Mobile App Development & Testing

Jonathan Marshall
WebSphere and Mobile Technical Specialist
IBM

Innovate2013
The IBM Technical Summit

The IBM Mobile App Development Lifecycle

Why do you need **Mobile-specific** App Development tools?

Mobile Apps are different.

- **They run on unstable networks–**interruption is the norm, not the exception
- **They are context-aware –** sensor richness provide invaluable context
- **Always on –** An opportunity to deliver greater value since always within arms' reach
- **Greater urgency –** immediacy of engagement
- **Smaller footprint –** More challenging to make compelling and easy to use

Development is different.

- **Extremely short development** cycles
- **More devices** to support, each with its own set of capabilities, OS and UI behaviors
- **More development approaches** to choose from – Web, HTML, Native or a mix
- More **third-party and open-source tools, frameworks and libraries** to choose from

Management is different.

- Smaller screens pulling content from more sources: **need to choreograph** content from multiple repositories and applications , both on premises and in the cloud
- Greater challenges of application **governance, distribution, and version management**
- **AppStore Terms of Service** present challenges for managing B2C apps

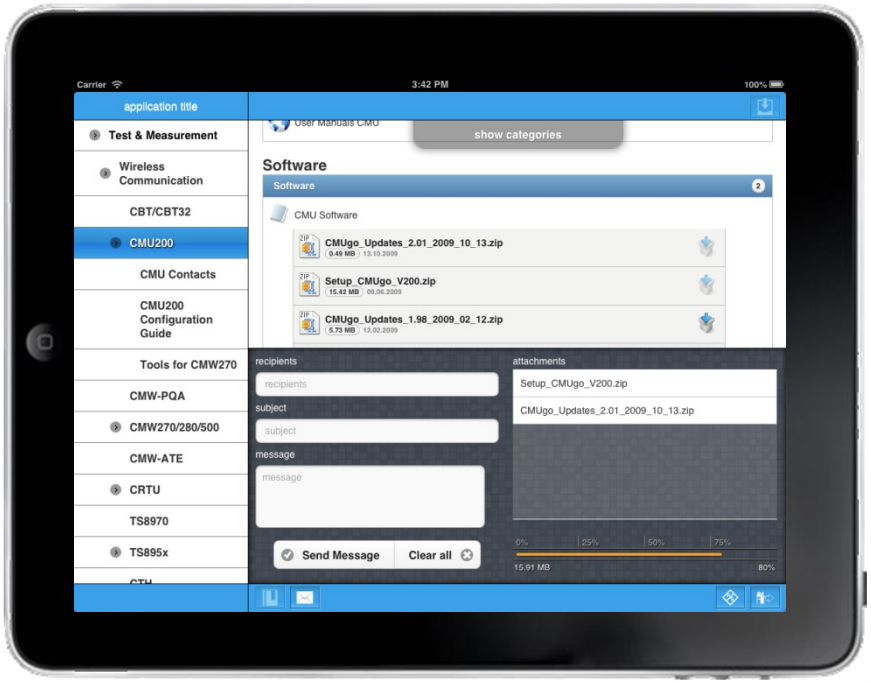
Security is different.

- **Greater risks** of exposing applications and data on small, light and always on portable devices
- **Greater authentication challenges** associated with content mashups
- **AppStore** Terms of Service can limit security options

Deliver Cross-platform Apps in Weeks – Rohde & Schwarz

Product Catalog and Order Tablet Application for Sales Personnel

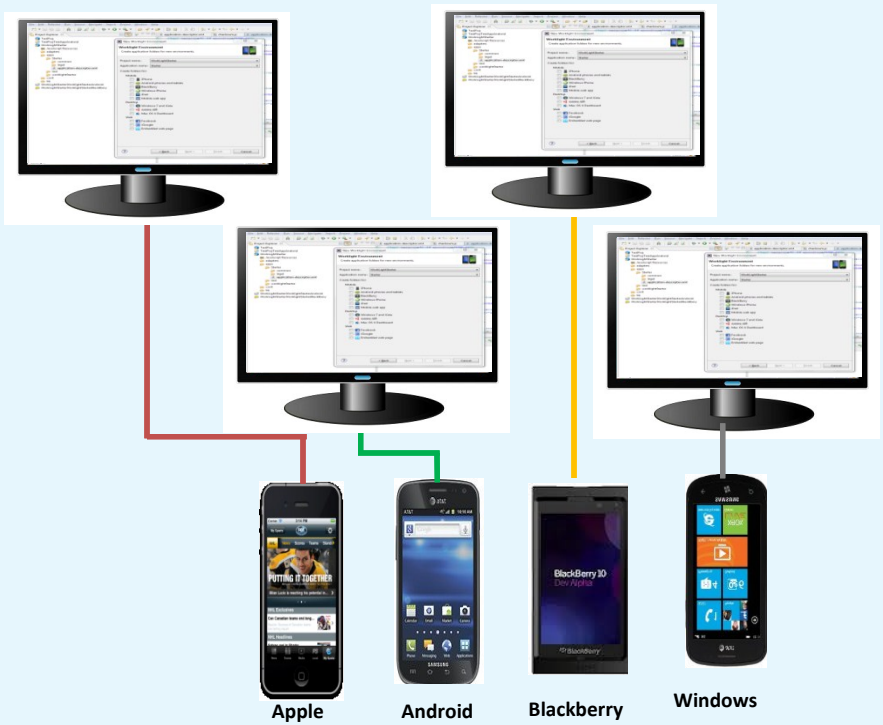
- **60% development cost saved** by using Worklight across 5 platforms
- 1st app built by 1 Developer in 12 Weeks, including customized authentication, MDM integration, SAP connectivity, offline access, mobile-triggered server emailing, JQuery UI library, Cordova plug-in



Multi-platform development with a shared codebase

From the complexity of many…

- Multiple sets of tools & frameworks
- Four codebases to develop and maintain



To the simplicity of one

- One development environment
- One codebase to develop and maintain

Support Multiple Mobile App Development Models

B2C

B2E

B2B

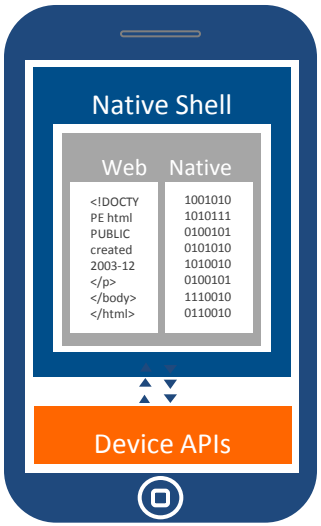
Browser Access

Written in HTML5 JavaScript and CSS3. Quick and cheap to develop, but less powerful than native.

