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GH Bernardin | 23. oktober 2014

Novosti v razvoju mobilnih aplikacij (Worklight 6.2)

Srečko Janjić, IBM

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Strateška usmeritev: IBM MobileFirst

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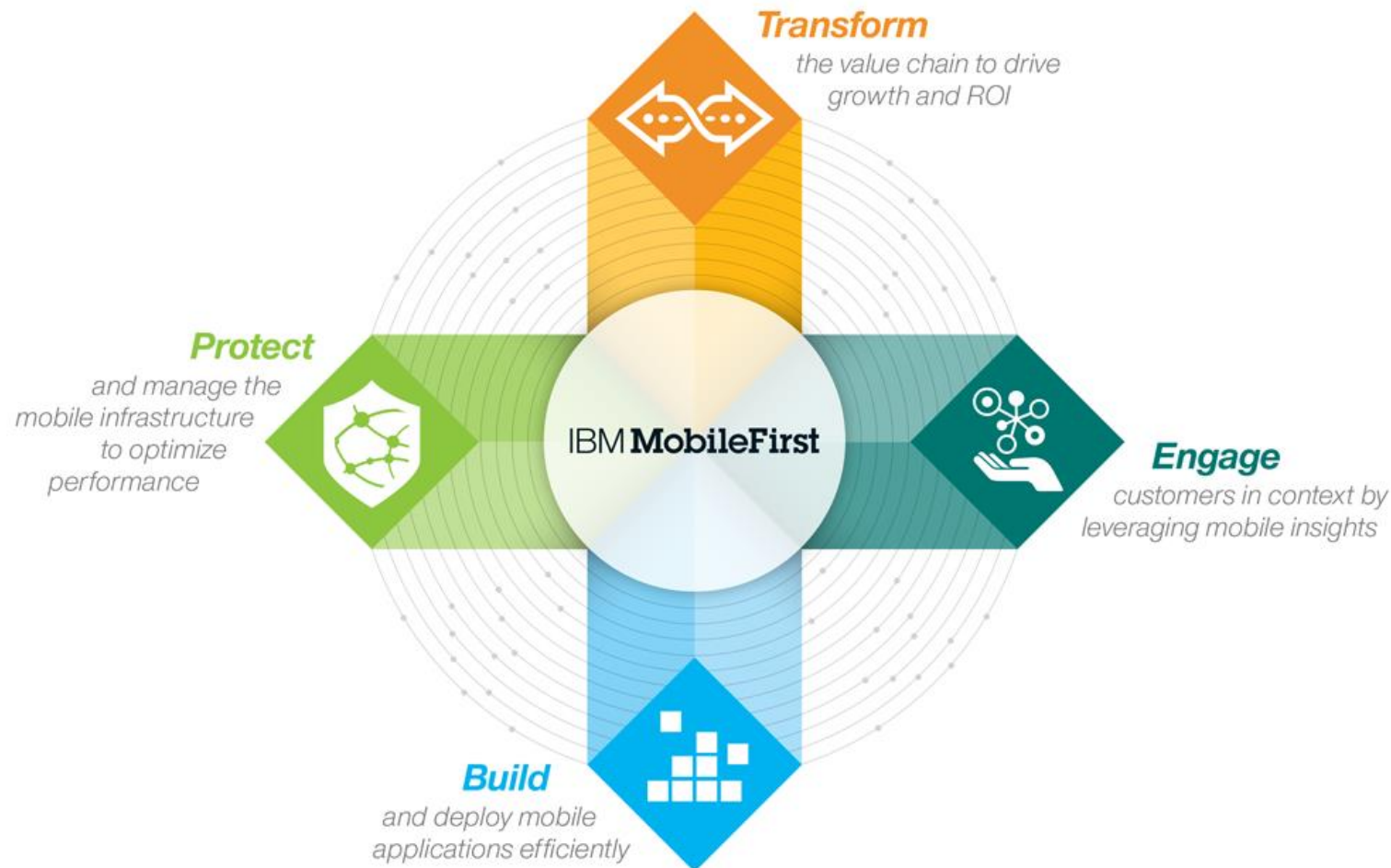
Izziv: Pisana paleta platform
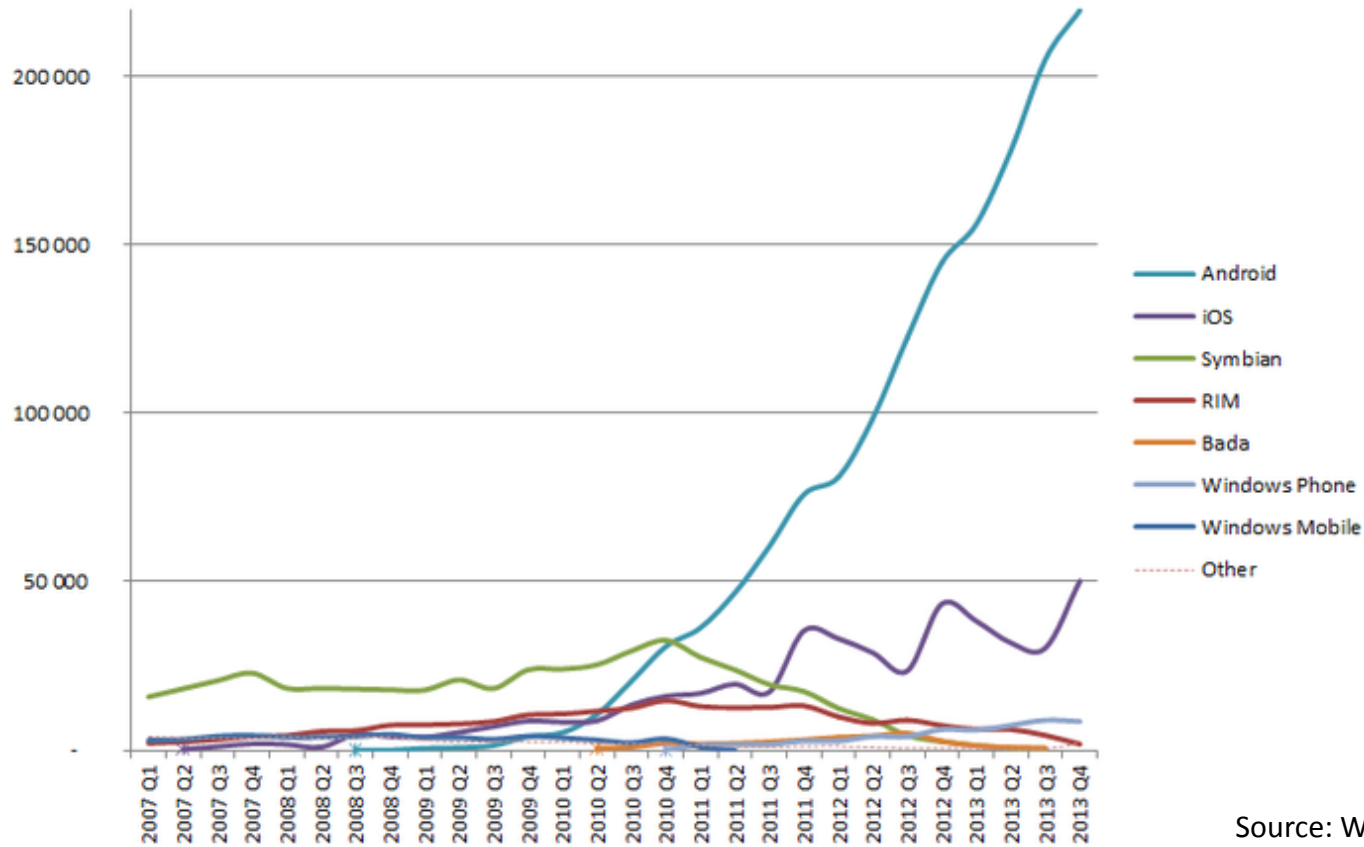
Source: Wikipedia

