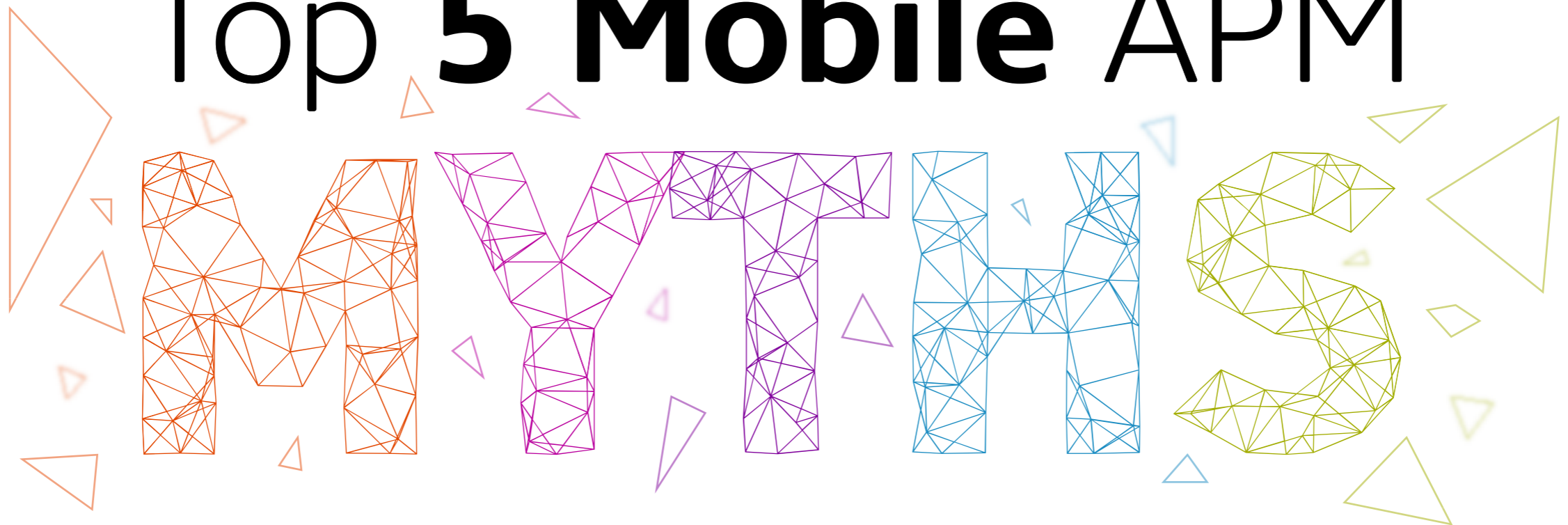


Top 5 Mobile APM





Top 5 mobile APM myths

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About the author: Maneesh Joshi has over 15 years of experience in the enterprise software space. In his current role as Senior Director of Product Marketing and Strategy at AppDynamics, he is responsible for its global go-to market strategy and product marketing. He started his career as a key member of the team that built Oracle's Service Oriented Architecture and Business Process Management businesses. Before running product marketing for this group, he managed product planning, architecture, and engineering for Oracle's integration products. Maneesh holds a B.S. in Engineering from the Indian Institute of Technology, Kharagpur, where he graduated with honors. He also received an M.S. in Engineering from the University of California, Davis, and an M.B.A. from The Wharton School at the University of Pennsylvania.



Introduction

Mobile is now regarded as the most explosive source of revenue growth, employee productivity improvement, and customer engagement. GigaOm research reports that mobile users represented 40 percent of eBay's 36 million new users in 2013, accounting for \$35 billion in enabled commerce volume (ECV) — an astounding increase of 88 percent over the prior year.

However, mobile engagement is a very tricky one. Because the mobile user is so focused on the mobile app while interacting with it, it is an intense interaction over a rather small screen. With so many alternative choices at their fingertips, the user has almost no tolerance towards ill-designed or poorly performing mobile applications. The last I heard the iTunes App Store has 1.2 million apps. For the Android user, there are about 1.3 million apps to try from. Loyalty needs to be earned, and cannot be taken for granted. Plus, a lot of your brand value and revenue/cost savings are at stake.

It is not as hopeless as it sounds, however. Remember, mobile users are also known for rewarding a great experience; it took the Angry Birds app only 35 days to reach 50 million users! The total franchise value including merchandise, etc. had exploded to a few billion dollars at their peak. Mobile is a high velocity market. The first mover's advantage is tremendous, and you need to take charge of your experience with the right mobile application performance monitoring (mAPM) tools at hand.