Browser Access

Hybrid Apps – Web

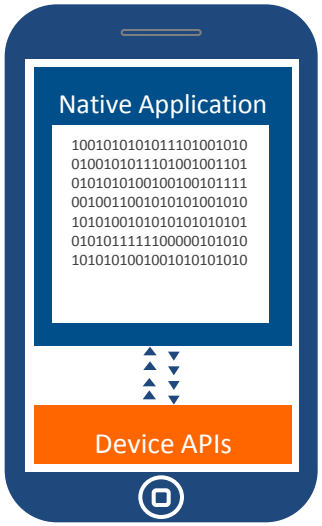
HTML5 code and Worklight runtime libraries packaged within the app and executed in a native shell.



Downloadable

Native Apps

Platform-specific. Requires unique expertise, pricy and long to develop. Can deliver higher user experience.



Downloadable

IBM

Demo

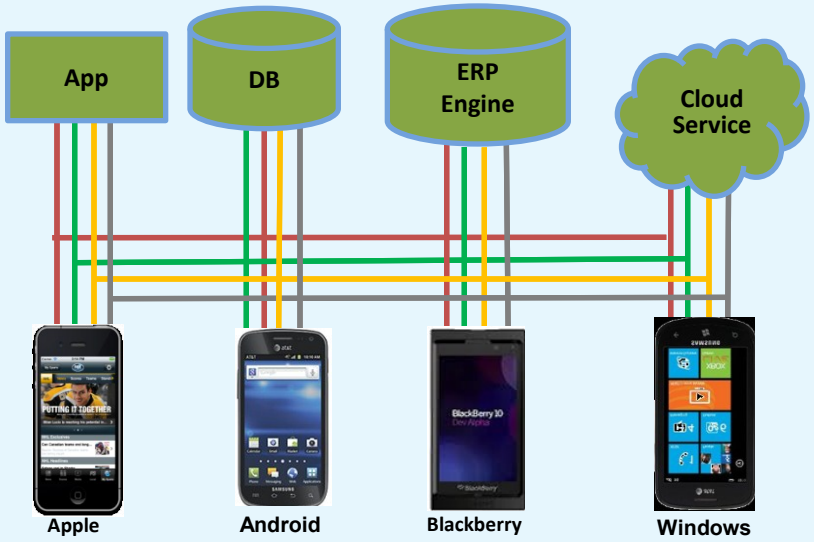
Building a Worklight application -
http://www.youtube.com/watch?v=snkUTBVxLBw

The IBM Mobile App Development Lifecycle

Controlled back-end integration

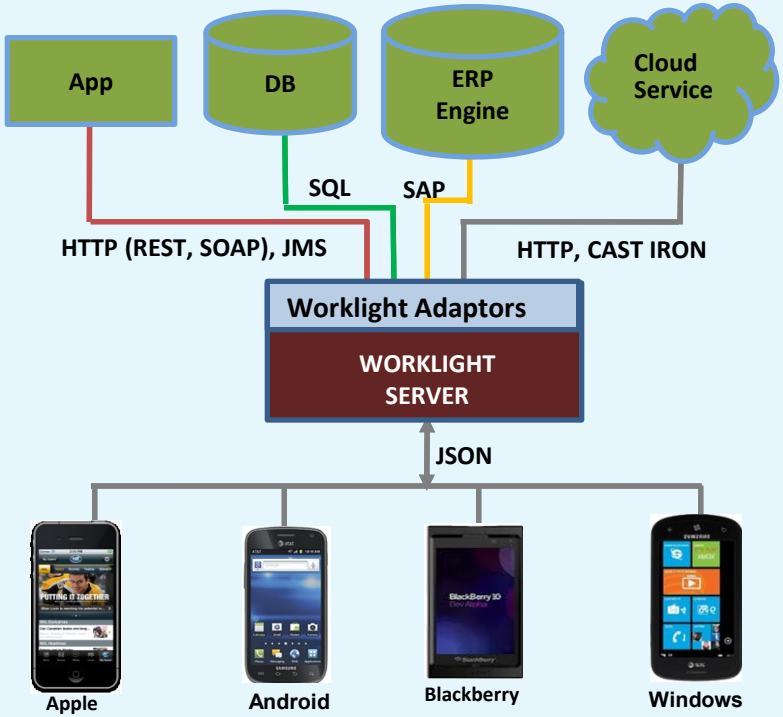
From multiple point-to-point integrations

- Multiple sets of integrations to enterprise resources to build and maintain
- YOU manage caching, synchronization and end-to-end encryption



To streamlined, transparent access

- Worklight transforms enterprise data into mobile-friendly, JSON format
- Worklight Server manages caching, data synchronization and end-to-end encryption



Centralized push notifications

From the complexity of many…

Multiple sets of push services to manage

To the simplicity of one…

Unified push management

The IBM Mobile App Development Lifecycle

Design & Develop

Instrument

Obtain Insight

Integrate

Test

Scan & Certify

Rapid App Updates

Without Worklight

Week 1

Patch and package
- Android app
- Apple app
- Blackberry app
- Windows app

Week 2

Submit for review
- Apple Store
- Google Play
- Blackberry AppWorld
- Windows App store

4-6 week publishing cycle

Date Resolved: **Never***

*There is no way to require users to upgrade or prevent them from running an old app.