Izziv: Razdrobljenost modelov in tipov
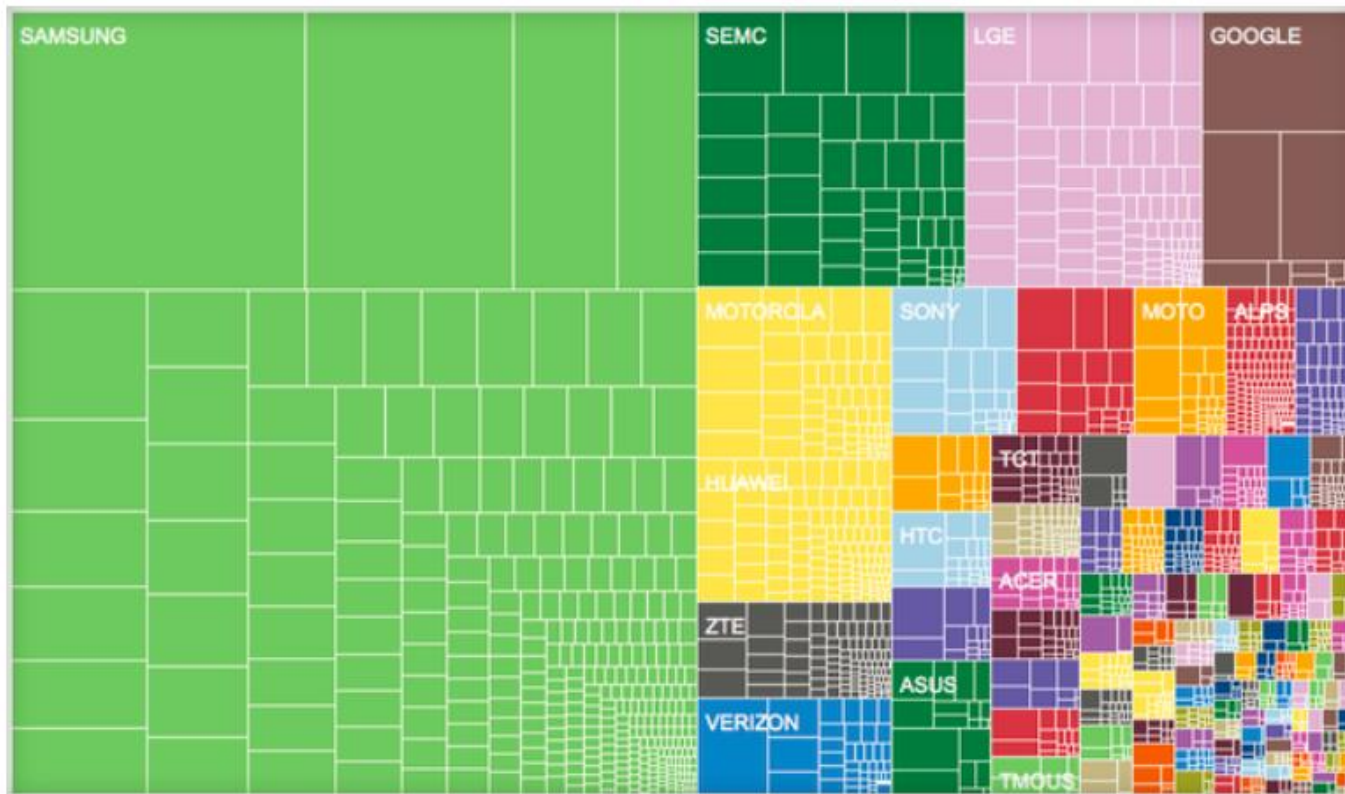
Brand fragmentation in the Android market is immense, but Samsung still leads the charge with 47.5 percent of the market share.

Open Signal

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Izziv: Razširitev pojma mobilne naprave

