

**BusinessConnect and SolutionsConnect**  
It's time to make bold moves.

***MOBILE APPLICATION  
DEVELOPMENT WITH  
SPEED AND QUALITY***



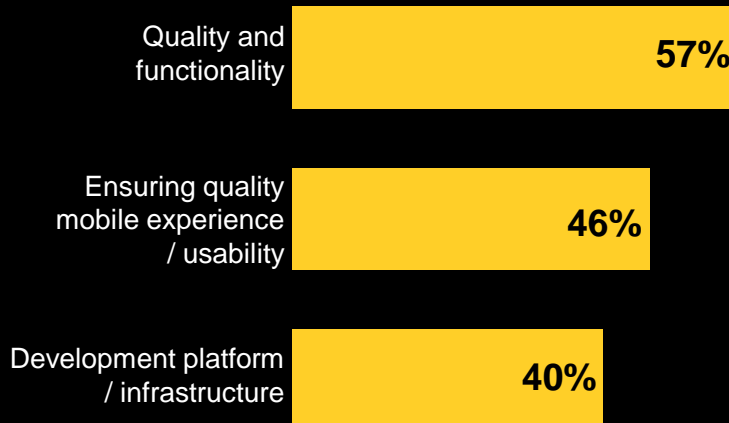




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# COMPANIES STRUGGLE WITH THE DESIGN AND DEVELOPMENT OF MOBILE APPLICATIONS

## Challenges In developing/acquiring mobile applications



“ For the end customer, it is not easy to get the right orientation, look and feel; usability is the next thing. ”

Executive | Automobile company

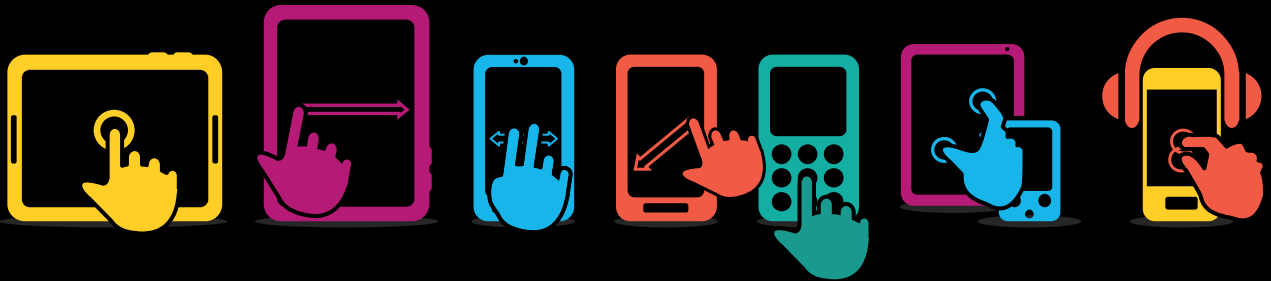
Source: Institute for Business Value, Mobile Enterprise Study, Q11.

Please select the top challenges your organization faces today when developing or acquiring mobile applications. Select up to 5.

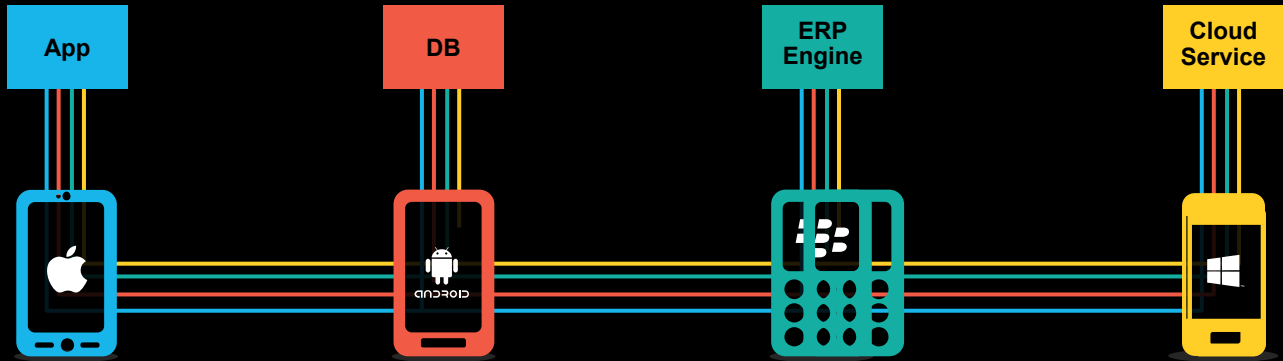
# THEY STRUGGLE WITH **MULTIPLE MOBILE OS PLATFORMS** AND DEVICES?



