Greg Truty
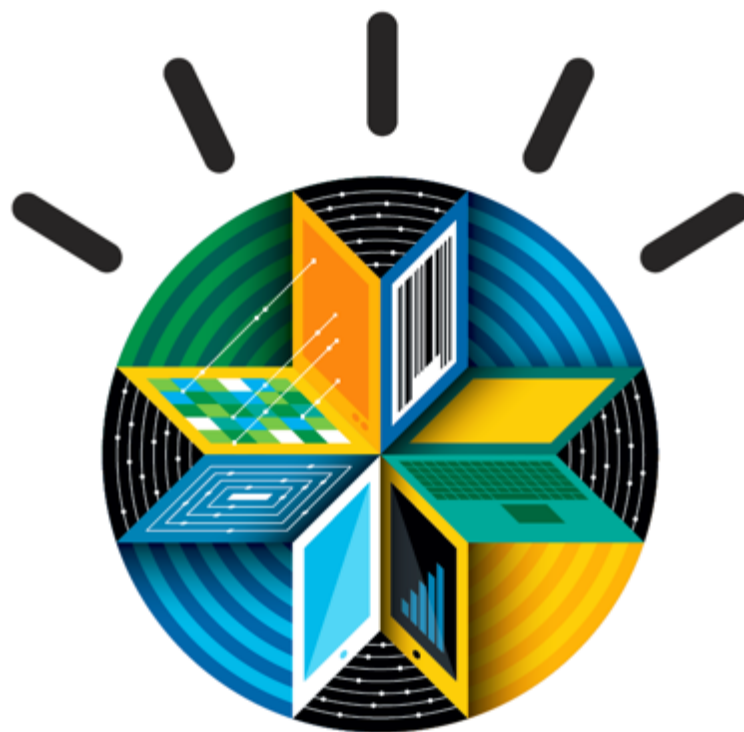Distinguished Engineer, Chief Architect IBM Mobile Foundation
gtruty@us.ibm.com

Mobile - and its effect on the enterprise

IBM Mobile Labs Come to You

Mobile is changing conventions for industries

Healthcare	Construction	Government

From:

Traditional health institution

To:

Seamless interactions among physicians and providers, improving quality of care, patient safety and efficiency improving patient experience
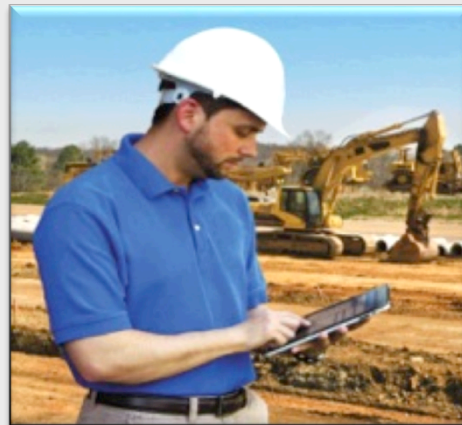

From:

Construction general contractor with remote employees

To:

Empowered construction project managers armed with mobile solutions to pitch new projects in higher-growth industries

From:

Sitting in traffic jams

To:

Real-time re-direction to optimal routes using mobile info

2

But mobile also brings business and IT challenges

Enterprise Business Model Changes

- New business opportunities based upon geolocation
- Anytime, anywhere business transactions
- Importance of social business interactions

App Development Lifecycle Complexity

- Complexity of multiple device platforms with fragmented Web, native, and hybrid model landscape
- Connecting the enterprise back-end services in a secure and scalable manner
- Unique mobile requirements (user interface, connected/disconnected use, version upgrades, etc.)
- Faster time-to-market demands and iterative delivery

Mobile Security and Management

- Protection of privacy and confidential information
- Use of client-owned smartphones and tablets
- Visibility, Security & Management of mobile platform requirements

Top Mobile Adoption Concerns:

1. Security/privacy (53%)
2. Cost of developing for multiple mobile platforms (52%)
3. Integrating cloud services to mobile devices (51%)

Source: 2011 IBM Tech Trends Report
https://www.ibm.com/developerworks/mydeveloperworks /blogs/techtrends/entry/home?lang=en

The quick reaction is to focus on devices and cool apps

Business leaders respond to mobile with, 'Let's build a really slick mobile app, put it up on iTunes and we're done!'

..... the fact [is] that underlying legacy applications and business processes need optimizing for the mobile experience. "

Clay Richardson, Forrester Analyst

IBM mobile enterprise capabilities address the spectrum of needs for successful transformation

Build mobile apps

Connect & run mobile systems

Manage mobile devices and apps

Secure my mobile business

Extend capabilities to mobile

Transform my business

- Building & Deploying Apps

- Mobile Lifecycle Management and Testing

- Data Access & Integration

- Device Management

- Network & Data Security and Management

- App Management

- Business Applications

- User Engagement

- Mobile Analytics and Insight

Application Development

IT Ops/CISO

Line of Business

IBM has invested substantially in mobile to create a broad and deep solutions portfolio