FireFox OS

Wearables

The ultimate IoT controller

Izziv: Iskanje prave zasnove aplikacije

Pure web   *Hybrid*   *Pure native*

| **Mobile web site** (browser access) | **Native shell** enclosing external site | **Pre-packgd.** HTML5 resources | **HTML5 + native UI** | **Mostly native,** some HTML5 screens | **Pure native** |
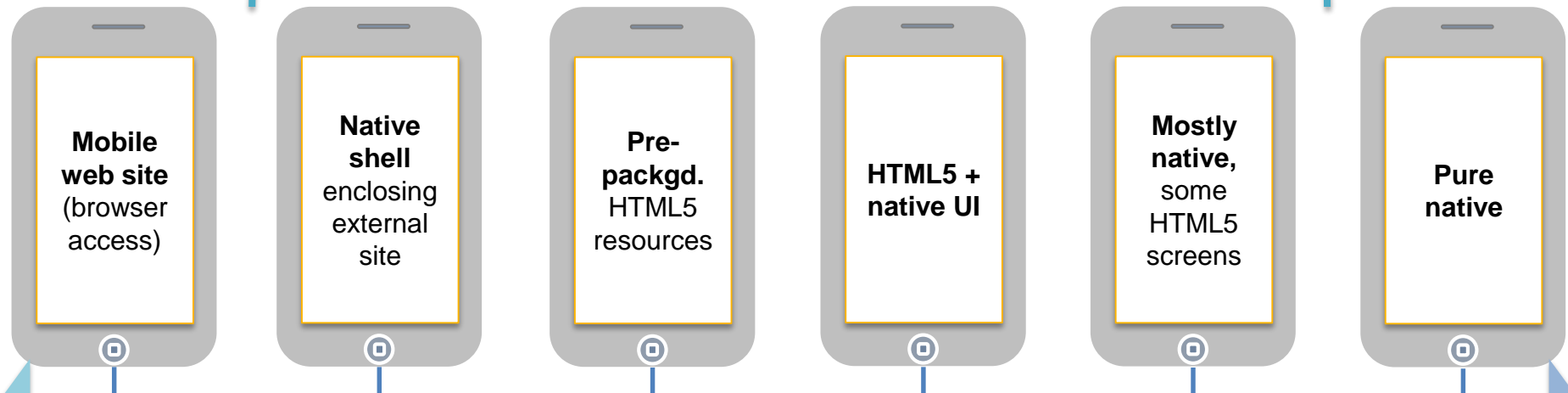
Web-Native Continuum

- HTML5, JS, and CSS3 (full site or m.site)
- Quicker and cheaper way to mobile
- Sub-optimal experience

- HTML5, JS, and CSS
- Usually leverages Cordova
- Downloadable, app store presence, push capabilities
- Can use native APIs

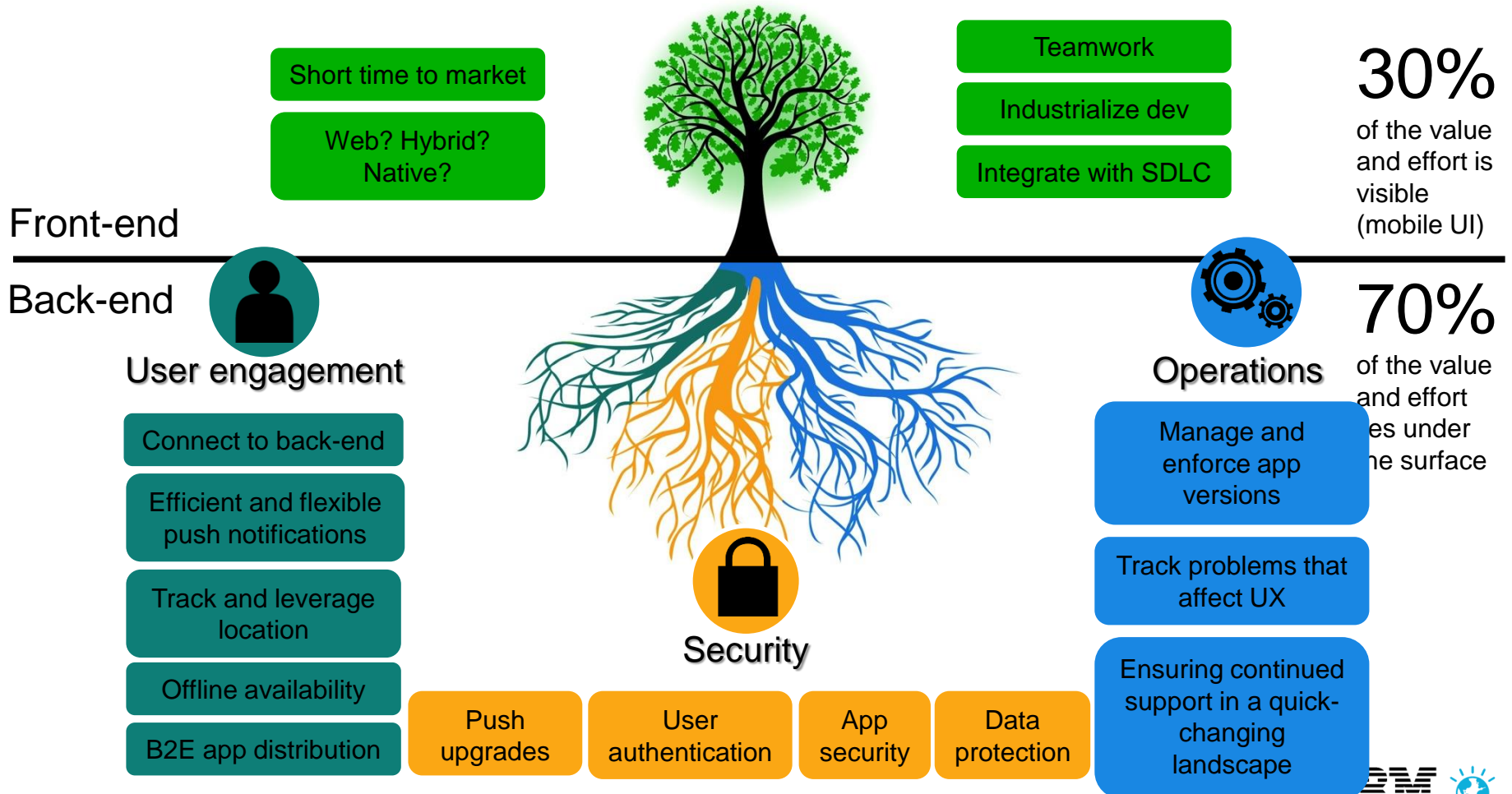- As previous
- + more responsive, available offline

- Web + native code
- Optimized user experience with native screens, controls, and navigation

