Get Your Agile Testing Up To SPEED!

Featuring Clark Cochran from CONFORMIQ

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www.qaiagile.com
BUILDING AGILE COMPETENCY FOR SENIOR MANAGEMENT

Agile principles, changes required for successful agile transition, and communication strategy

- Executive Overview to Agile Orientation
- Co-Existence of Agile & CMMI®

AGILE TRANSFORMATION & ENABLEMENT

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BUILDING AGILE COMPETENCY FOR SCRUM MASTERS

Principles of agile, agile process model, planning and tracking for agile projects, metrics, team culture changes required, collaboration strategies, and estimations

- Mastering Agile Scrum
- Agile Project Management (PMI – ACP)
- Certified Scrum Master (CSM)
- Kanban – Becoming Agile With Lean Software Development
BUILDING AGILE COMPETENCY FOR TEAM MEMBERS & PRODUCT OWNER (PO)

Principles of Agile, Roles and responsibilities, process model, Applied Agile practices, Changes required, Metrics in Agile and usage of tools

- Certified Scrum Product Owner (CSPO)
- Certified Scrum Developer (CSD)
- Software Engineering Excellence Using XP
- Agile Test Strategies & Management
- Agile User Stories, Estimation And Planning

AGILE TRANSFORMATION & ENABLEMENT
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BUILDING AGILE COMPETENCY FOR COACHES / MENTORS

Methodologies, the lifecycle model, applicability and customization methods to suit project requirements. Coaching Methods

- Introduction to SAFE – Scaled Agile Framework
- Certified Scrum Professional (CSP)
- Certified Scrum Coach (CSC) [With SCRUM Alliance]
- Coach The Coaches

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CUSTOMER CASE STUDIES

QAI GLOBAL INSTITUTE

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WORK DONE

• CONSULTING on process definition aligned to Agile (SCRUM, Hybrid SCRUM); CMMI Maturity Level 3; Agile Tool: Rally
• TRAINING on areas related to Estimation, Metrics, Project Management etc. using Agile under CMMI Framework
• CONSULTING on implementing defined process on SCRUM using Rally
• AUDITS to confirm implementation & identify improvement areas

TEAM SIZE
• 1 QAI Program Manager
• 1 QAI Project Manager (Expert in Agile)
• 1 QAI Onsite Resource
• 1 Lead Appraiser (for CMMI)
• 2 Agile Coaches

WORK DONE

• Providing regular TRAINING & COACHING on Agile SCRUM, Feature Driven Development, XP, Test Driven Development
• MAPPING of Agile with current areas of work of the organization
• IMPLEMENTING of Agile & CMMI
• MENTORING SCRUM practitioners
• AUDITING implementation

TEAM SIZE
• 1 QAI Program Manager (Agile & CMMI)
• 1 Lead Appraiser (for CMMI)
• 2 Agile Coaches

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Combine Agile Tools with Agile Experience

• CONFORMIQ 360° Test Automation tools
  – Enables system testing at the speed of development
  – Increased and optimized coverage to reduce defects
  – Seamlessly integrates user’s DevOps tools

+ 

• QAI Agile Testing Experience
  – Has trained over 160,000 IT professionals
  – Competence Development, Assessments and Certifications – Training and Consulting
  – 49+ Specialized agile courses; 27+ expert instructors
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- Enterprise Agile Failure Modes and Solutions
- Why Test Automation Fails
- Mobile Testing: Time to Cut the Cord

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How Do We Use a Data Management Maturity Model?

From the QAI USA Webinar Video Archives:

Part 1 – Why Do You Need Maturity in Data Management?

Part 2 – Introduction to Data Management Maturity Models.

Part 3 - How do you realize the benefits?

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presents the FALL 2016 WEBINAR SERIES

Agile Management Webinar Series
This three-part webinar series is directed to managers and executives who are interested in building more agile organizations—organizations that are more able to detect and react to change.

Murray Cantor

From the QAI USA Webinar Video Archives:

Part 1 - Agile Management: What and Why

Part 2 – Agile Management Best Practices

Part 3 - Your Agile Management Solution

Access these titles in the QAI Archive Library at qaiusa.com/webinars.
Get your agile testing up to **SPEED**!
Agile Testing Promises Quality at Speed … But Often Can’t Deliver

The promise –

“Because every developer is also a tester, quality assurance is built into the agile process from the beginning.”

- Joe Mack, Making the Case for Agile in the Enterprise, CIO, 2015

The reality –

“In most agile projects I’ve been involved with, the defect list has grown faster than it can be dealt with. We routinely needed groups of iterations devoted solely to trying to clear the backlog.”

- Lajos Moczar, Why Agile Isn’t Working, CIO, 2013
Agile is Pervasive but Underperforming

88% of businesses today are using agile methods

BUT …

1. Only 23% fix bugs immediately
2. Only 24% iterate small testable requirements rather than waiting for features to be completed
3. Only 26% have more automated than manual testing

Let’s take a closer look at what’s going wrong…
Agile Testing Problems Are Multi-Faceted

• Today’s testing scenarios are very complex
  – Multi-platform, multi-browser, multi-feature, frequent releases

• Manual testing is familiar but failing
  – Too slow, too error-prone

• Automation tools can be complicated & daunting
  – Programming, scripting, modeling

• There is no clear path from manual testing to automation
  – Lack of integrations with existing SDLC tools & processes
So How Much Farther Can You Go With Your Current Testing Process?

