Continuously Improve Mobile App Quality: IBM Mobile Quality Assurance
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The goodness of a good app

- **Consumers respond well to a good app**
  - **58%** -- would purchase products from the company that owns/issued/sold the software.
  - **72%** -- would tell their friend about their positive experience/impression.

- **Employees also respond well to a good app**
  - **38%** -- average increase in employee productivity
  - **40%** -- average increase in partner productivity
  - **30%** -- average reduction in the cost of a process or project

Base: 1048 Consumers in US, Canada, UK and India who use mobile apps, and 200 IT and business decision-makers involved in mobile application strategy, development, and/or procurement
Source: "IBM Mobile App Consumer & Enterprise Surveys", a commissioned study conducted by Forrester Consulting on behalf of IBM, September, 2014

The Impact of Good and Bad Mobile Apps

WHEN YOUR APP FAILS

63% OF YOUR CUSTOMERS COMPLAIN TO THEIR FRIENDS.

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM

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What's the cost of not getting it right?

- **Consumers react decisively to a bad experience <u>across touch points</u>:**
  - **65%** -- would not purchase products from the company that owns/ issued/sold the software.
  - **63%** -- would tell their friend about their negative experience/ impression.
  - **50%** -- will uninstall the app if they have problems Generally less willing to interact with the company on its website or via social media.

- **Employees:**
  - Get stuck and can't continue doing their work when the app doesn't work *(or spend additional time working around the app's poor performance).*
  - Do not adopt the app as a productivity tool, yielding the enterprise no productivity gains.

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Concerns that make Mobile App Quality different

"When someone leaves a negative review in the app store, it scars your app for life, you can't respond to it, and you can't learn more about the problem in order to fix it quickly."

