



Functional Testing For Mobile Applications

HP Solution Sheet

The Era of Mobile Applications

Mobile devices are gaining momentum. Companies of all types and sizes are developing and implementing mobile applications to increase productivity, help their distributed teams stay connected and allow customers to access essential services even when they are away from their computers. According to Forrester Research, 95% of enterprises have already deployed or are in the process of evaluating wireless e-mail, and approximately 33% of North American and European businesses have implemented sales force automation mobile applications.*

Mobile applications offer great advantages. A retail store manager can quickly check product inventory on her smartphone, a busy executive can review his appointment schedule from the coffee shop, a nurse can consult a patient's history right from the bedside, and a sales representative can access customer records and report on deal status while walking through an airport.

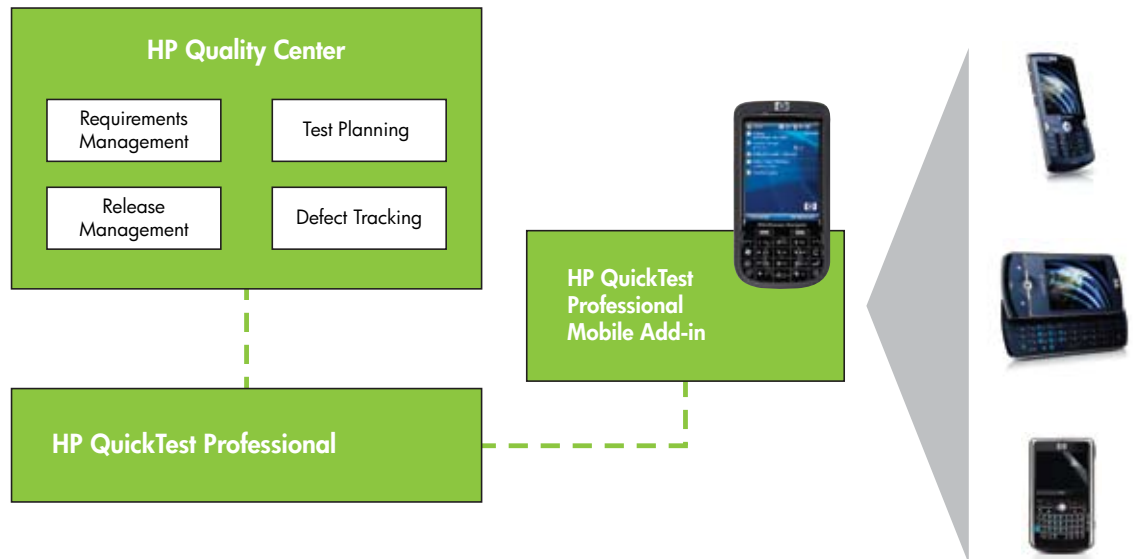
But as with any emerging technology, developing and implementing mobile applications can pose a number of unique challenges. Mobile applications don't simply imitate the desktop environment—they have their own

user interface (UI) requirements, business process flows, and infrastructure dependencies. There is a growing number of mobile devices—smartphones, PDAs, cell phones and specialized devices such as a delivery clerk's scanning and tracking handheld. Recent years have seen an emergence of a host of mobile operating systems. And finally, there is a choice of implementation options—such as thick and thin client. All this complexity increases the strain on IT to build, port and maintain mobile applications, and heightens the risk of quality and performance problems.

HP provides the most advanced automated testing solutions for functional and regression testing. Our HP QuickTest Professional solution supports all major software applications and environments, and in partnership with cutting-edge, innovative companies like Jamo Solutions and DeviceAnywhere, HP is extending its industry-leading functional testing capabilities to mobile applications on all commonly used operating systems and platforms.

* Forrester Research. Future View: Mobile Unified Communications Demand and Evolution, 2009 To 2014, March 19, 2009.

