

Quality Assurance in an Agile Environment

from a Tester's Perspective

Custom Technology Solutions



Introduction

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- Certified Professional Scrum Developer
- 12+ years experience in Software QA on traditional waterfall and 'Agile' projects
- Currently working on a Scrum team
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Centare Group?

- Consulting Services Organization
 - Primary focus on Agile, Mobile and Cloud
- Individual and team based development
- Microsoft Partner in ALM
- Training, mentoring, team building
 - Scrum.org training
 - Best practice training
 - Technical and business leadership strategies

Agenda

- What is Agile
- What is Scrum
- What is Agile testing
- The role of QA in Agile
- Challenges to testing in Agile
- Tools and automation in Agile testing



WHAT IS AGILE?

Agile

- A group of software development methodologies, frameworks and best practices based on:
 - Iterative and incremental development
 - Requirements and solutions evolve through collaboration between self-organizing, cross-functional teams

Agile Manifesto

- We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:
 - 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

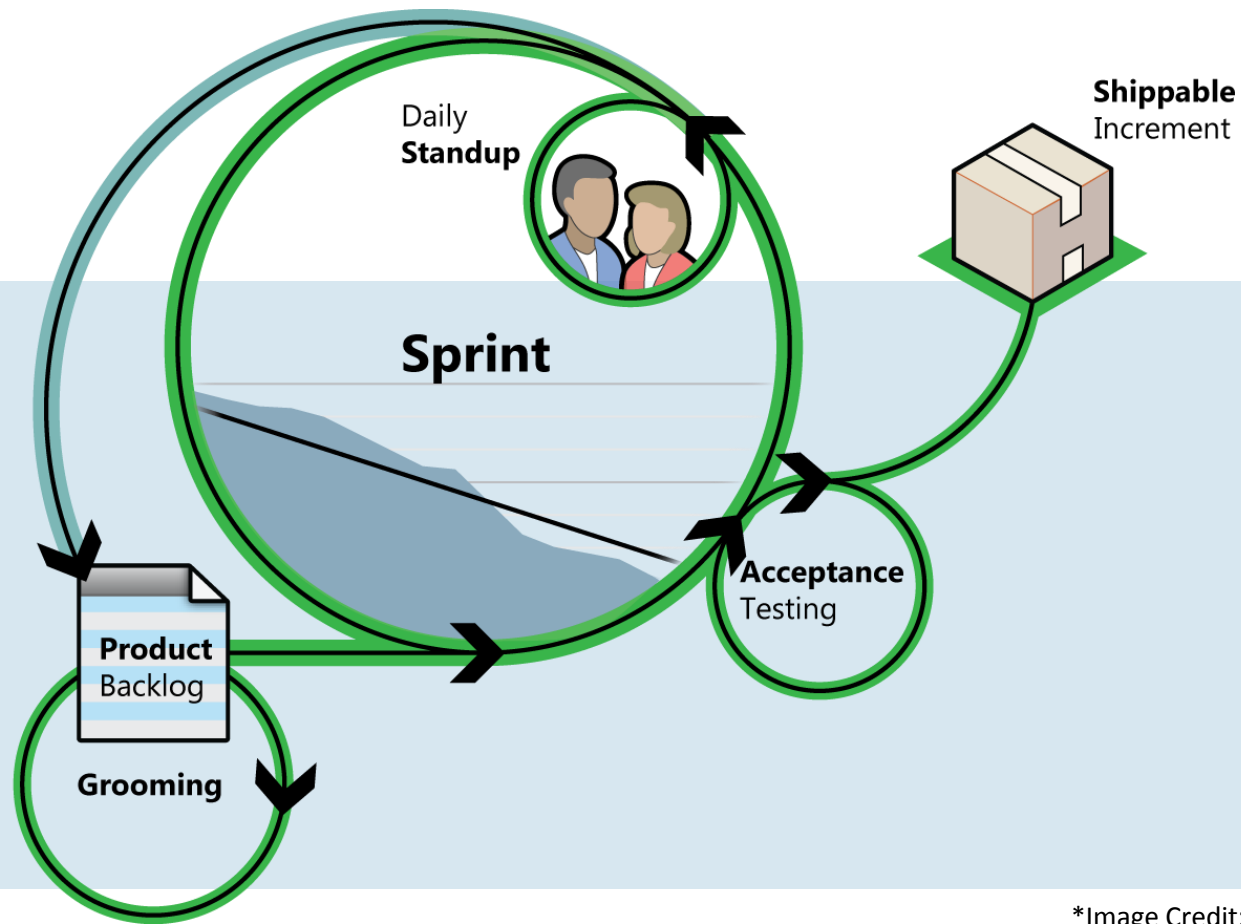
What is Scrum?