Build mobile apps

Connect & run mobile systems

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Transform my business

IBM Mobile Foundation

Worklight

CAST IRON SYSTEMS

IBM Endpoint Manager for Mobile

IBM Social Business, Commerce & Analytics

tealeaf
an IBM*Company

IBM Connections, SameTime, ECM, Tealeaf

IBM Mobile Services

Mobile Application Innovation Services

Mobile Enterprise Services for Managed Mobility

Mobile Infrastructure Strategy and Planning

Building & delivering applications

A deeper look at Build & Connect capabilities

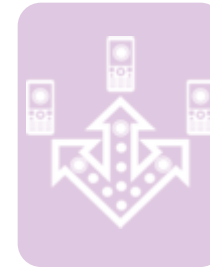**Build & Connect**   **Manage & Secure**   **Extend & Transform**

Build mobile apps

Connect & run mobile systems

Manage mobile devices and apps

Secure my mobile business

Extend capabilities to mobile

Transform my business

**Customers can now build enterprise mobile applications that:**

- Run on multiple mobile devices

- Connect to enterprise back-end applications and information systems

- Fulfills fast time-to-market requirements and can be rapidly updated with new releases

- Deliver high quality user experience

Worklight
an open, complete, and advanced mobile application platform for HTML, hybrid, and native applications

Worklight Architecture

9
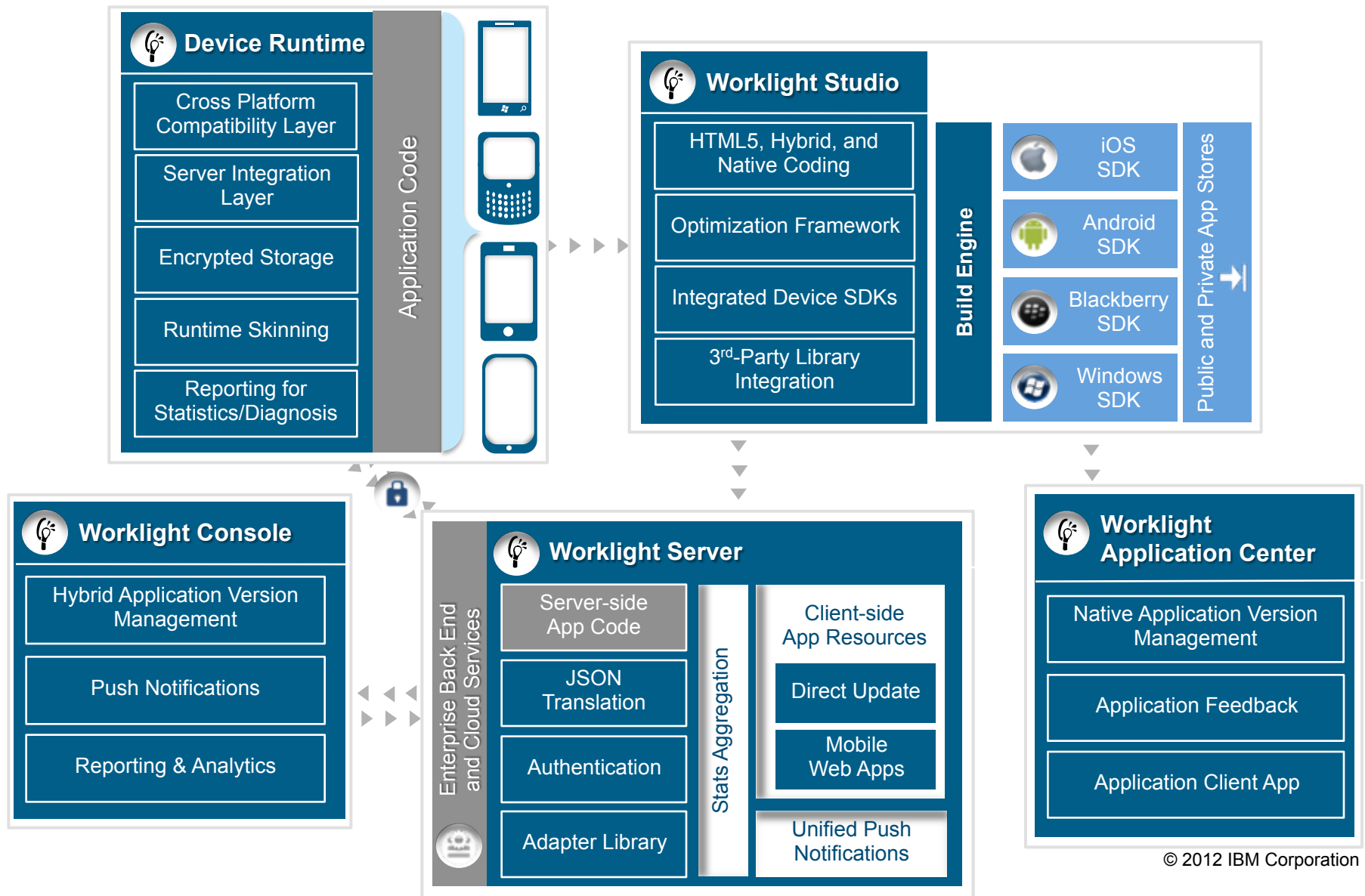
Worklight addresses numerous enterprise mobile pain points

Apps Development
- Build once. Run anywhere using HTML5/JS/CSS and Cordova
- Android, iOS, Blackberry, Microsoft, iGoogle, Facebook app, Adobe AIR
- Runtime Skins for different resolutions
- Application Lifecycle Management
- Centralized Build Process

Security
- Secured offline access
- On device encryption of user data
- Single sign-on mechanism
- SSL encryption
- Protection against reverse engineering vulnerabilities
- Multi-factor authentication

Enterprise Integration
- Direct access to back-end systems
- Leverage existing SOA services
- Server-side caching

Application Management
- App distribution
- App Version management
- Remote disabling apps
- Direct Update
- Push Notification service management
- Analytics and Usage report

Middleware
- WebSphere Application Server ND
- Reliable, Highly Available and Scalable

Scaling mobile enterprise development

Enact a collaborative, multi-platform mobile development lifecycle

IBM Mobile Development Lifecycle Solution

New!