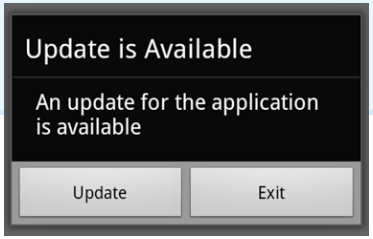
With Worklight

Day 1: **Patch and package common code base**

Day 1: **Deploy to Worklight Server**

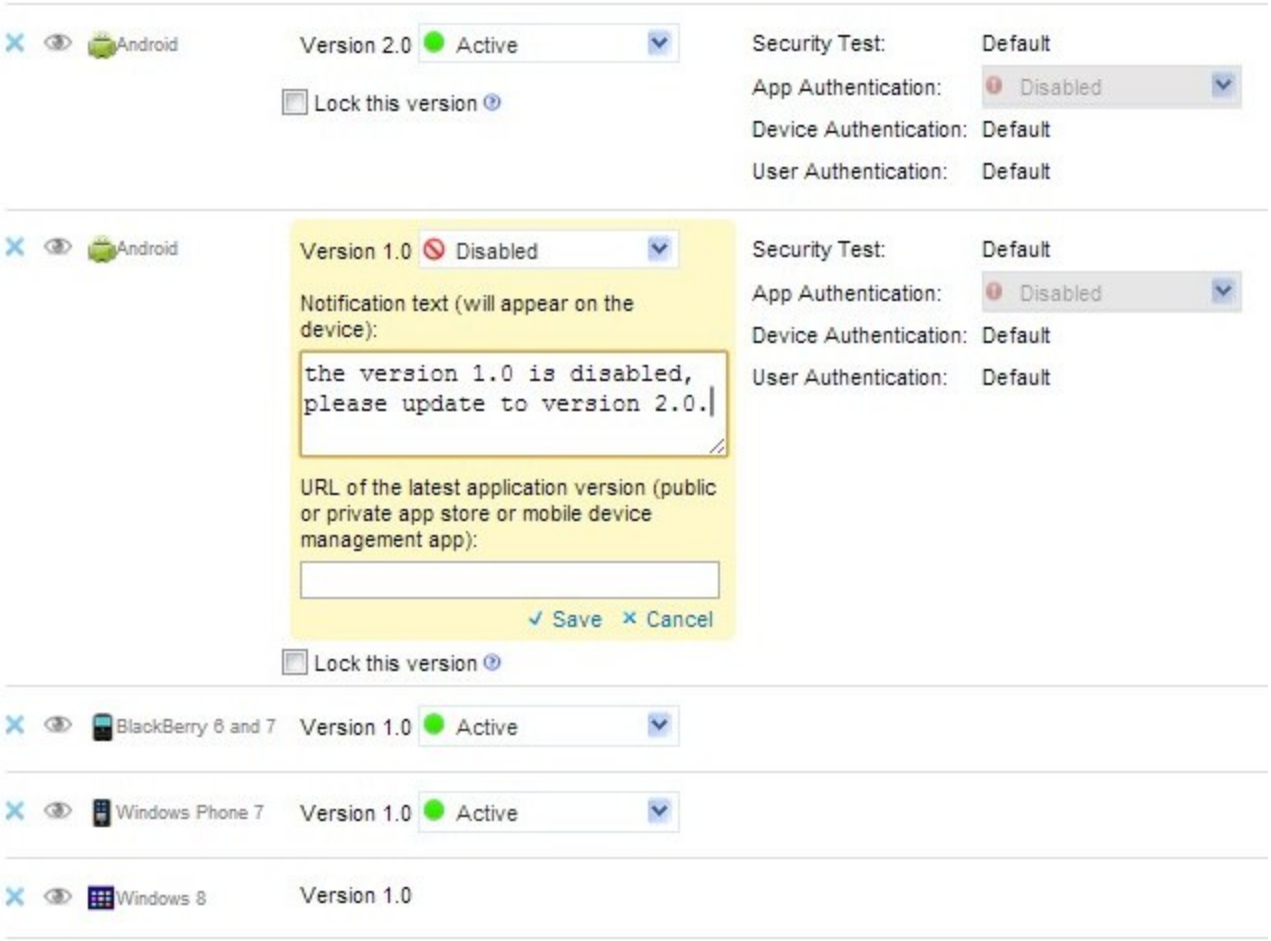
Worklight Direct Update: The next time users launch the app, they are forced to update or quit.