- App fully adjusted to OS
- Some screens are multi-platform when makes sense

- App fully adjusted to OS
- Best attainable user experience
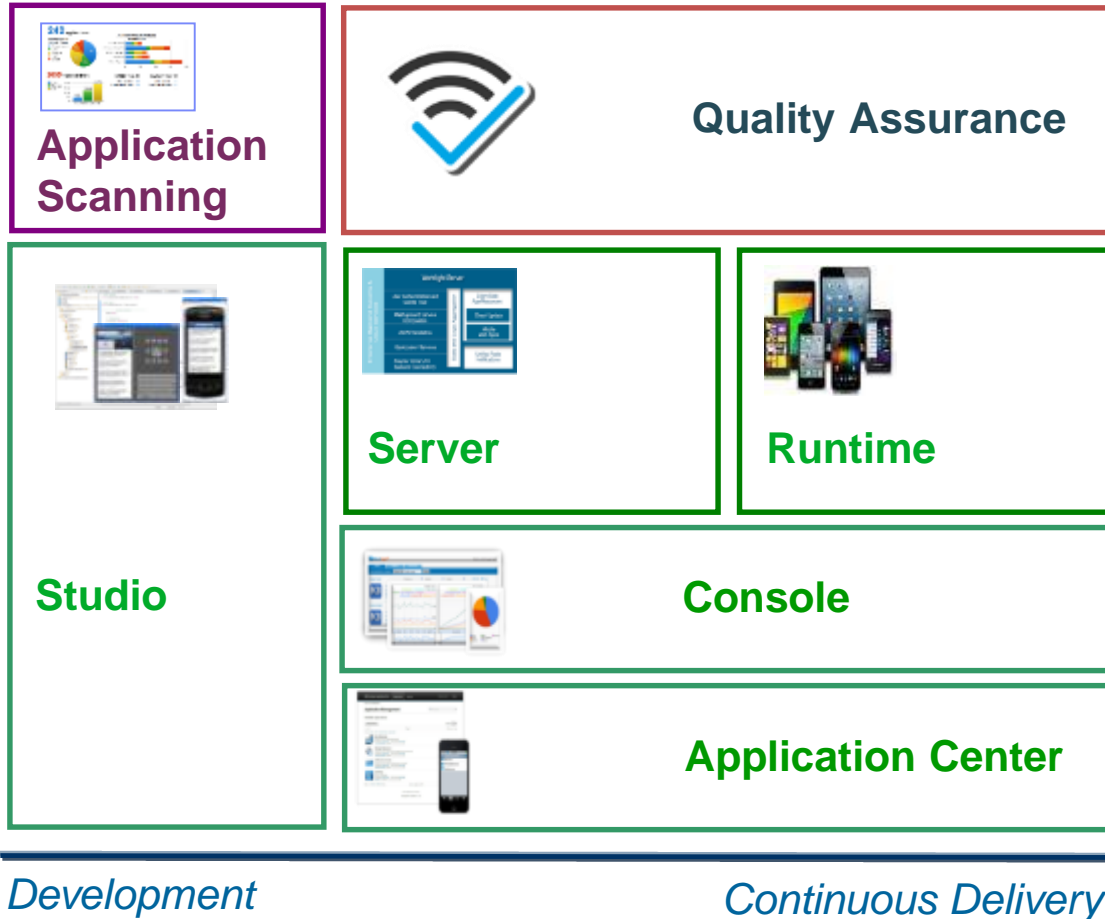- Unique development effort per OS, costly to maintain

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Izziv: Mobilna aplikacija ni samo "UI"

Front-end

Back-end

Short time to market

Web? Hybrid? Native?

Teamwork

Industrialize dev

Integrate with SDLC

30%
of the value and effort is visible (mobile UI)

70%
of the value and effort es under the surface

User engagement

Connect to back-end

Efficient and flexible push notifications

Track and leverage location

Offline availability

B2E app distribution

Operations

Manage and enforce app versions

Track problems that affect UX

Ensuring continued support in a quick-changing landscape

Security

Push upgrades

User authentication

App security

Data protection

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IBM Worklight Platform

Application Scanning

Quality Assurance

Server

Runtime

Studio

Console

Application Center

Development ————————————————→ Continuous Delivery

Application Scanning
Detect code vulnerabilities at the time of development

Quality Assurance
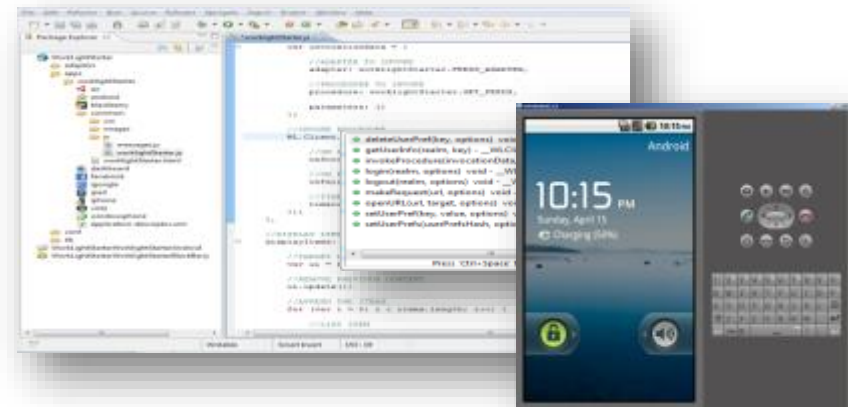Collect beta test feedback, crashes and analyze user sentiment

Foundation
Development, Runtime, Operations Console & Private Store

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Razvoj: Worklight Studio

- Eclipse-based IDE
- Code assist tools with auto-complete and validation
- Application scaffolding and componentization
- Mobile OS-specific optimization
- Device-specific optimization with Skins
- 3rd-party library integration for HTML5 and native components
- Quick access to simulators, emulators, and debugging tools

SDKs

Worklight Studio	Build Engine	
HTML5, Hybrid, and Native Coding		iOS
Optimization Framework		Android
Integrated Device SDKs		Blackberry
3rd Party Library Integration		Windows Phone
WYSIWG Editor and Simulator		Windows 8
Functional Testing		Java ME
		Mobile Web
		Desktop Web

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Razvoj: "Bring Your Own Tools!"

- In Worklight 6.2 developers have the flexibility to use the development tools of their choice – Worklight Studio is no longer required

- A Command Line Interface (CLI) is provided to enable the use of other development tools

- The CLI provides the following capabilities:
    - Add Worklight SDKs to a native project
    - Create Worklight hybrid projects
    - Add environments to a Worklight hybrid project
    - Create Worklight Adapters
    - Test Worklight Adapters
    - Deploy Worklight applications and adapters to the Worklight Server
    - Start and stop the Worklight Server
    - Launch the Worklight administrative console

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Testiranje: Mobile Test Workbench

