

Business, rewritten by software™

Mobile App Analytics

Mobile Application Management

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December 10th 2015



Agenda

- Application economy
- Benefit of MAA
- MAA Demo
- APM integration



THIS IS THE AGE OF THE
APPLICATION ECONOMY

AND IT'S ALL ABOUT THE

USERS

It's not all about apps, it's all about **user rating & success!**



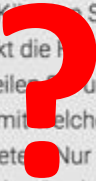
bemysty July 13, 2014



Funktioniert seit dem neuesten Update nicht mehr. Immer nur Fehlermeldungen.

REWE Markt GmbH September 19, 2014

Hallo bemysty, wir möchten gerne mit Ihrer Hilfe auf Fehlersuche gehen. Können Sie uns bitte unter www.rewe.de/kontakt die Fehlermeldungen beschreiben? Bitte teilen Sie uns auch mit, auf welchem Gerät und mit welchem Betriebssystem (Version) diese auftreten. Nur so können wir die App stets verbessern. Vielen Dank und schöne Grüße, Ihr REWE Team



Richard Mccann



Does not recognise car I have to agree with previous review, you register your car & go to connect with car but it says no car recognised and kicks you off the app. There is no tangible way to resolve the issue. I have lost patience and check my tyre pressure in the car now

wooster



This app simply does not work. Always get "system error" or "server is currently down" messages.



Tom Gorin June 2, 2015

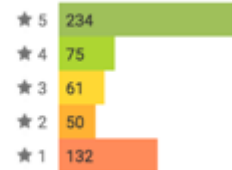


Alpha product at best This app is just unreliable. I have tried it with a nexus 4, LG G4, Xperia z3, and it randomly drops the connection. In fact, it is harder to get connected than not... This was one of the selling points for my 2015 A3 and I am sorely disappointed. No help from Audi either.

3.4

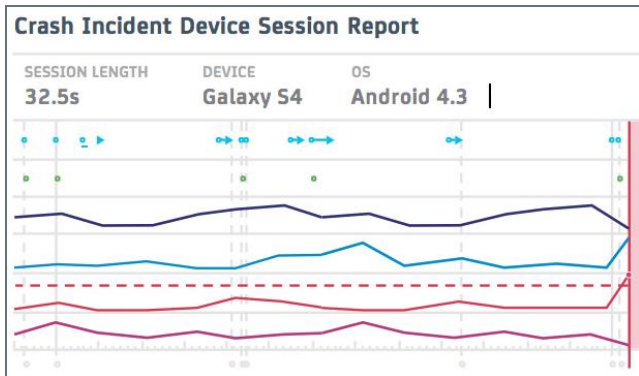
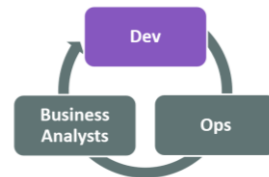


552 total



Developer Analytics

For large enterprise **Developers**, MAA captures **app crashes** and **offers code-level visibility** into root causes. This visibility is **critical in providing best end-user experience**.



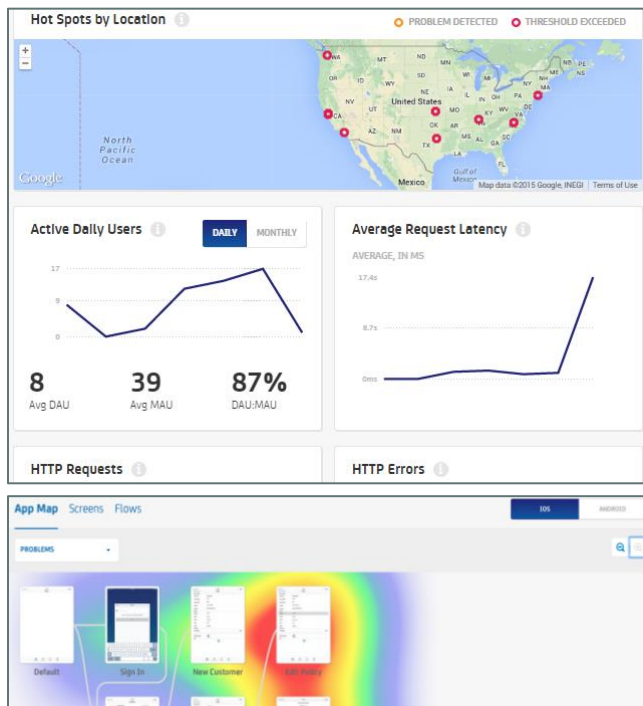
Flagged Session List ⓘ

LENGTH	PLATFORM	APP VERSION	USER ID	CAUSE	SESSION
1.3m	Android	1.0	John Smith	Crashed	3e690b93-
3.5m	Android	1.0	John Smith	Crashed	c751ee2b-5
48.5s	Android	1.0	John Smith	Crashed	19c3d0d6-