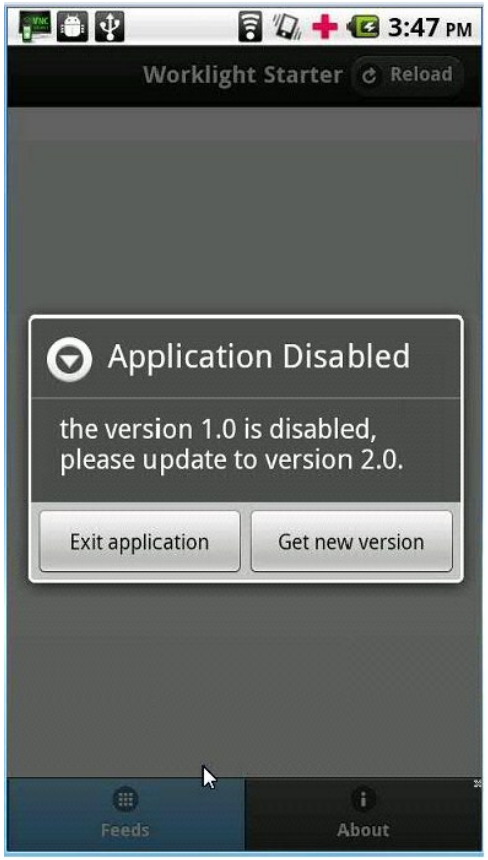
Date Resolved: **Same day**



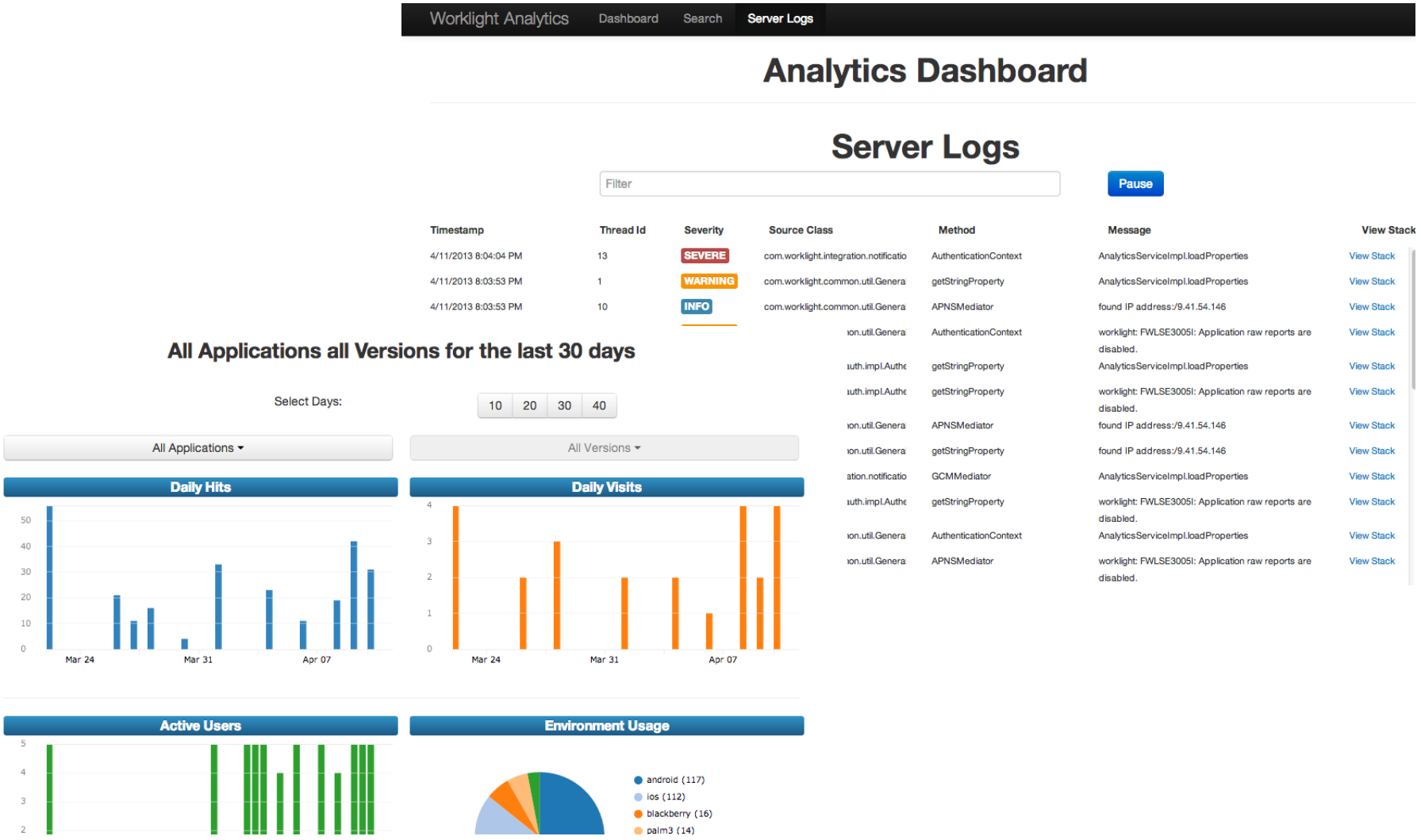
App Disable

Remote Disable: you can use the Worklight Console to deny access to an app of a specific version

