

Girish Dhanakshirur, STSM & Master Inventor, IBM Worklight  
[girishdhanak@in.ibm.com](mailto:girishdhanak@in.ibm.com)

## IBM MobileFirst Platform: Develop and Integrate Mobile Apps to Drive ROI



# Mobile is a mandatory transformation

**10 Billion** devices  
by 2020

**61%** of CIOs put  
mobile as priority

**45%** increased productivity  
with mobile apps



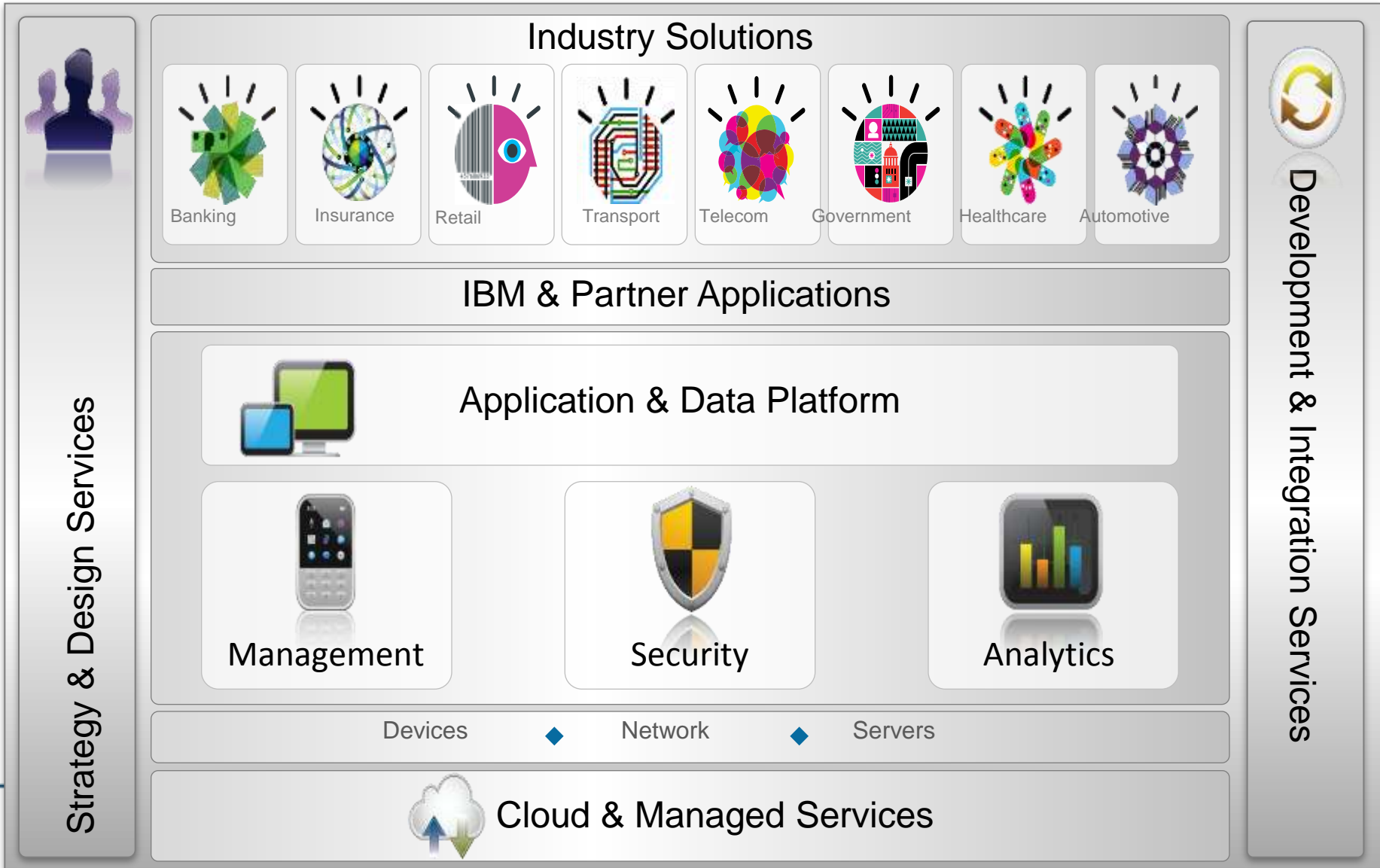
# The mobility spectrum

Past → Present → Future? →



*Mobility is not about devices, it is about  
**people being increasingly Mobile**, and  
paradigms that enable them*