Figure 1: Together with partner solutions, HP is extending its functional testing capabilities to mobile applications



Testing Mobile Applications with HP QuickTest Professional software

Testing applications for mobile devices is in fact very similar to testing desktop-based applications. It is based on the concepts of collaboration, test asset management, reusability, and accurate reporting and analysis. And just like in the desktop application world, the majority of testing on mobile devices is currently done manually.

Can manual testing accurately predict mobile application quality? Can a test engineer simply drive to a remote location and log into the credit union's Web site to check his account balance? Or see if he is still getting a good connection while delivering a package to a far-away golf course? The problem with manually testing mobile applications is the lack of coverage and scalability as well as the cost associated with manual tests, especially if they need to be run over and over again as part of an iterative development and quality process. While a human tester can manually key in a handful of transactions, they will never be able to continuously test and monitor the connection and application availability, test for all possible data and scenario permutations or validate the mobile application on each supported device, OS, and network. A manual tester also cannot

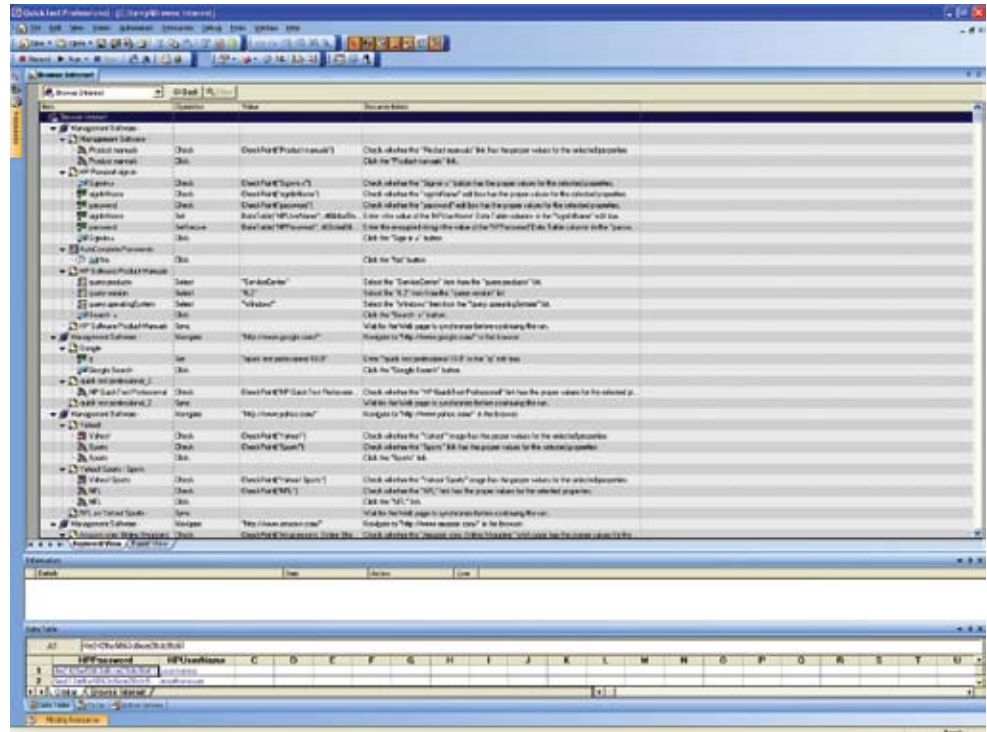
quickly identify the problem, fix it, and rerun all the tests required to validate the fix. Nor is it physically possible to rerun the entire test set every time a new version of an application becomes available.

HP QuickTest Professional software solves this problem by automating the creation and execution of functional and regression test suites. It captures, verifies, and replays user interactions automatically and helps testers quickly identify and report on application defects, while providing advanced functionality for tester collaboration.

HP QuickTest Professional is a market-leading test automation solution for application testing. It offers a fresh approach to automated testing by using the concept of keyword-driven testing and supporting reusable test components. These capabilities radically simplify test creation and maintenance. Using keyword capabilities, your testers can build test cases by capturing flows directly from the application screens using robust capturing technology (record/replay). In addition, your power users get full access to the underlying test and object properties through an integrated scripting and debugging environment that is synchronized with the Keyword View capability for your complete testing cycle.