If you can’t add testers
If you can’t increase budget
If you can’t extend testing time
And now you need to do agile testing ....

What do you do now?
It’s time to change your TEST DESIGN PROCESS

And here’s why ...
Your Testing Can Only Be as Fast as Your Slowest Step

Manual test design + Manual scripting + Automated execution

OR

Automated test design + Automated scripting + Automated execution
In order to test continuously, you must go BEYOND automating test execution alone to …

AUTOMATE

Optimized test case design

AUTOMATE

Executable test script generation

AUTOMATE

Test script execution

Anything less will NOT be fast enough…
How Can Today’s Testing Issues Be Overcome?

• **Solve three big gaps in current testing process**
  – Design optimized test cases and expected results, plus executable scripts fast enough for in-sprint progression testing
  – Enable continuous test execution during development sprints
  – Seamlessly link the “islands of automation” of existing tools

• **Fill in missing piece of testing**
  – Automate execution of existing manual test cases

• **Leverage BDD capabilities to enable true agile testing**
  – Import Gherkin feature files into graphic models to visualize and agree on coverage, then graphically improve if needed
  – Link requirements from Rally and other RQM tools to graphical model then generate traceability of requirements to each test case
  – Deliver known and comprehensive test coverage documentation
  – Enable test designers to directly automate execution in Selenium, Jenkins, Protractor, etc. for true continuous testing and integration

**Deliver Known Quality at the Speed of Development**
Leverage Digital Testing Transformation

• Use advanced technology to achieve “digital” testing

• The issue is how to generate optimized test cases without inputting the test cases or how the software should be tested
  – Why? Because this methodology makes testing design more difficult and thus slow when changes are made

• Choose a method where testers use the business logic and data then let the tool’s engine do the complex design automatically
  – Use graphical representation to input business logic
  – Keep actions at a high “abstract” level so modeling is easier
  – Reuse existing test cases for testing Brownfield applications
  – Automatically generate optimized test cases for the system
  – Automatically generate executable test scripts plus correct expected execution results
  – Connect to execution details in automated execution tools

• Integrate with third-party test ALM, requirements, and execution tools to maintain best of breed tooling investment
What are your digital transformation options?
Automate Test Design & Execution

Conformiq Creator™
- Automate & optimize test design

Conformiq Transformer™
- Automatically execute any type of existing test cases (without scripting specialists)

Improved Testing Efficiency

MBT
- Test Models
  - Frameworks
    - Keyword Driven
  - Script-Based
    - Capture/Replay
- Manual
Creator Automatically Generates Test Cases & Executable Scripts

- Graphical representation of the requirements in a model
  - Can import from Visio, ARIS, Excel, WSDL/XSD
  - Bidirectional link with requirements management tools (Rally, HP QC, IBM)

- Automatically generates optimal test cases & results

- Generates many outputs to fully understand test cases
  - Traceability matrix of each test case to requirement
  - Graphical model coverage of each test case
  - Manual test steps report
  - Direct link to test management tools (HP QC, IBM)

- Generates executable test scripts and test link file
  - Scripts are manually linked to test harness objects by user coding
  - OR export test scripts to Transformer

- Direct link to Transformer
Transformer Automates Test Script Execution

• Reverse engineer files for Creator model generation
  – Import Excel, Gherkin feature files, manual test cases

• Import files for test execution
  – Import test scripts from Creator
  – Import manual test cases
  – Reverse engineer objects from Selenium & QTP test library repositories

• Execute test cases using Selenium, QTP, Protractor
  – Use keywords rather than coding for harness linkage
  – Execute tests against Firefox, Chrome, IE
  – Parallel execution with Selenium
  – Report results within Selenium (bundled in Transformer)

• Extendable link with other execution tools
  – Mobile, Mainframe, GUI, API, SAP, etc.
Change Manual Testing to Three Automated Steps

1. Streamlined Graphical Model Capture of Requirements
2. Automatic Test Design with One Button Click
3. Transform Generated Tests for Automatic Execution & Full Documentation

A process to deliver repeatable and consistent comprehensive testing at development speed
BDD Automated Testing Process

- Import Gherkin feature files
- Generate graphical model
- Link with Rally requirements
- Generate test cases & scripts
- Generate traceability report
- Execute in Selenium, etc.