There is a lot of confusion in the market today. So in this ebook, I'd like to dispel some key myths around mobile apps. And how, with the right mAPM tool, you can nail your mobile app experience — both interactivity-wise and performance-wise — and thereby win the market.

MYTH #1

Unforgiving app ratings on the app store is an unfortunate reality

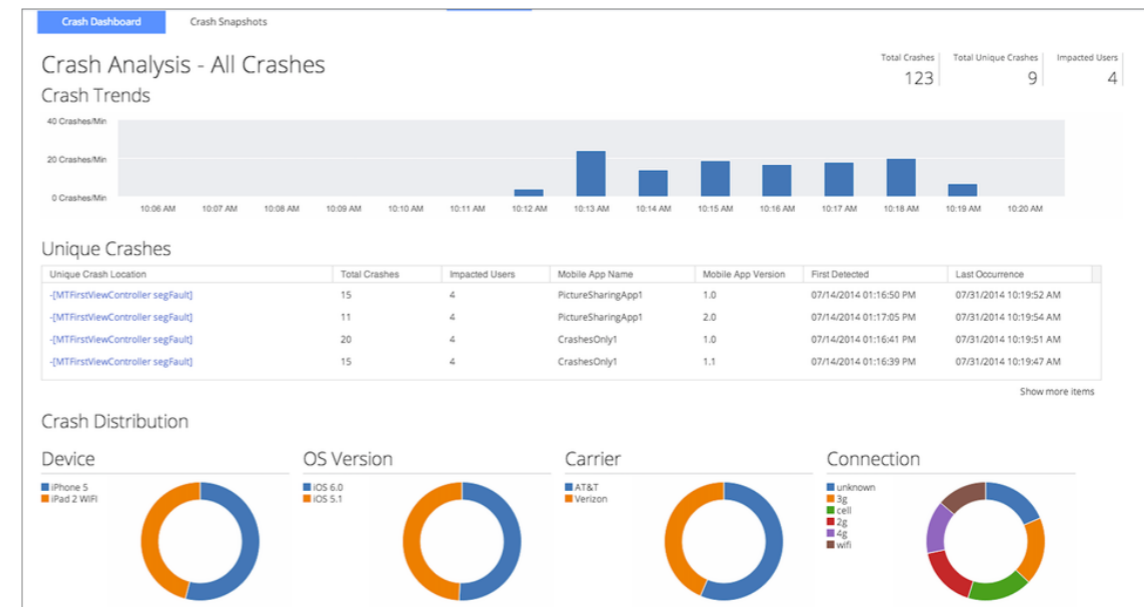


Myth #1: Unforgiving app ratings on the app store is an unfortunate reality

There is no such thing as bug-free code. Any sufficiently complex code will have bugs, and so will your mobile app. Your users understand this reality but are looking for well thought-out designs that have fewer performance and crash issues. Customers are also amenable to quick fixes and are willing to give chances to organizations that are responsive to bugs, performance issues, and crashing issues. The critical success factor here is the turnaround time.