# IBM MobileFirst offering portfolio



Strategy & Design Services

Development & Integration Services

## Industry Solutions

Banking Insurance Retail Transport Telecom Government Healthcare Automotive

## IBM & Partner Applications

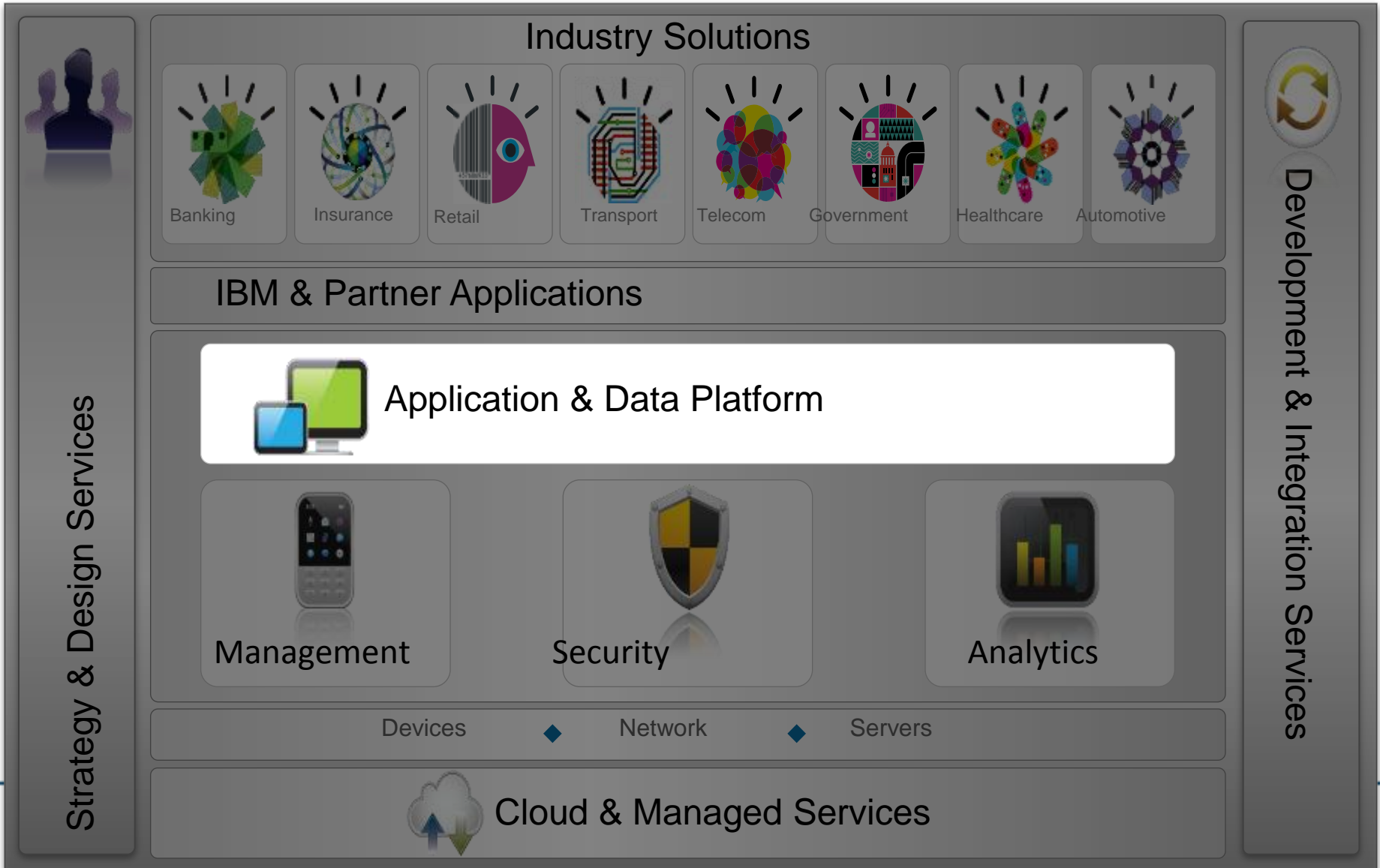
## Application & Data Platform

Management Security Analytics

Devices ♦ Network ♦ Servers

## Cloud & Managed Services

# IBM MobileFirst offering portfolio



# IBM Worklight: A mobile application platform

Speeding the development, integration and management of mobile applications and infrastructure

**Development:** Develop and Test Web, hybrid, and native apps using open, standards-based, flexible, and efficient tools and technology. Development lifecycle tools and integration

**Security and Trust:** Server-enforced authentication, app authenticity and user-app-device binding. Secure and syncable on-device storage. App version enforcement

**User Engagement:** Unified push and SMS notifications. Geolocation and context collections and intelligence. Mobile-friendly integration. Passes.

**Mobile Analytics:** Efficient acquisition of analytics data. Development, operational, and business analytics. Offline and online event management integration

IBM Worklight goes beyond mobile app UI creation to deliver mobile optimized, standards-based, middleware and tools for enterprise-grade mobile applications and services creation



# Getting started with mobility, step by step.

1

**Look, Functionality**

Native vs. Hybrid?

2

**Who will build?**

In-house or Outsource?

3

**Security**

How important is it?

4

**Infrastructure & Integration**

5

**Know thy user!**

6

**Test. Test. Perfect.**

7

**Context is King!**

# Getting started with mobility, step by step

1

## Look, Functionality

Native vs. Hybrid?

2

## Who will build?

In-house or Outsource?

3

## Security

How important is it?

4

## Infrastructure & Integration

5

## Know thy user! Analytics

6





Test. Test. Perfect.

