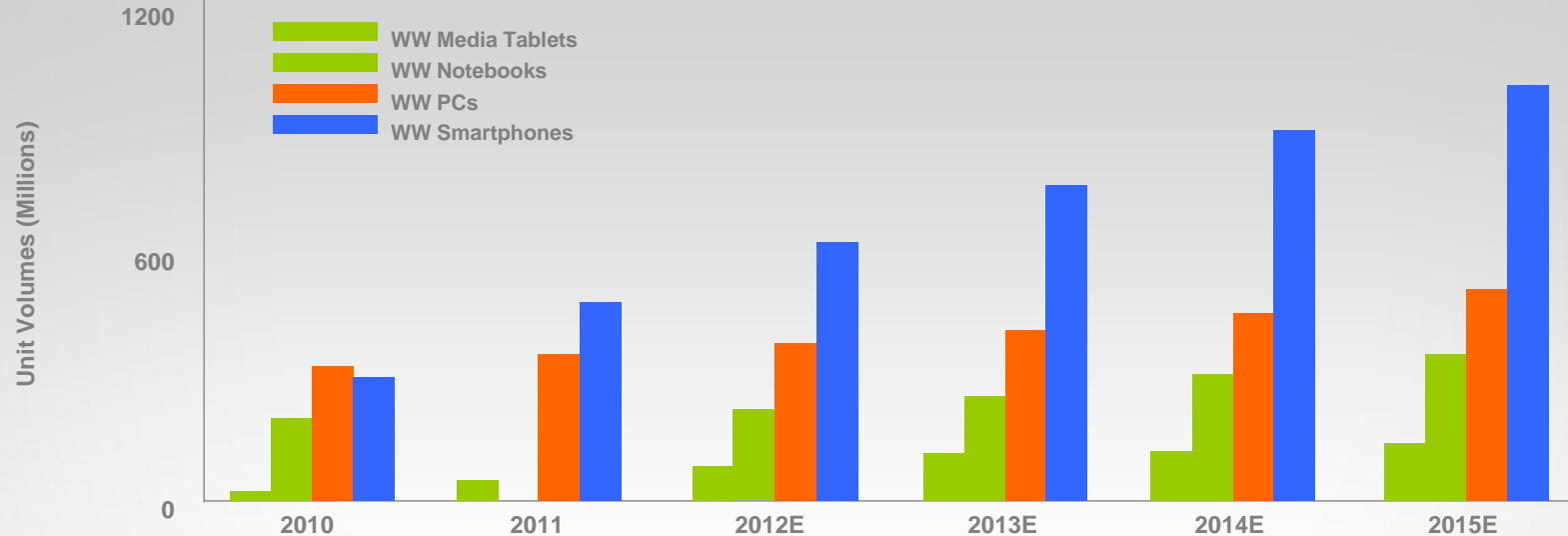# IBM Mobile Enterprise Launch

Colin Gniel

Business Unit Executive, Asia Pacific, WW Business Agility Tiger Team

Mobile is now bigger than PC

What's your mobile strategy?

IBM

Growth in Internet Connected Devices

Bar chart legend:
- **WW Media Tablets** (green)
- **WW Notebooks** (light green)
- **WW PCs** (orange)
- **WW Smartphones** (blue)

Y-axis: Unit Volumes (Millions), scale 0 to 1200.
X-axis: 2010, 2011, 2012E, 2013E, 2014E, 2015E

Source: Wells Fargo Securities, January 23, 2012
"Fostering the People: The Shift to Engagement Apps"

10 Billion mobile connected devices by 2020

Mobile is both an enterprise mandate and challenge **IBM.**

45% increased
productivity with mobile apps[1]

Mobile and Cloud are
top priorities
for CIOs[2]

Top Mobile Adoption Concerns:[3]

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

[1] Aberdeen Survey: ipadcto.com/2011/01/05/survey-mobile-apps-increase-enterprise-performance-and-productivity-advantages-top-three-mobile-app-strategies-gain-momentum/
[2] 2011 IBM Global CIO Study
[3] 2011 IBM Tech Trends Report https://www.ibm.com/developerworks/mydeveloperworks/blogs/techtrends/entry/home?lang=en

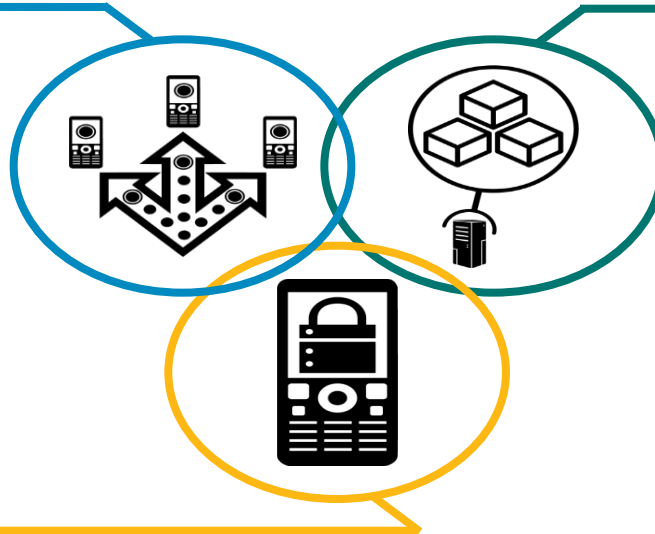# IBM strategy addresses client mobile initiatives