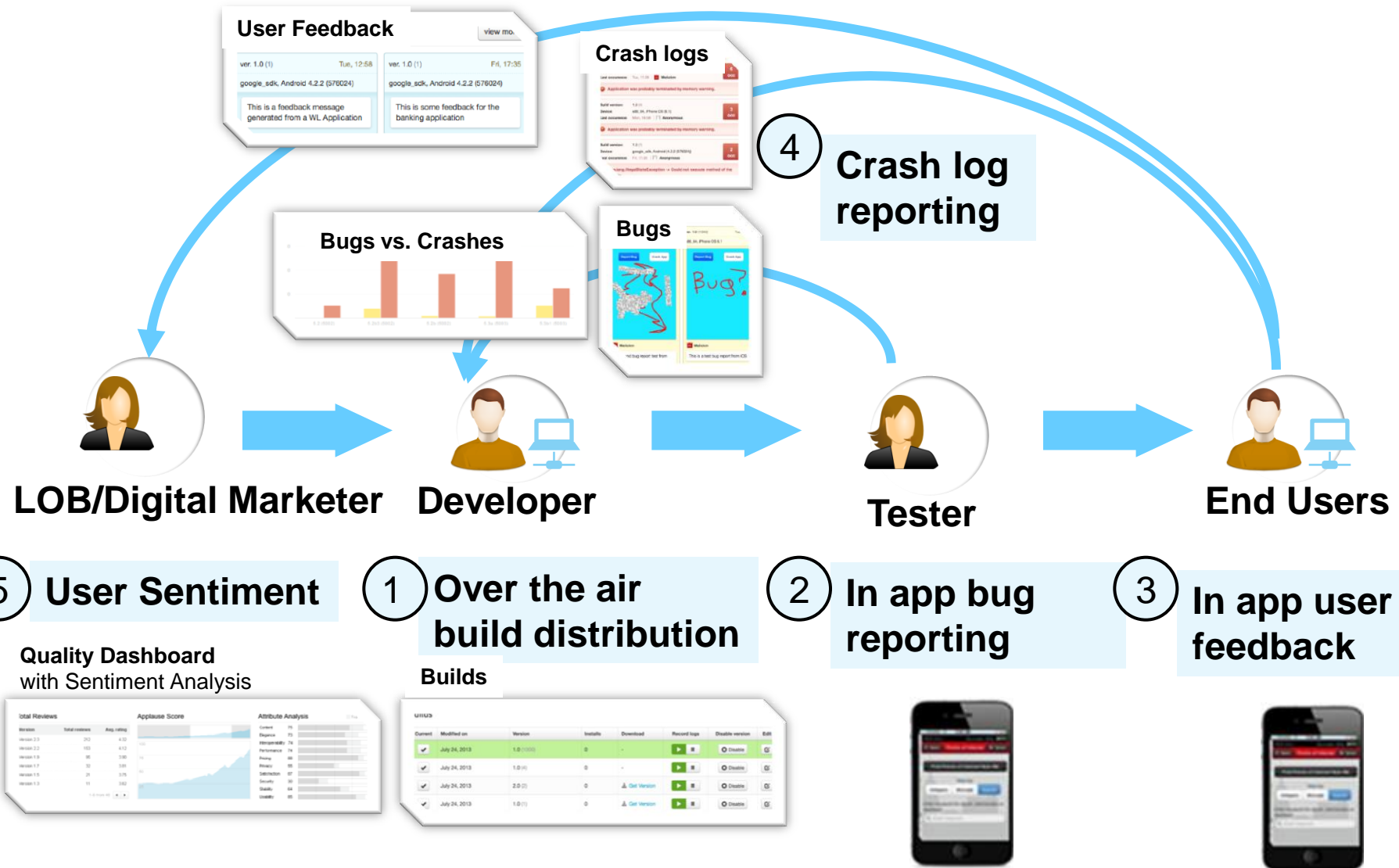- Mobile Orchard

LOB/Digital Marketer
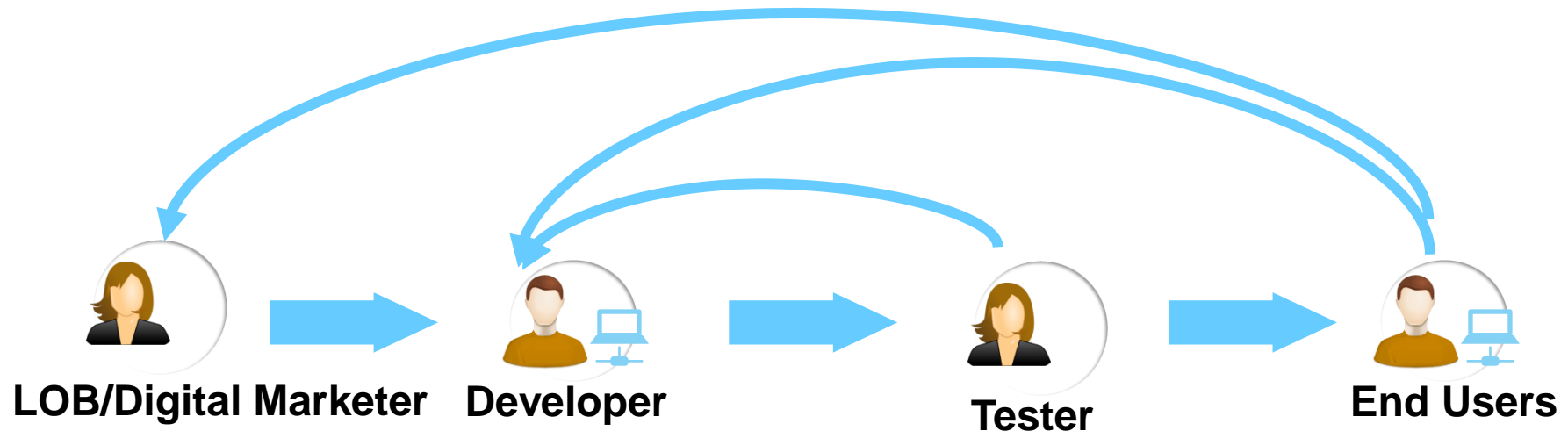
- How effective our mobile app is at engaging customers?
- How can I stay on top of current quality metrics, and turn them into an actionable strategy?