- Scrum, which is grounded in **empirical** process control theory, employs an iterative, **incremental** approach to optimize **predictability** and **control risk**. Three pillars uphold every implementation of empirical process control.
 - **Transparency**
 - **Inspection**
 - **Adaptation**

What is Scrum?

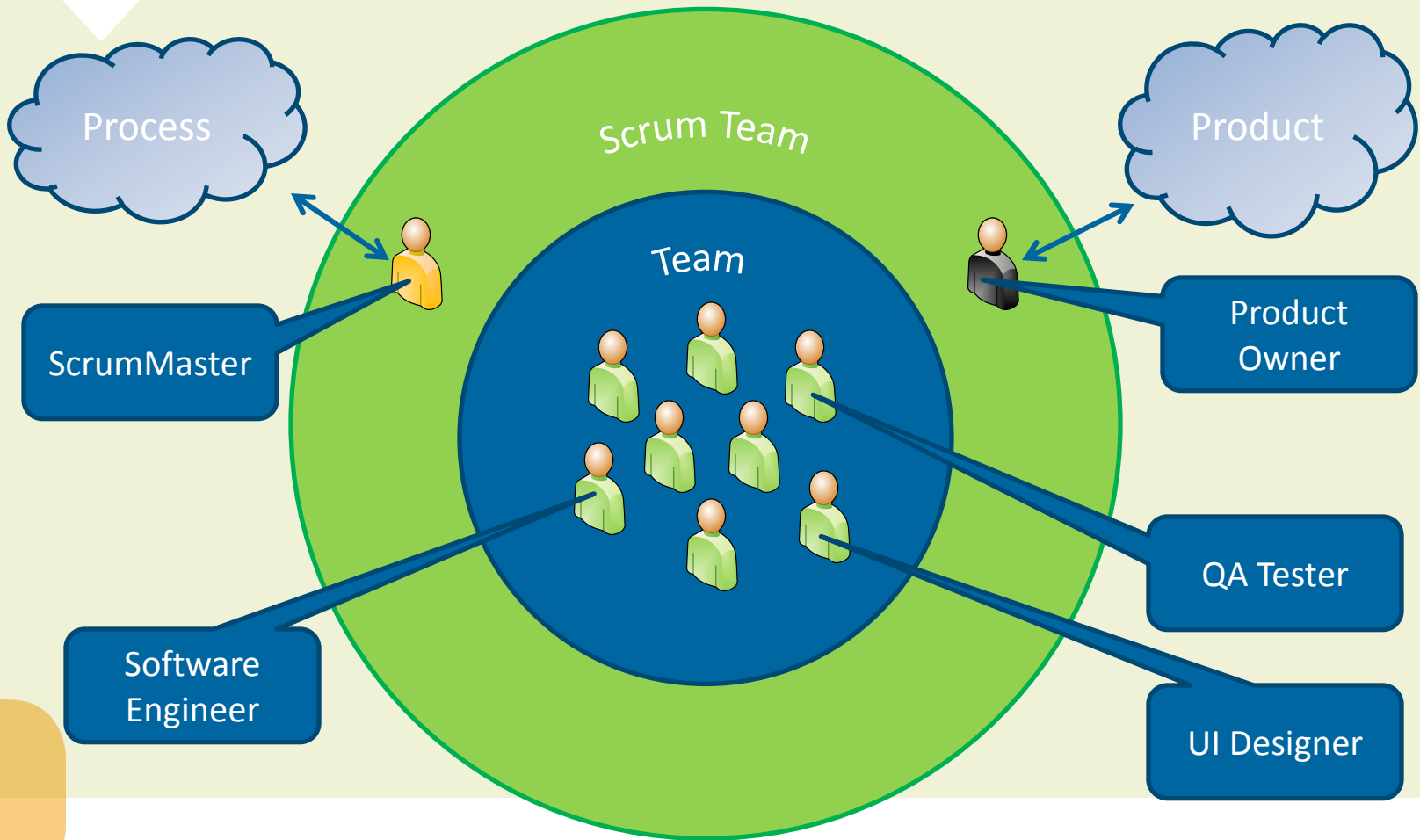
- Scrum is **not a methodology** that will make you develop better products.
- Not a “silver bullet.”
- **Scrum is simply a framework.**
- Tool used to build **quality** software.
- Tool to **increase return on investment.**