- Best-of-class **collaborative mobile application development lifecycle capabilities**

  - Accelerate productivity with **mobile development best practices** and tested integrated configurations

  - Develop **native and multi-platform hybrid mobile applications**

  - **Distributed team build and test** integrated with the mobile application platform

  - "mobile device-cloud" service integration for **on-device testing**

  - Support fast-paced development for mobile with **agile methodologies**

IBM Worklight

App Design

Mobile Testing

SCM and Mobile Builds

IBM Mobile Development Lifecycle Solution (Planned for 4Q 2012*)
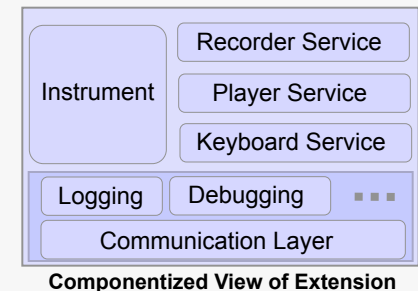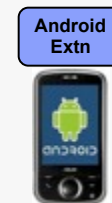
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Deep Application Instrumentation for Mobile Function Test
Mobile Testing Tech Preview

App instrumentation libraries provide a transparent overlay for user interaction with the mobile app. Architecture adheres to adapter model followed by other Rational quality management products.

Architecturally, our approach is to have an adapter that deals with all mobile devices. An extension specific to the mobile platform resides on the device. Event capture and playback services together with UI elements constitute each extension.

Android Extn

Instrument	Recorder Service
	Player Service
	Keyboard Service
Logging	Debugging	...
Communication Layer		

Componentized View of Extension

Key Goals for Mobile Test Automation

- **Dynamic Instrumentation of Android Mobile Applications** (without requiring source/static enablement)
  - **Adapter model with specific extensions for multiple mobile platforms**
    - **Capture with high-fidelity replay of multi-touch events**

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Integrating with the Enterprise

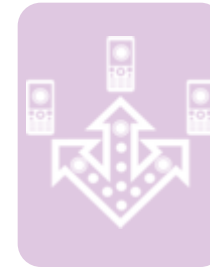# A deeper look at Build & Connect capabilities

Build & Connect

Build mobile apps

Connect & run mobile systems

Manage & Secure

Manage mobile devices and apps

Secure my mobile business

Extend & Transform

Extend capabilities to mobile

Transform my business

Rapidly connect mobile apps

- Centrally manage all integrations and connect information from a variety of Cloud and on premise applications

- Simplified "configuration, not coding" approach to connecting cloud, on premise and mobile applications across devices

- Rapid cloud integration for real-time access to back end data across application platforms

WebSphere Cast Iron - *Rapidly connect mobile apps with the Cloud and Back-end systems*

Mobile

Rapid, simple & flexible connectivity for mobile apps
WebSphere Cast Iron Hypervisor Edition

- **Native connectors** and template integration processes (**TIP′**s) to connect mobile apps to backend & cloud systems, **reducing project costs up to 80%**

- **Bidirectional connectivity and business** logic to increase data quality and streamline business processes

- **Centralized monitoring** for all connectivity projects

- **Simple** and **flexible**, user-friendly, wizard-based, "configuration, not coding" architecture provides **best-practices** and enable repeatable mobile integration project success
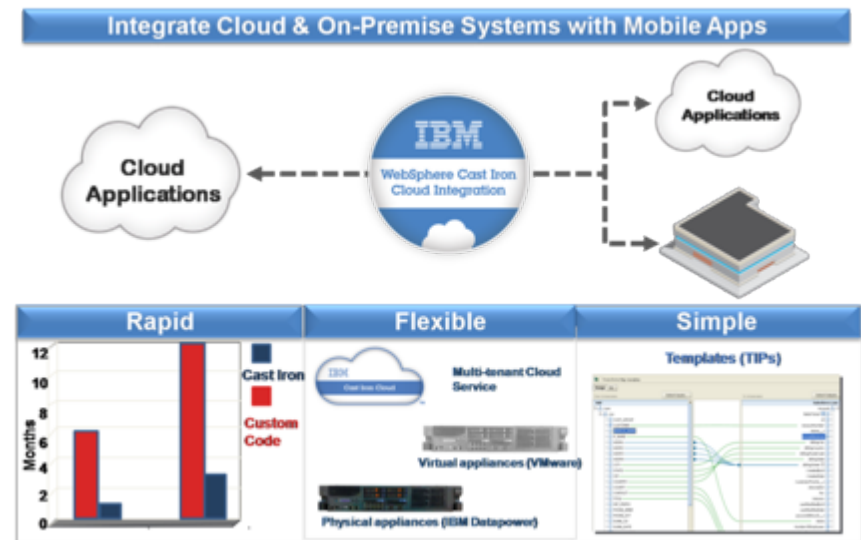
Simple and flexible integration for all connectivity projects, allowing you to rapidly integrate SaaS and back-end systems with mobile apps