Developer

- How could I get visibility to issues that customers experience in production so that I can address them quickly?
- How can I get more people to test the apps so that we can cover different devices, network carriers, and OS versions?

Tester

- How can I get the latest and greatest build without wasting my time to track that down?
- How can I quickly submit bug reports with screenshots and device details right from the application?

End Users

- How can I provide direct and constructive feedback?

6

Mobile Quality Assurance: Continuously deliver high quality mobile apps

User Feedback

Crash logs

④ **Crash log reporting**

Bugs vs. Crashes

Bugs

LOB/Digital Marketer   **Developer**   **Tester**   **End Users**

⑤ **User Sentiment**

Quality Dashboard
with Sentiment Analysis

① **Over the air build distribution**

Builds

② **In app bug reporting**

③ **In app user feedback**

Over the air app distribution

- Developer uploads new build

- Identifies test devices

- IBM MQA notifies testers

- Testers download new version through the app or thru IBM MQA

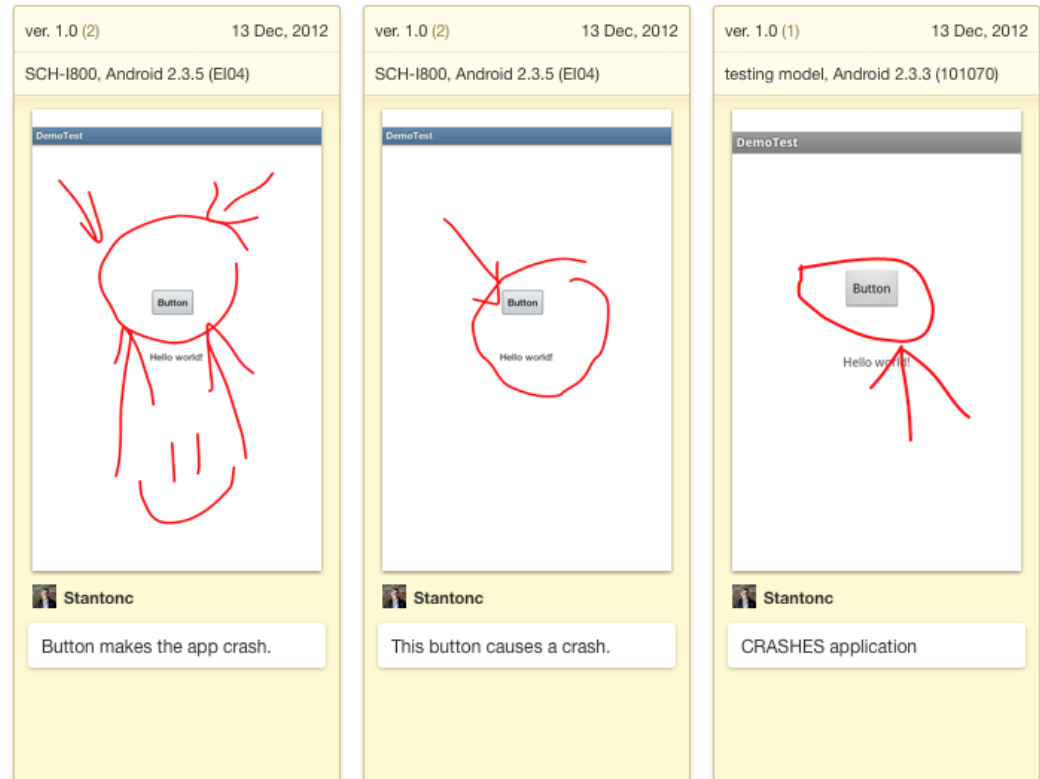**Enables developers to distribute new builds to test devices**

In app bug reporting

When bugs are identified, user simply shakes their device

1. IBM MQA is activated
2. Bug details are report in structured manner RTC

Bug details include

- Device maker & model
- OS & version
- Carrier & connection speed
- Battery life & resolution
- Repro steps & screenshot