Extend & Transform

Extend *existing business capabilities to mobile devices*

Transform *the business by creating new opportunities*

Key Capabilities
- Strategy, planning and implementation
- Mobile-enabled solutions including BPM, analytics, commerce, and social business
- Mobile as a service

Build & Connect

Build *mobile applications*

Connect *to, and* ***run*** *backend systems in support of mobile*

Key Capabilities
- Mobile web, hybrid and native app development
- Enterprise data, service, and application integration
- Enterprise wireless networking

Manage & Secure

Manage *mobile devices, services and applications*

Secure *my mobile business*

Key Capabilities
- Mobile lifecycle management
- Device analytics and control
- Secure network communications & management

Key mobile development and delivery challenges

IBM

Delivering for multiple platforms

- Highly fragmented set of …
  - Platforms and devices
  - Languages, APIs, and tools
- Native programming models not portable across platforms

Consumerisation of IT and need to deliver high quality apps

- High quality user experience is a requirement
- Quality influenced as much by design as it is by function

Accelerated time to market requirements

- Higher frequency of releases and updates
- Added pressure on teams to deliver on time and with quality

Connecting apps and mobile users with existing enterprise systems

- Existing services typically need to be adapted and extended for mobile
- Enterprise wireless networks are running out of bandwidth to accommodate employee devices

Mobile Devices: Unique Management & Security Challenges

IBM

Mobile devices are shared more often

- Personal phones and tablets shared with family
- Enterprise tablet shared with co-workers
- Social norms of mobile apps vs. file systems

Mobile devices have multiple personas

- Work tool
- Entertainment device
- Personal organisation
- Security profile per persona?

Mobile devices are diverse

- OS immaturity for enterprise mgmt
- BYOD dictates multiple OSs
- Vendor / carrier control dictates multiple OS versions

Mobile devices are used in more locations

- A single location could offer public, private, and cell connections
- Anywhere, anytime
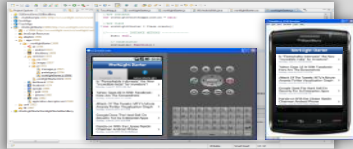- Increasing reliance on enterprise WiFi

Mobile devices prioritise the user

- Conflicts with user experience not tolerated
- OS architecture puts the user in control
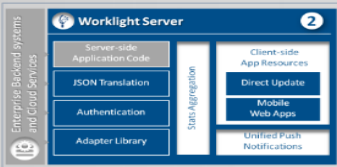- Difficult to enforce policy, app lists

Worklight Overview

Worklight Studio
The most complete, extensible environment with maximum code reuse and per-device optimisation

Worklight Server
Unified notifications, runtime skins, version management, security, integration and delivery

Worklight Runtime Components
Extensive libraries and client APIs that expose and interface with native device functionality

Worklight Console
A web-based console for real-time analytics and control of your mobile apps and infrastructure

Rich, cross-platform application development

IBM Worklight V5.0

App development using native and/or familiar web technologies:
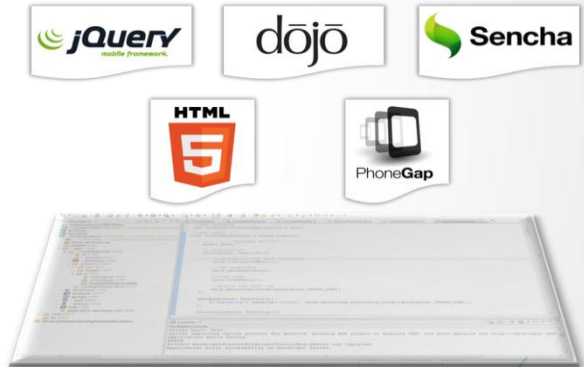
- HTML5
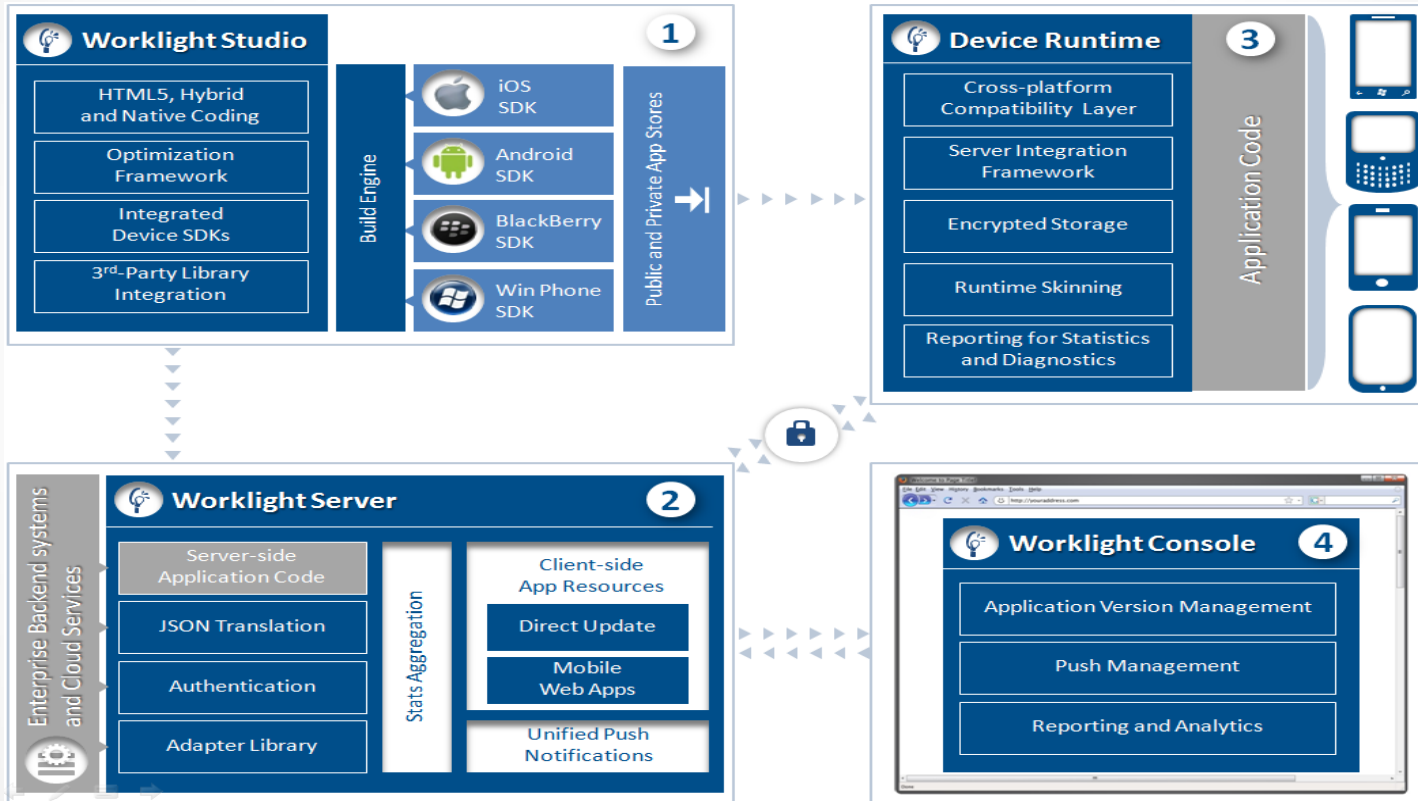- CSS3
- JavaScript