- ✓ Capture mobile app crashes and identify root causes
- ✓ Screen capture issues fix them faster, drive better UX
- ✓ Gain code-level visibility into issues with symbolic stack traces and detailed activity logs
- ✓ Prioritize issues by assessing impact on user experience and revenue
- ✓ Analyze errors and network behavior to identify issues in code or back-end servers
- ✓ Capture device usage metrics: CPU, memory, frame rate
- ✓ Tag a user, then understand how the app performed for that specific user (crash, latency)

Operations Analytics

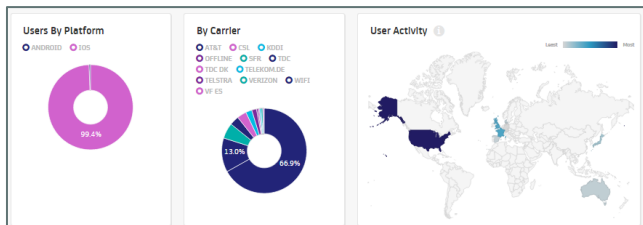
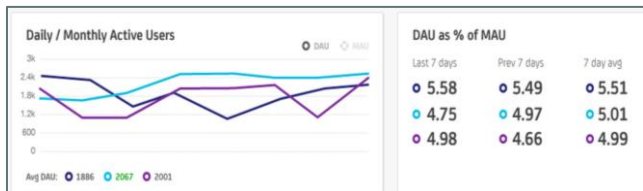
For large enterprise **Operations** team, MAA solution **captures performance metrics** of the mobile app infrastructure. These **metrics help address issues** before they hurt UX.



- ✓ Segment app performance by version, carrier, geo, OS, device
- ✓ Get real-time alerts on threshold violations impacting SLAs, user experience, or revenue; prioritize alerts
- ✓ Gain visibility into backend services affecting the app performance
- ✓ Analyze performance of networks and locations to correlate with app performance
- ✓ Isolate and rule out domain, network, data center issues
- ✓ Identify mobile app hotspots: usage, performance, coverage, issues

Business Analytics

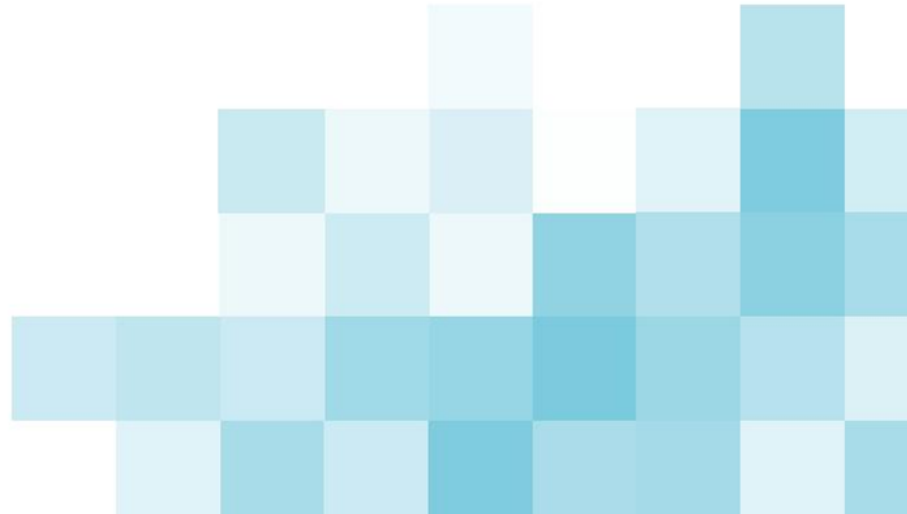
For large enterprise **Business Analysts**, MAA is an analytics solution that **captures usage and user experience metrics**. This metrics help **increase top-line revenue**.