7

Context is King!



# Native - Tools, languages, packaging format, Application Stores

				
Languages	Objective-C,C,C++	Java (Some C, C++)	Java	C#, VB.Net, etc.
Tools	XCode	Android SDK	BB Java Eclipse Plug-in	Visual Studio, Windows Phone Dev Tools
Packaging Format	.app	.apk	.cod (BB6/7) .bar (BB10)	.xap
Application Stores	Apple App Store	Android Marketplace	BlackBerry App World	Windows Phone Market

# Right Approach – Native Approach

- **Existing Native Skills**

- To support multiplatform need to hire new employees or train in-house developers
- Organizations that have in-house skills can leverage without new investment

- **A Single Mobile OS**

- Release mobile app for limited target audience to use single mobile OS
- Multiplatform might not be a priority
- Single native app requires limited set of skills and tools

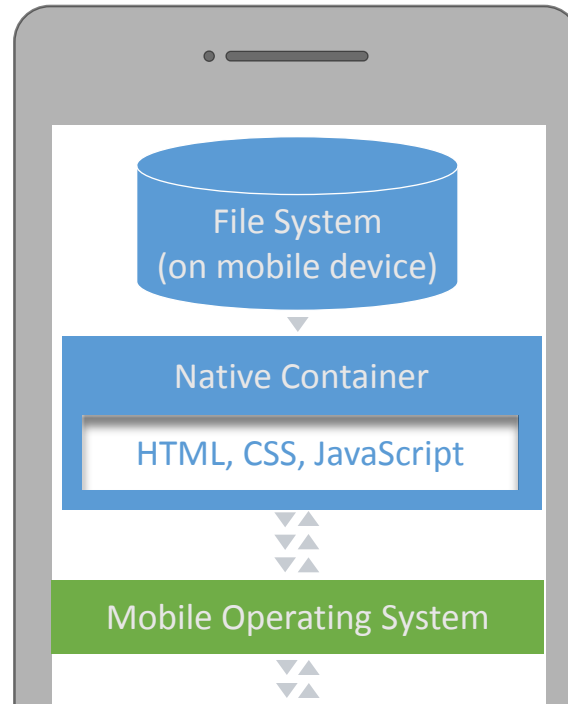
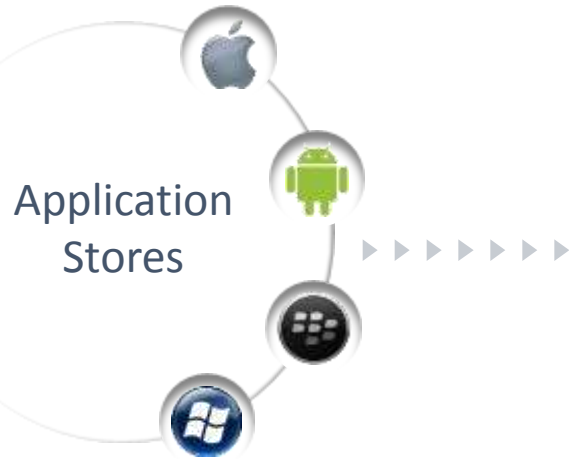
- **Native Functionality**

- Very strong single functionality, e.g. Skype
- Web technologies not sufficiently mature for unique requirements

- **Rich UI Requirements**

- Game-like applications that require rich UI

# Hybrid Apps



Combines best of both worlds:

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



# Right Approach – Hybrid Approach

- **Balancing the TradeOff**

- Best of both worlds. Native bridge full access to all capabilities.
- Cross-platform across multiple platform – development and on-going process cost-effective

- **In-house Skills**

- Web development skills are common.
- Leverage skills to deliver native user experience

- **Future Considerations**

- HTML5 is growing in both availability and capability
- Investing in HTML will ensure right investment today
- Will support newer platforms when they adopt HTML5

# Summary of Features

Feature	Native App	Hybrid App
Development Language	Native Only	Native and Web or Web Only
Code Portability and Optimization	None	High
Access Device-Specific Features	High	Medium
Leverage Existing Knowledge	Low	High
Advanced Graphics	High	Medium
Upgrade Flexibility	Low (Always via app stores)	Medium (Usually via app stores)
Installation Experience	High (From app store)	High (From app store)

# Getting started with mobility, step by step

1

**Look, Functionality**  
Native vs. Hybrid?

2

**Who will build?**  
In-house or Outsource?

3

**Security**  
How important is it?

4

**Infrastructure & Integration**

5

**Know thy user! Analytics**

6

**Test. Test. Perfect.**

7

**Context is King!**

# Mobile application development is a top priority for businesses

**35%** of developers are currently targeting tablets, with more than **90%** plan to develop for tablets in the near future.

Nearly **90%** of developers are currently extending enterprise apps to mobile or plan to in the near future.

More than **100M** people upgraded to iOS6 in the first week (September, 2012)



**29%** of mobile developers currently focus on Hybrid app development with another 49% expected to focus on it in the next year.

In the next 12 months **77%** of developers will be focused on Hybrid application development.