App delivery in variety of forms:
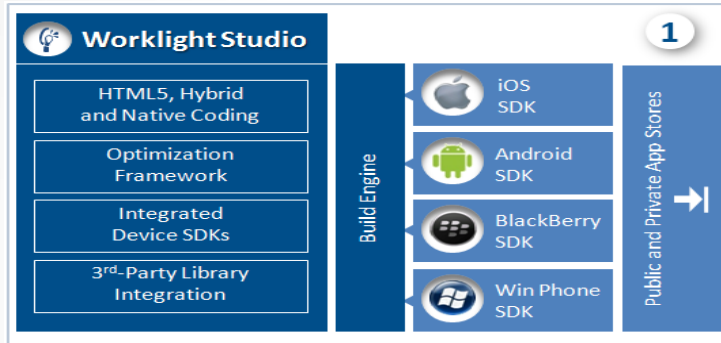
- Mobile Web app
- Hybrid app
- Native

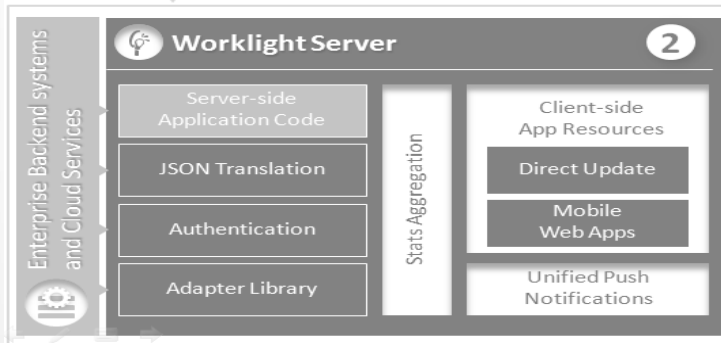Compatible with prominent HTML5 libraries and tools:
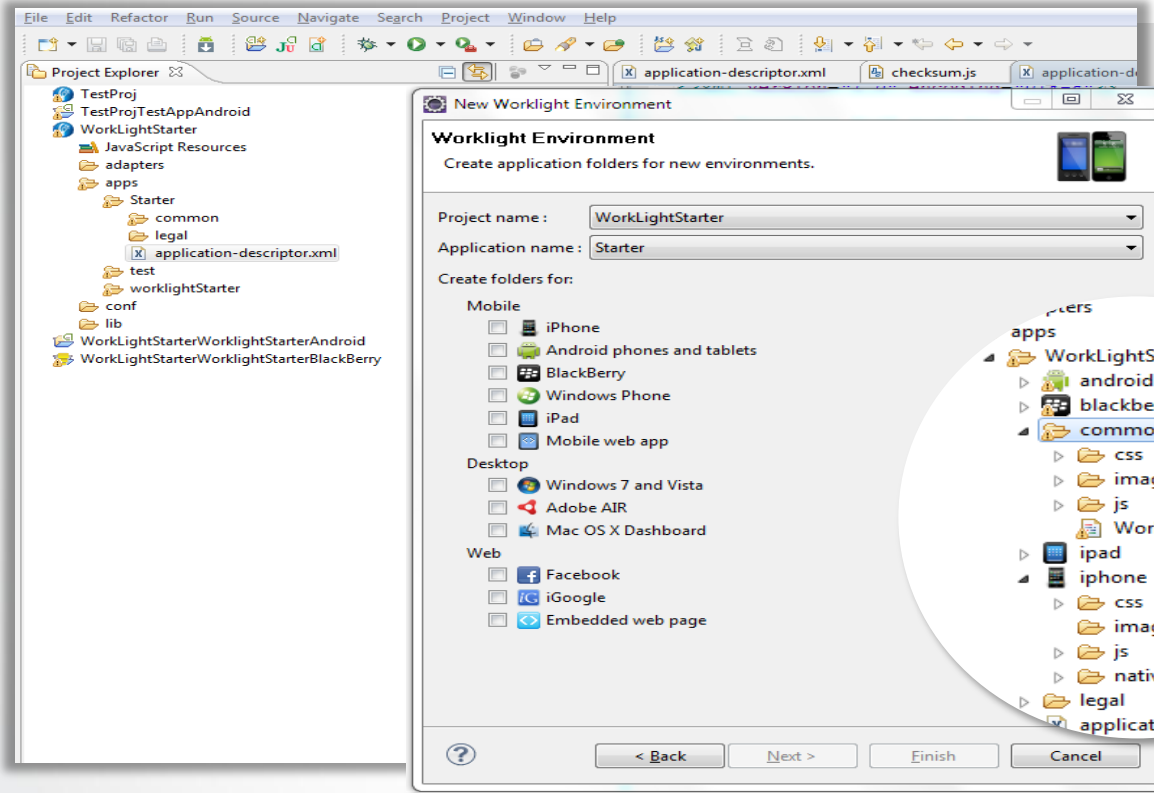
Worklight Architecture