Figure 2: Comprehensive functional testing

Using the keyword view, auto-documentation and active screen features, you can easily create and modify test scripts for a variety of software applications and environments—including mobile applications.



Through seamless integration with HP Quality Center, you can publish test scripts to the central repository which allows other QA team members to reuse your test scripts and avoids duplicate work. You can manage all your testing assets from a global, Web-based central location to promote collaboration between workgroups, reuse tests between builds and applications and perform advanced change and impact analysis.

Specialized Testing Solutions for Mobile Devices with HP Partners

Through partnership with companies such as Jamo Solutions and DeviceAnywhere, HP has extended the functionality of the HP QuickTest Professional to support functional testing of mobile applications. The tremendous advantage of the HP mobile application testing solution is that it is completely device, configuration, and OS version agnostic. It does not matter what buttons are available on a particular PDA, or what your smartphone's screen resolution or background colors are. This is the only

way to achieve quick, reliable ROI—the scripts can be created once and reused on any type of device, with any configuration, language or version of the operating system. The solution recognizes GUI objects on the screen just like the user sees them. Each user action—such as creating an SMS message or pressing the Send button—is captured in the script and is available to view in the keyword or expert view for easy maintenance. The solution also goes deep into the device information and allows users to access and test device-specific data, such as battery power, memory usage, number of unread messages, connectivity information, and so on. During replay, testers can populate the device memory, analyze storage options, and access other advanced functions that make automated testing much more powerful than a simple repetition of the manual tester's actions. Automation also allows you to benchmark application performance data and compare subsequent test results so you can make sure that changes did not impact CPU, memory or consume other resources that degrade performance.

Automating the testing process for mobile applications offers a tremendous benefit for end-to-end testing of business transactions that span both traditional IT applications and mobile devices. For example, a support engineer logs a customer call into the Help Desk application, which triggers a notification to a field agent's mobile device. The agent contacts the customer, resolves the problem and changes the issue status to "fixed", which is automatically synched with the customer record in the Help Desk system. Only automated testing can accurately validate application functionality at every step of this complex business process. By collecting application data from both conventional IT systems and mobile devices, an automated solution can help you make certain that the entire business process works as expected.

Automated functional testing has a proven track-record in desktop-based applications. It helps companies deploy higher-quality software applications, reduces risk to the business, reduces the number of production-level defects, and accelerates problem resolution which accelerates time to market (TTM) and saves millions of dollars by helping avoid costly business interruptions and errors. The growing popularity of mobile applications is demanding that companies adopt automated testing strategies and solutions that are designed specifically for their mobile application needs. Companies moving to agile will find these demands even more extreme. HP continues to innovate and broaden the reach of its market-leading functional testing software. HP QuickTest Professional—with specialized extensions developed by HP trusted partners can help you deliver mobile applications that work across a variety of platforms, devices, and versions and remain reliable.

For more information

For an overview of HP Quality Center, visit: www.hp.com/go/qualitycenter

For detailed information on HP QuickTest Professional software, visit: www.hp.com/go/functionaltesting

For additional information on Jamo Solutions, visit: www.jamosolutions.com

For additional information on DeviceAnywhere, visit: www.deviceanywhere.com

HP Services

Get the most from your software investment.

HP provides high-quality software services that address all aspects of your software application lifecycle needs. With HP, you have access to standards-based, modular, multi-platform software coupled with global services and support. The wide range of HP service offerings—from online self-solve support to proactive mission-critical services—enables you to choose the services that best match your business needs.

For an overview of HP software services, visit www.managementsoftware.hp.com/service

To access technical interactive support, visit Software Support Online at support.openview.hp.com

To learn more about HP Software Customer Connection, a one-stop information and learning portal for software products and services, visit: www.hp.com/go/swcustomerconnection

Technology for better business outcomes

To learn more, visit www.hp.com/go/functionaltesting

© Copyright 2009 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

4AA2-6647ENW, June 2009