Enables developers to receive bug reports

Direct user feedback

- Developers can customize the feedback workflow

- When user has feedback, they trigger a feedback widget

- IBM Mobile Quality Assurance is activated

- Free-form feedback is shared directly to IBM MQA

Enables developers to connect with users

Crash log reporting

When your app crashes, IBM MQA logs the event

IBM MQA captures the crash details
- Device maker & model
- OS version
- Carrier & connectivity
- Battery life
- Stack trace
- Logs

IBM MQA aggregates all crashes into an easy-to-use reporting UI

New version (89)
GT-P1010, Android (2.2.1 (XWKB8))
18 Apr, 2012 | Anonymous

15 OCC

⊗ java.lang.NullPointerException -> Test crash

```
com.testapp.ApphanceTestAppActivity.crash (ApphanceTestAppActivity.java:31)
com.testapp.ApphanceTestAppActivity.access$0 (ApphanceTestAppActivity.java:30)
com.testapp.ApphanceTestAppActivity$1.onClick (ApphanceTestAppActivity.java:47)
android.view.View.performClick (View.java:2461)
android.view.View$PerformClick.run (View.java:8890)
```
View more

New version (89)
GT-P1010, Android (2.2.1 (XWKB8))
27 Feb, 2012 | Anonymous

53 OCC

⊗ java.lang.IllegalArgumentException -> No files specified for upload

```
com.apphance.android.util.Network.uploadFiles (Network.java:225)
com.apphance.android.session.PacketSender.sendMessageAttachments (PacketSender.java:211)
com.apphance.android.session.PacketSender.sendAttachments (PacketSender.java:174)
com.apphance.android.session.PacketSender.processSuccessfulPacketResponse
(PacketSender.java:142)
```
View more

Enables developers to know when and why crashes occur

User Sentiment

Mine app ratings and reviews to extract actionable feedback
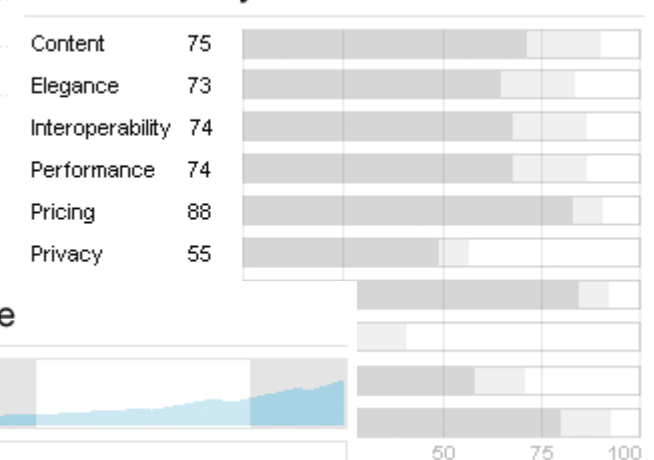
IBM MQA allows users to see

- Review stats on their mobile apps
- Detailed attribute scores
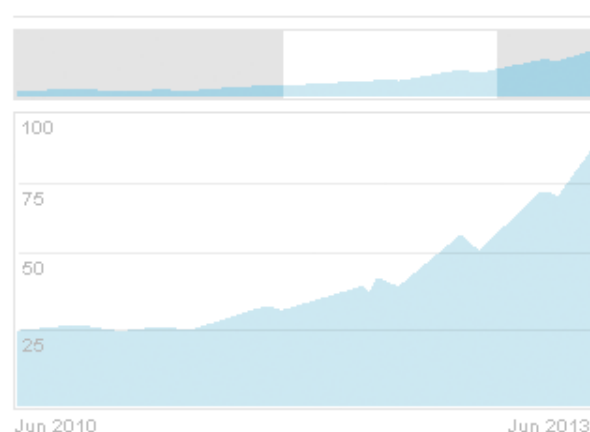- Cumulative sentiment score and trends

Total Reviews

Version	Total reviews	Avg. rating
Version 2.3	212	4.32
Version 2.2	153	4.12
Version 1.9		
Version 1.7		
Version 1.5		
Version 1.3		