**25+** Almost all expect to deploy more than 25 mobility applications in the next two years

Source: Evans Data Mobile Developer Survey Mobile Development Report 2012 Volume  
Source: Business Insider (September 2012)

# Why mobile development is different

## Mobile apps are different.

- **They are context-aware** – know where you are and what you are doing
- **They run on unstable networks**– interruption is the norm, not the exception
- **Smaller footprint** – More challenging to make compelling and easy to use
- **Always on** – An opportunity to deliver greater value

## Management is different.

- Greater challenges of application **governance, distribution, and version management**

## Development is different.

- **Faster 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

## 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





# Studio – WYSIWYG UI Construction (HTML, JQuery or Dojo)

Portrait/Landscape orientations

Scale the editing surface to fit to window

jQuery mobile widgets in the Palette

Mobile Navigation view to create and manage jQuery Mobile "page" instances

Property sheets to configure jQuery mobile widgets

```
<div data-role="page" data-theme="b">
  <div data-role="header">
    <h1 data-bbox="495 105 545 125">News Center
  </h1>
  <div data-role="content">
    <img alt="News image" data-bbox="440 140 600 260"/>
    <div data-bbox="440 270 600 570">
      <div data-bbox="440 270 600 290">▶ Headline News
      <div data-bbox="440 300 600 320">▶ Around The World
      <div data-bbox="440 330 600 350">▶ U.S. News
      <div data-bbox="440 360 600 380">▶ Local News
    </div>
  </div>
  <div data-role="footer" data-position="fixed">
    <div data-bbox="440 400 600 420" data-role="navbar">
      <div data-bbox="440 400 480 420" href="#facebook"><img alt="Facebook icon" data-bbox="440 400 460 420"/>
      <div data-bbox="480 400 520 420" href="#twitter"><img alt="Twitter icon" data-bbox="480 400 500 420"/>
      <div data-bbox="520 400 560 420" href="#youtube"><img alt="YouTube icon" data-bbox="520 400 540 420"/>
      <div data-bbox="560 400 600 420" href="#" data-role="button" data-icon="gear" class="ui-btn-right"><img alt="Gear icon" data-bbox="560 400 580 420"/>
    </div>
  </div>
</div>
```

# Screen Patterns Based on Re-usable Mobile Pat

New in  
Worklight 6.0

## Reusable mobile components

- 40+ out-of-the-box common screen patterns
- Navigation, search, lists and tables, authentication, configuration panels
- For jQuery Mobile and Dojo Mobile
- Live preview using the underlying widget library

The screenshot displays a design tool interface with two main sections: 'Categories' and 'Patterns'. The 'Categories' section on the left lists: Lists, Authentication, Navigation and Search, and Configuration. The 'Patterns' section on the right shows a live preview of a mobile application for an iPhone 4S in portrait orientation at 50% zoom. It features four preview windows: 'Simple List' (a list of 10 items), 'Simple List with Footer' (a list of 10 items with a footer containing 'Home', 'Search', and 'About' buttons), a list with two categories ('Category A' and 'Category B'), and a form with a 'Text Input' field and a 'Toggle Switch' set to 'Off'.