# THEY STRUGGLE CREATING THE BEST UX USING BEST OF BREED OPEN FRAMEWORKS?



# THEY STRUGGLE WITH **INTEGRATION?**



# THEY STRUGGLE WITH SECURITY?





# THEY STRUGGLE WITH TESTING?



# THEY STRUGGLE WITH **ANALYTICS?**



# THEY STRUGGLE WITH **MOBILE OPERATIONS?**

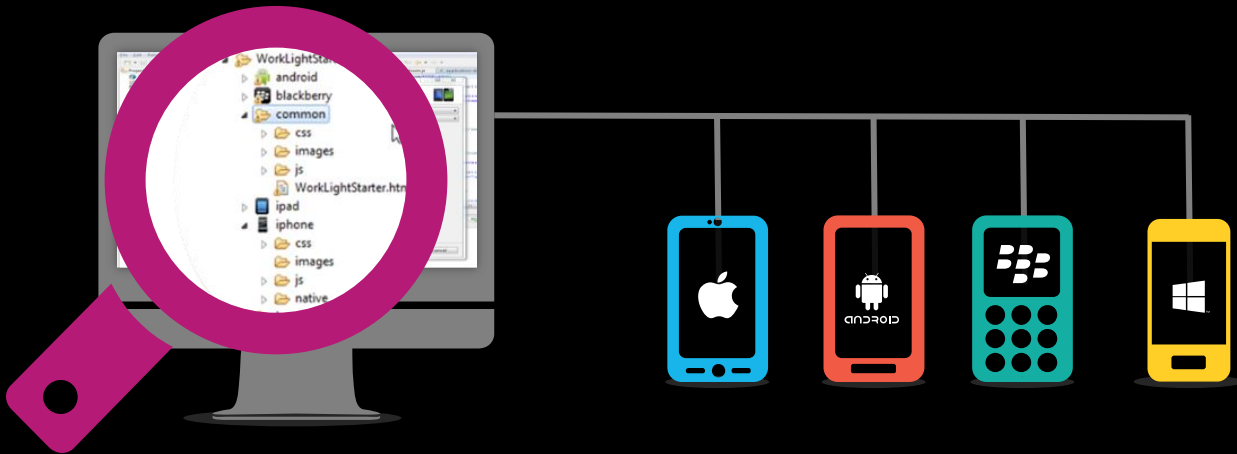


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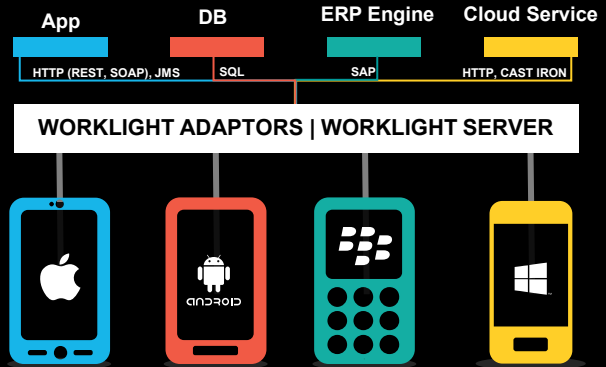
**HOW DO WE  
OVERCOME THESE  
*CHALLENGES?***



# MULTI-PLATFORM DEVELOPMENT – ENVIRONMENT OPTIMISATION FOR MAXIMUM CODE REUSE



# CONNECTIVITY – STREAMLINED, TRANSPARENT & MOBILE OPTIMISED



# INSTANT PREVIEW TESTING – MOBILE BROWSER SIMULATOR

## Mobile Browser Simulator

The Mobile Browser Simulator displays mobile web pages in a variety of mobile browser sizes and shapes.

Webpage:

Add Device ▾

Scale All Devices: 100% ▾

Enable Useragent Switching  Simulate

- ▶ Battery
- ▶ Camera
- ▶ Capture
- ▶ Compass
- ▶ Contacts
- ▶ File
- ▼ Geolocation
  - ▶ Coordinates
  - ▶ Map
- ▶ Network
- ▼ Scenario
  - Name: MyScenario

MyScenario

Latitude, Longitude (decimal degrees, for example)

**Instant Preview Testing - Mobile Browser Simulator**

The screenshot shows the Mobile Browser Simulator interface. At the top, the browser address bar displays the URL: `128.141.143.195:10080/_MobileBrowserSimulator/index.html?webpage=http://128.141.143.195:10080/LocationScenariosDemo/apps/services/...`. The main title is "Mobile Browser Simulator" with a subtitle: "The Mobile Browser Simulator displays mobile web pages in a variety of mobile browser sizes and shapes."