- Comprehensive, complete, resilient functional testing

  - Android and iOS, native and hybrid
    HTML and jQuery

  - Record, edit, and run on mobile devices or emulator

  - Same test runs across multiple devices in the platform family

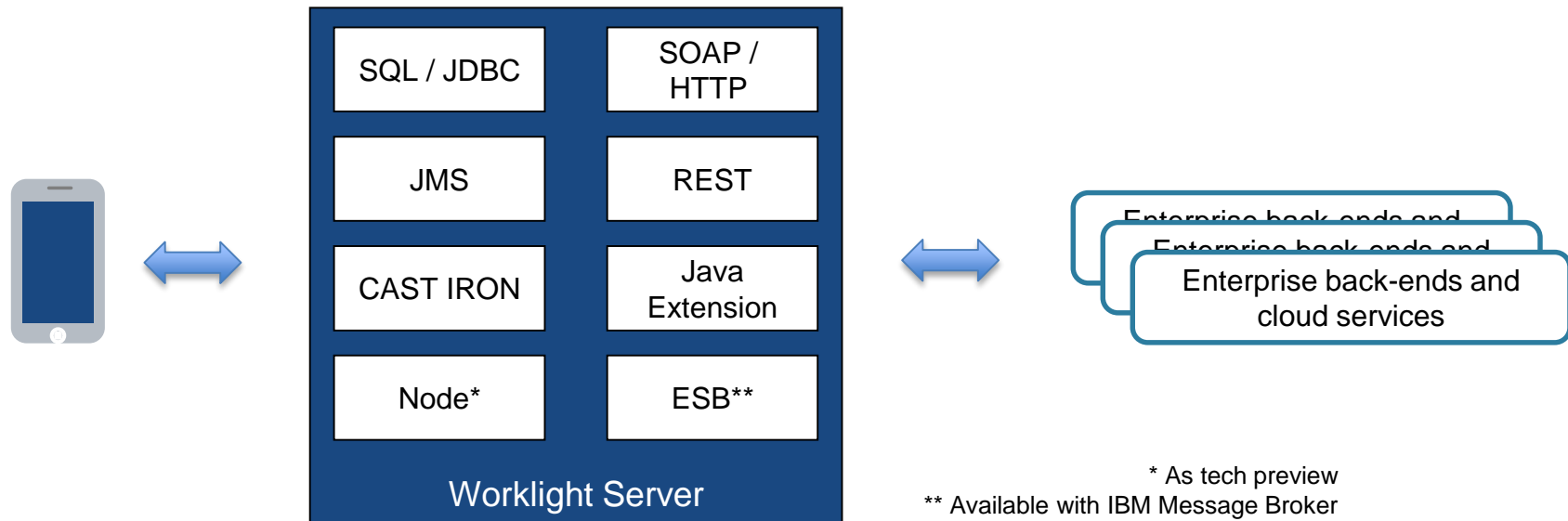 - Natural language scripts can be used by developers and non-developers alike

- Simple process

  1. Record

  2. Author

  3. Playback

  4. Report

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Povezava z zalednimi sistemi: Adapterji

SQL / JDBC	SOAP / HTTP
JMS	REST
CAST IRON	Java Extension
Node*	ESB**

Worklight Server

Enterprise back-ends and cloud services

* As tech preview
** Available with IBM Message Broker

Run time

- Lightweight server-side logic to expose systems of records in a mobile-friendly way
- Security
- Analytics
- Data sync
- Mobile user engagement

For developers

- JS anywhere: Simple APIs for server-side JavaScript development
- Extensibility: Java API for custom adapters
- Easy-to-use, consistent client-side API to call any back-end system

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"Service discovery wizard"

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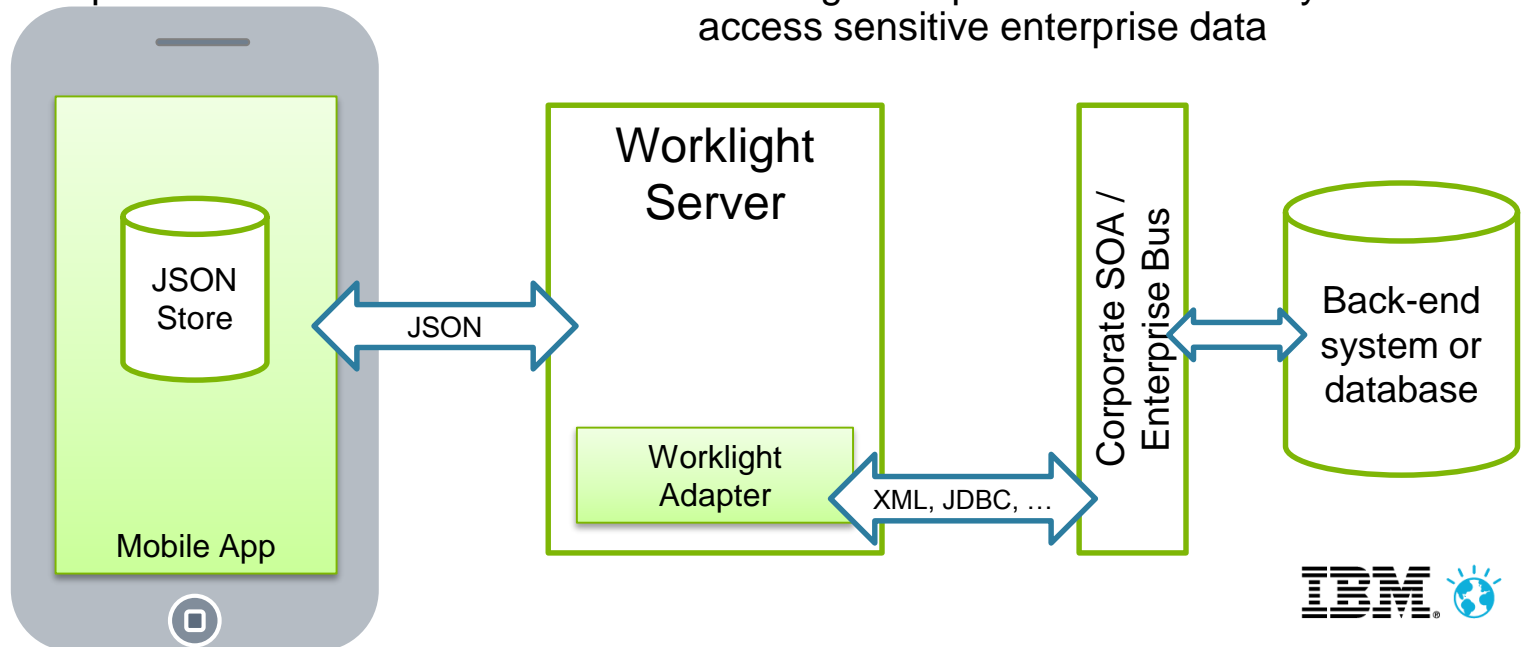
"Push" notifikacije – unificiran pristop