Worklight Studio

- Eclipse-based IDE
- Combining native and standard web technologies in one multiplatform app
- Environment-specific optimization
- 3rd-party libraries integration
- Device SDK integration
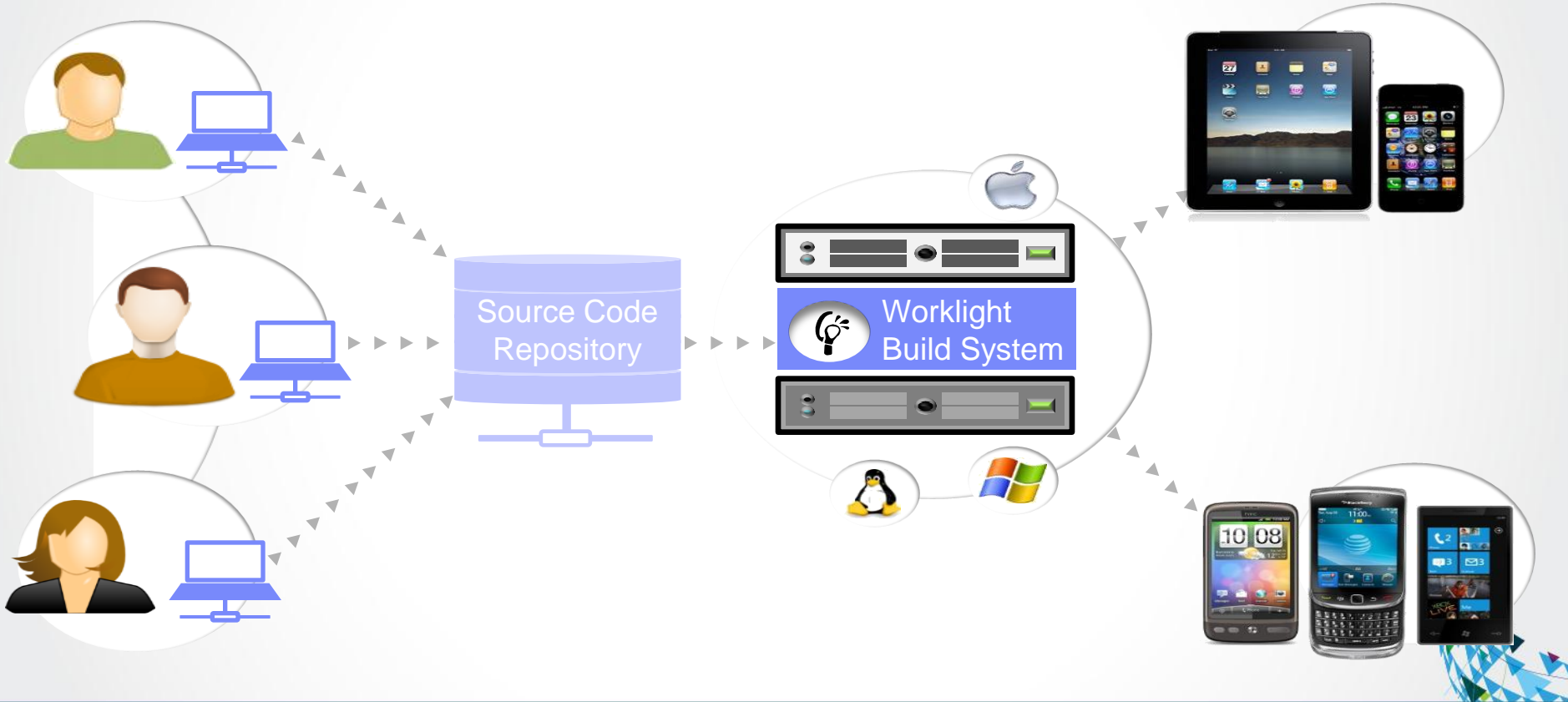- Back-end connectivity utilities