Securing the mobile delivery channel

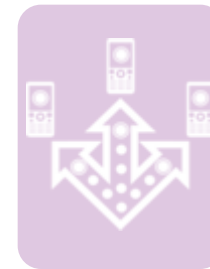# A deeper look at Manage & Secure capabilities

Build & Connect

Build mobile apps

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Manage & Secure

Manage mobile devices and apps

Secure my mobile business

Extend & Transform

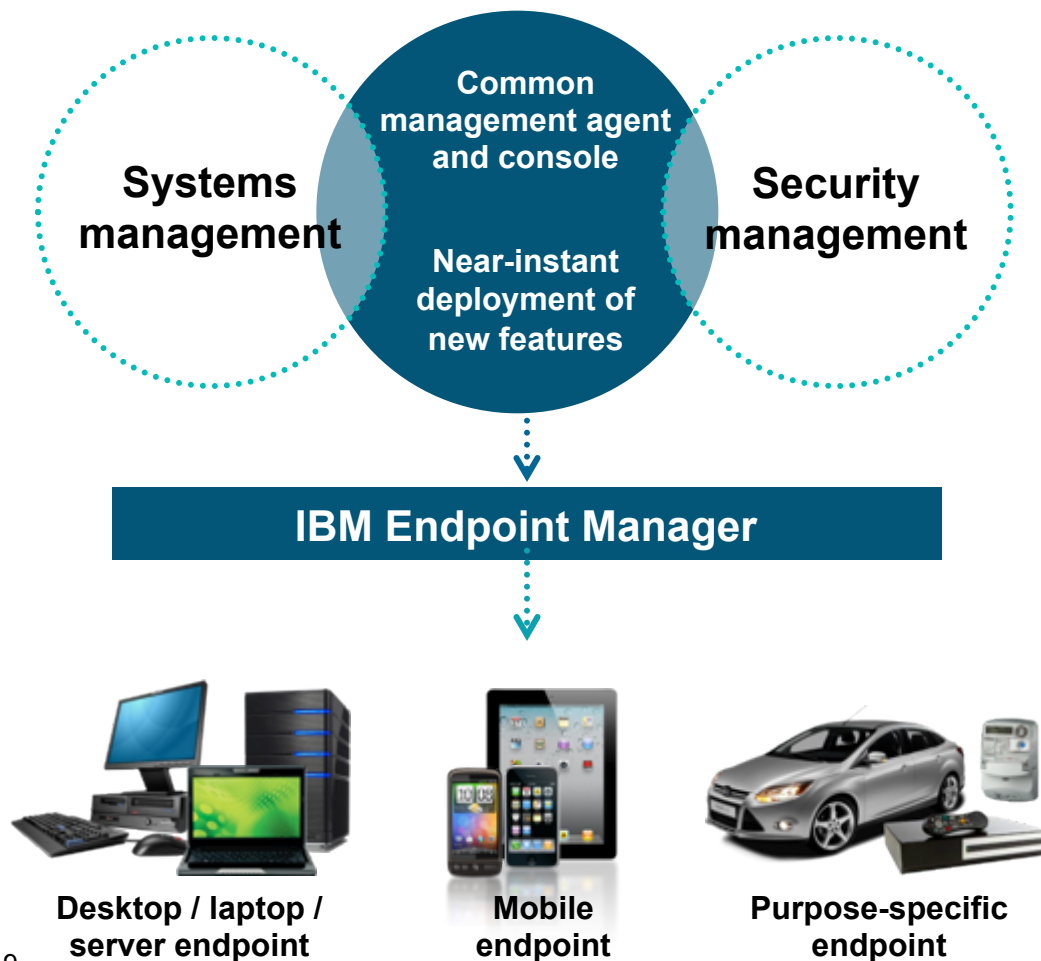**Extend** capabilities to mobile

Transform my business

Customers can now:

- Use IBM Endpoint Manager for mobile visibility, security and management

- Use IBM Security Access Manager to authenticate and authorize mobile users and devices

- Utilize managed services for complete mobile landscape management

IBM Endpoint Manager for Mobile Devices – *extending visibility, control and automation for mobile*

Extending visibility, control and automation to mobile devices

IBM Endpoint Manager for Mobile Devices

Building on the July 2010 BigFix acquisition

Systems management

Common management agent and console

Near-instant deployment of new features

Security management

IBM Endpoint Manager

Desktop / laptop / server endpoint

Mobile endpoint

Purpose-specific endpoint

Introduced in March 2012:

- Advanced management for iOS, Android, Symbian, and Windows Phone

- Unified management automatically enables VPN access based on security compliance

- Integration with back-end IT management systems such as service desk, CMDB, and SIEM

- Security threat detection and automated remediation

- Extends IBM's existing 500,000 endpoint deployment

How does Endpoint Manager manage devices?