- Uniform access to push notifications providers
  - Register for, notify, and receive a notification via Worklight APIs or SMS

- Register for and send SMS based notifications
  - E.g., for feature phones

Back-end System	Polling Adapters	Unified Push API	Notification State Database	iOS Dispatcher	iOS Push API	Apple Push Servers (APN)		Worklight Client-side Push Services
				Android Dispatcher	Android Push API	Google Push Servers (GCM)		Worklight Client-side Push Services
Back-end System	Message-based Adapters		User-Device Database	Windows Phone Dispatcher	Windows Push API	Microsoft Push Servers		Worklight Client-side Push Services
				SMS Dispatcher	Broker API	SMS/MMS Brokers		

Administrative Console
Notification statistics, SMS subscription control

Optional 2-way SMS

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"Offline" način: JSON Store

- On-device, mobile database support
  - Embedded JSON mobile database
  - JavaScript APIs to store, query and update the data in offline mode using MongoDB-like APIs
- Encrypt sensitive data
  - Using a key provided by developer or obtained as user's password
  - FIPS140-2-compliant

- Server-to-client Sync
  - Retrieve, store and keep data store up-to-date using adapters
- Client-to-server Sync
  - Simplify write actions on data while the app is offline and send these actions to the server
- Enterprise API-based
  - Leverages corporate API / SOA layer to access sensitive enterprise data

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"Direct Update"

Native Shell

Pre-packaged resources

App Store

1 Download

2 Transfer

Cached resources

Worklight Server

3 Check for updates
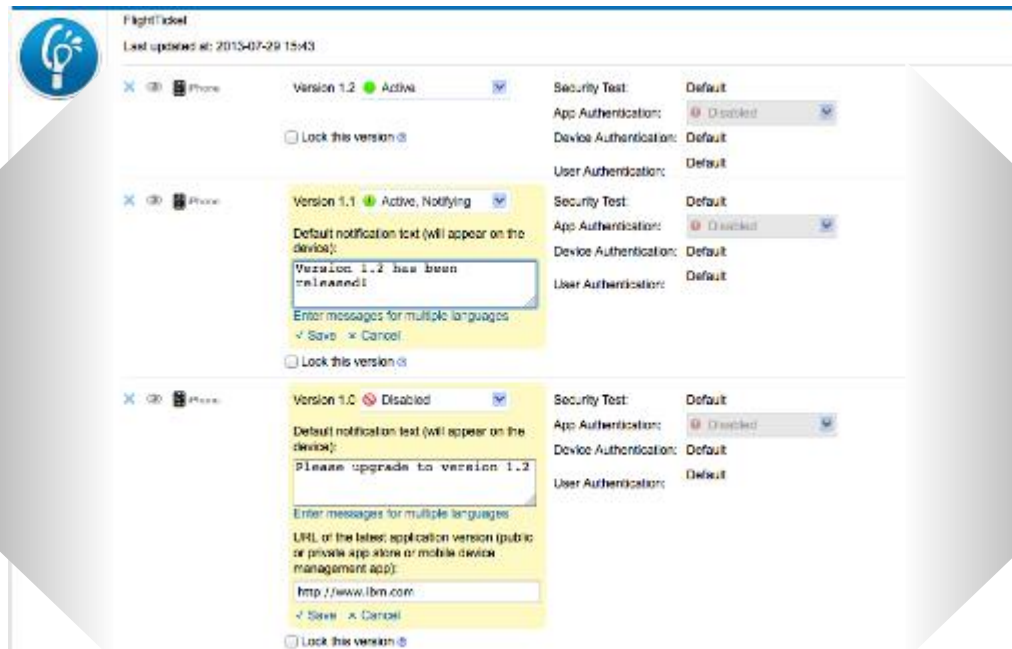
Web resources

4 Update web resource

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 and foreground events

4. Updated web resources downloaded when necessary, with user confirmation or silently

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"Remote disable"

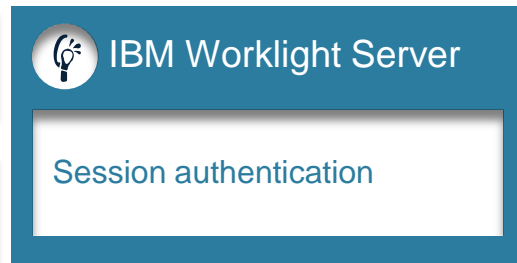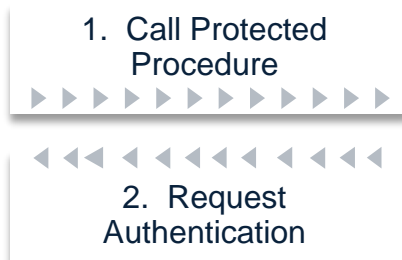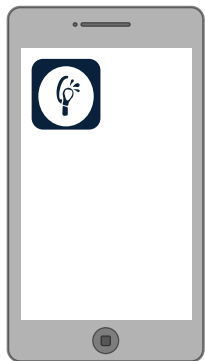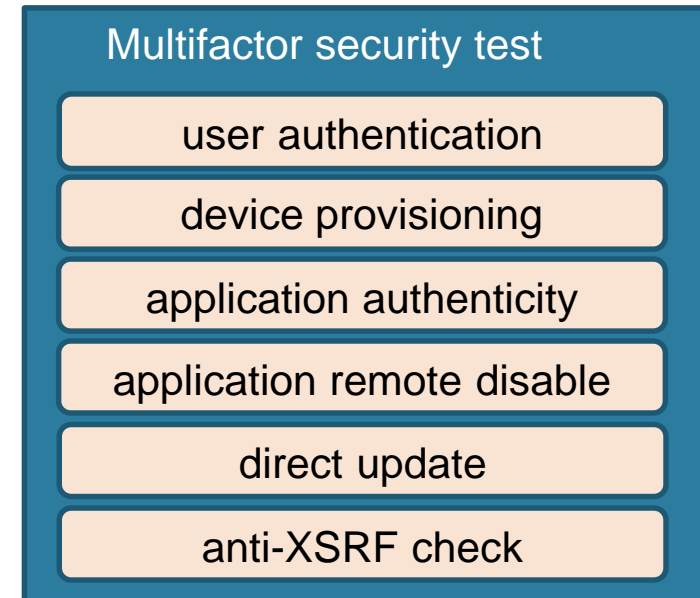**Remote Disable**: Deny access to an app of a specific version on a specific environment