Attribute Analysis   Top Scores

Content	75
Elegance	73
Interoperability	74
Performance	74
Pricing	88
Privacy	55

50   75   100

Sentiment Score

100
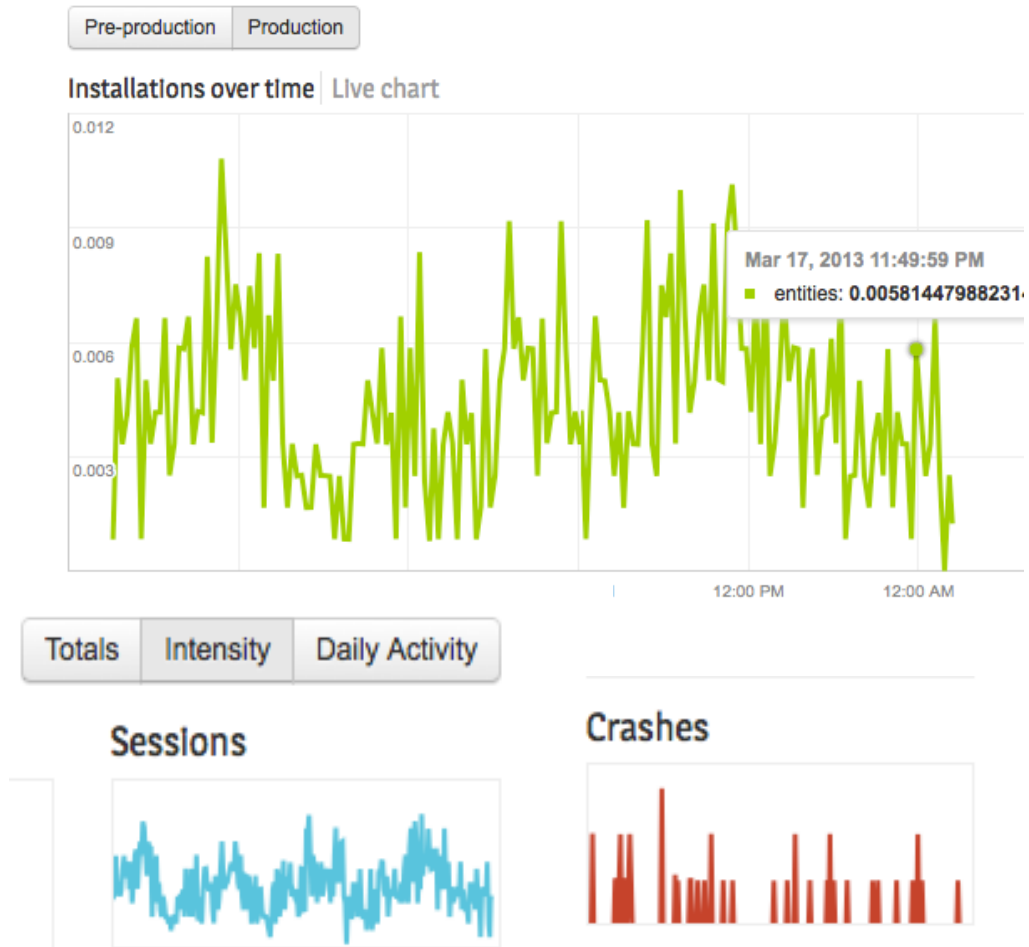
75

50

25

Jun 2010   Jun 2013

Enables line of business to mine user sentiment

Evidence-based prioritization

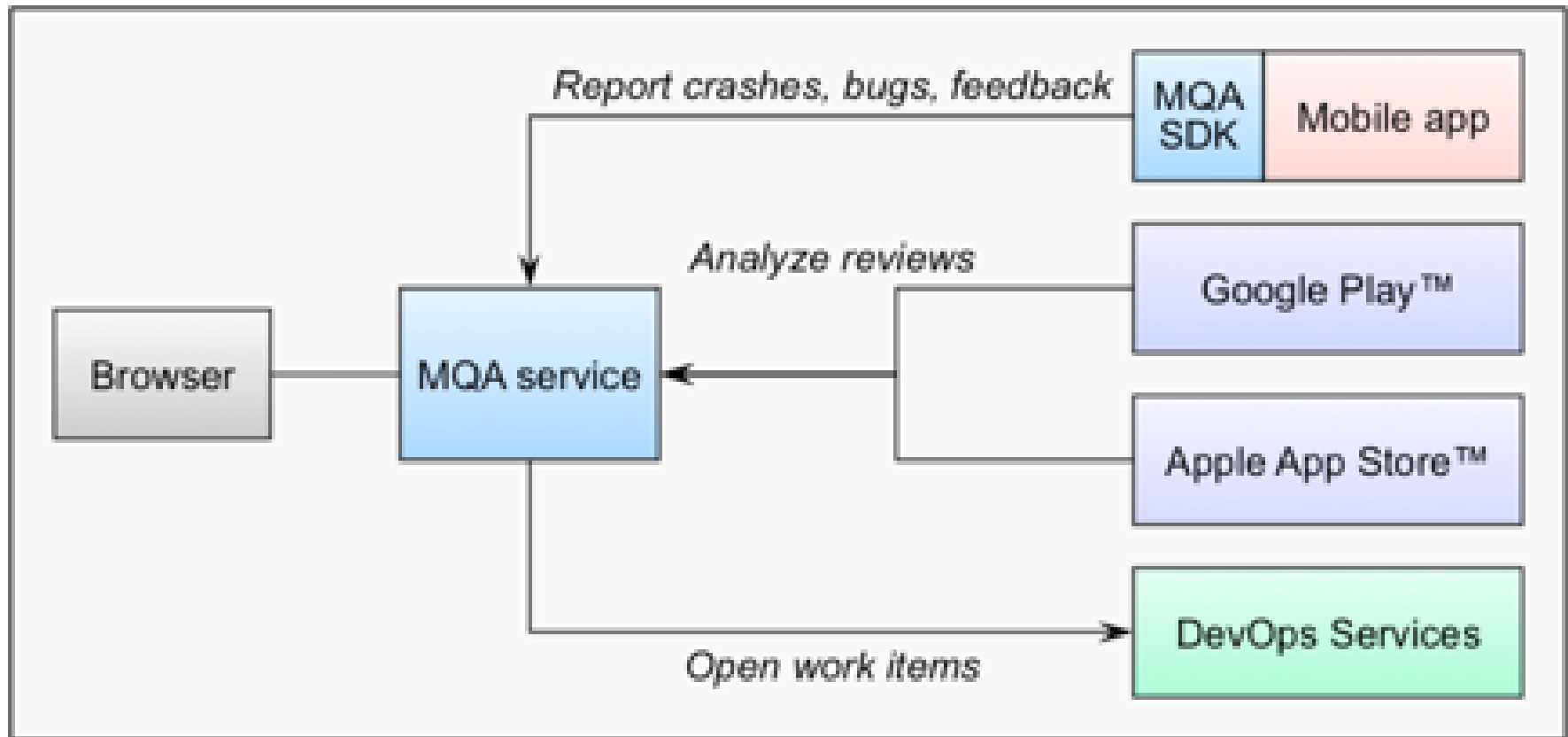Collaborate on mobile strategy and end user experience

IBM MQA delivers

- Tracking of app installations
- Cumulative usage sessions
- Crash report tracking over time

Enables prioritization of action on mobile app development

Mobile Quality Assurance Architecture

Continuous quality assessment and user feedback of applications

- **Mobile Quality Assurance provides a rapid feedback loop with customers**
  - Instant feedback via interactive bug reporting
  - Screen captures to assist problem identification

