NEXT GENERATION TEST AUTOMATION

Presented by Stephan Schulz, CTO of Conformiq
About Conformiq

- Founded in 1998 in Finland
- Software & support services
  - Conformiq 360° Test Automation
  - 3rd generation of software
  - General purpose test design and automation tools
- Worldwide locations
  - San Jose, CA, USA (HQ)
  - Helsinki, Finland (R&D)
  - Bangalore, India (R&D)
  - Paris, Hyderabad, Toronto (sales & support)
- Partner with SDLC tool providers and testing services companies
- Customers worldwide
  - Fortune 100 Enterprise & Networking markets
  - BFSI, Telecom service providers
Food for Thought

• What percentage of tests do you execute today in an automated way? Regression versus progression?

• What is your current requirement coverage?

• How confident are you that all of your regression tests actually need to be executed (at all)?
Data from a Previous Poll (Enterprise IT - EU)

• What percentage of tests do you execute today in an automated way?

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 80%</td>
<td>10%</td>
</tr>
<tr>
<td>Between 41% and 80%</td>
<td>12%</td>
</tr>
<tr>
<td>Between 20% and 40%</td>
<td>15%</td>
</tr>
<tr>
<td>Less than 20%</td>
<td>56%</td>
</tr>
<tr>
<td>We do not automate</td>
<td>7%</td>
</tr>
</tbody>
</table>

• What is your current requirement coverage?

<table>
<thead>
<tr>
<th>Requirement Coverage</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 81%</td>
<td>28%</td>
</tr>
<tr>
<td>Between 61% and 80%</td>
<td>35%</td>
</tr>
<tr>
<td>Less than 60%</td>
<td>28%</td>
</tr>
<tr>
<td>Not sure</td>
<td>10%</td>
</tr>
</tbody>
</table>
Some Related Quotes

• “We have 3 testers per developer and defects still slip through.”  
  *Cardinal Health Test Lead*

• “I have 30,000 test cases and my testers can not tell me what they cover.”  
  *Huawei Test Director*

• “I was surprised about the throughput of one of my testers – until I decided to review his test scripts ...”  
  *Enterprise IT Test Manager*
In a Perfect World: What would I want?

- Increase productivity
- 100% Increase and optimize test coverage
- Full and complete integration
It Takes More than Automating Test Execution

Define tests → Write scripts → Execute tests

Next Iteration

Challenges
- Deployment cost
- Required skill set
- Maintenance
- Test quality
- Cycle time
- Continuous integration

Product changes

Requirements → Documentation → Scripts

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Evolution of Software Testing

- Manual Testing
- Test Scripts
- Test Frameworks
- Keyword Driven Test Models
- MBT

Improved Testing Efficiency
Combine MBT with Test Execution Automation

- Automate test design
- Shorten path to test execution automation
- Simplify MBT adoption

Improved Testing Efficiency

- MBT
  - Test Models
    - Test Frameworks
      - Keyword Driven
    - Test Scripts
      - Capture/Replay
  - Manual Testing

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26-28/10/2016
What is Model Based Testing?

- Capture operation of application in a model instead of writing tests
- Generate tests and test data based on your targets
- Higher coverage & faster test execution from automatic test design
- Scripts, documentation, and coverage automatically in sync
Next Generation Test Automation

ALM / Requirement Management
- Track requirement changes automatically
- Existing Assets
  - Create models automatically

ALM / Test Management
- Update documentation automatically
- Test Execution
  - Execute tests automatically

Maintain a model and update everything else automatically

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Model Based Testing is Disruptive

- Functionality vs Path
- Application vs Environment
- Coverage vs Number of Tests
- Abstraction vs Detail
- Automated vs Manual Design
- Flexible vs Fixed Test Sets
Complete Automation of End2End Testing Process

- Requirement Management
- Test Management
- Modeling
- Test Design
- Test Execution
- App Under Test
- Version Control
- Automation Assets
- Manual Tests
  - Gherkin
  - Flowcharts
  - BPM

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Model Capture from Existing Assets

- Model requirements in workflows to be tested
- Import Gherkin feature files or manual tests from spreadsheets
- Import models from flowchart or other BPMN tools

- Model across all interfaces available for testing
- Import interface information from UI recordings, API specs (WSDL/XSD, WADL/JSON, ...)

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Review Automatically Generated Tests

• Validate assumptions with all stakeholders before test execution
• Know what you cover ... and what you don’t!
Integrate with all [Existing] SDLC Tools

ALM / Requirement Management

ALM / Test Management

MBT

Existing Tests, Recordings & User Stories

Automatic Test Execution

Version Control

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It is not a Dream or Vision - it is Very Real!

• “From 3 Stars Rating to 5 Stars in the App Store”
  Javier Moscardó - Spotify - UCAAT 2015 (best presentation)

• “Requirements and Challenges with Advanced Test Automation, The Industry Perspective”
  Sigrid Eldh - Ericsson - UCAAT Keynote 2015

• “The World's Largest MBT Deployment Transforms Testing for Quality at Agile Speed”
  Clark Cochran - Conformiq - STC 2015

• “Shifting Test Automation to the Left of SDLC”
  Ish Kumar – Tech Mahindra – Blog 2015
What will get us to the “6 star rating”?

• Next step in evolution of automated testing is appearing on the horizon already ...
  • What is likely to fail?
  • What is failing and why?
  • Is it a symptom or defect?
  • And more ...
Q&A and Discussion

Thank you!

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