

#### THE SOFTWARE DELIVERY EXPERTS

## Using Analytics to Optimize Your Mobile Testing

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## What is Analytics?

- Analytics is the discovery, interpretation, and communications of meaningful patterns in data.
- Analytics make sense of data and identifies trends



**Data** Tells you 14,000 push messages sent from mobile app in one month

VS

Data itself isn't actionable. We can't do much with that information Analytics Looks at the Data and makes sense of it

• Tells us # of messages per user

• Gives open rate %



# **Benefits of Analytics**

- Tool for Smart Decision Making
  - Can gather actionable data efficiently and present in meaningful manner to stakeholders/decision-makers
- Identifies and Mitigates risk
- Provides insight into user demographics and behaviors
- Help to optimize websites



## Web Analytics

• Relies on specific user events such as page views

• Data found through IP addresses or cookies

• Follows user's click path



# **Mobile Analytics**

• Mobile analytics measures data generated by mobile sites and mobile applications.

• Allows us to measure and understand how mobile users are interacting with mobile sites and mobile apps.

• Data from mobile analytics is more granular than Web analytics.



# Mobile Web Analytics

• Mobile Web analytics measures behavior of mobile website similar to web analytics.

- Data collected includes:
  - Page Views
  - Visits
  - Visitors
  - Countries
  - Device Model

- Device Manufacturer
- Screen Resolution
- Device Capabilities
- Service Provider
- Preferred User Language



# Mobile App Analytics

- Mobile App analytics measures data generated when users interact with your mobile applications.
- Data collected includes:
  - SDK's for tracking code
  - Screen Views
    - Total Number of screens per session
    - Order in which screens are viewed
    - Number of technical errors including app crashes

- Time spent in each part of your app
- In-app purchases
- Total number of users active in the app at a given time
- OS Version
- Language
- Device Information



## Mobile App Analytics Continued

- Visits
- # of First Opens
- Source Data
- Strings of Action
- Location
- Login/Logout
- Custom Event Data

- Manufacturer
- Type of Device (mobile, phone, tablet, etc)
- Total amount of time active in-app for each session



### Key Differences Between Mobile and Web Analytics

Web	Mobile
KPI's: Visitors>Visits>Pageviews>Eve nts	KPI's: Users>Sessions>Events
Focuses on specific user events	Relies on time that a user spends on apps
Data obtained from IP addresses or cookies	Data can be obtained through device's unique ID which can be correlated with sign-ins on social media or other apps.
	Mobile apps may need to be connected to Mobile Networks.



### Key Differences Between Mobile and Web Analytics

Web	Mobile
Session length may not be reliable- For example, user could have many tabs open in the background and be working on something else. Data would show that user was engaged with pages for at least 30 minutes even though the user may not have been looking at the browser	Mobile analytics data is precise, coming from an almost granular level.
Time-out length is 30 minutes	Time-out length is 15 seconds or when app is closed.



## Using Mobile Analytics to Design Test Strategy

- Mobile Analytics can help us:
  - Identify Scope of Testing
  - Pinpoint Highest Risk Areas so that testing can be prioritized



# Identify Scope of Testing

- To identify scope of testing, we can draw from the various analytics available.
- Insight into User Behaviors, such as Bounce Rates, Customer Event Data, and time spent in each part of the app will give insight into scope of testing.

Example

• If we see that 90% of consumers use 1 of 5 devices, testing can be narrowed down to those devices.



## Bounce Rate

• Bounce rate will probably be one of the most important points of data that you use when analyzing data. When using event based data analysis, you will be able to see what the percentage of users who leave your app/website when taking a certain action or a certain event happens on a certain page. This is extremely important because you can use this information to keep your user base using your app/website longer.





#### Bounce Rate



**Bounce Rate as defined by Google Analytics:** The percentage of single-page visits (i.e. visits in which the person left your site from the entrance page). Bounce Rate is a measure of visit quality and a high Bounce Rate generally indicates that site entrance (landing) pages aren't relevant to your visitors.



THE BOUNCE RATE EQUATION



#### Rb = Bounce rate

- Tv = Total number of visits viewing one page only
- Te = Total entries to page





# Pinpoint Highest Risk Areas

• By combining parts of the analytics, we can pinpoint the high risk, high impact areas.

### Example

• We have limited test timeline and we need to concentrate on the highest risk areas. Can identify the most used devices, OS, and screens in order to prioritize those as High Risk.



What if I Don't Have Analytics to Use for My Test Strategy?

• Use Market Trends!!!

If you need to test a brand-new app, and don't have analytics to use, use market trends. If you have no way to predict what your user base will be like, market trends can provide a baseline for what an average user base would look like. Make some predictions about your target audience based on trends like the ones on the following slides.



# Device Type Trends

#### Share of Platform Time Spent by Age

Source: comScore Media Metrix Multi-Platform & Mobile Metrix, U.S., Age 18+, June 2017

Desktop Smartphone App Smartphone Web Tablet App Tablet Web



#### WORLDWIDE SMART CONNECTED DEVICES MARKET SHARE FORECAST BY PRODUCT CATAGORY (2013-2018)



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#### Establish Manual Testing Strategies – Analytics to Consider



Gartner Forecast Estimates Mobile OS Sales by Market Share (2009-2016)





#### Establish Manual Testing Strategies – Analytics to Consider



#### ABIresearch







#### Mobile OS Market Share







## Manufacture Trends



Main Stream Smartphone Market Share









Top Five Smartphone Vendors in PRC, Shipments, Market Share, and Year-Over-Year Growth, 2016 Preliminary Data (Units in Millions)

Vendor	2016 Shipment Volume	2016 Market Share	2015 Shipment Volume	2015 Market Share	Year-Over- Year Growth
1. OPPO	78.4	16.8%	35.3	8.2%	122.2%
2. Huawei	76.6	16.4%	62.9	14.6%	21.8%
3. vivo	69.2	14.8%	35.1	8.2%	96.9%
4. Apple	44.9	9.6%	58.4	13.6%	-23.2%
5. Xiaomi	41.5	8.9%	64.9	15.1%	-36.0%
Others	156.7	33.5%	173.4	40.3%	-9.6%
Total	467.3	100.0%	429.9	100.0%	8.7%
Source: IDC Qu	arterly Mobile Pho	ne Tracker, Feb	6, 2017		124



#### Top Three Wearable Device Companies in India Market Share, Q1 2017



Source: IDC WW Wearable Tracker, Q1 2017

#### Notes:

-The "Company" represents the current parent company (or holding company) for all brands owned and operated as subsidiary



## **Combination Trends**





What if I Don't Have Analytics to Use for My Test Strategy? (Cont.)

• Use Similar mobile website of mobile app

• Find a similar website or app, and look at its analytics to establish a baseline for testing



#### Questions?