- **Integrates directly with IBM DevOps Services Track and Plan**
  - Automatically create a new defect in Track and Plan from feedback in MQA
  - Development team is always up-to-date on latest issues
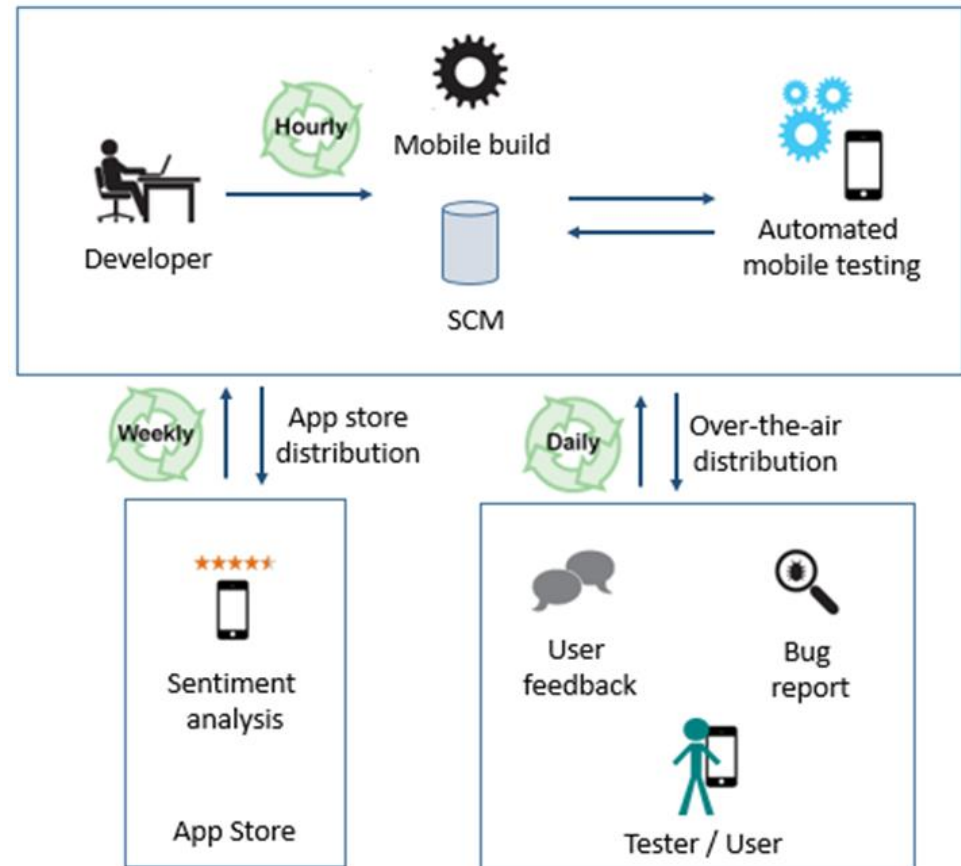
Tangerine – Improves customers' mobile experience using automated app feedback

Tangerine
Forward Banking

95% reduction

in implementation time, with the IBM® Bluemix™ solution taking days, rather than weeks, to install

Gathers more than 1,000

items of feedback from customers in just a few weeks

Simplifies quality assurance

processes by consolidating customer issues and delivering them in a meaningful way

The transformation: To respond to rapidly changing consumer expectations, Tangerine wanted to be able to get actionable insight based on customer feedback. Tangerine chose the IBM Mobile Quality Assurance for Bluemix service, one of several cloud-based IBM DevOps solutions, to improve the quality of its mobile banking app.

Solution component
Software
• IBM® Mobile Quality Assurance for Bluemix™

"With the Bluemix solution, we can rapidly improve the customer experience."