DRY	OFFSET	TIMESTAMP (UTC +00:00)	Cart Status
7.0s	Dec 16th, 2014 8:41:37pm	Number of Items : 100	Cart Value : 75 \$
7.0s	Dec 16th, 2014 8:41:37pm	Premier Gold : Customer type	Service : TIXCHANGE
7.2s	Dec 16th, 2014 8:41:37pm	Transaction : Shop - Add Item To Cart	Transaction Start Time : Dec 16th, 2014, 8:41:37pm (UTC +00:00)

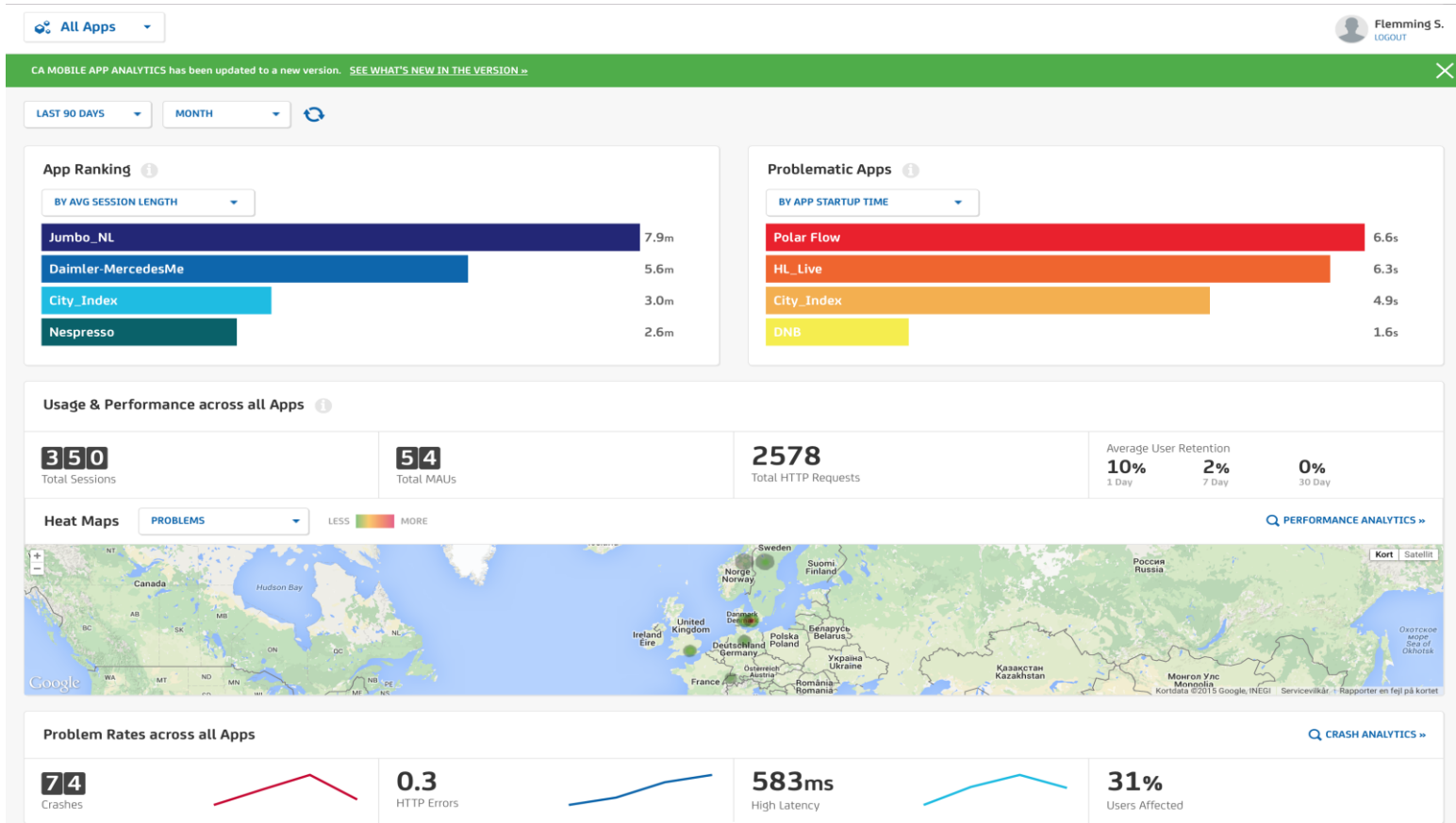
- ✓ Gain visibility into performance of key business services
- ✓ Identify popular business flows in the app; capture user flow through your app
- ✓ Insight into mobile app user engagement, activity, and retention
- ✓ Segment & analyze usage data by app version, carrier/WiFi, location, platform, OS
- ✓ Track and report stickiness based on users' revisits
- ✓ Get data to help make better OpEx and CapEx decisions
- ✓ Tag a business event (e.g. Gold Customer, shopping cart > 100 items) and look at impact on the top line