Simple Scrum

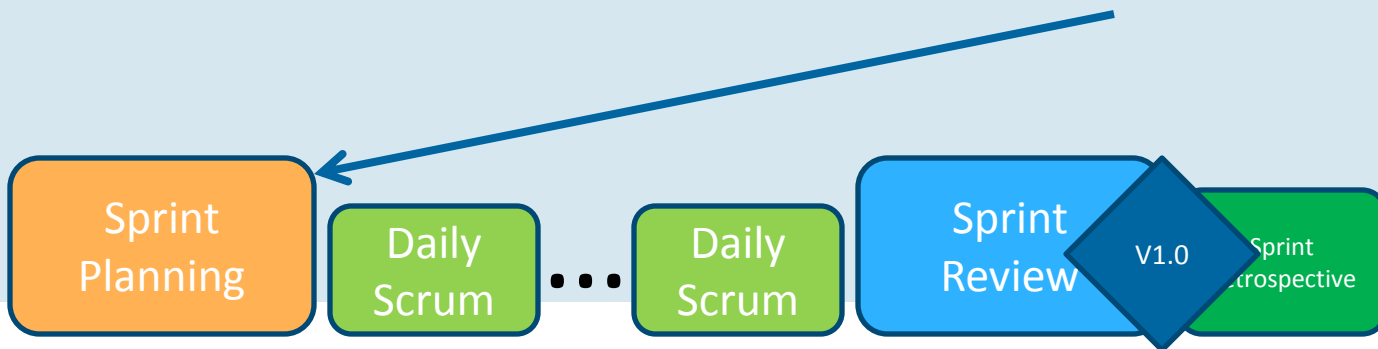
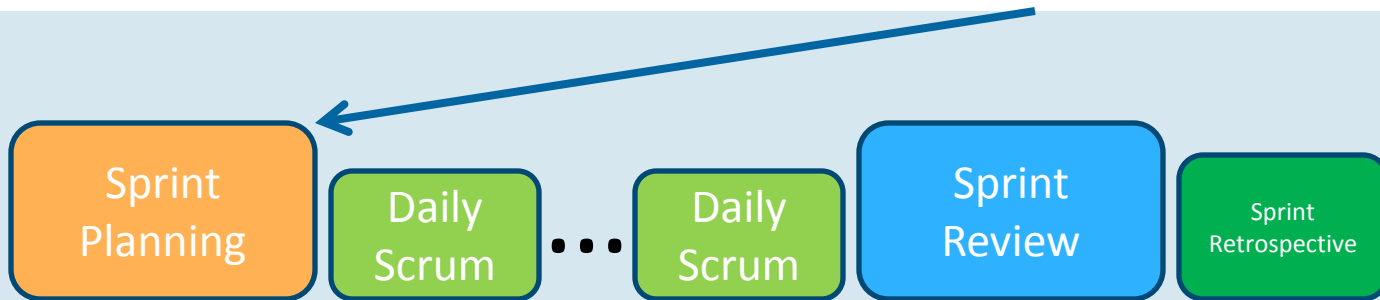
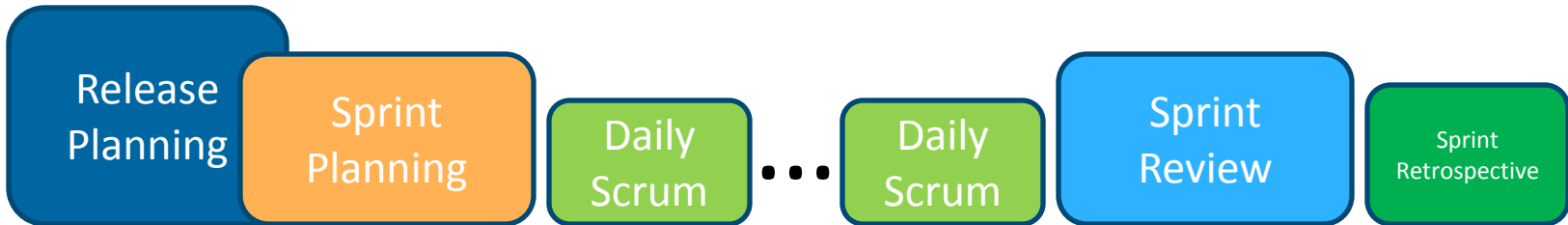