—Charaka Kithulegoda, chief information officer, Tangerine

DEMO

IBM Tealeaf provides continuing in-depth customer analytics of applications in production

- Tealeaf is complementary to Mobile Quality Assurance
  - MQA for early development and testing
  - Tealeaf for post-production feedback and analytics

- Tealeaf ensures continuous feedback throughout lifecycle
  - Improvements can be made during and after development
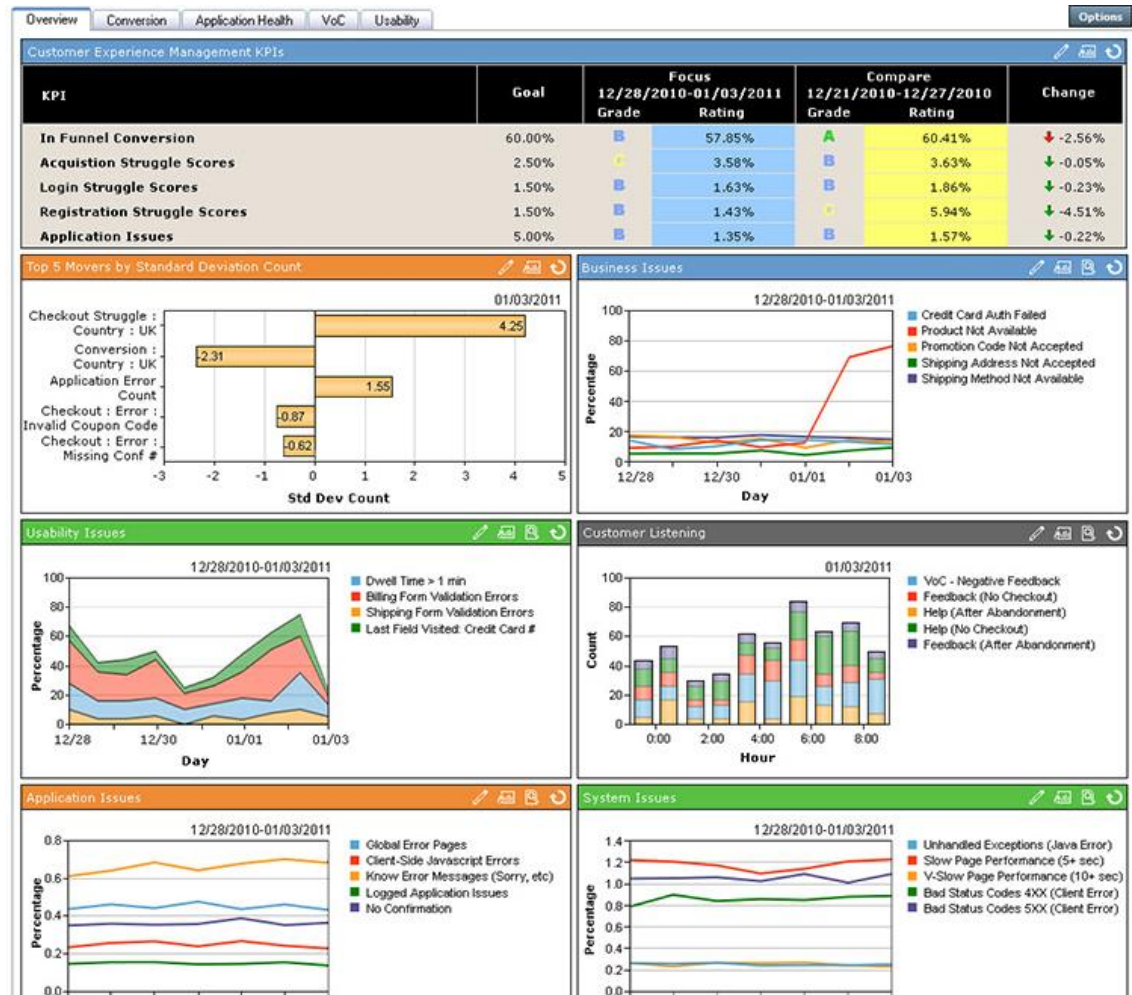
Gain detailed visibility into the mobile experience with IBM Tealeaf

- Discover "why" customers succeed or fail when using your application

- Automatically detect customer struggles, obstacles or issues

- Drill down into actual user behavior, complete with gestures

- Translate customer feedback into actionable improvements

- Correlate customer behavior with network and application data

- Fraud detection and forensics

Native Apps

Mobile Web

Hybrid Apps

HTML5

See the complete mobile experience through the eyes of your customers

Bluemix and DevOps Services