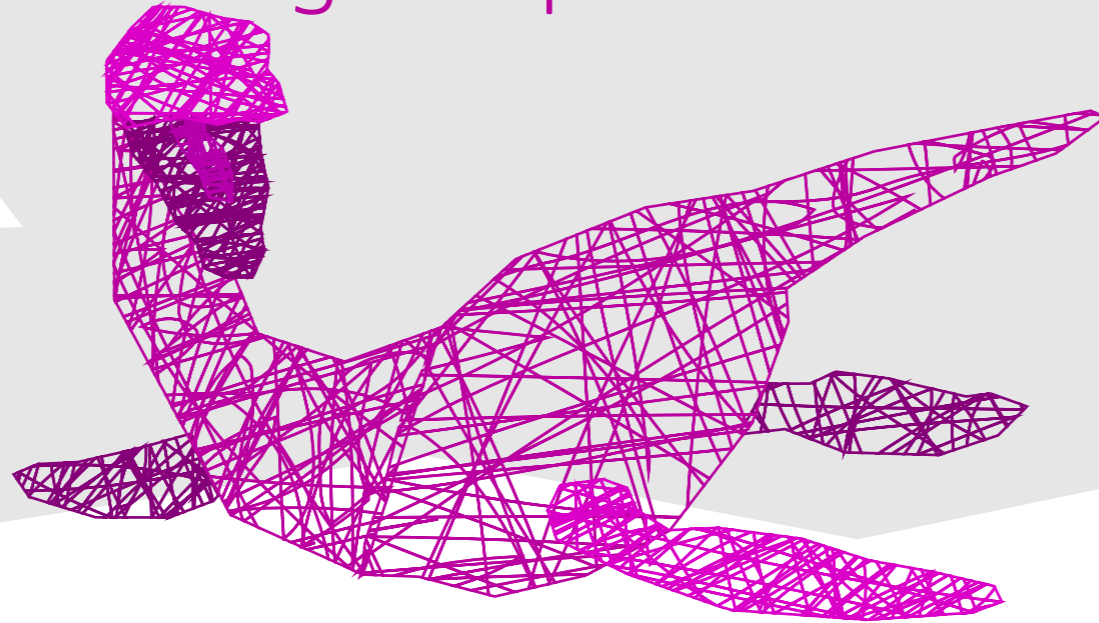
In order to avoid brutal app ratings, you need to ship a good product, but more importantly show you are willing to respond to your user problems and fix them promptly. Use state of the art crash analytics and network request analytics to understand how your app is performing. The ideal mAPM tool should show the crashes and their stack traces in near real-time as they happen. For fastest response time, the mAPM tool should group these crashes based on common patterns and uniqueness. The same mAPM tool should also provide network request latencies at group levels as well as individual request levels. Resolution of information should not be lost when troubleshooting performance and crash issues.

“The ideal mAPM tool should show the crashes and their stack traces in near real-time as they happen.”



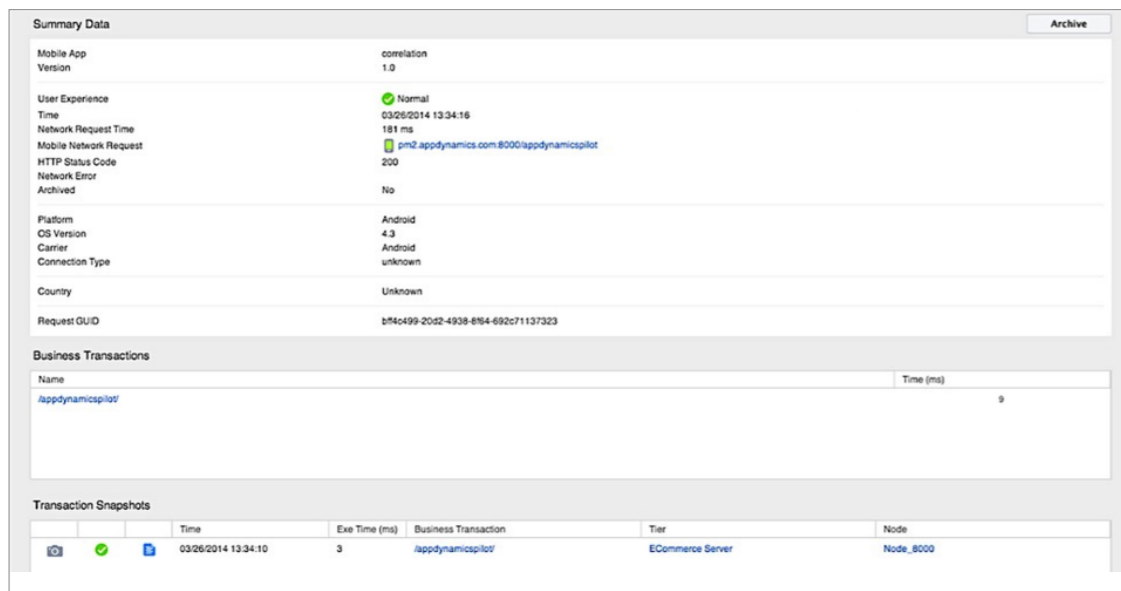
MYTH #2

Backend services are black boxes of performance bottlenecks and I should just give up on them



Myth #2: Backend services are black boxes of performance bottlenecks and I should just give up on them

I keep observing the finger pointing between mobile developers and the IT Ops teams. Those mobile developers who use mobile-only APM tools have visibility only till the point where a network request is made from the mobile app. Anything beyond is pretty much a black box which is usually the main cause for performance delays and mobile app's poor response time. For the lack of better information, the mobile developer is quick to blame the back end service. On the other hand, the IT Ops team that has invested in legacy APM solutions that are unable to distinguish mobile-originating transactions from the others. They often struggle to isolate the mobile transaction delays caused by their services and get defensive.