Demo



Mobile DevOps – Mobile App Analytics

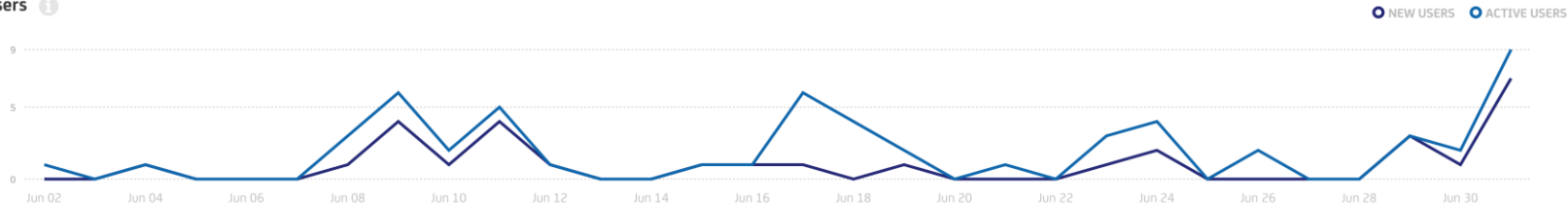
Broad, Deep visibility into your mobile infrastructure



Usage Analytics

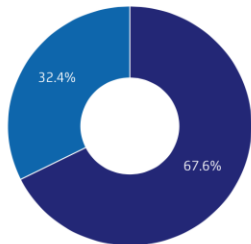
View of users, Activity, Carrier, Location

Users i



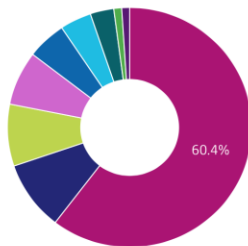
Users By Platform

ANDROID IOS



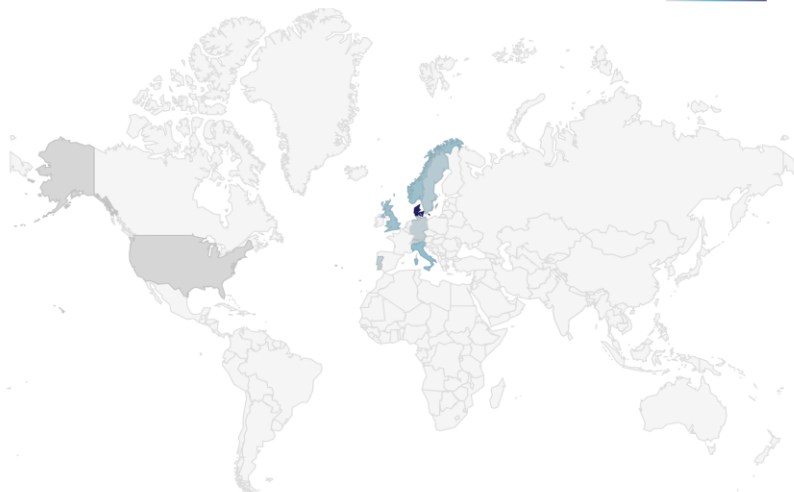
Users By Carrier

ANDROID DK TDC MEO N TELENOR
OFFLINE TDC TELEKOM.DE WIFI
VODAFONE IT



User Activity i

Least Most

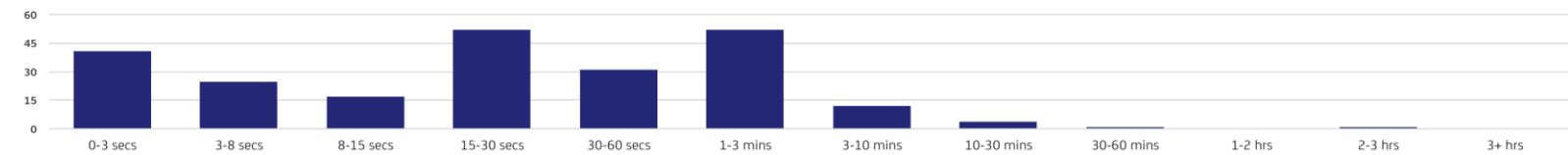


Usage Analytics

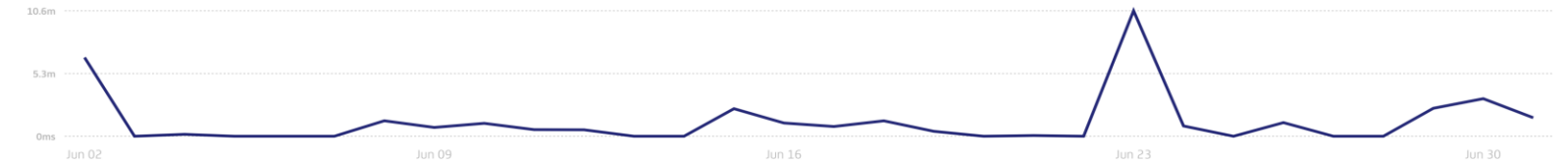
View of Sessions Distribution, Retention Metrics

