



STAREAST 2009 Adaptive Test Case Technology



Martin Hernandez, Director of QA Eng. Services
425-519-6146 | mhernandez@bsquare.com
Matt Herman, Director of Products, Test Quest
952-936-7887 | matth@bsquare.com

Agenda

- Challenge
- Adaptive Test Case Technology
- Practical Examples

Challenge



GPS



Video



Multimedia



What is similar across all devices?

All have similar functionality and require the same comprehensive test coverage

Complexity of mobile market poses a significant challenge

Varying Network Technologies



Complexity is the biggest challenge for mobile product launches.



Lack of thorough testing can cost recalls, damaged reputations, and revenue loss.

Device Diversity



Multiple:
Operating systems
Chipsets/Firmware
User interfaces

Multiple Mobile Device Application Environments

Windows Mobile	Windows CE
Symbian	RIM
Linux	Brew
Java	

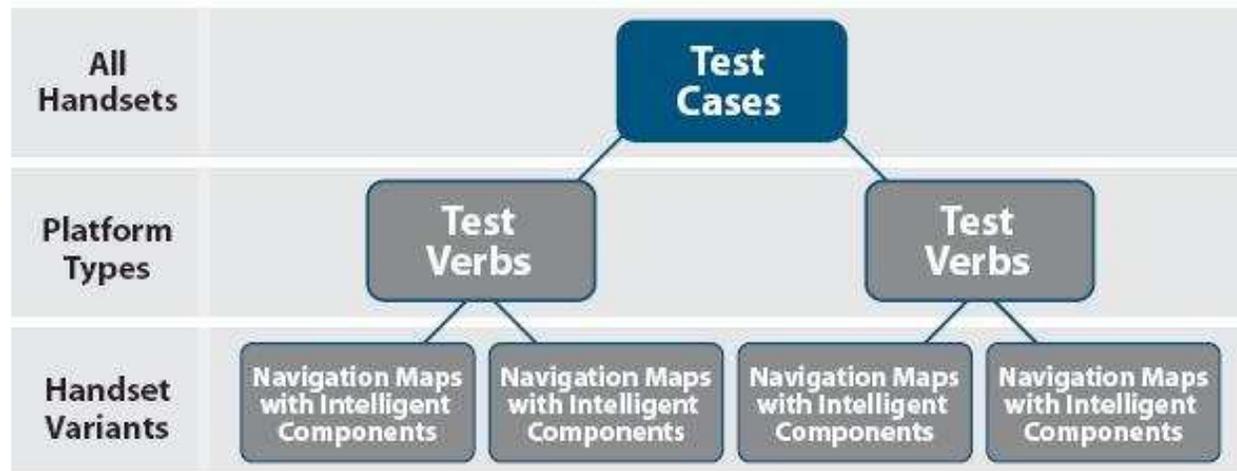
Challenge – How do we

- WOW, how am I going to get done
- Accelerate time to market
- Achieve ROI on UI Automation
- Minimize Test maintenance & porting costs
- Leverage Gen1 automation on Gen2
- Accommodate changing requirements
- Allow testing flexibility with changing software
- New Features
- Updating User Flow & Scenarios
- Ensure our Test Team is ready for execution with revolving specs, requirements & software
- Plan for internalization

High level solution

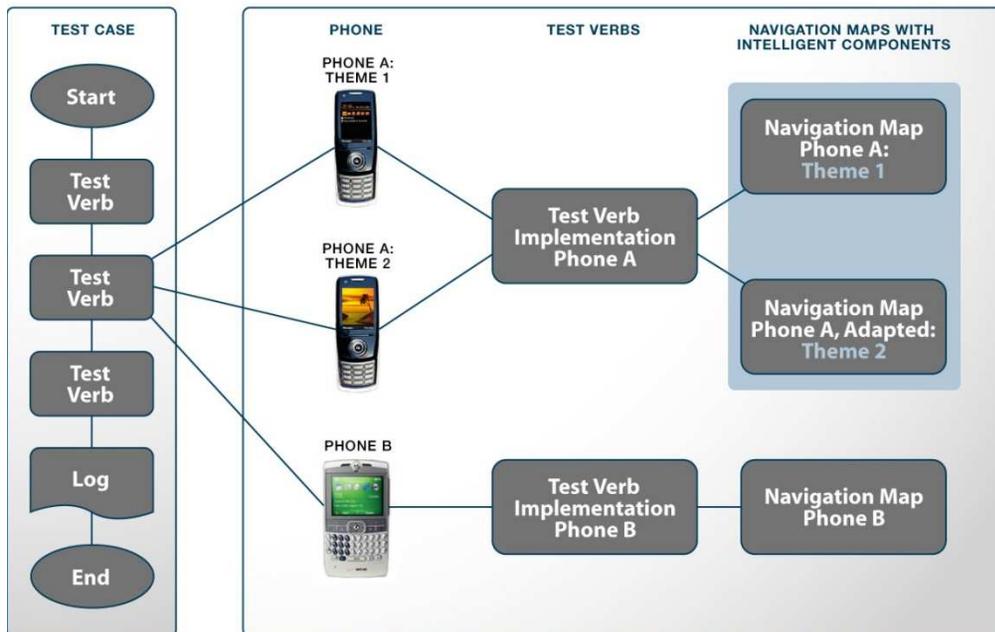
- Simplify through Abstraction
 - Test cases share a common element
- Functional decomposition
 - Separation of device specific action from requirements
 - Common elements
 - Requirements
 - Actions
 - Unique User Interfaces and application flows
 - Identify reuse

Solution: Adaptive Test Case Technology



- Test Cases: defines functional requirements common cross platforms.
- Test Verbs: defines core functions and captures platform differences.
 - Allows a single test case to work across multiple device platforms
 - Helps manage the implementation work across these platforms
- Navigation Maps: abstracts the differences in GUI
 - Navigation maps support abstracting device properties out of the test case that may change across your test requirements: theme, resolution, language, etc
 - Device navigation is a major issue in mobile test automation (30% of test automation logic is getting the device to the correct state). However this logic has nothing to do with satisfying a test requirements.