TELECOMMUNICATIONS



BANKING



RETAIL



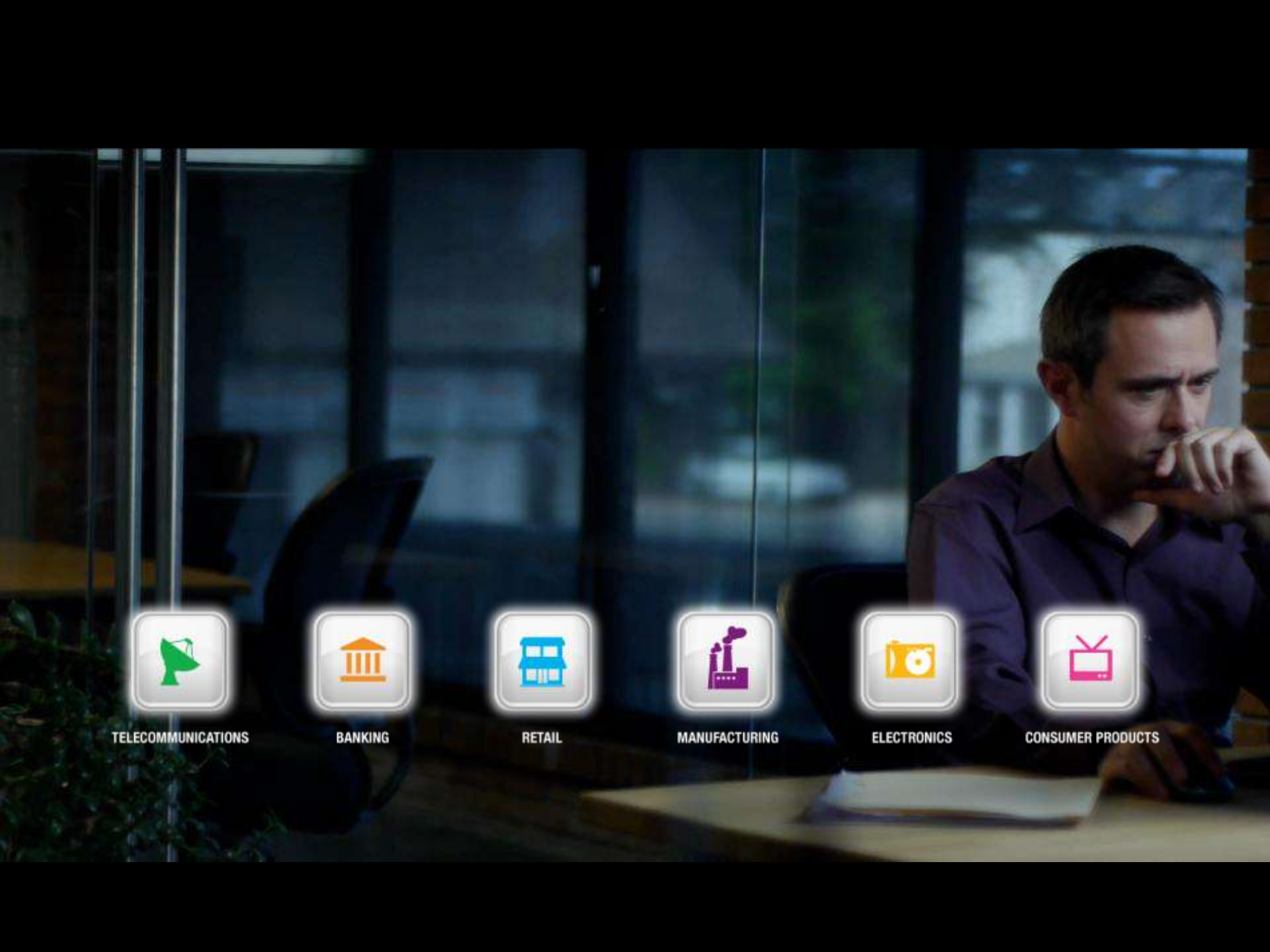
MANUFACTURING



ELECTRONICS

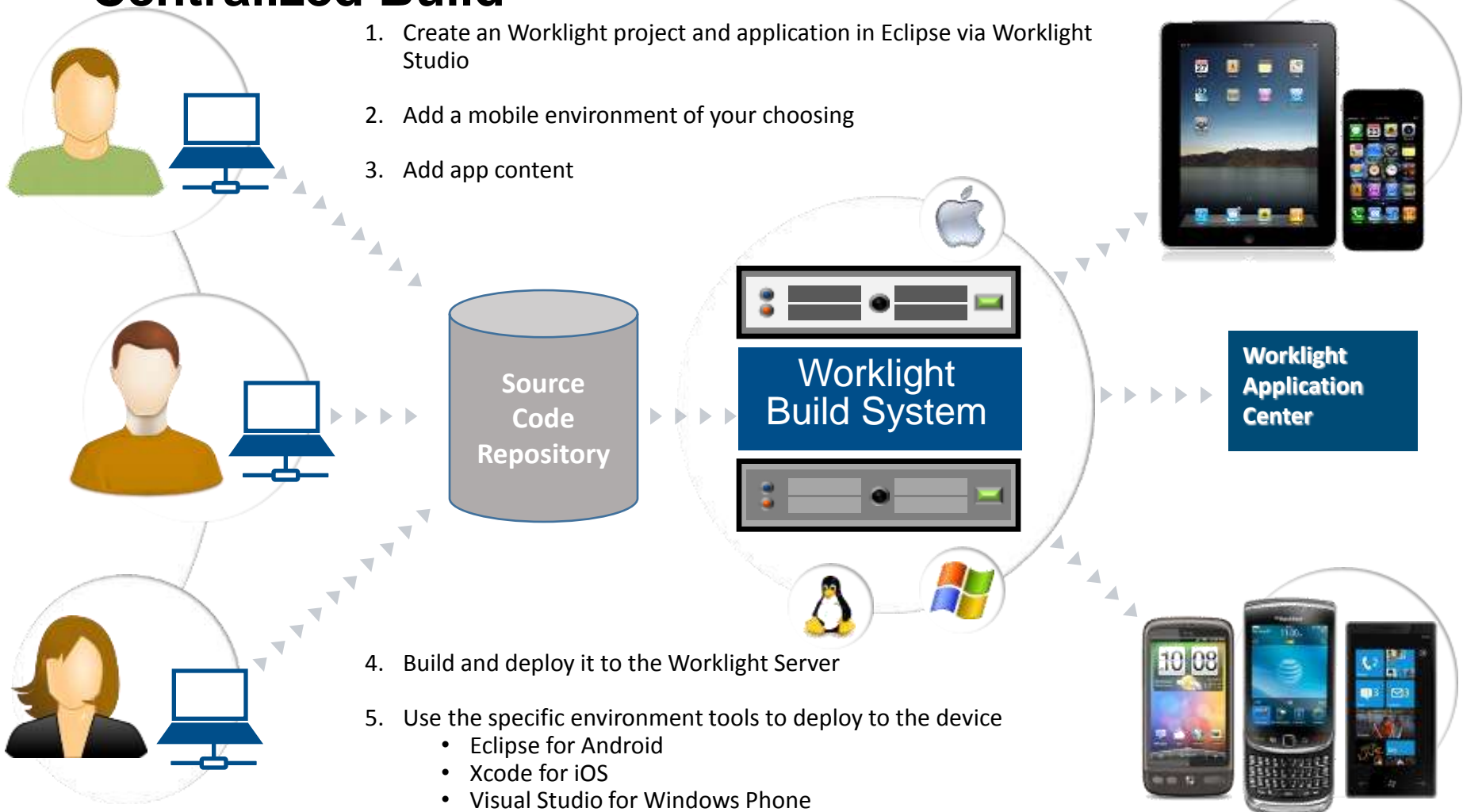


CONSUMER PRODUCTS



# Centralized Build

1. Create an Worklight project and application in Eclipse via Worklight Studio
2. Add a mobile environment of your choosing
3. Add app content



4. Build and deploy it to the Worklight Server
5. Use the specific environment tools to deploy to the device
  - Eclipse for Android
  - Xcode for iOS