The screenshot displays a detailed view of a transaction in an APM tool. It is divided into three main sections: Summary Data, Business Transactions, and Transaction Snapshots.

Summary Data:

- Mobile App Version: correlation 1.0
- User Experience: Normal (indicated by a green checkmark)
- Time: 03/26/2014 13:34:16
- Network Request Time: 181 ms
- Mobile Network Request: pm2.appdynamics.com:8000/appdynamicsplot
- HTTP Status Code: 200
- Network Error: No
- Archived: No
- Platform: Android
- OS Version: 4.3
- Carrier: Android
- Connection Type: unknown
- Country: Unknown
- Request GUID: bf4c499-20d2-4938-8f54-692c71137323

Business Transactions:

Name	Time (ms)
/appdynamicsplot/	9

Transaction Snapshots:

Time	Exe Time (ms)	Business Transaction	Tier	Node
03/26/2014 13:34:10	3	/appdynamicsplot/	ECommerce Server	Node_8000

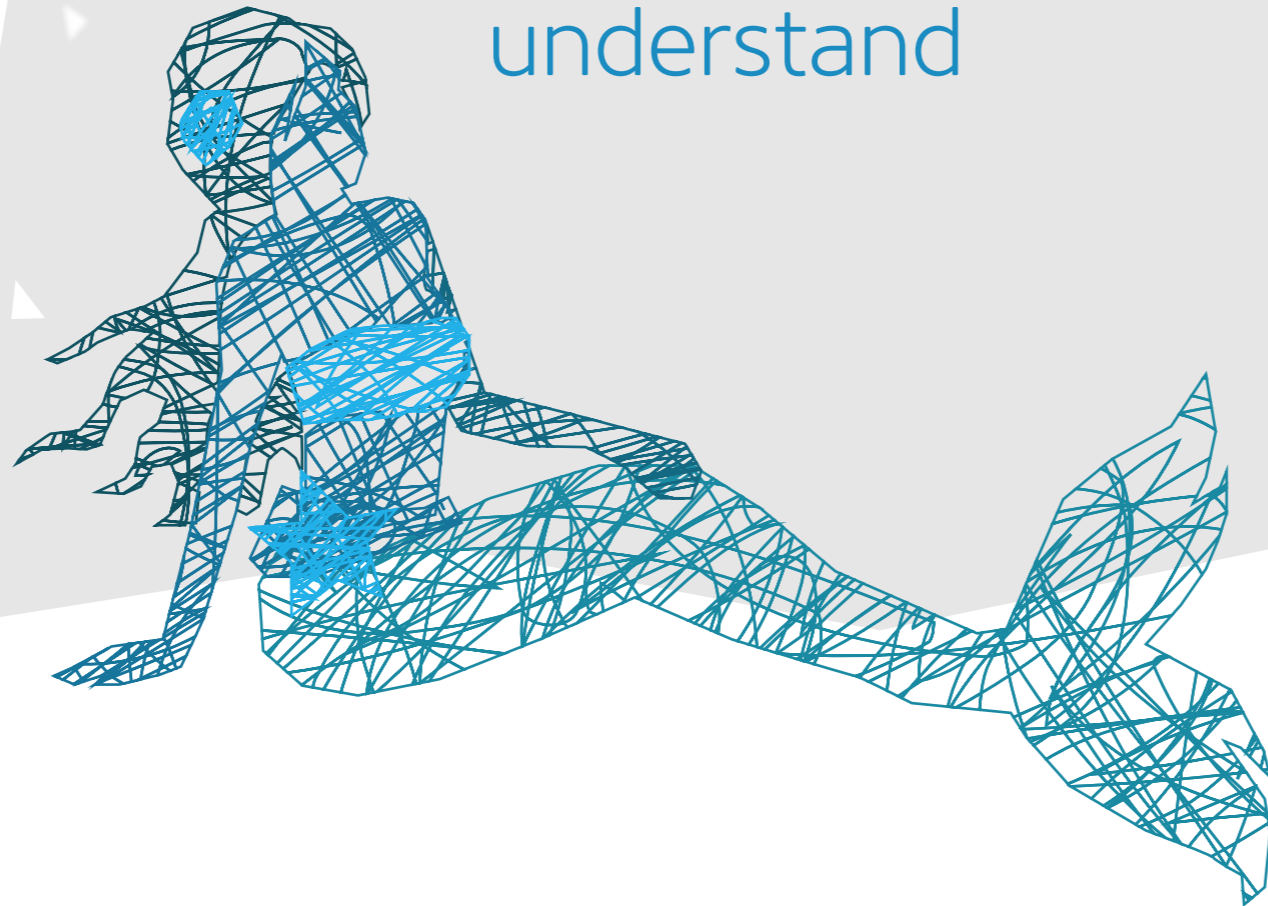
A modern end-to-end APM solution that delivers context-awareness for transactions originating from mobile devices all the way to the backend database or even storage would completely take away the guesswork in performance troubleshooting. And if the entire infrastructure can be managed with a single pane of glass, there will be no information lost in translation and the mobile dev and IT Ops team can collaborate to focus on nailing down the end-user experience rather than play the blame game.