Agent-based Management
- Android via native BigFix agent
- iOS via Apple's MDM APIs

Email-based management through Exchange and Lotus Traveler
- Supported platforms: iOS, Android, Windows Phone, Windows Mobile, Symbian

Microsoft Exchange Server

Lotus Notes

Category	Endpoint Manager Capabilities
Platform Support	Apple iOS, Google Android, Nokia Symbian, Windows Phone, Windows Mobile
Management Actions	Selective wipe, full wipe, deny email access, remote lock, user notification, clear passcode
Application Management	Application inventory, enterprise app store, whitelisting, blacklisting, Apple Volume Purchase Program (VPP)
Policy & Security Management	Password policies, device encryption, jailbreak & root detection
Location Services	Track devices and locate on map
Enterprise Access Management	Configuration of Email, VPN, Wi-fi
Expense Management	Enable/disable voice and data roaming

A Holistic Approach to Managing & Securing the Mobile Environment

1 **Develop and Communicate Formal Mobile Strategy, Policies**

3 Protect devices from malware, data theft

PUBLIC WIFI

INTERNET

TELECOM PROVIDER

2 Efficiently acquire, deploy, secure, manage, and de-provision devices

4 Actively manage corporate device purchases, service contracts, usage

MOBILE APPS

WEB SITES

5 Test, deliver and manage security-rich apps

6 Manage users and access to enterprise apps and data

SECURITY GATEWAY

PRIVATE WIFI
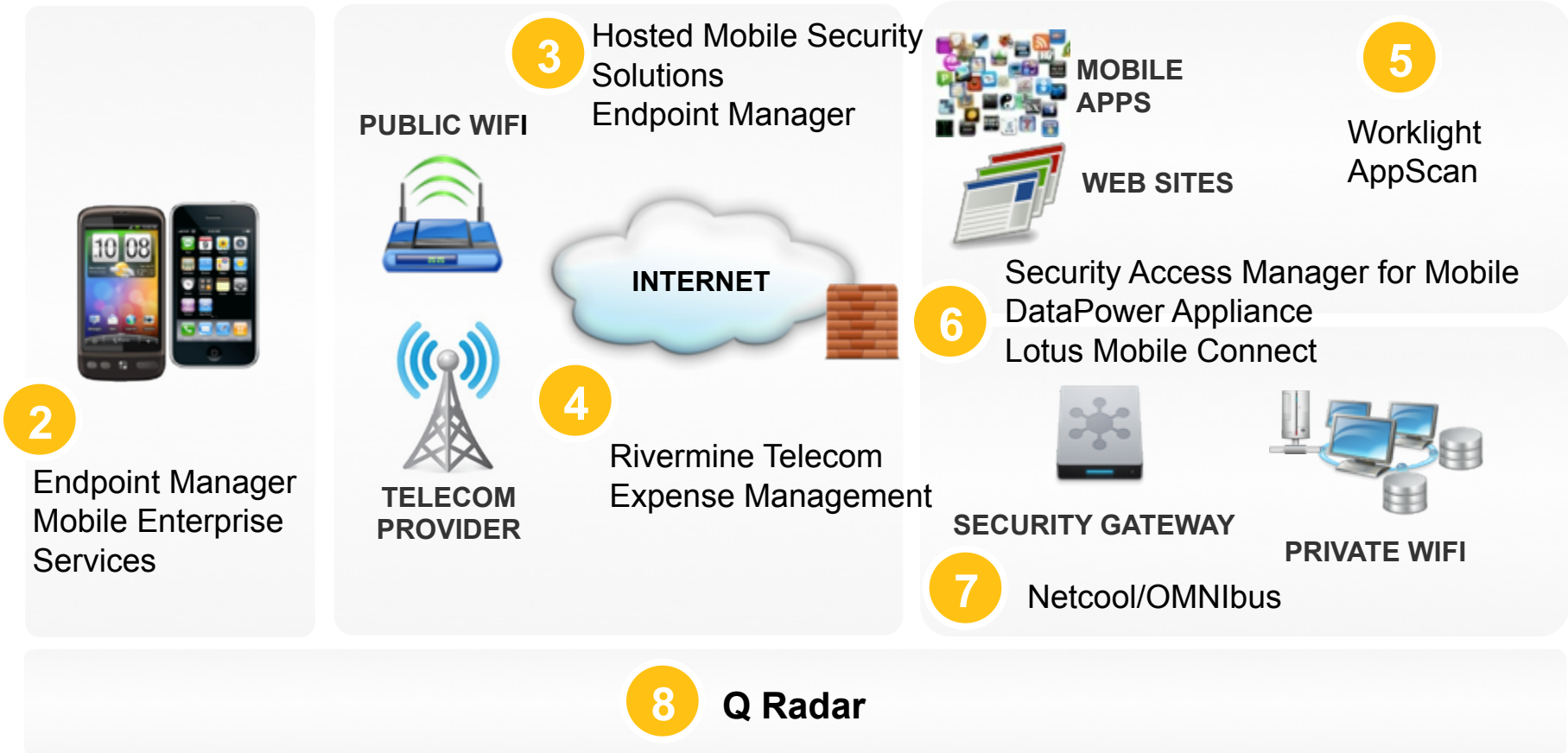
7 Manage and optimize enterprise wireless networks