Below the title, there is a control bar with the following elements:

- Webpage: `http://128.141.143.195:10080/LocationScenariosDemo/apps/services/...`
- Go / Refresh button
- Add Device dropdown
- Scale All Devices: 100%
- Enable Useragent Switching checkbox (checked)
- Simulate button

On the left side, there is a "Cordova" section with a list of device features, each with a right-pointing arrow:

- Device
- Events
- Accelerometer
- Battery
- Camera
- Capture
- Compass
- Contacts
- File
- Geolocation
- Network
- Scenario

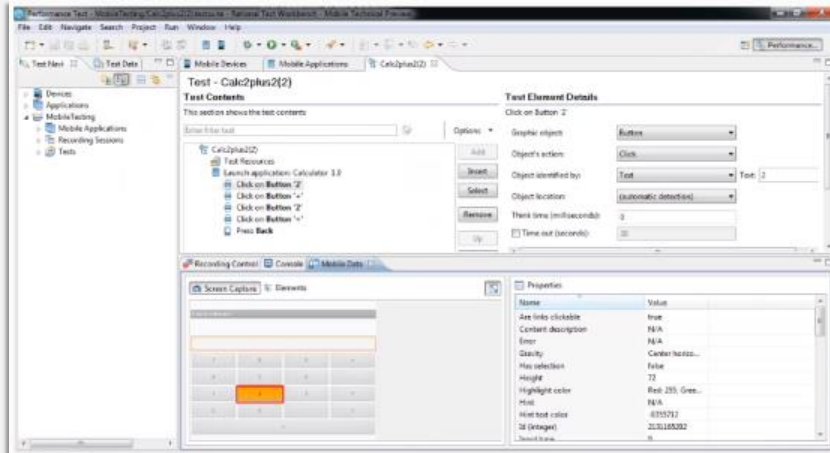
On the right side, there is a large area displaying a simulated mobile device. The device is a tablet labeled "Amazon Kindle Fire 2" at the bottom. The screen shows the word "Couponator" in a blue serif font at the top. Above the device, there are control icons: a "Skin" dropdown, a pencil icon, a QR code icon, a "Rotate" button, and a zoom icon.





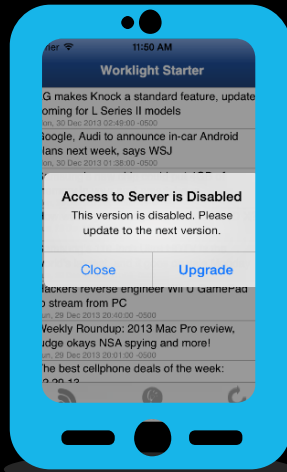
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# REGRESSION TESTING - MOBILE TEST WORKBENCH