  - Visual Studio for Windows Phone
  - Ripple for BlackBerry

# Getting started with mobility, step by step

1

**Look, Functionality**  
Native vs. Hybrid?

2

**Who will build?**  
In-house or Outsource?

3

**Security**  
How important is it?

4

**Infrastructure & Integration**

5

**Know thy user! Analytics**

6

**Test. Test. Perfect.**

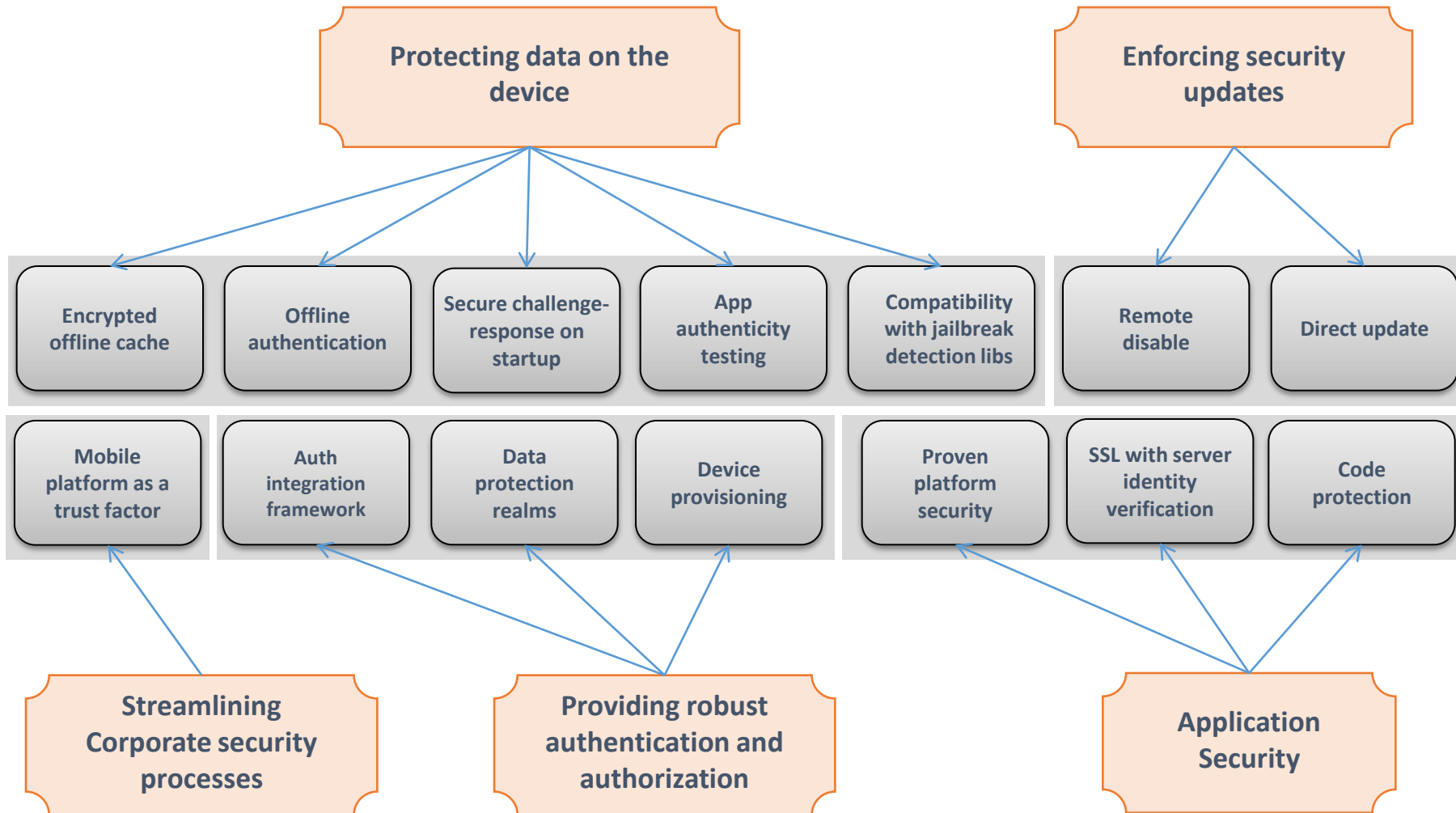
7

**Context is King!**

A mobile strategy must address both managed & unmanaged environments to address all use cases