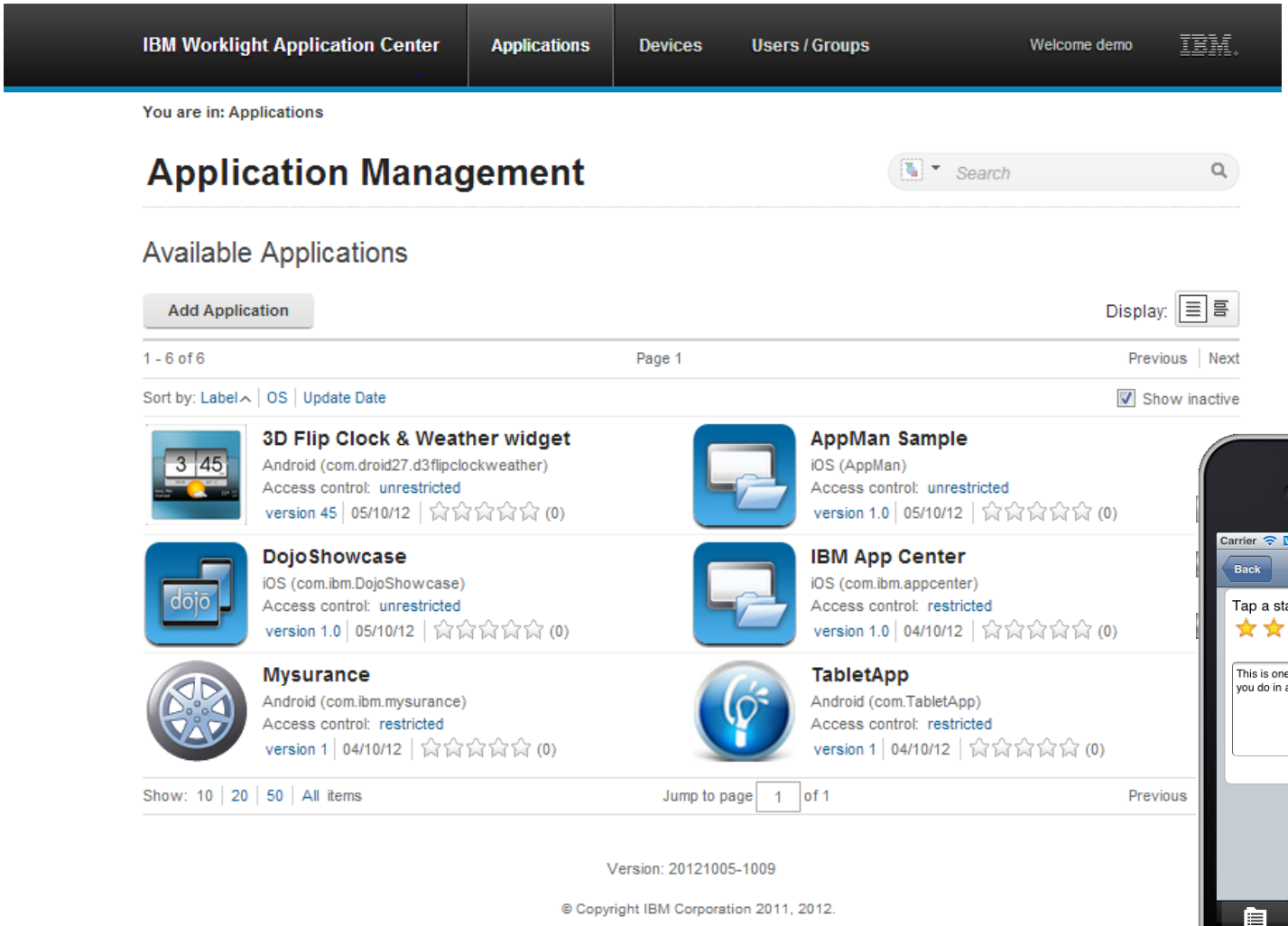




Analytics


Worklight Analytics
Dashboard
Search
Server Logs
Analytics Dashboard
Server Logs
Filter
Pause
Timestamp
Thread Id
Severity
Source Class
Method
Message
View Stack
4/11/2013 8:04:04 PM
13
SEVERE
com.worklight.integration.notificatio
AuthenticationContext
AnalyticsServiceImpl.loadProperties
View Stack
4/11/2013 8:03:53 PM
1
WARNING
com.worklight.common.util.Genera
getStringProperty
AnalyticsServiceImpl.loadProperties
View Stack
4/11/2013 8:03:53 PM
10
INFO
com.worklight.common.util.Genera
APNSMediator
found IP address:/9.41.54.146
View Stack
ion.util.Genera
AuthenticationContext
worklight: FWLSE3005I: Application raw reports are disabled.
View Stack
uth.impl.Authe
getStringProperty
AnalyticsServiceImpl.loadProperties
View Stack
uth.impl.Authe
getStringProperty
worklight: FWLSE3005I: Application raw reports are disabled.
View Stack
ion.util.Genera
APNSMediator
found IP address:/9.41.54.146
View Stack
ion.util.Genera
getStringProperty
found IP address:/9.41.54.146
View Stack
ation.notificatio
GCMMediator
AnalyticsServiceImpl.loadProperties
View Stack
uth.impl.Authe
getStringProperty
worklight: FWLSE3005I: Application raw reports are disabled.
View Stack
ion.util.Genera
AuthenticationContext
AnalyticsServiceImpl.loadProperties
View Stack
ion.util.Genera
APNSMediator
worklight: FWLSE3005I: Application raw reports are disabled.
View Stack
All Applications all Versions for the last 30 days
Select Days:
10
20
30
40
All Applications
All Versions
Daily Hits
50
40
30
20
10
0
Mar 24
Mar 31
Apr 07
Daily Visits
4
3
2
1
0
Mar 24
Mar 31
Apr 07
Active Users
5
4
3
2
Environment Usage
android (117)
ios (112)
blackberry (16)
palm3 (14)