Single Shared Codebase

Common code placed
in primary file

Environment optimisation
code is maintained separately

Centralised Build

Source Code Repository

Worklight Build System

Worklight Runtime Architecture

Worklight Server

Server-side Application Code		Client-side App Resources
JSON Translation	Stats Aggregation	Direct Update
Authentication		Mobile Web Apps
Adapter Library		Unified Push Notifications

Device Runtime

PhoneGap
- Cross Platform Technology

Worklight
- Security and Authentication
- Back-end Data Integration
- Post-deployment control and Diagnostics

Application Code

Data Collection and Analytics

Worklight Server

Data Collection and Stats Aggregation

Corporate BI Systems

Cloud-based Analytics

Worklight Console
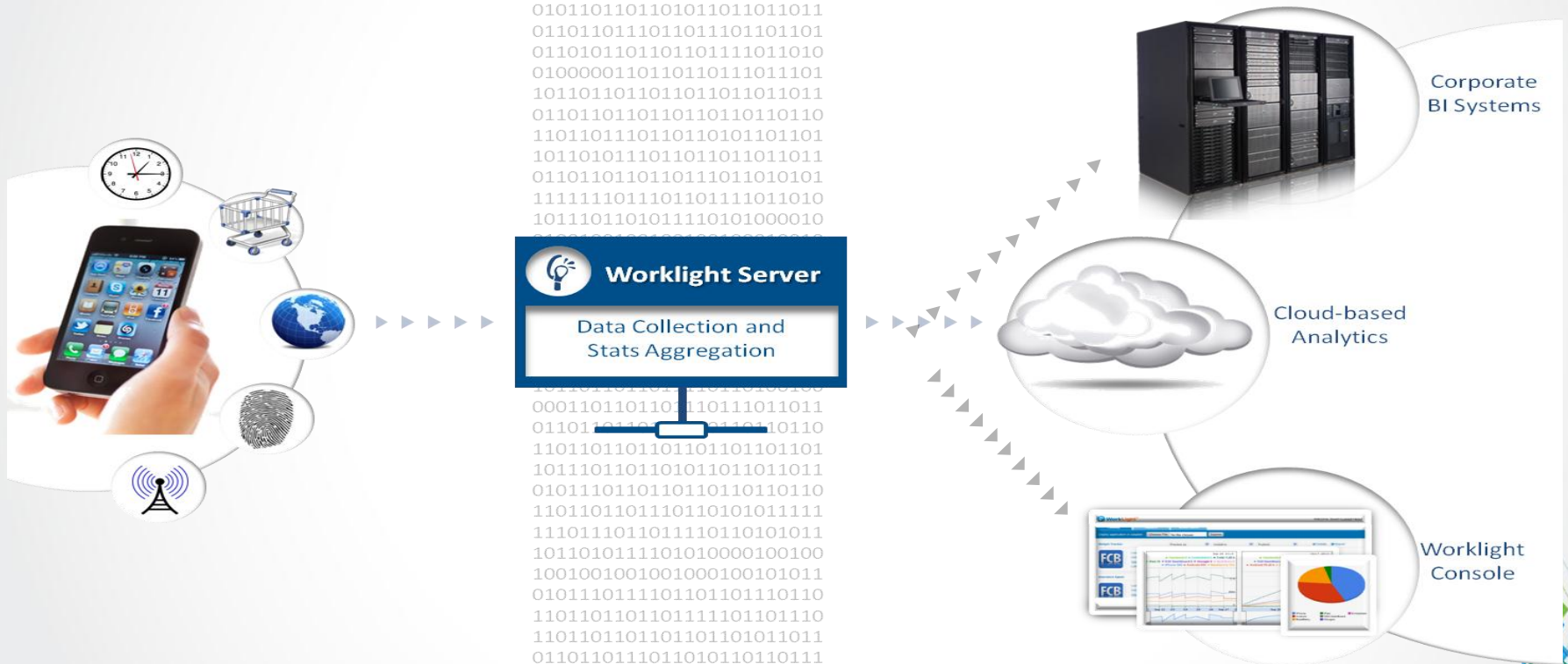
Direct Update – On-device Logic
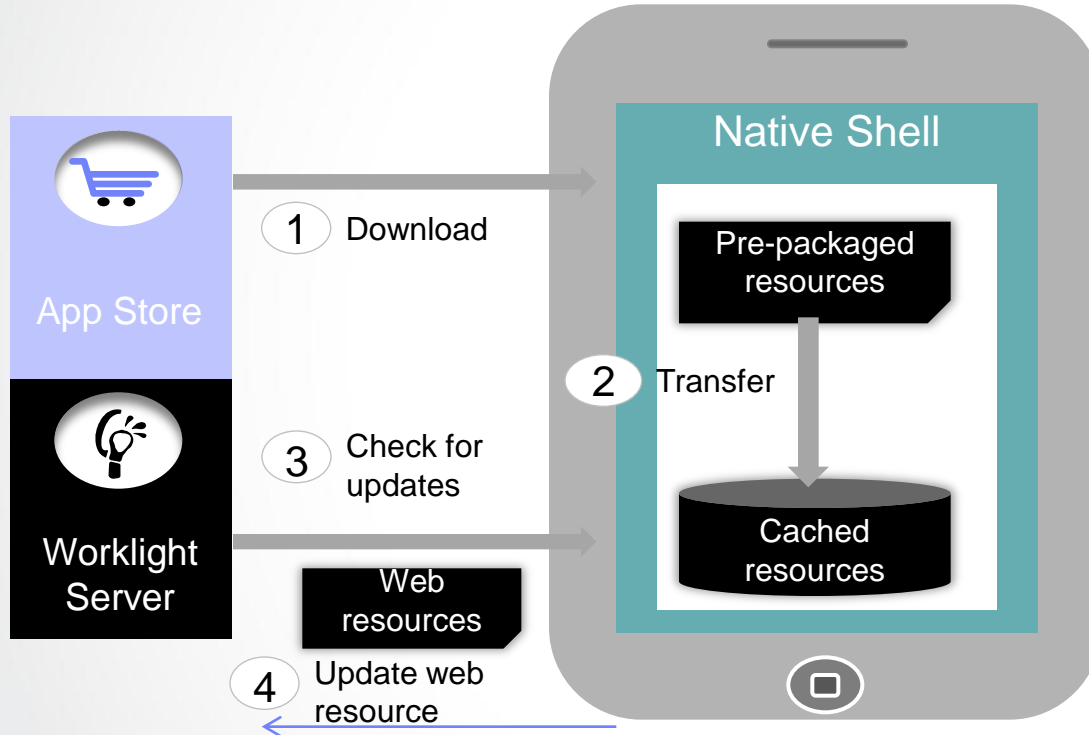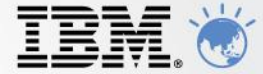
1. Web resources packaged with app to ensure initial offline availability