Target	B2C/B2B	B2E – Traditional	B2E - BYOD
Device Owner	Individual user	Enterprise	Individual user
Information owner	Enterprise or public sources	Enterprise	Enterprise or public sources
Device	Various OS as per preference of user	OS deemed manageable by enterprise	Various OS as per preference of user
Information	Externally accessible information from the enterprise	Whatever Enterprise exposes	Whatever Enterprise exposes
<b>Technologies:</b>	<b>MAM &amp; container</b>	<b>MDM</b>	<b>MDM or MAM &amp; container</b>

# Security Features Mapping



# Getting started with mobility, step by step

1

**Look, Functionality**  
Native vs. Hybrid?

2

**Who will build?**  
In-house or Outsource?

3

**Security**  
How important is it?

4

**Integration & Delivery**

5

**Know thy user! Analytics**

6

**Test. Test. Perfect.**

7

**Context is King!**



# Multichannel Sites

and

# Stand Alone Applications



Integrated [site](#) that aggregates multiple applications and content Works across multiple channels including: desktop browser, kiosk smartphone and tablets

Custom built “stand-alone” or single function [applications](#). For example IBM Connections, IBM Sametime or custom application

IBM Technical **Summit** And they can be consumed in many ways...

# IBM Worklight integration options

## IBM WebSphere Cast Iron

A **Worklight** adapter expedites mobile applications connectivity challenges.

## IBM WebSphere Datapower

Out of the box **patterns** for web and mobile applications, including Worklight

## IBM CICS

New CICS Mobile Pack includes **JSON data** and **RESTful interface** for simple and efficient mobile device integration

## IBM Integration Bus

Includes **patterns** that automate the generation of mobile services, adapters, and sample mobile applications within Worklight

## IBM Business Process Manager

Includes **Worklight** to build BPM applications for mobile, and exemplar toolkit for mobile-ready coach controls

## IBM Operational Decision Manager

Supports dynamic remote invocation of business rules from mobile applications through **Worklight connector**



# Application Center

The Worklight Application Center enables companies to easily set up an enterprise app store for their enterprise and development teams.

- The Application Center provides:
  - **Administrators** with fine-grained control over the distribution of mobile apps across the enterprise, including ACL and LDAP support;
  - **Employees** with one-stop shopping for the latest apps needed by their department and optimized for their device;
  - **Developers** with an easy way to distribute mobile builds and elicit feedback from development and test team members.

## Worklight Application Center

Development Team Provisioning

Enterprise App Provisioning  
and Governance

App Feedback Management

Public App Stores



# Getting started with mobility, step by step

1

**Look, Functionality**  
Native vs. Hybrid?

2

**Who will build?**  
In-house or Outsource?

3

**Security**  
How important is it?

4

**Infrastructure &  
Integration**

5

**Know thy user!**

6

**Test. Test. Perfect.**

7

**Context is King!**

## Mobile = utter frustration



*@bevan - \_\_\_\_\_ mobile is down. Not letting me checkout. CS says it's a known problem. On BlackFriday? I just missed two deals!!*



*@gdomdom - @\_\_\_\_\_ Your app sucks for trying to shop!!!  
Get your mobile act together*



*@christenfolsen - Dear \_\_\_\_\_, please fix the mobile version of your website or I am going to kill you.*

## Common mistakes

- Visual overload
- Making user fill out long forms
- Not accounting for size/width of the finger
- Not accounting for device width
- Heavy or too many image files
- Not using CSS3/HTML5 (reduces need for images)
- Opaque design – user can't figure out what is happening
- Not setting a home screen icon
- Making pages non-zoomable