Worklight App Center



The IBM Mobile App Development Lifecycle

Design & Develop

Instrument

Obtain Insight

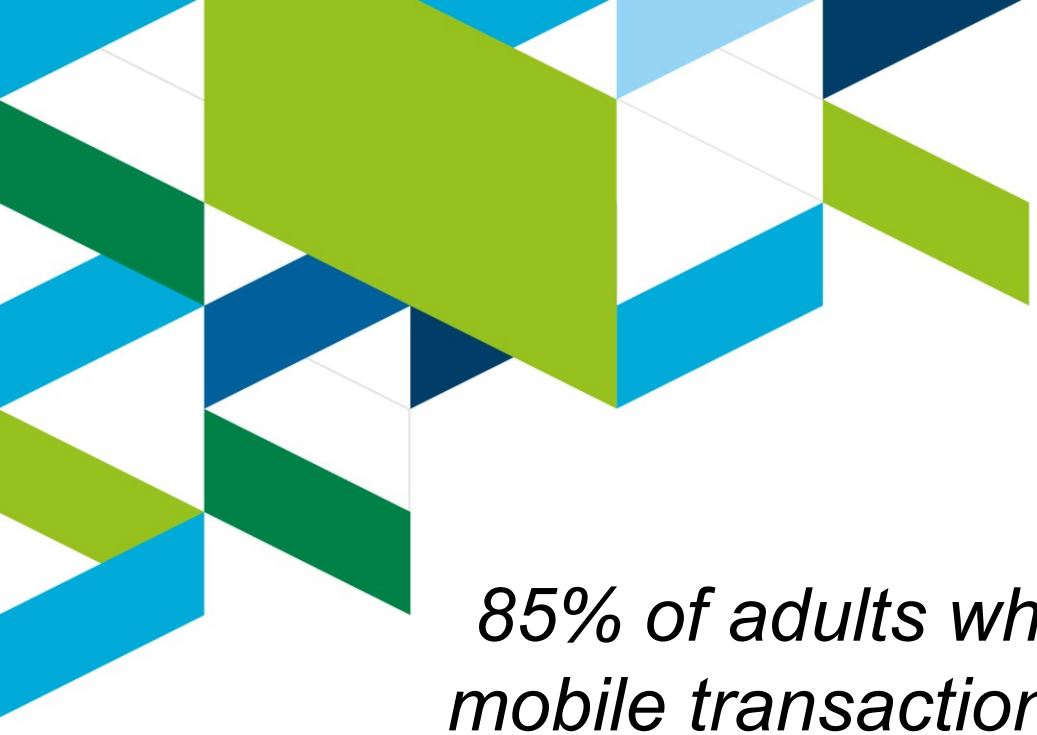
Integrate

Manage

Deploy

Scan & Certify

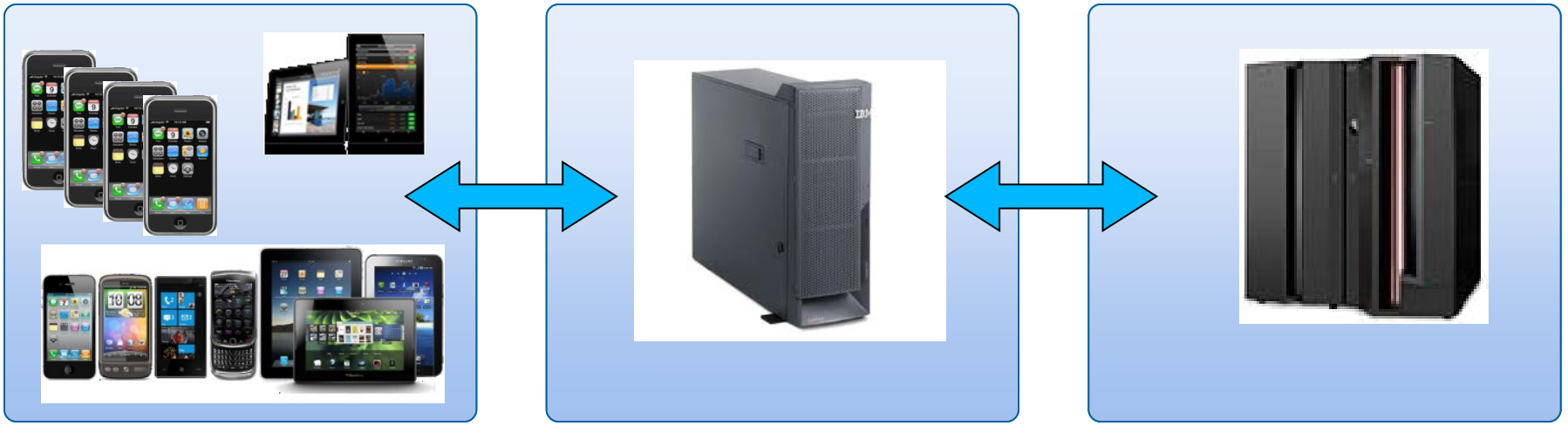
IBM



85% of adults who have completed a mobile transaction last year expect the experience to be better than using a laptop or desktop computer.

Innovate2013
The IBM Technical Summit

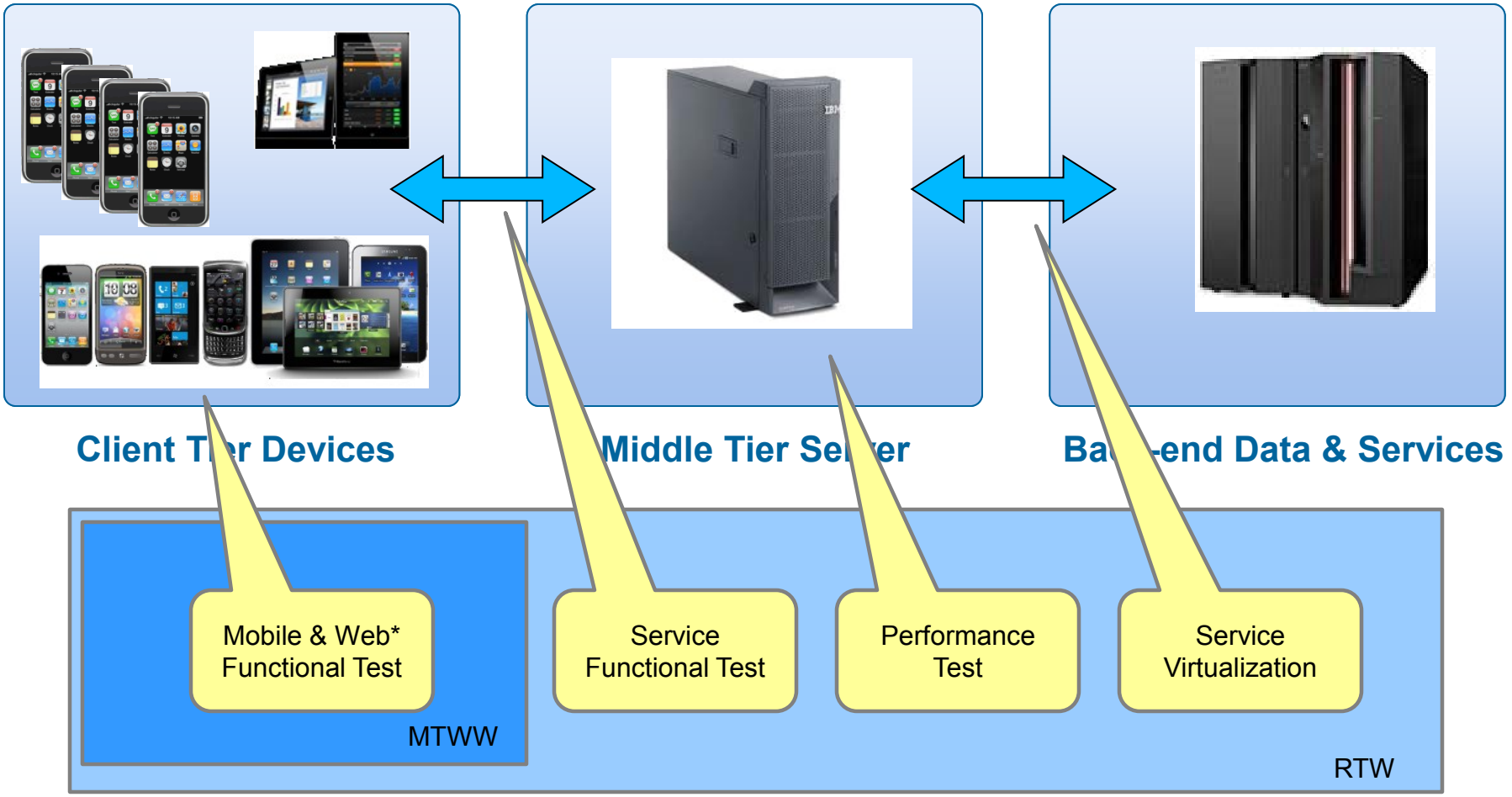
Testing the end-to-end mobile solution



Client Tier Devices | Middle Tier Server | Back-end Data & Services

Testing involves much more than just the mobile front-end
Rational Test Workbench offers a complete solution