*Image Credit: Sam Guckenheimer, Microsoft

Scrum Roles



Scrum Time Boxes



My First Sprint

- What did I get myself into?
- Overwhelmed and unsure of my role
- How do I write test cases when there are no requirements?
- Testing got pushed to the very end
- Felt intimidated
- Didn't feel like I could properly contribute to planning
- Wasn't sure what to report in daily standup
- Feeling of unease
- Outside of my comfort zone



WHAT IS AGILE TESTING?

What is Agile Testing?

- Emphasis on individuals and interactions, working software, customer collaboration
- Responsive to change
- Focus on business value vs. conformance to requirements
- Team Deliverable

Agile Quality is a Team Deliverable

Agile Practice	Benefits
Whole Team	<ul style="list-style-type: none">• Quality is everyone's responsibility• Quality is not just testing• Testing is a first class citizen
Continuous Integration	<ul style="list-style-type: none">• Developers cannot check in code with failing tests
Continuous Testing	<ul style="list-style-type: none">• Test early and often• Bugs found closer to when they are introduced making them easier to fix• Testing as features are developed

What is an Agile Tester?

- Embraces change and is a change agent
- Collaborates well with technical and business people
- Uses tests to document requirements and drive development
- Experienced exploratory tester

The 10 Principles for an Agile Tester

1. Provide continuous feedback
2. Deliver value to the customer
3. Enable face-to-face communication
4. Have courage
5. Keep it simple
6. Practice continuous improvement
7. Respond to change
8. Self organize
9. Focus on people
10. Enjoy

Agile vs. Waterfall

Agile	Waterfall
Requirements refined as you go and tests document requirements	Requirements are often bad and poorly written
Change is embraced	Change requires a change request
Testing is a first class citizen	Testing is often an afterthought
Whole team approach to testing	Testing is done by testers
Lightweight metrics	Metrics are often heavyweight and meaningless
Cooperative relationship between testers and developers	Testers and developers often have an adversarial role

Agile vs. Waterfall Continued

Agile	Waterfall
Zero tolerance for defects	Defects thrown over the wall
Defect management tool is optional	Defect management tool is needed
Trust	Distrust and suspicion
Continuous testing	Testing compressed
The team estimates time and effort	Plans are dictated by management