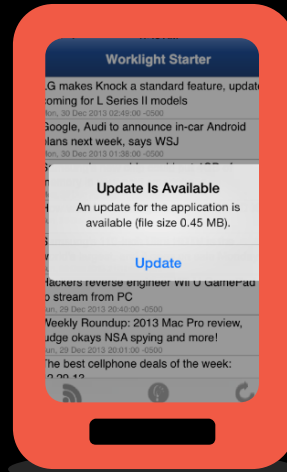


# ENFORCING SECURITY UPDATES

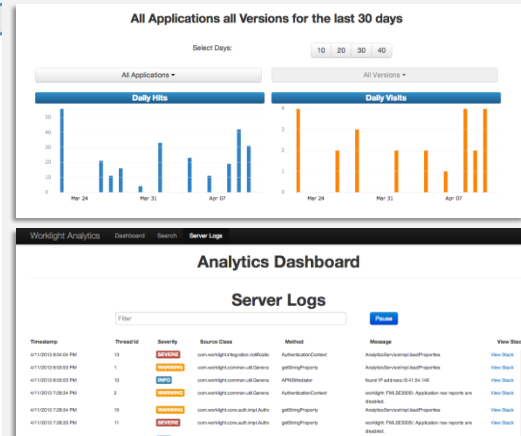
Remote  
disable



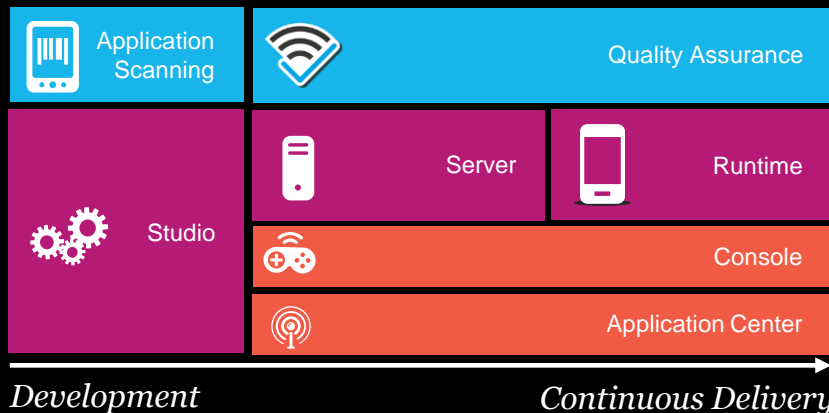
Direct  
update



# OPERATIONAL ANALYTICS



# MOBILE APPLICATION DEVELOPMENT PLATFORM (MADP) ARCHITECTURE



## ***Application Scanning***

Detect code security vulnerabilities at the time of development

## ***Quality Assurance***

Collect beta test feedback, crashes and analyze user sentiment

## ***Foundation***

Development, Runtime, Operations Console & Private Store

# ROHDE & SCHWARZ CUTS MOBILE DEVELOPMENT COSTS BY 60%

*“After lots of evaluations, we decided that Worklight seems to fit best with our environment and our needs. Now we are able to deliver exceptional apps in weeks instead of months”*