Sessions

SESSION LENGTH DISTRIBUTION



AVERAGE SESSION LENGTH



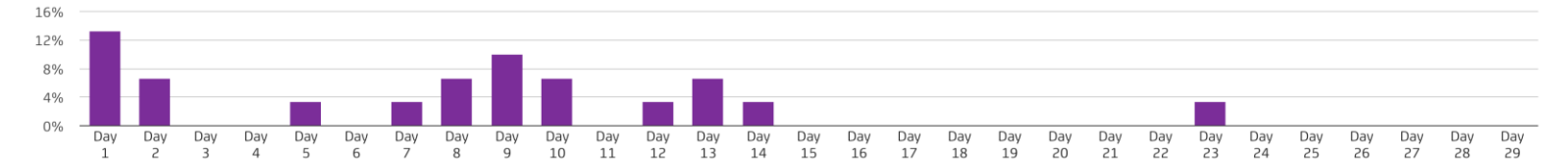
236

Sessions (Last 30 Days)

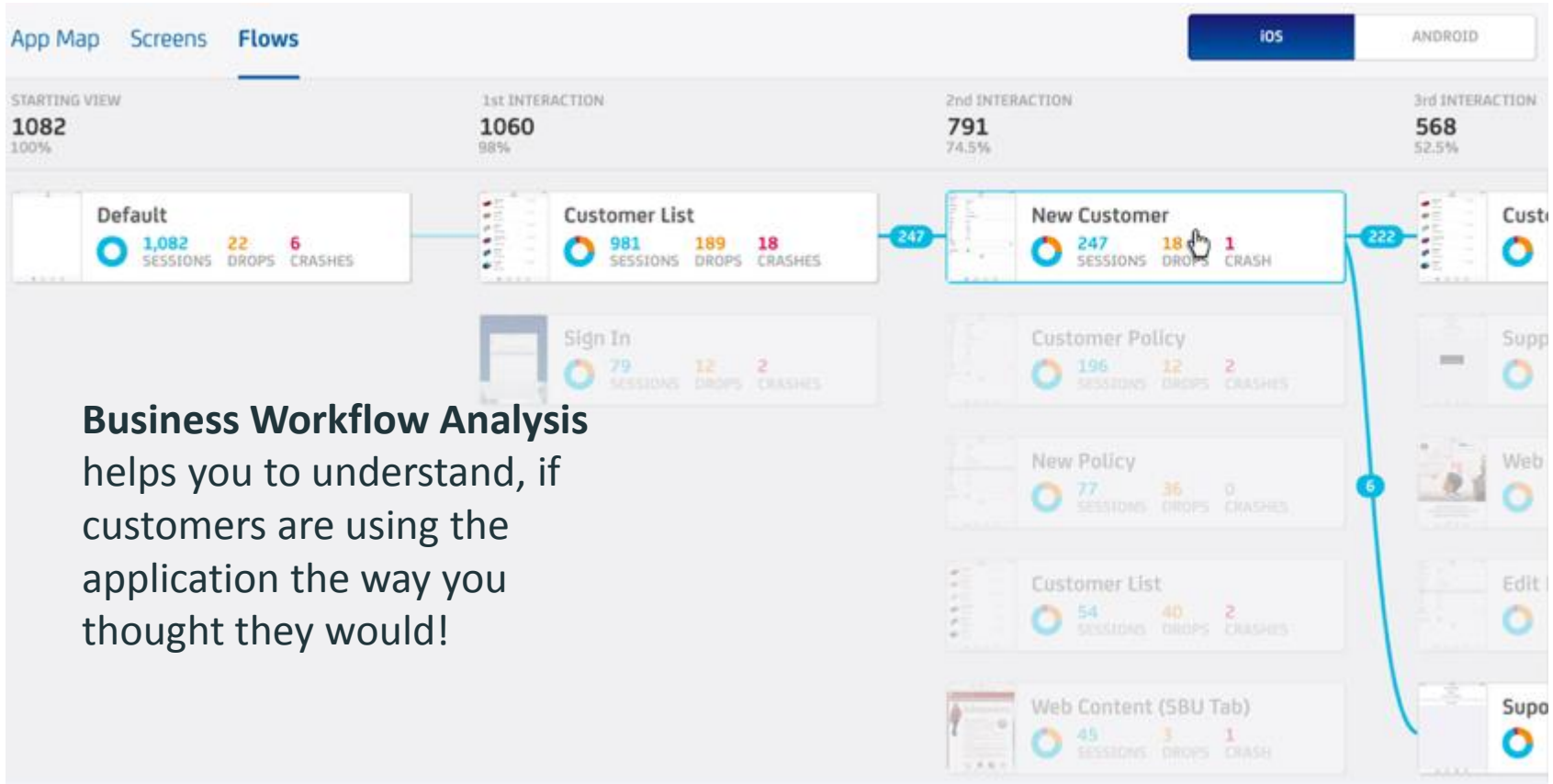
1.9m

Avg Duration

% of new Users who return after: ⓘ