- Ensure users use the latest security fixes
- Avoid using previously installed old versions that are no longer supported

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Varnost: Worklight security model

- Goals
  - Controlling access to the protected resources
  - Propagating identity to the backend
- Resources
  - **Application**
 - **Adapter procedure**
  - **Event source**
  - **Static resouce**

Multifactor security test

| user authentication |
| device provisioning |
| application authenticity |
| application remote disable |
| direct update |
| anti-XSRF check |

1. Call Protected Procedure

2. Request Authentication

IBM Worklight Server

Session authentication

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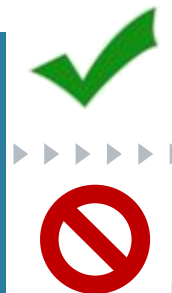
Analitika: Worklight Operational Analytics

▪ Out-of-the-box analytics address the following:

  – User adoption, device and app properties

  – User actions and called adapter procedures

  – Performance and data usage information

  – Exceptions, crashes, logs, response time

  – Geolocation data

▪ Analytics component now provided in a WAR for simple install and administration

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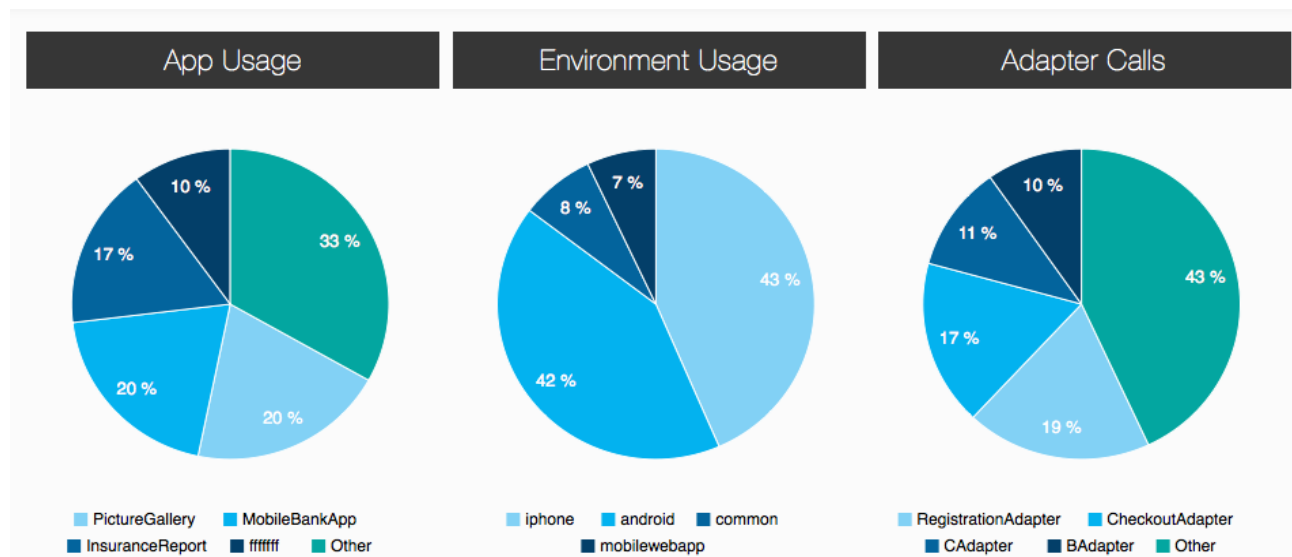
Distribucija aplikacij: Application Center

- Share apps across developers, testers, and other stakeholders
– iOS, Android, Windows Phone 8, BlackBerry 6 and 7
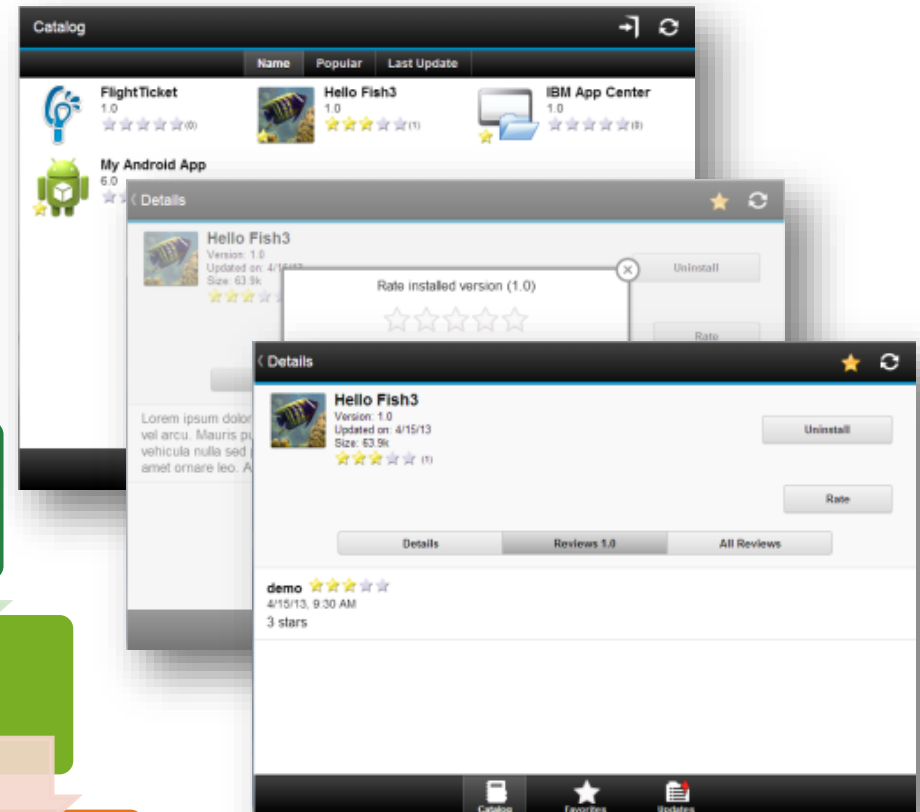
Developers
• Easily distribute app to testers