Manfred Metz | corporate mobility manager | Rohde & Schwarz

# ING VYSYA BANK INCREASES CUSTOMER SATISFACTION BY 50%

Save Chequ



Bill Payments



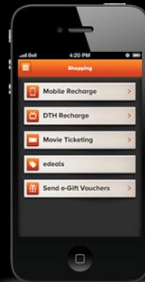
Funds Transfers



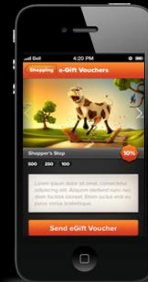
Balance Meter



One-click shopping

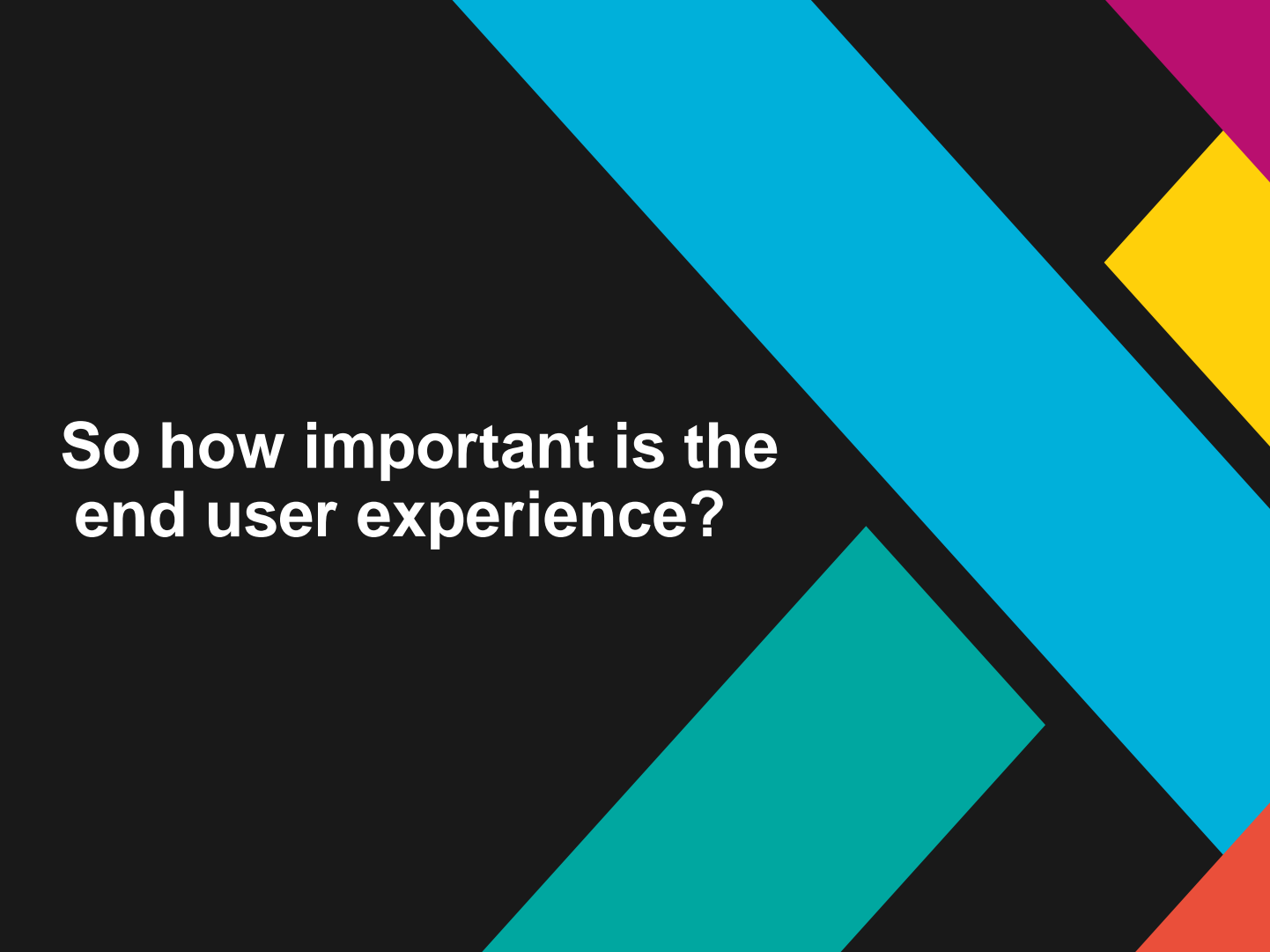


Balance Meter



Branch / ATM





**So how important is the  
end user experience?**





# VISIBILITY INTO THE CUSTOMER MOBILE EXPERIENCE TO IMPROVE CONVERSIONS AND GROW REVENUE

Industry-leading customer experience management solutions to mobile websites, native applications, and hybrid apps including support for HTML5.

- **Capture and high-fidelity replay of mobile gestures\*** for mobile web sessions on iOS and Android-based devices help optimize users' experiences on mobile web applications .
- **Analyze mobile user behaviors and quantify business impact** of user struggles with IBM Tealeaf integrated solutions
- **Add-on Heatmap, Link Analytics, Form Analytics, and Attention Map analytics** for mobile-web applications

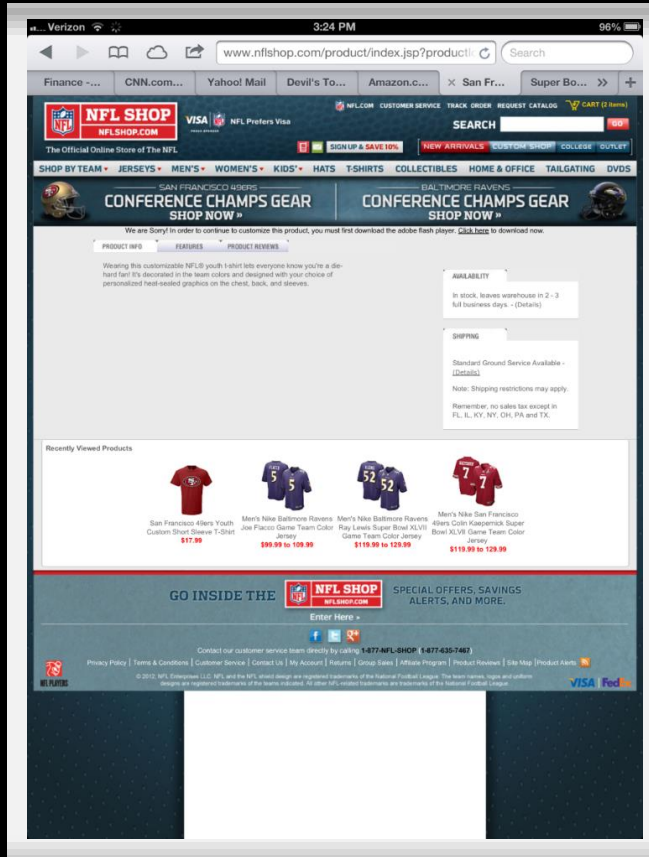


## Expectations vs. Realities

85% of adults who have completed a mobile transaction in the past year ***expect the experience to be better than using a laptop or desktop*** computer

