so that testing activities begin in the planning stages of the development process.

Integrating testing activities into a definition of done— Coaching clients who are struggling with identifying the key criteria that comprise a useful definition of done including properly-scoped feature testing.

Having the right integration and unit tests for applications—Focusing on creating tests that are applicable for the system and reflect the team's definition of done.

Integrating tests into a CI/CD pipeline—Automating continuous testing helps to shorten the feedback loop by providing immediate feedback about code quality based on test results or other metrics as defined in the application's quality thresholds.

The ultimate focus is not on processes, but on delivering high-quality software at the end of every sprint.

Here are some important things that testers can do to promote agile testing and allow the team to realize the benefits of agile:

- Get involved in initial development, design, planning, and scoping
- Assess the testability of features being considered for development
- Help developers design effective unit tests
- Design and execute test cases for all aspects of testing
- Automate test cases (when appropriate) to allow for more efficient testing
- Ask questions that help evaluate user stories for appropriate size and scope

HOW COVEROS DRIVES AGILE TESTING

Our experienced team will help your organization to adopt agile testing principles, standards, and best practices. We prefer to work alongside existing teams to design, develop, and implement testing frameworks. These extensible, reusable frameworks allow other team

members to work with the tests by either creating or modifying as the software project develops.

Coveros practitioners work one-on-one with your development team to improve the quality of your unit tests. Developers will be introduced to concepts such as **test-driven development (TDD)**, which ensures that the development of every new feature begins with writing tests for that feature. We can also help non-technical stakeholders to participate in specifying how an application should behave functionally by introducing **behavior-driven development (BDD)** methodologies and tools. BDD uses a simple, 'Given, When, Then' format to allow all members of the team to collaborate and agree upon feature functionality. To validate the features, tests will then be written using those same steps, which document the agreed-upon behaviors. In an agile software testing environment, testers are able to begin their work at the same time as developers since the user stories are appropriately planned out before being added to the sprint.

Successful agile testing embraces automation as a long-term investment. As an application grows, so will the regression test suite, which increases the amount of time it takes to verify releases. Automating part of your regression tests and integrating them into your CI/CD pipeline allows testers to focus on validating new features being developed in the sprint. The team's initial investment in writing these tests will yield time savings in the future. While we can help organizations at any point along the test automation maturity spectrum, we have a proven process for taking an organization with poor or nonexistent automation and starting them on the path to reaching full agile testing maturity.

SUMMARY

Implementing agile testing methods results in the entire team sharing responsibility for quality while allowing testers to grow in their roles. Empowering testers to work with product owners and developers to articulate feature requirements during the planning phase provides the entire team with an appropriate definition of done for each story. This reduces the risk of re-work and shifts testing activities towards the very beginning of the development cycle. Testers and developers working in tandem throughout the sprint produces a more unified feature matching the definition of done. Investing in automated testing allows for faster verification of new releases while allowing testers to focus on newer features. Our approach is unique in its belief that every organization is different and benefits from a tailored agile testing process befitting its culture, market, organizational structure, people, and business environment.

RELEVANT CERTIFICATIONS

Coveros has partnered with the International Consortium for Agile (ICAgile) and International Software Testing Qualifications Board (ISTQB) to provide certifications to agile professionals. Our training program offers specific, proven courses for improving your team's agile testing practice. Coveros provides virtual, public, and on-site training offerings, offering you the flexibility to choose the delivery option that works for you and your team. Whether you need to enhance the skills of 1 or 1,000, our experienced agile testing instructors can help.

In addition to simply improving their role-specific knowledge through our training, many software testers seek to complete an industry recognized certification.

Through our training program, your organizational staff can receive certifications in:
Fundamentals of Agile (ICP certification)
Agile Testing (ICP-TST certification)
Agile Test Automation (ICAgile)
Fundamentals of Test Automation

Coveros also offers five conferences a year for software professionals via our TechWell brand. These include the STAR software testing series, widely recognized as North America's premier software testing events and EPIC Experience conference which focuses on agile testing and automation. For more information about our training and conferences, please visit training.coveros.com and techwell.com/software-conferences.

ABOUT COVEROS

For over a decade, Coveros has helped organizations accelerate their software delivery utilizing the latest DevOps and agile methods. Our full complement of cutting-edge services help organizations assess and improve their software development, testing, DevOps, and application security practices.

Our clients include such leading organizations as UnitedHealth Group, Delta Dental, Department of Homeland Security, Symantec, US Air Force, Fannie Mae, RSA, WorldBank, and Advent.

Coveros is headquartered in Northern Virginia.

To learn more about Coveros and our Agile Testing Services, visit www.coveros.com.

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