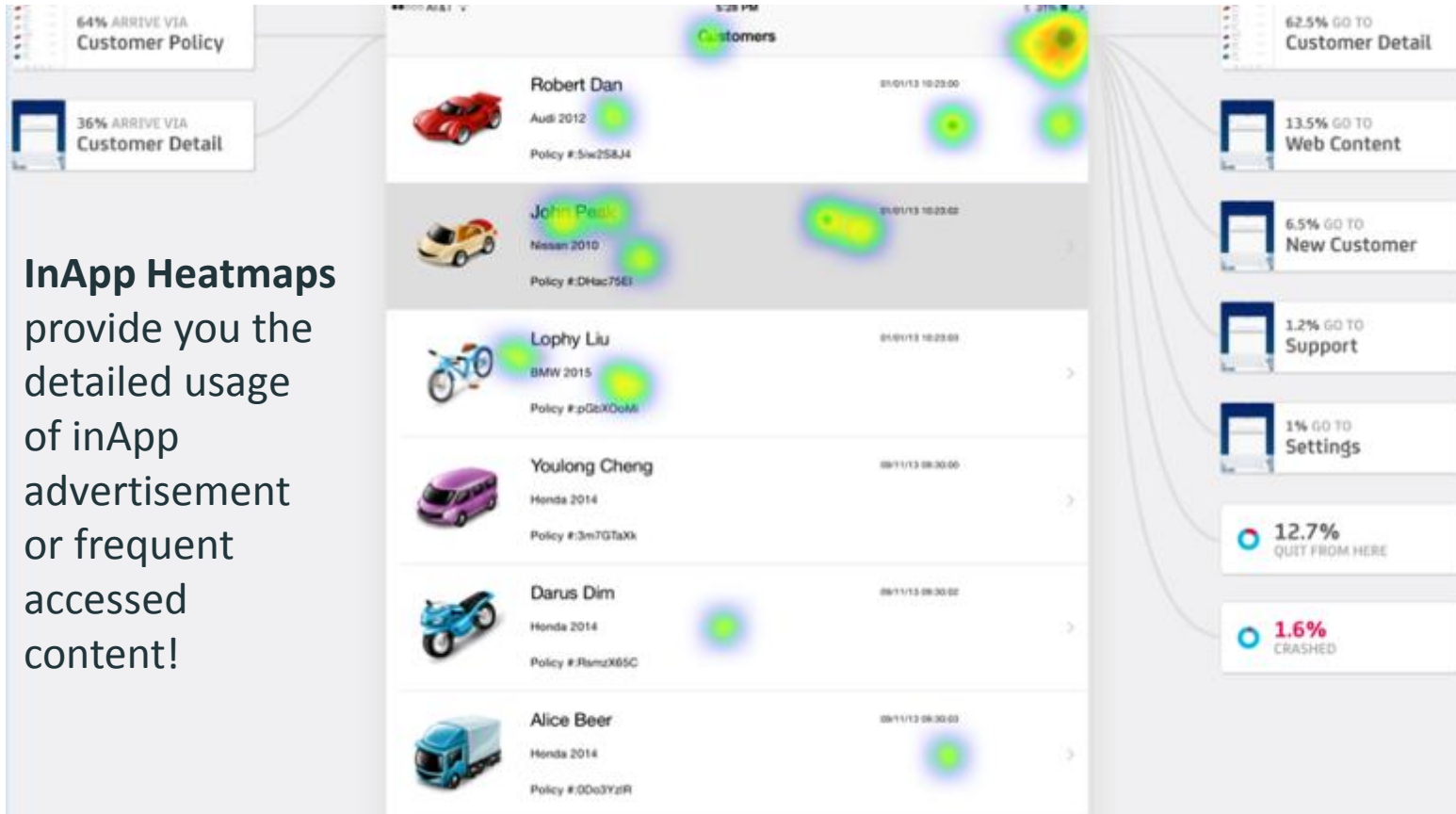


Marketing and Business Development



Marketing and Business Development

InApp Heatmaps provide you the detailed usage of inApp advertisement or frequent accessed content!