Testing the end-to-end mobile solution (cont)

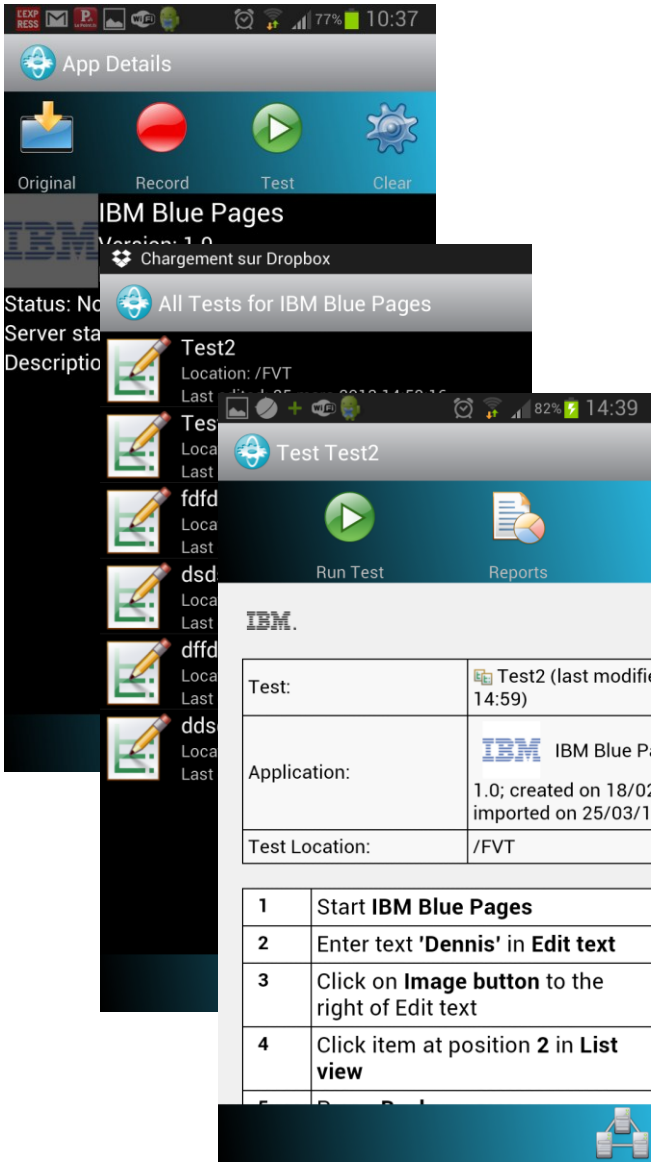


Automated Mobile Functional Testing

Delivering support for native, web, and hybrid applications on Android and iOS

- Supported Mobile Operating Systems
  - Android 2.2+
  - IOS 6+
  - Android & iOS hybrid apps
    - HTML5/CSS3
    - JQuery Mobile

- Capture (record) a test from a physical device or mobile emulator
- Structured test definition language (ClearScript) simplifies authoring and supports multi-language
- Shares multi-channel, Keyword, and execution capabilities within the Rational Test Workbench & Rational Quality Manager
- Shell-share provides seamless transition from Worklight to RTW



Demo

Recording a test - http://www.youtube.com/watch?v=ktQ9HUGytZo

Test playback - http://www.youtube.com/watch?v=s6mq5qoj6Fs

The IBM Mobile App Development Lifecycle

Design & Develop

Instrument

Obtain Insight

Integrate

Manage

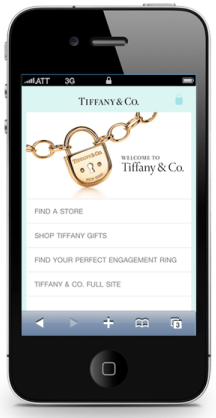
Test

Deploy

Scan & Certify

IBM

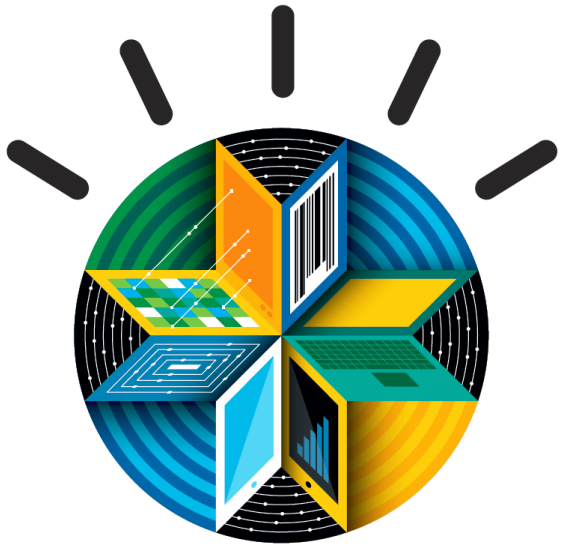
Mobile application development and testing



IBM

Three Ways to Get Started with IBM

1. Download the free IBM Worklight Developer Edition: ibm.com/developerworks/mobile/worklight
2. Download the free IBM Mobile Development Lifecycle Solution (Worklight PLUS ALM): ibm.com/developerworks/cloud/cloudtrial
   Promo code IMDLS
3. Learn more: ibm.com/mobilefirst