Testers
• Easily find apps and versions to test

Testers
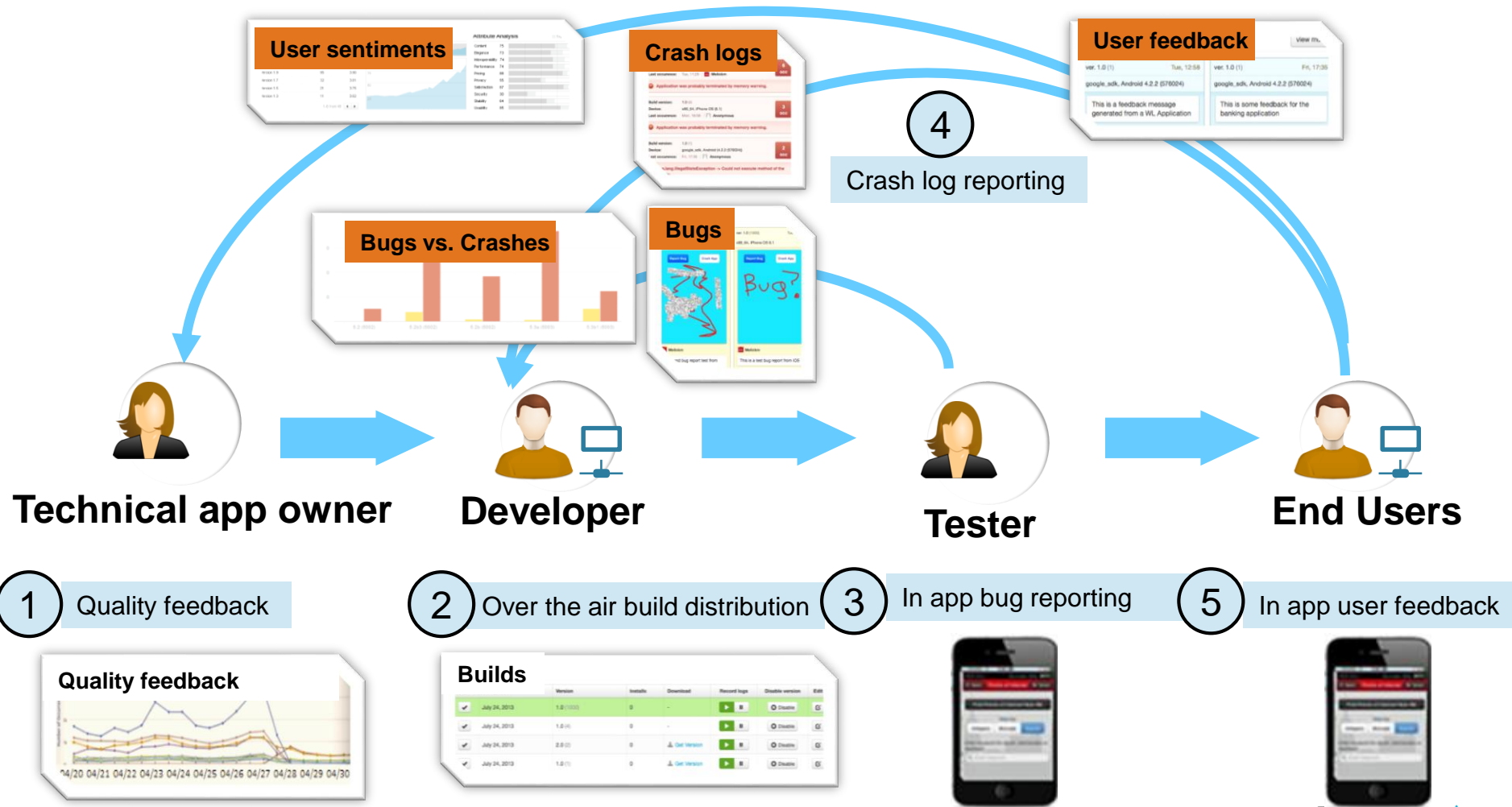• Provide rating and feedback directly from the device

Developers
• Access all feedback in a centralized manner

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Mobile Quality Assurance

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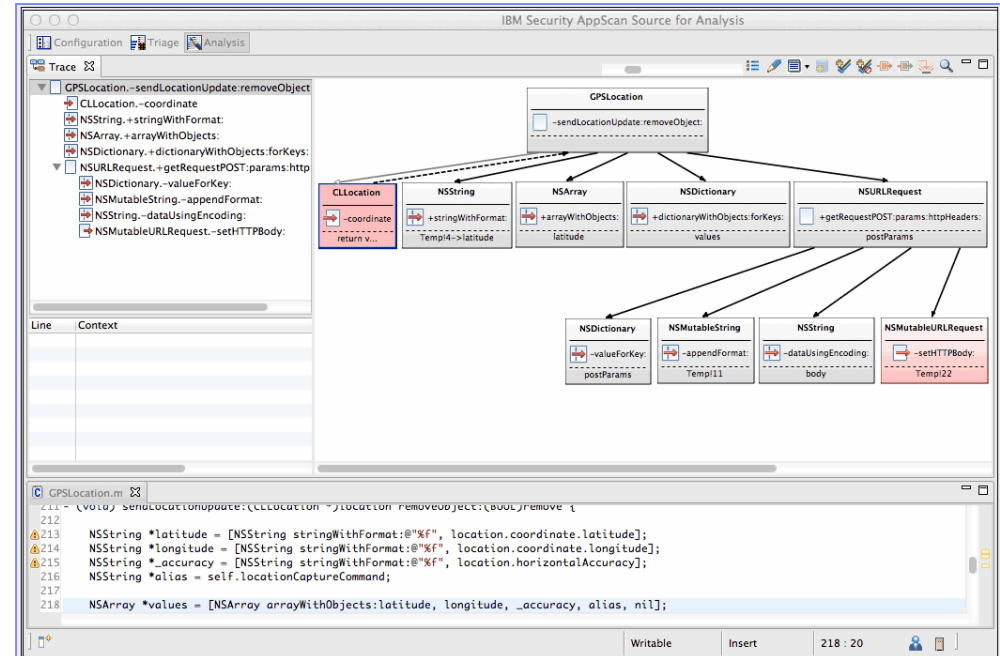Misli prihodnost. Bodi sprememba.

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Application Scanning

Ensure mobile applications are not susceptible to malware!

- Support for **Android** and **Native Apple iOS** apps

- Security SDK research & risk assessment of **over 40k** Android and iOS APIs

- **Mac OS X** platform support

- **Xcode** interoperability & build automation support

- **Full** call and data flow analysis of
  - Objective-C
  - JavaScript
  - Java

- **Identify** where sensitive **data** is being **leaked**

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GH Bernardin | 23. oktober 2014

Hvala !

http://www.ibm.com/developerworks/mobile/worklight/