Analytics – App Performance

App Performance

App Performance Network Performance

LAST 30 DAYS

DAY



Average Request Latency ⓘ

580ms

Avg per Request



HTTP Requests ⓘ

8.2

Avg per Session



HTTP Errors ⓘ

0.3

Avg per Session



CPU Use ⓘ

33.8%

Avg per Session



Memory Use ⓘ

0.3%

Avg per Session



Data Sent ⓘ

4.1KB

30 days avg per request

493.0B

Prev 30 days avg per request

Data Received ⓘ

3.3KB

30 days avg per request

22.6KB

Prev 30 days avg per request

Startup Time ⓘ

796ms

Avg per Session



Analytics – App Performance

Network Performance

URL Ranking

REQUESTS

https://ciapi.cityindex.com/TradingApi	234
http://tixchange.demo.ca.com:80/jtixchange_web/shop/viewProduct.shtml	104
https://1456.content.swrve.com/api/1/user_resources_and_campaigns	97
http://tixchange.demo.ca.com:80/jtixchange_web/shop/addItemToCart.shtml;jsessionid=0...	84

Problematic URLs

AVG LATENCY

https://apply.cityindex.de/Scripts/PostcodeLookup.js	6.0s
https://apply.cityindex.de/cide/sbcfd-step1.aspx	4.3s
http://www.hl.co.uk/feeds/mobile-app-feeds/funds-hub/funds-hub	3.4s
https://online.hl.co.uk/sars/ChartingData/get_five_year_data/sedol/B2NG4R3/format/json	3.2s

Network Performance

URL CONTAINS

Search term

+ SEARCH BY ERROR CODE

URL

REQUESTS

FAILURE

AVG LATENCY

AVG DATA IN / OUT

apply.cityindex.de
/Scripts/PostcodeLookup.js

1

0%

6.0s

0bytes / 0bytes

apply.cityindex.de
/cide/sbcfd-step1.aspx

1

0%

4.3s

0bytes / 0bytes

www.hl.co.uk
/feeds/mobile-app-feeds/funds-hub/funds-hub

2

0%

3.4s

342.3kB / 277.2kB

online.hl.co.uk
/sars/ChartingData/get_five_year_data/sedol/B2NG4R3/format/json

4

0%

3.2s

49.3kB / 7.2kB

applyforanaccount.cityindex.co.uk
/en-GB/ci-demo/form

4

0%

3.1s

0bytes / 0bytes

Analytics – App Crashes

Crash Analytics

Crashes ?



49 Crashes	11 Affected Users	31% of All Users	44days ago First Occurrence	2.2h ago Last Occurrence
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Apps with the most crashes



Analytics – App Crashes

Crash Analytics

List of Crash Types



APPS	PLATFORM	COUNT	CRASH TYPE	% OF AFFECTED USERS	TOTAL AFFECTED USERS	FIRST OCCURRENCE	LAST OCCURRENCE
TIXCHANGE_FS (v2.1)	Android	1	java.lang.IllegalArgumentException android.view.WindowManagerGlobal (findViewLocked:372)	25%	1	1.6h ago	1.6h ago
TIXCHANGE_FS (v2.1)	Android	2	android.content.ActivityNotFoundException android.app.Instrumentation (checkStartActivityResult:1634)	25%	1	1.7h ago	1.7h ago
TIXCHANGE_FS (v2.1)	Android	5	android.content.ActivityNotFoundException android.app.Instrumentation (checkStartActivityResult:1777)	50%	2	23days ago	2.0h ago
TIXCHANGE_FS (v0)	iOS	18	SIGTRAP Unknown (Unknown:0)	100%	8	42days ago	2.1h ago
Nespresso (v2.10.0)	Android	1	java.lang.VerifyError java.lang.reflect.Constructor (newInstance:-2)	25%	1	2days ago	2days ago
Nespresso (v2.10.0)	Android	2	java.lang.IncompatibleClassChangeError com.nespresso.ui.g.d (postUrl:66)	25%	1	2days ago	2days ago
TIXCHANGE_FS (v2.1)	Android	5	android.content.ActivityNotFoundException android.app.Instrumentation (checkStartActivityResult:1648)	75%	3	23days ago	13days ago
BMW-Connected (v1.7.1 (row_151829_1014))	Android	1	java.lang.OutOfMemoryError android.graphics.Bitmap (nativeCreate:-2)	100%	1	19days ago	19days ago
TIXCHANGE_FS (v0-)	iOS	6	SIGILL Unknown (Unknown:0)	100%	3	44days ago	22days ago
TIXCHANGE_FS (v0)	iOS	1	SIGABRT Unknown (Unknown:0)	33%	1	42days ago	22days ago

