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CIOs in the era of big data, cloud, mobility and social



Mobile is a mandatory transformation

10 Billion devices by 2020

61% of CIOs put mobile as priority













Smartphone adoption skyrockets

- 1 in 3 Americans own a smartphone and the number is higher in some Asia-Pac countries.
- 12% of Americans own a tablet and shipments are projected to double from 2011 to 2013.1

- Tower Group







How about Hong Kong?

"Our smartphone penetration rate of 61% (as at 2011) is among the second highest in the world."

Quote from the Report Published by OGCIO, HKSARG, Apr 2012 <u>http://www.ogcio.gov.hk/en/news_and_publications/publications/doc/Fact_Sheet-HK_as_ICT_Hub-EN.pdf</u> Based on Our Mobile Planet (http://www.ourmobileplanet.com/en/).

<u>Rank</u>	Country	Population	Smartphones	Per Capita
1	Singapore	49	44	90%
2	Hong Kong	80	49	61%
3	Sweden	93	48	52%
•••				
16	USA	3191	1118	35%

Quote from the smartphone penetration rate analysis by TomiAhonen Consulting 2011 (<u>http://communities-</u> <u>dominate.blogs.com/brands/2011/12/smartphone-penetration-rates-by-country-we-have-good-data-finally.html</u>) Based on Our Mobile Planet (http://www.ourmobileplanet.com/en/).





Mobile handset dominance is difficult to predict

1995 Palm

500,000 units sold in 6mts. 70% market share



2001 Nokia

40% Market share of all mobile phones



2008 RIM

Fastest growing stock. 56% of smartphones, 77% 3yr CAGR (19.7% share in 10/11



2011 Apple

Most valuable company in the world, 27.3% of US smartphones

2013+ Android

Has 43.7 of the US smartphone market 10/11









With enormous **opportunities** (and **challenges** to IT)

Business to Enterprise (B2E)



- Increase worker productivity
- Improved claims processing
- Increase revenue with sales engagements
- Extend existing applications to mobile workers and customers
- Reducing fuel, gas, or fleet maintenance costs where relevant
- Increase employee and business partner responsiveness and decision making speed
- Resolve internal IT issues faster

Next

 Reduce personnel cost (utilizing personal devices instead of corporate devices)

Business to Consumer (B2C)



- Improve customer satisfaction
- Deeper customer engagement and loyalty
- Drive increased sales through Personalized offers
- Customer service
- Competitive differentiator
- Improve brand perception
- Deeper insight into customer buying behavior for up sell and cross sell
- Improve in store experience with mobile concierge services





And Mobile App is much more than just programming



Manageability

Providing customers with the ability to control who has access to specific applications and updates

Analytics

Enabling customers with insight into who is using their applications, when they are using them, and how

Security

Ensuring that distributed data and access into the enterprise from applications is controlled and secure

Scalability

Delivering the ability to scale with unpredictable demand while maintaining quality of service and experience

Connectivity

Simplifying the process of connecting mobile applications to diverse back-end systems and enabling two-way communications (Web services, Push Notifications) So we need

- A total solution that can cope with all these challenges
- Technologies that can adapt to the future
- Technologies that YOU can take control







Worklight Focus



<u>Creating</u> rich, yet <u>cost-effective</u> mobile apps in a fragmented technological landscape.



<u>Connecting</u> the enterprise back-end services in a <u>secure</u> and <u>scalable</u> manner

<u>**Controlling**</u> the growing portfolio of applications deployed "in the wild"







Worklight Overview



Worklight Studio

The most complete, extensible development environment with maximum code reuse and per-device optimization



Worklight Server

Mobile middleware offering unified push notifications, version management, security and integration



Worklight Runtime Components

Extensive libraries and client APIs that expose and interface with native device functionality and the Worklight Server



Worklight Console

Web-based console for real-time analytics and control of your mobile apps and infrastructure







Worklight – The Mobile Enterprise Application Platform





Worklight Application Types

Browser Access

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

Hybrid Apps - Web

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

Hybrid Apps - Mixed

User augments web code with native language for unique needs and maximized user experience.

Native Apps

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



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Hybrid Apps



Combines best of both worlds:

Primarily written in HTML5, CSS, JS while allowing full access to device capabilities.

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Worklight Architecture





Leverage Existing Backend Integration



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Integrating Best-in-class Tools

Worklight is compatible with prominent HTML5 libraries and tools:





Studio – WYSIWYG UI Construction

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Common web codebase facilitates reuse

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Incorporated Device SDKs and Emulators





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Perform device specific tests in the Mobile Browser Simulator: supports PhoneGap and Worklight client API







Runtime Skinning – Use Cases

Different Screen Sizes



Different Screen Densities



Different Input Method



Support for HTML5









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Example Mobile Skin on Android

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Example Mobile Skin on iPAD

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Centralized Build





Unified Push Notifications





Mobile Security Objectives





Securing Mobile Apps





Data Collection and Analytics





Direct Update – On-device Logic



- Web resources packaged with app to ensure initial offline availability
- Web resources transferred to app's cache storage
- App checks for updates
 - On startup
 - On foreground
- Updated web resources downloaded when necessary



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Direct update – client user experience

- 1. Detection upon startup and foreground
- 2. Dialog for easy user selection
- 3. App download progress bar



4. Application restarts automatically





App Management

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A cross platform private mobile application store similar to public app stores but focused on the needs of an organization or a team

Key capabilities:

- delivers distribution and management of mobile applications within a company / teams
- easy distribution of iOS and Android apps within a team
- provides versioning and updates
- centralizes rating and feedback information
- controls who can modify or install an application
- easy to install and simple to run





Download Application over-the-air to the device

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Feedback aggregated on Application Center console





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Customer Spotlight – Lotte



- Rich hybrid app with over 100 screens
- Native implementation for augmented reality and security
- Ported Android to iOS in a 3-4 weeks





IBM Mobile Foundation – sample topology







Try today!

- IBM Worklight Developer Edition
- <u>http://www.ibm.com/developerworks/mobile/worklight.html</u>
- Getting Started
- <u>http://www-01.ibm.com/software/mobile-solutions/worklight/library/</u>
- Documents
- <u>http://www-01.ibm.com/software/mobile-solutions/worklight/library/v50/documentation/</u>







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