8 **Deliver an Adaptive Security Posture**

A Holistic Approach to Managing & Securing the Mobile Environment

1 **IBM Global Business, Technology, & Security Services**

3 Hosted Mobile Security Solutions
Endpoint Manager

PUBLIC WIFI

5 Worklight AppScan

MOBILE APPS

WEB SITES

INTERNET

Security Access Manager for Mobile
DataPower Appliance
Lotus Mobile Connect
6

4

Rivermine Telecom Expense Management

TELECOM PROVIDER

SECURITY GATEWAY

PRIVATE WIFI

2

Endpoint Manager
Mobile Enterprise
Services

7 Netcool/OMNIbus

8 **Q Radar**

Multi-channel capabilities

A deeper look at Extend & Transform capabilities

Build & Connect

Build mobile apps

Connect & run mobile systems

Manage & Secure

Manage mobile devices and apps

Secure my mobile business

Extend & Transform

Extend capabilities to mobile

Transform my business

Customers can now

- Use our strategy and planning services to build a mobile strategy and transform their business

- Use our industry frameworks and solutions delivered via software, strategy, managed services and business process consulting

- Use mobile to engage their own customers in new ways with WebSphere Commerce and IBM Social Collaboration software

Social collaboration software
mobile access to enterprise social collaboration

Create new ways to engage anywhere

IBM mobile solutions for social business

- **Make your workforce smarter** with new security-rich social capabilities delivered to mobile devices

  - Stay on top of key work activities and actions to maintain productivity

  - Locate nearby colleagues through geo-location (user choice)

  - Protect company data with local/remote data wipe capability

- **Delight your customers** with new multi-channel capabilities that deliver integrated, personalized web experiences

  - Tap into mobile device specific features

  - Deliver consistent messaging and content across web experience platforms -- web, mobile web, mobile hybrid

  - Distribute hybrid apps in app stores

Enhanced!

Member

Personalized experiences

Members
- My Health
- Find a Provider
- Products and Services

Agent

Agents
- My Business Manager
- Discounts/ Values
- Products and Services
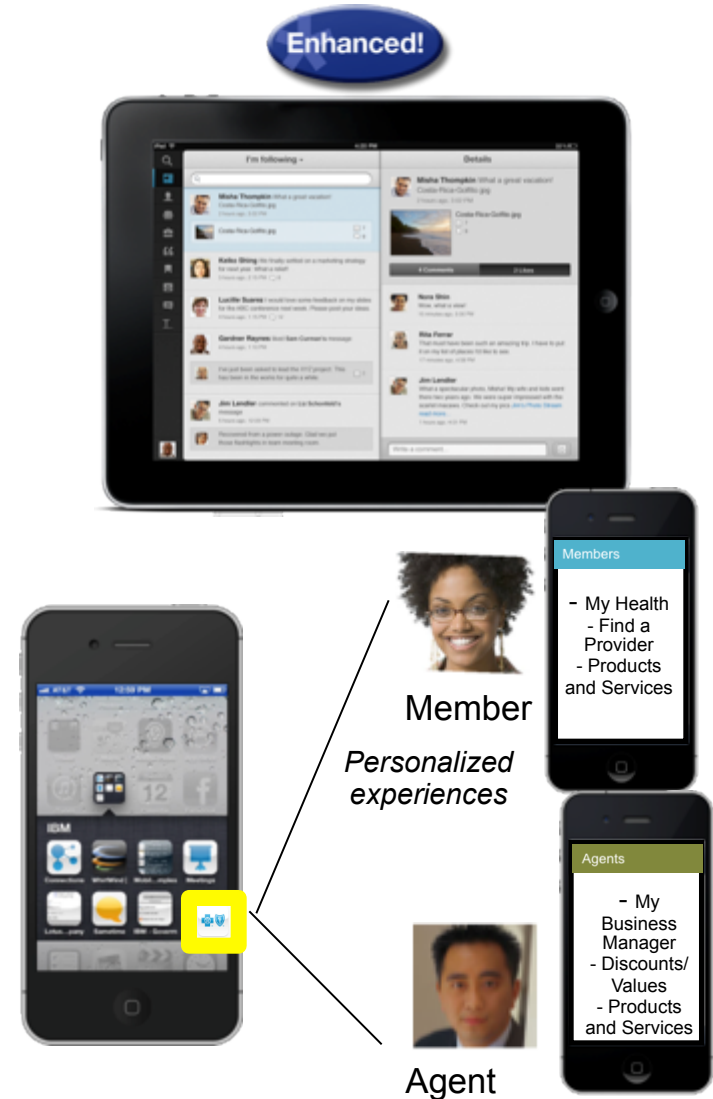
Challenge

- Mobile devices have significantly expanded the number of channels (tech & business) that must be supported by applications
- Industry trends are rapidly driving the convergence of mobile, web, and desktop experiences