Application Crash Root Cause Analysis



Session replay with code trace helps to find the **root cause** of application crashes

APM integration

Choose which data to collect:

Usage

- ☒ Startup time
- ☒ Session activity
- ☐ Screen captures
- ☒ Orientation

Performance

- ☐ Errors
- ☒ Disk space
- ☒ Memory use
- ☒ CPU use
- ☒ Battery level
- ☒ Mobile transactions
 - ☐ Automated
 - ☒ Instrumented

Crashes

- ☒ Session state & activity
- ☒ Lines of code / class / method
- ☒ Frequency / first & last occurrence
- ☒ Affected users
- ☒ Stack trace

Send data to Mobile App Analytics

- ☒ On App Startup
- ☒ after every events

Send data over network?

- ☒ Yes, use network when wifi is not available
- ☐ Only send when user is connected to wifi
- ☐ Send data to CA APM

Device data storage limit

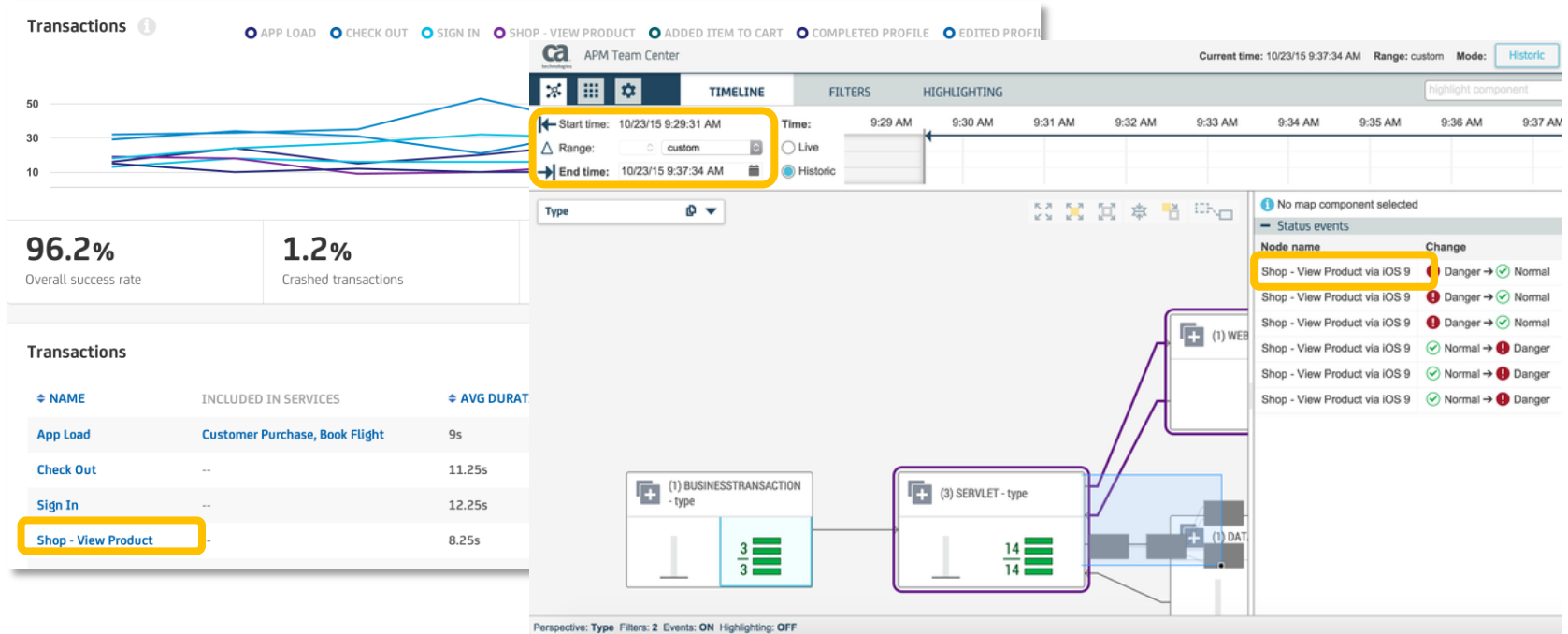
Store a maximum of on device

APM Header decoration. This must be enabled for APM integration to work.

End-to-End Mobile Infrastructure Visibility

with Contextual deep link into APM Team Center

IT Operations



End-to-end view of business transactions from 'mobile to mainframe'

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From planning to development to management to security, at CA we create software that fuels transformation for companies in the application economy.