2. Web resources transferred to app's cache storage

3. App checks for updates
   On startup
   On foreground

4. Updated web resources downloaded when necessary

Unified Push Notifications Architecture

IBM

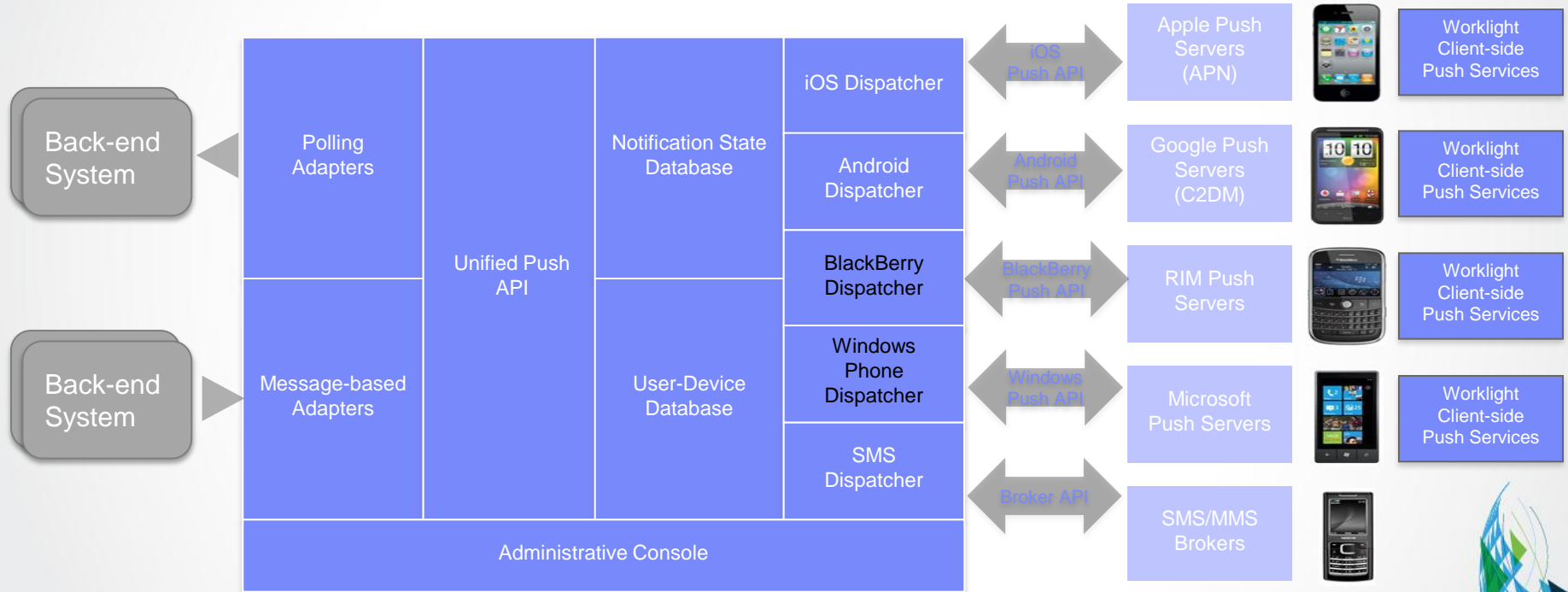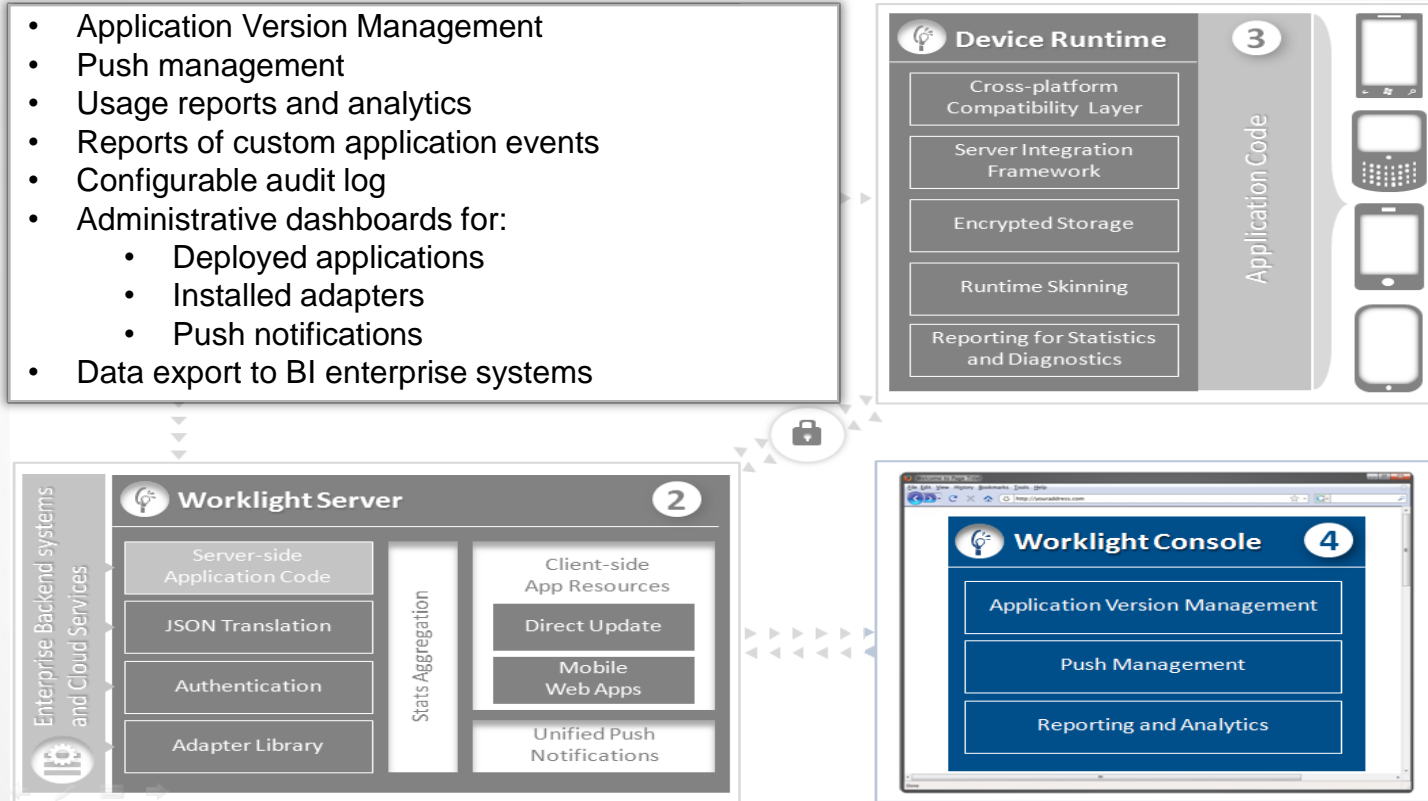|				
		iOS Dispatcher		Apple Push Servers (APN)
		Android Dispatcher		Google Push Servers (C2DM)

Back-end System

Back-end System

Polling Adapters

Message-based Adapters

Unified Push API

Notification State Database

User-Device Database

iOS Dispatcher

Android Dispatcher

BlackBerry Dispatcher

Windows Phone Dispatcher

SMS Dispatcher

Administrative Console

iOS Push API

Android Push API

BlackBerry Push API

Windows Push API

Broker API

Apple Push Servers (APN)

Google Push Servers (C2DM)

RIM Push Servers

Microsoft Push Servers

SMS/MMS Brokers

Worklight Client-side Push Services

Worklight Client-side Push Services

Worklight Client-side Push Services

Worklight Client-side Push Services

Worklight Console

- Application Version Management
- Push management
- Usage reports and analytics
- Reports of custom application events
- Configurable audit log
- Administrative dashboards for:
    - Deployed applications
    - Installed adapters
    - Push notifications
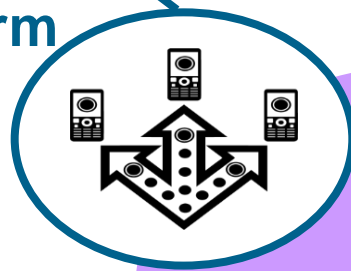- Data export to BI enterprise systems

Client initiatives require a mobile foundation

IBM

Extend & Transform

Extend *existing business capabilities to mobile devices*

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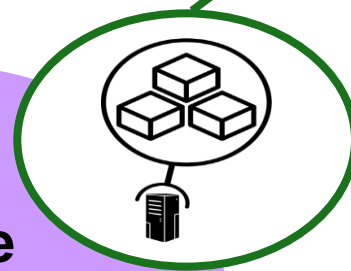
Mobile Foundation

New!