This is the most critical requirement we hear from our customers time and again.

“...if the entire infrastructure can be managed with a single pane of glass, there will be no information lost in translation and the mobile dev and IT Ops team can collaborate...”

MYTH #3

Users are an enigma
that I can never really
understand

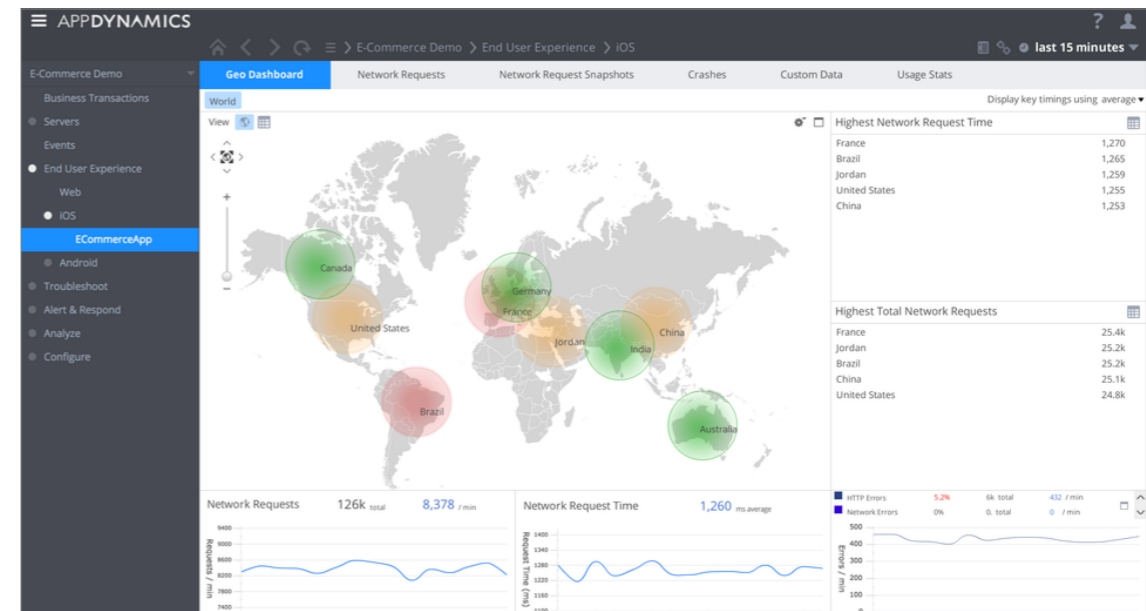


Myth #3: Users are an enigma that I can never really understand

You cannot nail down the mobile end-user experience unless you know your audience. You need to understand where the end user is spending time while using your application. Are they spending time scrolling down search results to find what they want? In other words, are you presenting the most relevant information at the top? Are they abandoning the shopping cart at any specific points in the checkout process? Is there funnel friction you need to optimize your app against?

The modern mobile APM tools have some great capabilities to understand your end user and their behavior. You can inject timers across any two arbitrary points and measure times taken for a collection of any number of steps. For example, you can measure how long it takes your user from conducting the first search to purchasing a product or a service. This can be done at an individual user or at aggregate levels. You can measure how much time users spend on which screen. This will give you great insights into who your typical user is and what interactions do they indulge in with your application. You can then optimize the app experience for those common patterns.