Questions

Innovate 2013
The IBM Technical Summit

Thank You

Innovate2013

The IBM Technical Summit

Backup

Innovate2013
The IBM Technical Summit

Reducing Cost for Cross-platform Development

Multiple Apps for Employees

- First Beta in less than a month
- Multi-geo user base
- Extended to notebook users

Rapid Demo App Development

- Access to CRM, SAP ERP, Lotus Notes
- Showcases for business
- Training for developers

A Set of Standardized Components

- Document access and viewer
- Authentication
- Data access interface (adapter)
- Customized mobile design palette

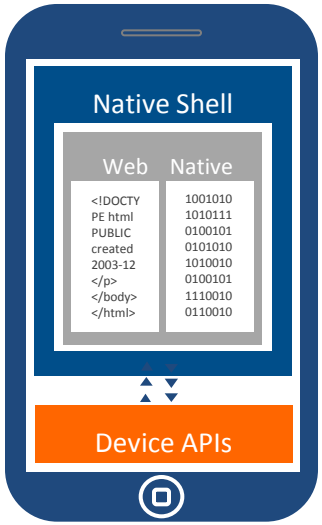
Mobile ROI – 60% Overall Cost Savings

- 30% savings in app development
- 80% savings in interfacing with backend systems
- 90% savings in content maintenance
- 50% savings in technical maintenance

Support Multiple Mobile App Development Models

Hybrid Apps – Web

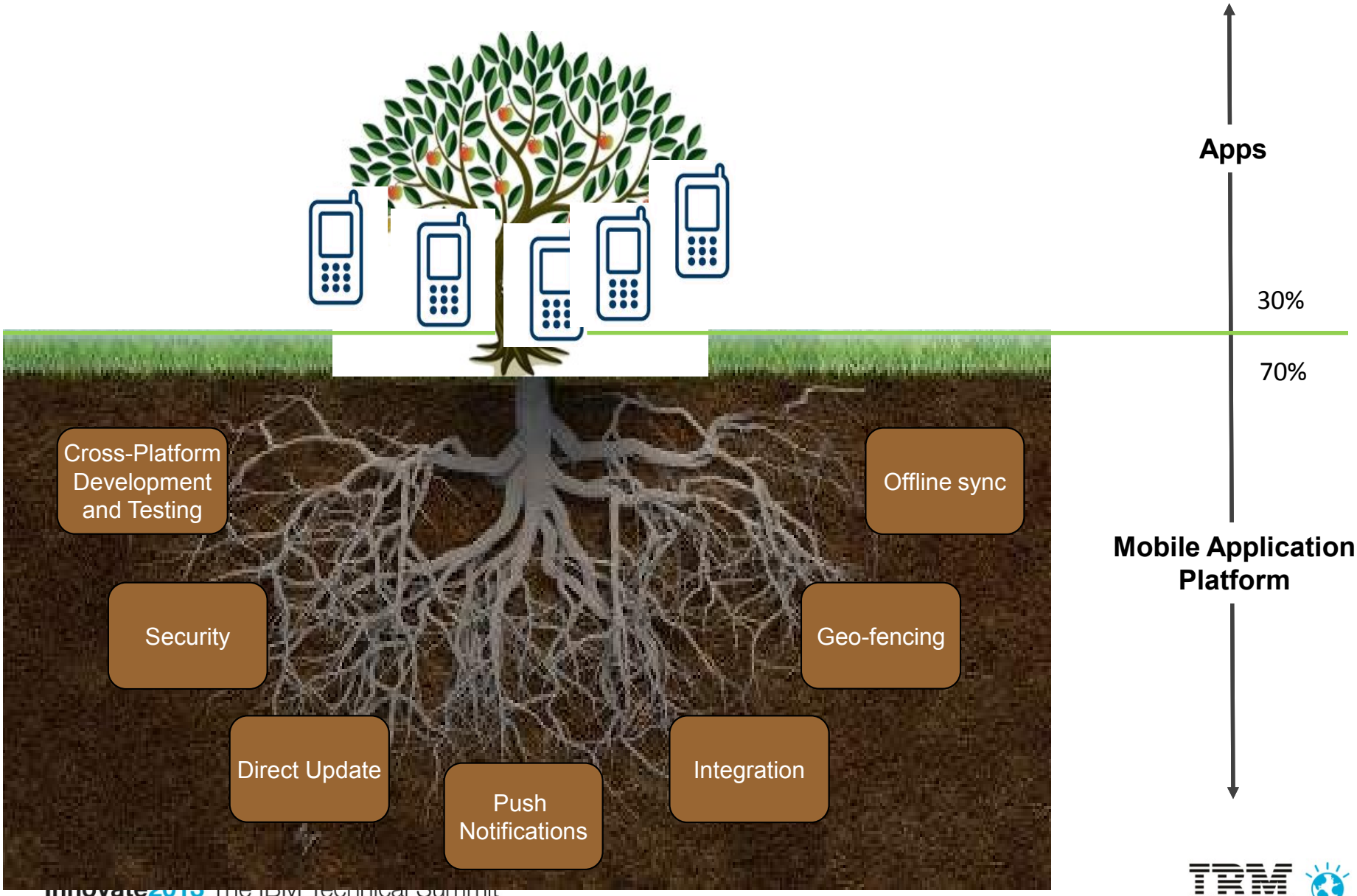
HTML5 code and Worklight runtime libraries packaged within the app and executed in a native shell.



Downloadable

- Rich user interface using HTML5 technologies
- Integration with native device capabilities provided from JavaScript using Apache Cordova; camera, GPS, contacts, etc
  - Fully extensible
  - Can mix and match native code where desired
- Platform capabilities provide:
  - Backend integration
  - Security
  - Operational analytics
  - Native database with synchronisation
  - Geo-aware APIs
  - Support the latest mobile OS

It’s not just about Apps…



Thank You

Innovate2013

The IBM Technical Summit