Yet **41%** of comments about the top mobile companies expressed frustration

# CONSUMER MOBILE EXPECTATIONS ARE HIGH



# TOP CONSUMER STRUGGLES

1. Inability to complete a transaction
2. Search functionality
3. User interface



**63%**

*of all online adults would be less likely to buy from a company via other purchase channels if they experienced a problem conducting a mobile transaction.*



**How do you find out about bad customer experiences?**

# MOBILE COMMERCE: 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.*

**“The Companies That Focus on Customer Experience Are The Ones That Will Win”**

*M&M Direct*





# MOBILE COMMERCE: PURE DELIGHT



*@beccbrown - Wow, just did half my #Christmas shopping on the bus, using my #iPhone \_\_\_\_\_ app. #ihearttech #blackfridaybedamned*



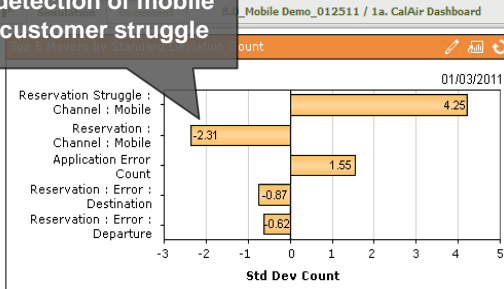
*@LiveLoveLaugh88 - I'm like a fiend with these \_\_\_\_\_ deals... setting alarms on my phone and checking \_\_\_\_\_ app every 15 mins. #BlackFriday*



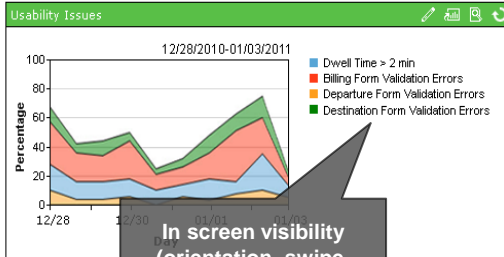
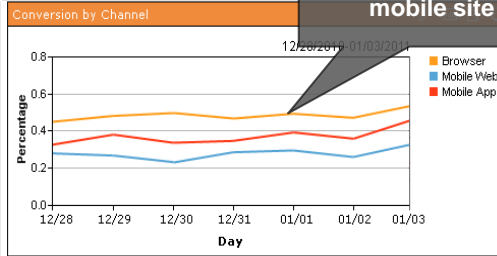
*@eclat521 - Well- that's my boy's Xmas presents ordered, from my phone, thanks to \_\_\_\_\_ app. Too easy!*

# MOBILE DASHBOARD

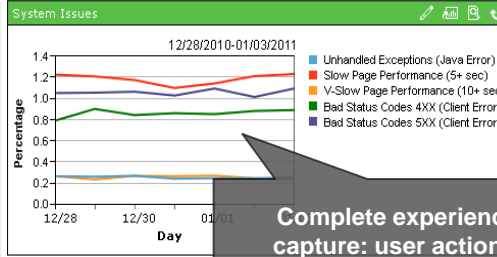
Automatic detection of mobile customer struggle



Cross channel analytics: web, app, mobile site

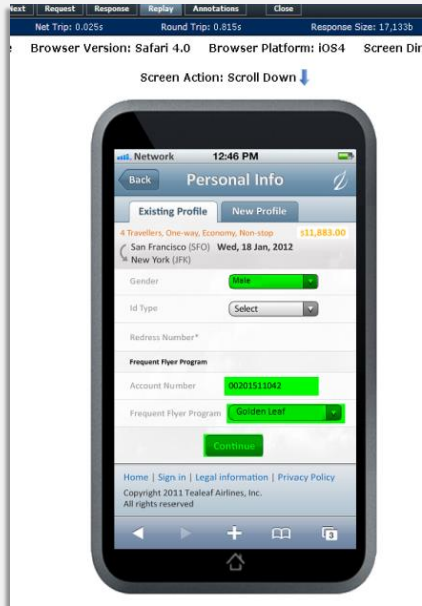


In screen visibility (orientation, swipe, form entry, clicks) to track usability issues



Complete experience capture: user actions, application, environmental and network data