“Are they abandoning the shopping cart at any specific points in the checkout process?”



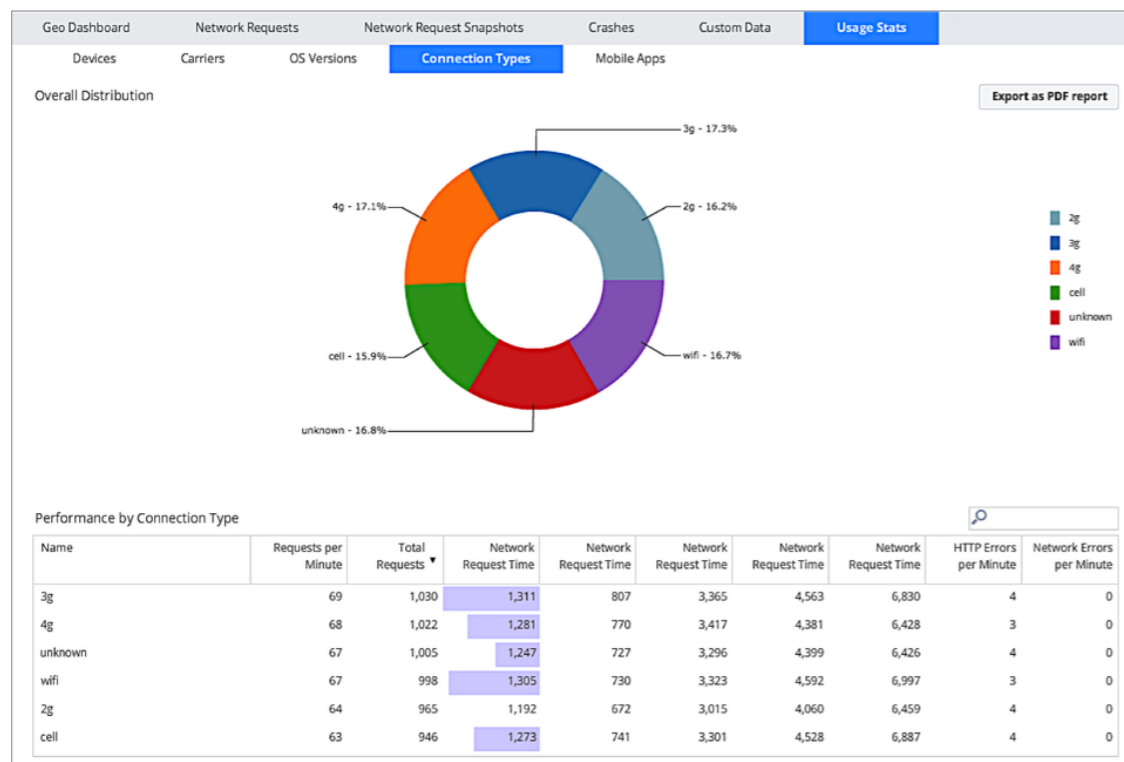
MYTH #4

I'm going to spend the rest of my life certifying my mobile app on the infinite permutations and combinations of device types, OS types, and network carriers/types



Myth #4: I'm going to spend the rest of my life certifying my mobile app on the infinite permutations and combinations of device types, OS types, and network carriers/types

This is where you need concrete data to understand your user demographics. A good mAPM solution will give you detailed breakdown of who your core audience is. What device types they prefer, what OS's (iOS vs. Android) they run, and which networks they mostly originate from. A good APM solution will also allow you to correlate this information with revenue or engagement information to determine your highest-value audience.