IBM Mobile Foundation V5.0

Manage & Secure

Manage *mobile devices and applications*

Secure *my mobile business*

Comprehensive solution for mobile delivery

IBM Mobile Foundation V5.0

- A comprehensive suite of mobile products that provides the essential elements needed for mobile development, deployment, and management.

- Mobile Foundation elements:

  - IBM Worklight
    Mobile application development and delivery

  - IBM WebSphere Cast Iron Hypervisor Edition
    Advanced connectivity to cloud and back-end systems

  - IBM Endpoint Manager for Mobile Devices
    Complete end-to-end Mobile Device Management (MDM)

*End to end solution for mobile development, device management, and connectivity*

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

- **Centralised 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
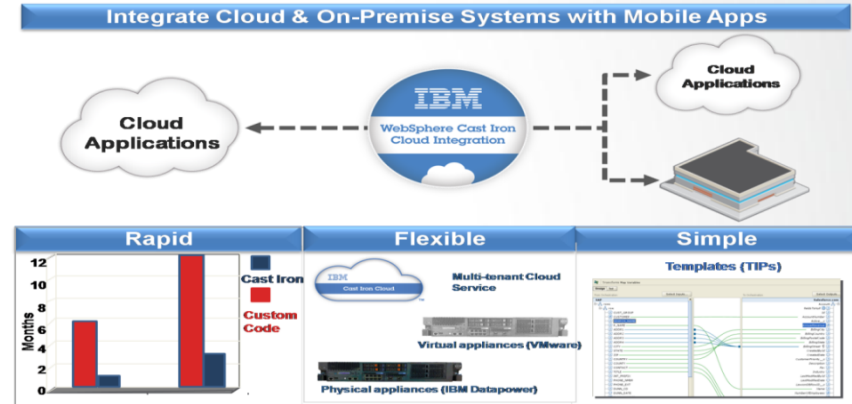
Simple and flexible integration for all connectivity projects, allowing you to rapidly integrate SaaS and back-end systems with mobile apps

Unified Device Management

IBM Endpoint Manager

- Addresses the issues of application deployment, security, complexity and BYOD policies that challenge support for an increasingly mobile workforce

- "Single pane" for mobile devices, laptops, desktops, and servers that scales to can be implemented in hours

- Key capabilities:

  - Agent and e-mail sync based management options
  - Hardware, OS, and app inventory and performance data
  - Enterprise app store and app "push" capabilities
  - Security policy and configuration management
  - Wipe and selective wipe of enterprise apps and data
  - Employee self-service portal
  - Highly scalable and lightweight infrastructure

Real-time visibility and control with the flexibility to address the unexpected.

IBM Mobile Foundation V5.0

Available configurations

Enterprise Edition

- Business-to-enterprise (B2E)
- Package includes:
    - IBM Worklight
    - IBM Cast Iron Hypervisor Edition
    - IBM Endpoint Manager for Mobile Devices
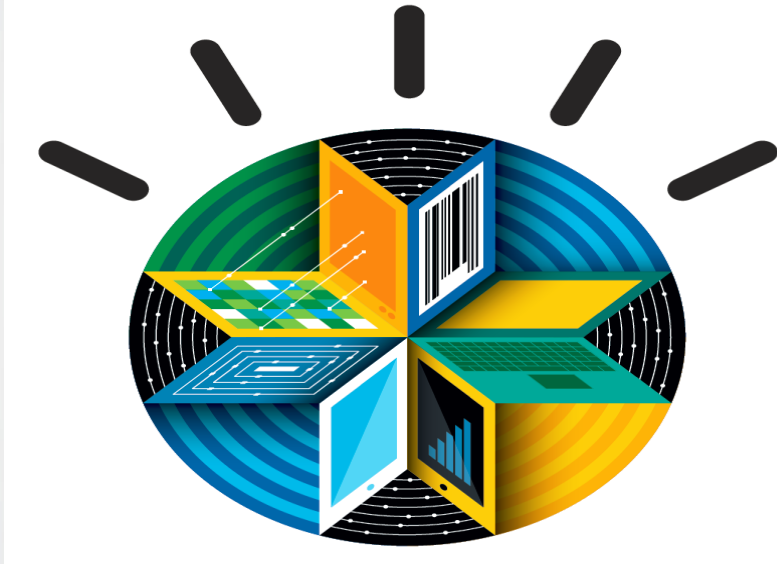- Used by enterprises to manage internal apps

Consumer Edition

- Business-to-consumer (B2C)
- Package includes:
    - IBM Worklight
    - IBM Cast Iron Hypervisor Edition
- Used for commercial and customer-facing apps

Next Steps

	Business Stream	Technical Stream
10:35am	**Enterprise & BPM Mobile Integration**	**Worklight Demo & Deep Dive**
11:25am	**Mobility Solutions showcase**	**Mobile Security Architecture - Workight & Tivoli Endpoint Manager**

- Learn more at:

  www.ibm.com/mobile-enterprise

  - Access white papers and webcasts
  - Get product and services information
  - Download and begin using IBM Endpoint Manager

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

Learn more at: www.ibm.com/mobile-enterprise