# MOBILE WEB



## Orientation-Specific Enhanced Mobile Replay



# MOBILE DOM RENDERING

**Navigation**

Page #	Title	Time Stamp
11	Home page	10/10/2012 11:51
12	Screenview: L046	10/10/2012 11:51
13	TouchGesture B:	10/10/2012 11:51
14	TouchGesture B:	10/10/2012 11:51
15	TouchGesture B:	10/10/2012 11:51
16	TouchGesture B:	10/10/2012 11:51
17	id: search value	10/10/2012 11:51
18	id: search value	10/10/2012 11:51
19	Screenview: U016	10/10/2012 11:51
20	Screenview: L046	10/10/2012 11:51
21	TouchGesture B:	10/10/2012 11:51
22	Screenview: U016	10/10/2012 11:51

Browser: Safari  
 Browser Platform: iPhone OS  
 Browser Major Version: Safari/5.0  
 Traffic Type: MOBILE

Strains & Passer  
 Furniture Electronics Apparel

It's here: Magento end of summer SALE!!  
 Anashria  
 Buy Canon REBEL  
 FREE SHIPPING on orders over \$50.  
 Best Selling Products  
 POPULAR TAGS  
 COMMUNITY POLL  
 NEW ACCEPTING PayPal

At the top of the tablet screen, the website header includes the 'Strains & Passer' logo, a search bar, and navigation tabs for 'Furniture', 'Electronics', and 'Apparel'. The main content area is filled with promotional banners and product listings, such as 'Anashria' with a 'Limited Offer 20% OFF', 'Buy Canon REBEL' for \$499, and 'FREE SHIPPING on orders over \$50'. There are also sections for 'Best Selling Products' and 'POPULAR TAGS'. At the bottom of the tablet screen, there is a footer with 'At the top of the tablet screen, the website header includes the 'Strains & Passer' logo, a search bar, and navigation tabs for 'Furniture', 'Electronics', and 'Apparel'.

# RWD REPLAY

The screenshot displays the IBM Tealeaf CX RWD Replay interface. The top navigation bar includes 'Start Replay', 'First', 'Previous', 'Next', 'Last', 'Request', 'Response', and 'Replay'. Below this, a 'Filter By' section is visible. The main content area is divided into two panes. The left pane shows a list of UI events, with several items highlighted in blue and enclosed in a red box. The right pane shows a responsive website demo with a grid background. The demo text includes 'HOME', 'ABOUT RESPONSIVE DESIGN', 'GALLERY', 'GET IN TOUCH', and 'Evolve your website - make it responsive. Responsive websites adapt seamlessly to new browsing habits, bringing your content cost-effectively to more people.'

Page	URL
UI	http://replay.jenkins.it:8143/ibm.com/rd/demo.htm
UI	screenView: load; name: root referer:
UI	ClientState: resize
UI	ClientState: resize
UI	ClientState: scroll
UI	ClientState: scroll
UI	id: content value: event: click (no matching pa for this event)
UI	ScreenView: URLLOAD: name: root referer:

- UI Events appear for changes, resize and scroll
- Screen size is displayed
- Replay view adjusts to match user's experience

# MOBILE USABILITY

IBM Tealeaf CX

Search Online Help [Q] Admin [v] IBM.

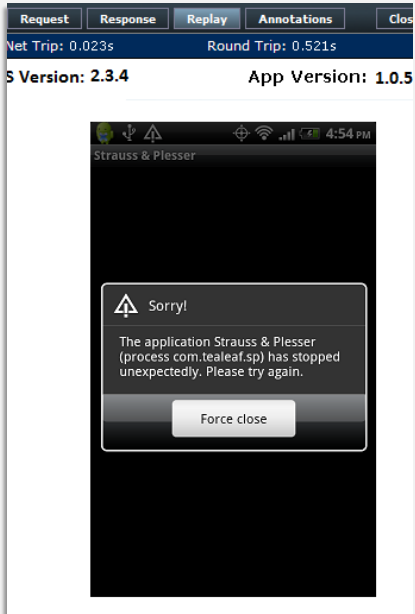
Start Replay Previous Next Request Response Replay Overlays

04/01/2013 Filter by data: Campaign Success Drill down selector: [v]

Browser: webExplorer Browser Platform: Tablet OS Browser Major Version: webExplorer 6.0 Traffic Type: Tablet Replay Render: Chrome|HTML

The screenshot shows the S&P News website on a tablet. The page features a blue header with 'Login', 'Register', and 'Help' links. Below the header is the 'S&P News' logo and 'Strauss & Plesser News'. A prominent banner reads 'Get Social. Do Business. Without the hassle.' with an image of a person at a computer. The navigation bar includes 'News', 'World News', 'Business', 'Entertainment', and 'Technology', along with a search bar. The main content area has a 'Watch Live TV Now' section with a 'Live TV' button and a '997 data points selected' indicator. A sidebar on the right lists 'Top Links' such as 'U.S. News: Why get much-needed wet snow?' and 'World News: Russia to pump \$2B into Space Program'. The bottom of the page features a 'Travel Wherever You Want... With U.S. High.com' advertisement. Heatmaps are overlaid on the page, showing high interaction areas in red and yellow, particularly on the 'Watch Live TV Now' banner and the 'Top Links' section.