- Eliminate manually writing test cases in Cucumber or JBehave
- Graphically determine Gherkin file completeness
- Generate requirements traceability coverage
- Achieve Continuous Integration
- Perform progression testing at agile development speeds
Step #1: Understand Your Application Flow

Activity Diagram

- Graphically capture workflows from requirements in activity diagrams
- Import diagrams from Visio, ARIS & various BPMN tools
- Import Gherkin feature files & Excel test cases

• Model interfaces in WYSIWYG editor – NO PROGRAMMING
• Import interfaces from UI recordings, WSDL/XSD, etc.
• Use mainframe or custom actions for non-GUI back-end operations

Why Model?
University of Southern California study found that up to 50% of defects can be found just through modeling the SUT’s expected operation
Many Algorithms to Deliver Optimal Coverage

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirements Coverage</td>
<td>Cover “requirement” statements</td>
</tr>
<tr>
<td>Condition Coverage</td>
<td>Cover “true” and “false” cases of conditional constructs (positive and negative)</td>
</tr>
<tr>
<td>Risk Based Coverage</td>
<td>Cover user assigned priorities</td>
</tr>
<tr>
<td>Data Coverage</td>
<td>Cover all pairs or all combinations of data values</td>
</tr>
<tr>
<td>Boundary Value Analysis</td>
<td>Cover integer boundary conditions</td>
</tr>
<tr>
<td>All Paths – Control flows</td>
<td>Cover all arbitrarily action sequences</td>
</tr>
</tbody>
</table>

You control your testing methods
Step #2: Fully Understand Your Test Cases

- Project Control
- Test Coverage Summary
- Test Coverage Matrix
- Generated Test Names
- Individual Test Diagram
- Individual Test Data
- Generated Test Case Description
Know Exactly What Has Been Tested

- Test Coverage Matrix
- Test Case Coverage
- Design Change Impact Analysis
- Test Generation Information
Step # 3: Automated Test Script Execution

- Conformiq Transformer enables test scripts to be executed by the modeler without need for specialists and script creation delivering true continuous integration

- Only integrated link between automated test case generation and automated test case execution
Full End to End Seamless STLC Tool Integration

ALM / Requirements Management
- HP
- RALLY
- IBM
- Seapine Software
- Microsoft

Existing Assets
- CONFORMIQ
- Conformiq
- iRise
- Mega
- iSoftware
- TRICENTIS

Documentation
- Custom
- PDF
- Foreign

ALM / Test Management
- HP
- Microsoft
- RALLY Software
- IBM

Conformiq
360° Test Automation

Repository
- git
- XSD
- TRICENTIS

Automatic Test Execution
- XML
- Robot
- TCL
- OATS
- Python
- Perl
- FitNesse
- JBehave
- JUnit
- SoapUI
- Proprietary
- etc.

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Automation of the End to End Testing Process
Results

• Telecom operation application testing
  – 37% overall progression testing productivity gain
  – 32% overall progression testing cycle time reduction
  – 95.5% test cases automated
  – >100 licenses
  – >250 trained users

• Bank application testing
  – 40% fewer test cases for 100% coverage
  – 40% reduction in test design time
  – 55% faster end to end test design through execution
  – 80% maintenance effort reduction

• ERP application testing
  – 67% test designer headcount reduction

Latest results:
51% test design efficiency gain!
70% test script creation efficiency gain!
Conformiq 360° Users *Eliminate*

- **Manually** designing and maintaining test cases
- **Manually** optimizing the minimum number of test cases
- **Manually** writing executable test scripts
- **Manually** determining correct test results
- **Manually** determining test case impact with every change
- **Manually** maintaining requirement traceability
- **Manually** writing test documentation
- **Manually** transferring information between STLC tools
- **Manually** optimizing regression test suite
- **Manually** scripting automated execution tools

*For continuous testing at the speed of agile development*
Why is Conformiq Unique?

• **ONLY** Conformiq automatically generates the optimal set of test cases to stimulate the entire system operation (with **BOTH data and business logic**) — from the model of system operation the tool thinks of the test scenarios, creates cases and expected results, then generates test scripts for automated execution.

• **ONLY** Conformiq leverages existing testing investments to take advantage of the real benefits of MBT!

• **ONLY** Conformiq simplifies and unifies test automation across multiple tools and platforms

“Amazing and it works!”
True Agile Testing is Full Automation

“Everyone needs to look at this technology because everyone is going to need it. Conformiq is the best of breed out there.”

“This is the future of testing.”
So how can you get from where you are today to where you need to be?
You are not alone on your journey toward agile transformation …
Combine Agile Tools with Agile Experience

• **Conformiq 360° Test Automation tools**
  – Enables system testing at the speed of development
  – Increased and optimized coverage to reduce defects
  – Seamlessly integrates user’s DevOps tools

+ 

• **QAI Agile Testing Experience**
  – Has trained over 140,000 IT professionals
  – Competence Development, Assessments and Certifications – Training and Consulting
  – 49+ specialized agile courses; 27+ expert instructors
Resources & Next Steps

• **www.conformiq.com**
  – Customer presentations
  – Customer case studies
  – White papers
  – Videos
  – Blog posts

• Contact us: [stacy.dryer@conformiq.com](mailto:stacy.dryer@conformiq.com)
  – Discuss the fit for your situation
  – Schedule demo or lab
  – Request pricing

• **www.qaiagile.com**
  – Experience
  – Agile programs and training
  – Assessments
  – Conferences and events
  – Certifications

• Contact us: [pradeepc@qaiworldwide.org](mailto:pradeepc@qaiworldwide.org)
  – Discuss needs analysis
  – Schedule discussion
  – Request detailed class list
Questions?