personalized　　　　　*contextual*　　　　　*optimized*
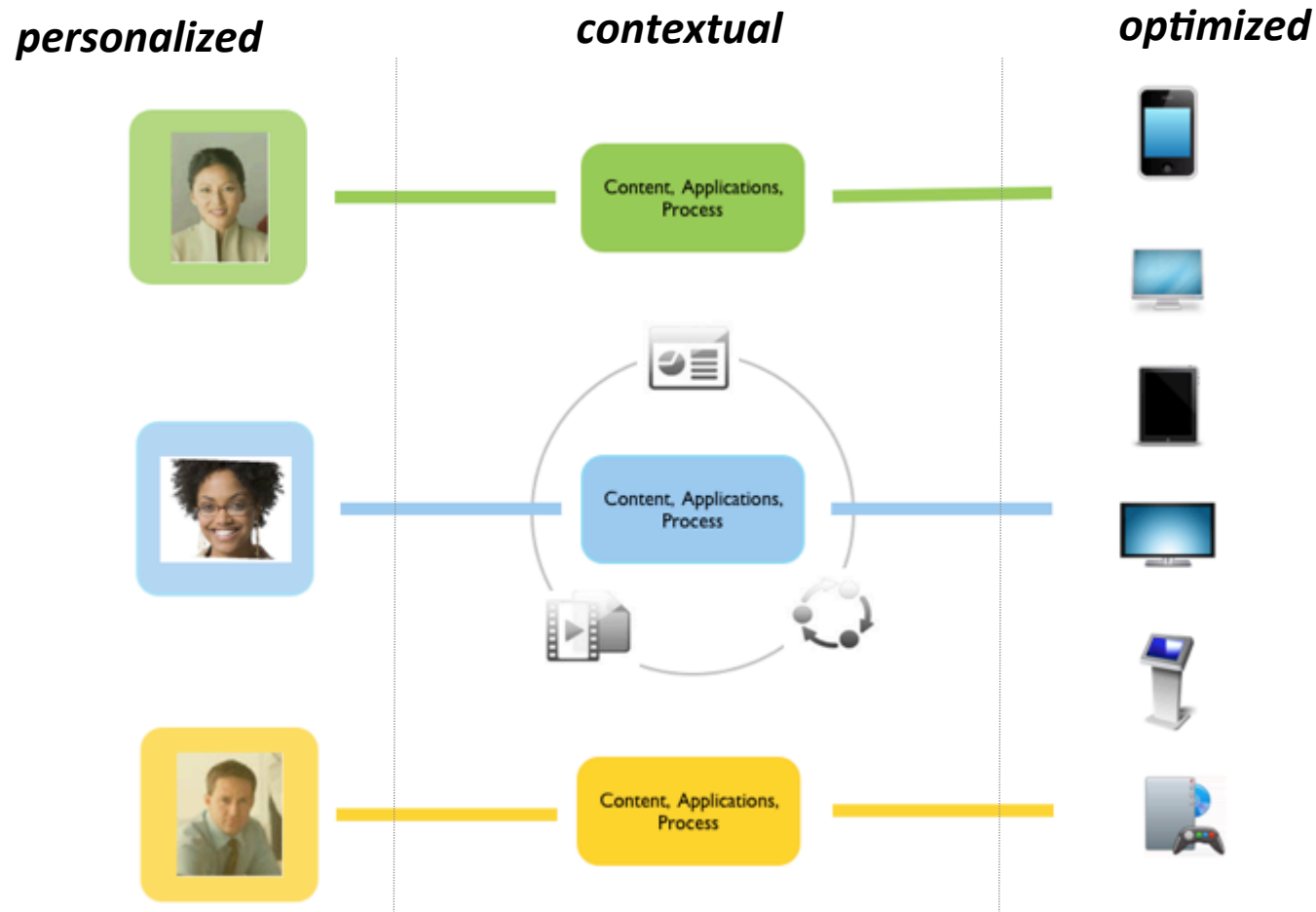
Tackling multi-channel management

Examples of delivery challenges:

- Adaptive content to channel context

- How to ensure consistent entitlements

- Multi-brand management and "virtual" sites

- Consistent experience (requires shared code & services)
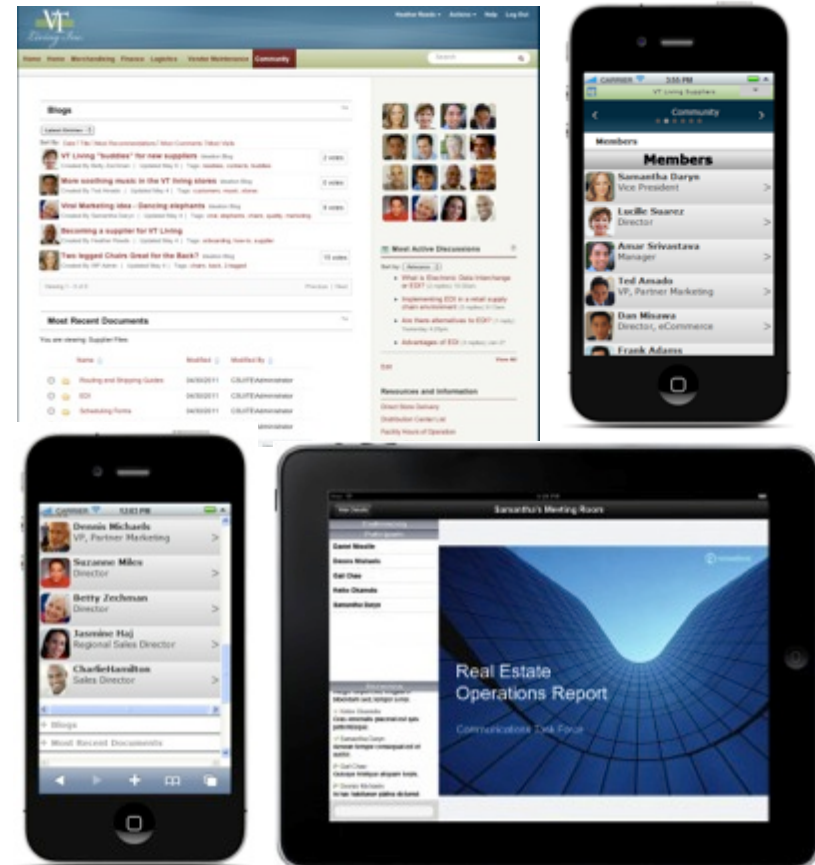
Customer experience management