# NATIVE APPS



```

Browser: NoUserAgentHeaderFound
Traffic Type: Not

xprTTLB=0
RspTTLA=31504
ConnSpeed=197308
ConnType=DSL
WS_Generation=1217
WS_Grade=ExcellentWS
WS_GradeEx=0
NT_Total=31504
NT_Grade=ExcellentNT
NT_GradeEx=0
RT_Total=32721
RT_Grade=ExcellentRT
RT_GradeEx=0

[urlfield]
Android=ImageTest

[RequestBody]
{"serialNumber":30,"messageVersion":"0.0.0.2","sessions":[{"startTime":1333644402188,"id":"4879AEEF317C446D3B5AD99B4EE66754C","offset":25479,"type":6,"contextOffset":4827,"exception":{"description":"divide by zero","stackTrace":["java.lang.ArithmeticException: divid
com.tealeaf.sp.activities.BaseActivity.crash:TheApp(BaseActivity.java:61)n/tat com.tealeaf.sp.activities.BaseActivity.onOptionsMenuSelected(B
android.app.Activity.onOptionsItemSelected(Activity.java:2264)n/tat com.android.internal.policy.impl.PhoneWindow.onMenuItemSelected(Phon
com.android.internal.view.menu.MenuItemImpl.invoke(MenuItemImpl.java:145)n/tat com.android.internal.view.menu.MenuBuilder.performItem
com.android.internal.view.menu.IconMenuItemView.invokeItem(IconMenuItemView.java:553)n/tat
com.android.internal.view.menu.IconMenuItemView.performClick(IconMenuItemView.java:122)n/tat android.view.View$PerformClick.run(Vi
android.os.Handler.handleCallback(Handler.java:587)n/tat android.os.Handler.dispatchMessage(Handler.java:92)n/tat android.os.Looper.loop(
android.app.ActivityThread.main(ActivityThread.java:3906)n/tat java.lang.reflect.Method.invoke(Native Method)n/tat java.lang.reflect.
com.android.internal.os.ZygoteInit$MethodAndArgsCaller.run(ZygoteInit.java:840)n/tat com.android.internal.os.ZygoteInit.main(ZygoteInit.ja
halvik.system.NativeStart.main(Native Method)n","name":"class java.lang.ArithmeticException"}]}]},"clientEnvironment":{"mobileEnvironment
{"keyboardType":"NO_KEYS","brand":"verizon","fingerPrint":"verizon/sm7w/cdma_smdwr-2.3.6/6.5.1-167_DHD-14_M2-5/111228;
    
```

# NATIVE REPLAY

The screenshot displays the IBM Tealeaf CX - Replay interface. The browser address bar shows the URL: localhost/portal/Replay.aspx?tla=e5d0877ccd694483b8b1cb0a8e4a3f8. The interface includes a navigation pane on the left with a table of events and a main content area on the right showing a mobile app screen.

Page	URL
UI	id: 194771728 value: What is Tealeaf event: click 2
UI	id: 1000 value: Tealeaf Products event: click 4
UI	id: 1000 value: IBM® Tealeaf® CX Mobile event: click 5
UI	id: 1000 value: White Paper event: click 6
UI	id: 2000 value: Contact Us event: click 9
UI	id: 305404800 value: Facebook event: click 10
UI	id: 200676032 value: Alyssa event: change 15
UI	id: 200590000 value: Simpson event: change 15

Request Information

First Name:

Last Name:

Email:

Phone:

Company:

Job Title: Select One

Job Role: Select One

Industry: Select One

Country: United States

State: Select One

Session First Use: 1/30/2014 10:59:40 AM Session Last Use: 1/30/2014 11:03:11 AM Page Count: 31 Last Update: 1/30/2014 11:45:49 AM



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***THANK YOU***





## **BusinessConnect and SolutionsConnect**

It's time to make bold moves.