# Mobile Operational Insights: Target Personas



## IT Operations

*Focused on problem determination, better visibility across the platform*



## App Developer

*Focused on problem determination, help fix my app issues*



## Admin/Analyst

*Focused on platform wide trends and how to do better*

# Getting started with mobility, step by step

1

**Look, Functionality**  
Native vs. Hybrid?

2

**Who will build?**  
In-house or Outsource?

3

**Security**  
How important is it?

4

**Infrastructure & Integration**

5

**Know thy user! Analytics**

6

**Test. Test. Perfect.**

7

**Context is King!**

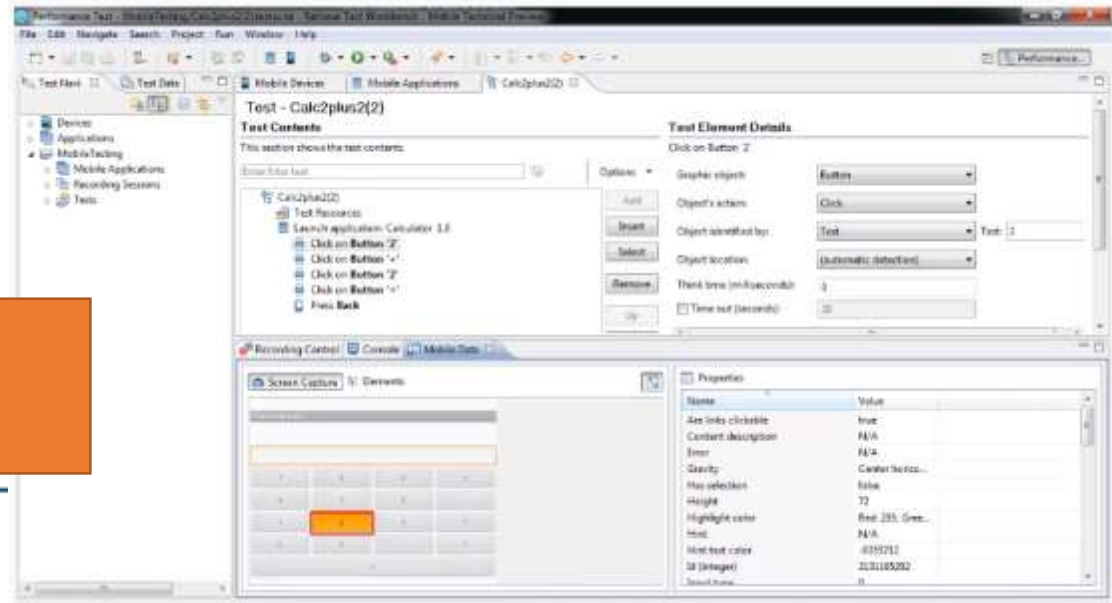


# New to 6.0: Mobile Functional Test Tools

- Create, run, and automate tests on mobile applications
- Improve quality and time-to-value with industry-first app testing
  - Create resilient and code-less test cases
  - Record once, play back on multiple devices
- Standardized, eclipse based
- Comprehensive – Android and iOS, Native and hybrid
- Complete – Recording, editing, and running on mobile devices
- Resilient – Same test runs across multiple devices
- Also for non-developers – Scripts in natural language description

Deliver consistently high quality across your mobile app portfolio.

New in Worklight 6.0



# Getting started with mobility, step by step

1

**Look, Functionality**  
Native vs. Hybrid?

2

**Who will build?**  
In-house or Outsource?

3

**Security**  
How important is it?

4

**Infrastructure & Integration**

5

**Know thy user! Analytics**

6

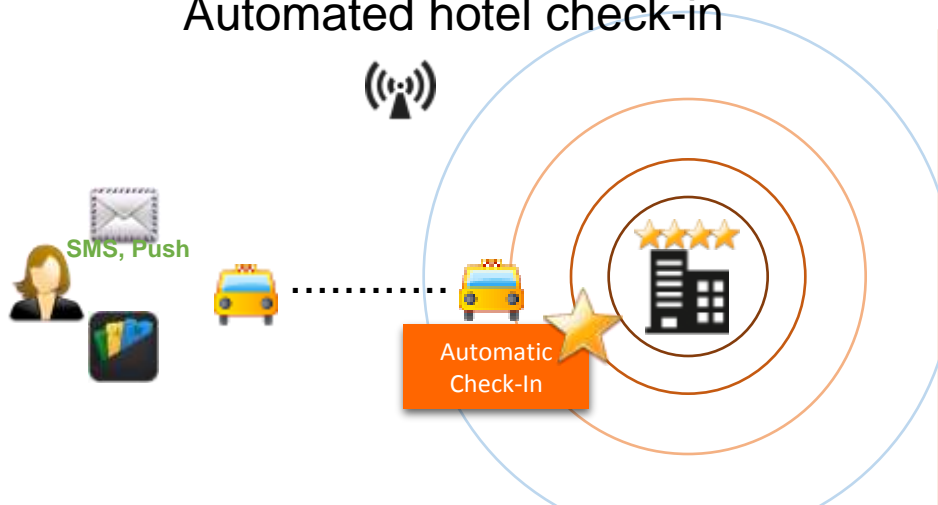
**Test. Test. Perfect.**

7

**Context is King!**

# Geo-location Scenarios

## Automated hotel check-in



## Routing trucks arriving at warehouse



## More engaging mall experience



## Location-aware security for hospital app



# Getting started with mobility, step by step.

1

**Look, Functionality**

Native vs. Hybrid?



2

**Who will build?**

In-house or Outsource?



3

**Security**

How important is it?



4

**Infrastructure & Integration**



5

**Know thy user!**



6

**Test. Test. Perfect.**



7

**Context is King!**



# Think Mobile, First



[www.ibm.com/mobilefirst](http://www.ibm.com/mobilefirst)