ADAPTIVE TEST CASE TECHNOLOGY ENABLES



- Easy maintenance and reuse of test logic
- Device model variations (e.g., theme, display resolution or language) are absorbed by navigation maps with intelligent components
- Platform variations (i.e., differences across device models or operating systems) are absorbed by TestVerbs
- Test cases do not change

Adaptive Test Case Technology - Benefits

- Promote reuse
- Facilitates new test cases
- Reduces errors test case creation
- Abstracts the test case from hardware
- Abstracts the test case from OS
- Abstracts the test case from GUI
- Ensures interoperability
- Protects investment in test assets
- Speeds testing
- Adapt to new platforms quickly

Practical Example

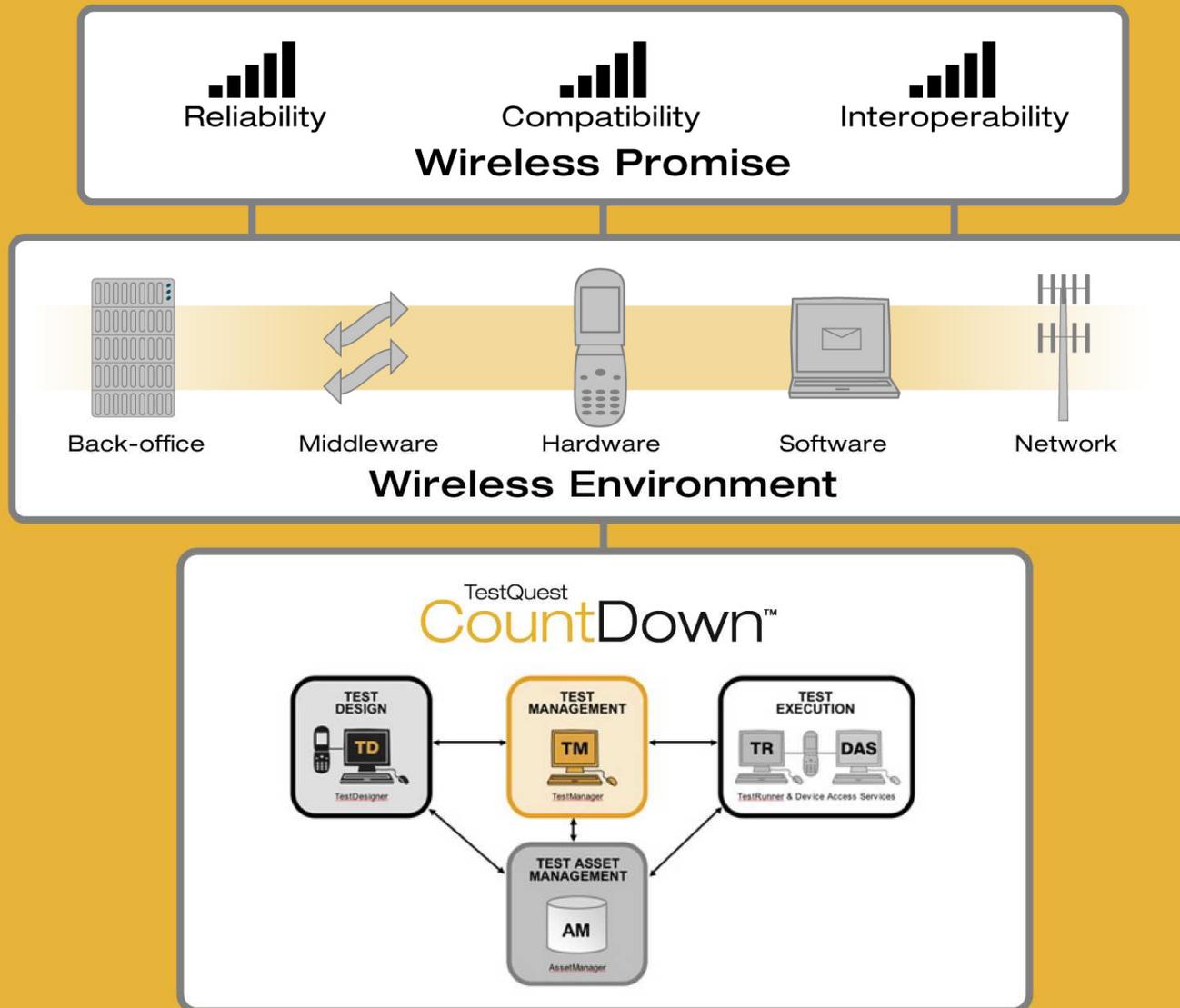
Example TestCase From OEMs & Operators

- Send an SMS from Contacts with the Radio off and verify SMS was not sent properly
 - Verify Radio is Off
 - Add Contact
 - Originate SMS from Contact
 - Compose SMS
 - Send SMS
 - Verify SMS not Sent
- Sound Simple?



- Heterogeneous Devices => Adaptive TestCase Methodology

Test Platform Designed for the Wireless Environment





Thank you.

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