A deeper look at Extend & Transform capabilities
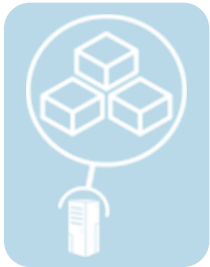
Build & Connect

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Extend capabilities to mobile

Transform my business

Customers can now:

- Automatic detection of customer struggle

- Obtain clear visibility across its user base, site and applications

- Understand customer feedback for making improvements

IBM Tealeaf CX Mobile

Visibility into usage across the user base, site, and apps

Discover what's working and what isn't – and WHY
Tealeaf CX Mobile

Visibility into user success & failure
- Automatic detection of customer struggle, obstacles or issues
- Understand customer feedback for making improvements
- Visibility into your mobile usage across the user base, site and apps

Accelerate time-to-market
- Eliminate poor quality to deliver winning mobile services
- Identify cause without having to update or re-launch your services
- Rapidly evaluate mobile features – adoption, success & failure points

Make the right mobile investments
- Quantify business impact to prioritize decisions: fix, invest, remove
- See the actual usage of mobile services rather than the expected

Mobile Site   Native Apps   Hybrid Apps   HTML5
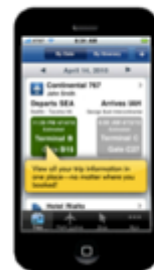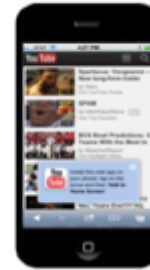
IBM is leading the charge

> 95% of IBM employees are issued laptops
>
> Over 100,000 smartphones and tablets with access to the IBM network and growing rapidly!
>
> Personally owned devices can be used for business purposes
>
> Strong dependency on collaboration and social media tools to conduct IBM business and stay connected

IBM's BYOD program "really is about supporting employees in the way they want to work. They will find the most appropriate tool to get their job done. I want to make sure I can enable them to do that, but in a way that safeguards the integrity of our business."
– IBM CIO Jeanette Horan

How did IBM become a mobile business?

- Established policies for mobile employees
- Established policies for personally-owned devices
- Sold expensive office space and created world-wide mobility centers
- Launched small, focused "opt-in" BYOD pilots. Resisted the urge to "boil the ocean"
- Embraced collaboration and social media tools to allow mobile devices to stay connected

A highly diverse workforce:

- 425,000 employees worldwide

- 50% workforce has less than 5 years of service

- 50% of employees work remotely – not from a traditional IBM office

- 71% of employees are outside the US

Next Steps
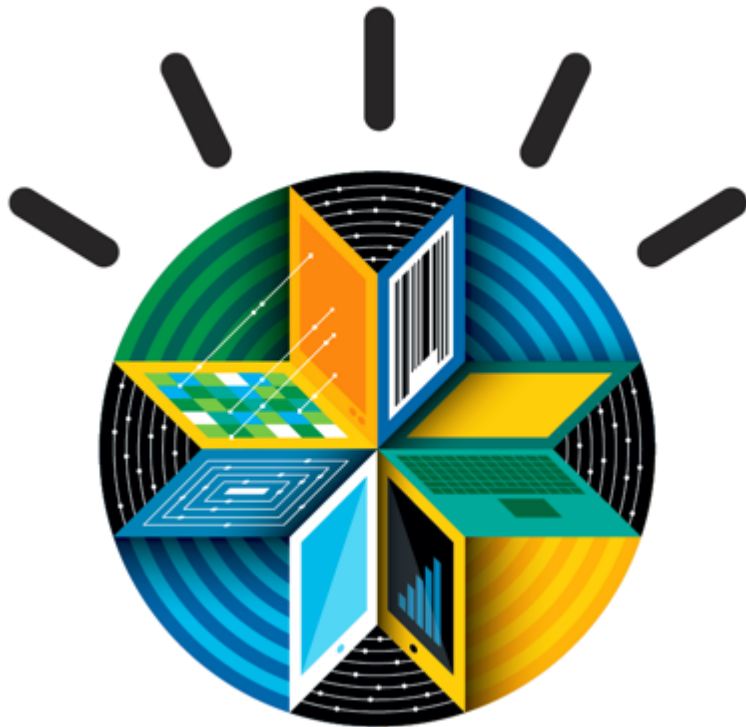
- Learn more at:

  www.ibm.com/mobile-enterprise

- Access white papers and webcasts

- Get product and services information

- Download and begin using IBM Worklight and IBM Cast Iron

- Talk with your IBM representative or IBM Business Partner to find the right next step for you

Try it today!

IBM Worklight Developer Edition

ibm.co/worklightde

IBM Endpoint Manager for Mobile Devices 30 day trial

ibm.co/EndpointMgrTrial

IBM WebSphere Cast Iron WebAPI Builder 90 day trial

bit.ly/CastIronTrial

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