CHALLENGES

Agile Testing Challenges

- Fear
- Old habits
- Us vs. Them mentality
- Unclear role of testers
- Mini-waterfall
- Operational Silos
- Lack of skills and domain expertise
- Not understanding Agile concepts
- Existing processes in the organization



**TEST AUTOMATION IN AGILE
AUTOMATION IS ESSENTIAL**

Why Automate


- Provides safety net
- Gives feedback early and often
- Documents how the application works
- Potential cost reduction
- Frees people to do their best work

What to Automate

- Repetitive tasks
- Unit tests
- Functional tests
- Load tests
- Data creation
- Stable code



What not to Automate

- Usability testing
 - Exploratory testing
 - One-Off Tests
 - Code that is constantly changing
- 

Visual Studio 2010 Ultimate

- Microsoft Test Manager or Microsoft Visual Studio 2010 can be used to run:
 - Unit tests
 - Coded UI tests
 - Database unit tests
 - Load tests
 - Generic tests
- Tests can be run automatically as part of a build process

Microsoft Test Manager

- Define test effort
- Create and run manual steps
- Record manual steps for playback
 - Useful for automating repetitive tasks performed during testing
 - Action recordings can be used to turn manual tests into automated CodedUI tests
- Testing reports
- Diagnostic data collection
- Exploratory testing
- Defect management

Creating Action Recordings

The screenshot shows the 'Testing Center' application window. The 'Test' tab is selected in the top navigation bar. Below the navigation bar, there are three main sections: 'Run Tests', 'Verify Bugs', and 'Analyze Test Runs'. The 'Run Tests' section is active and contains a 'Run Tests' toolbar with a 'Run' button. Below the toolbar, there is a 'Test suite: RTM' section with a progress bar. A table of test cases is displayed, with columns for 'Or...', 'ID', 'Title', 'Tester', 'Configuration', and 'Priority'. The table is divided into 'Active (2)' and 'Passed (1)' sections. The 'Active' section contains two rows of test cases, and the 'Passed' section contains one row. The 'Run' button in the toolbar is highlighted with a callout box.

1 Click the down-arrow on the center group switcher and select Testing Center.

2 In the center group menu bar, click Test.

3 Select the test cases that you want to run.

4 On the toolbar, click Run.

Or...	ID	Title	Tester	Configuration	Priority
Active (2)					
1	12922	Verify user credentials	Andrew Hill	Windows 7...	2
2	12923	Test various firewall...	Andrew Hill	Windows 7...	2
Passed (1)					
3	12924	Select item from menu	Andrew Hill	Windows 7...	2

Action Recordings Continued

The image displays two screenshots of a test runner interface, illustrating the process of creating and running action recordings.

Top Screenshot: Start Test Dialog

- 1 Select Create action recording:** A callout points to the checked checkbox labeled "Create action recording".
- 2 Click Start Test:** A callout points to the "Start Test" button.

Bottom Screenshot: Test Execution

- 3 Mark the result of each step. Note the blue action recording indicator section that appears:** A callout points to a blue bar with a green checkmark that appears next to the first step, "1. Enter user name".
- 4 When you have finished testing, click End Test:** A callout points to the "End test" button.

Currently Recording Indicator: A separate callout points to a green indicator in the top right corner of the application window, with the text: "Note the Currently Recording indicator which appears on the application currently being recorded."



SUMMARY

Resources

- Agile Testing, A Practical Guide for Testers and Agile Teams- Lisa Crispin and Janet Gregory
- Software Testing with Visual Studio 2010- Jeff Levinson

Want more?



Improving The Profession Of Software Development

- Professional Scrum **Product Owner**
- Professional Scrum **Master**
- Professional Scrum **Foundations**
- Professional Scrum **Developer**

Q&A



Thank You!