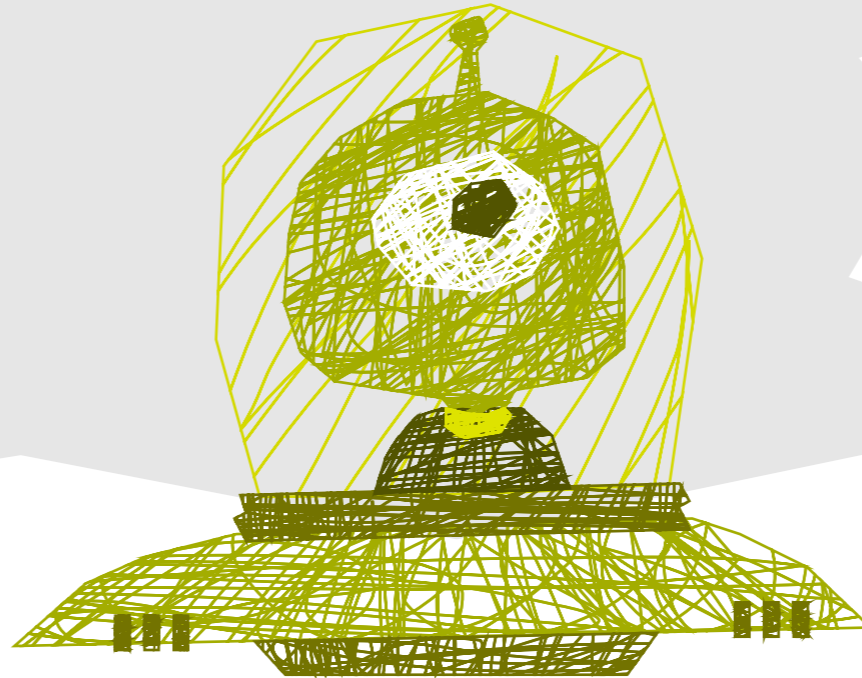


With all this valuable information, you can prioritize development, testing, and certification of your mobile app. You can even optimize your app experience and test for performance bottlenecks for the high-value audience. And lastly, you can focus on retaining them by delivering on their roadmap demands over the lesser engaging ones.

“...prioritize development, testing, and certification of your mobile app. You can even optimize your app experience and test for performance bottlenecks for the high-value audience.”

MYTH #5

There's no way to know the business impact of the performance issues of my mobile app



Myth #5: There's no way to know the business impact of the performance issues of my mobile app

Most mAPM tools in the market today are too developer-centric. They deliver crash analytics and performance delays caused by delayed response from backend services but little else. Often times, the mobile channel is an enabler of some business goals such as better customer engagement, additional revenue streams, cost savings from productivity or efficiency gains. Plus, it's the broader context that feeds investments into the mobile channel. Ignoring the business context is like missing out on half the picture.

The right tool needs to deliver full context on the mobile application. The full context should include what impact the app has on business metrics such as revenues, cost savings, customer engagement KPIs, etc. A comparative chart that shows performance impact of mobile app on these business metrics can be incredibly powerful to raise awareness among the organization.

“The full context should include what impact the app has on business metrics such as revenues, cost savings, customer engagement KPIs, etc.”

Name ↑	Mobile Application	Me... Type	Calls per Minute	Data Points per Minute	Sum	Average (ms)	50th percentile (ms)	90th percentile (ms)	95th percentile (ms)	99th percentile (ms)
+ [ADViewController viewDidLoad]	BankingApp1	●	1			2,625	3,142	3,142	3,142	3,142
+ [ADViewController viewDidLoad]	CrashesOnly1	●	1			2,998	2,998	2,998	2,998	2,998
+ [ADViewController viewDidLoad]	PictureShari...	●	1			1,366	1,910	1,910	1,910	1,910
- [ADSampleClass sample:meth...	PictureShari...	●	1			2,382	2,732	2,732	2,732	2,732
- [ADSampleClass sample:meth...	CrashesOnly1	●	2			2,905	3,220	3,223	3,223	3,223
- [ADSampleClass sample:meth...	BankingApp1	●	1			2,853	3,423	3,423	3,423	3,423
Background image loading	BankingApp1	⌚	5			4,477	4,272	8,333	8,333	8,333
Background image loading	PictureShari...	⌚	7			5,465	6,269	8,928	9,053	9,053
Background image loading	CrashesOnly1	⌚	7			4,762	4,564	8,454	8,454	8,454
Load time greater than 500ms	BankingApp1	⌚		1	49			1	1	1
Load time greater than 500ms	CrashesOnly1	⌚		1	18			1	1	1
Load time greater than 500ms	PictureShari...	⌚		1	37			1	1	1
Repainting framebuffer	CrashesOnly1	⌚	6			25	26	36	36	36
Repainting framebuffer	BankingApp1	⌚	7			23	24	36	38	38
Repainting framebuffer	PictureShari...	⌚	8			19	20	32	32	32
SQLite errors	CrashesOnly1	⌚		1	65			3	8	8



Conclusion

With these myths dispelled, I hope you have gotten a different perspective on your mobile app initiatives and are rethinking your approach to mobile APM.

Start

MYTH BUSTING

and try out AppDynamics today!

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