DATA REPORT:
ANDROID MANUFACTURER EDITION

July 2016

Apteligent

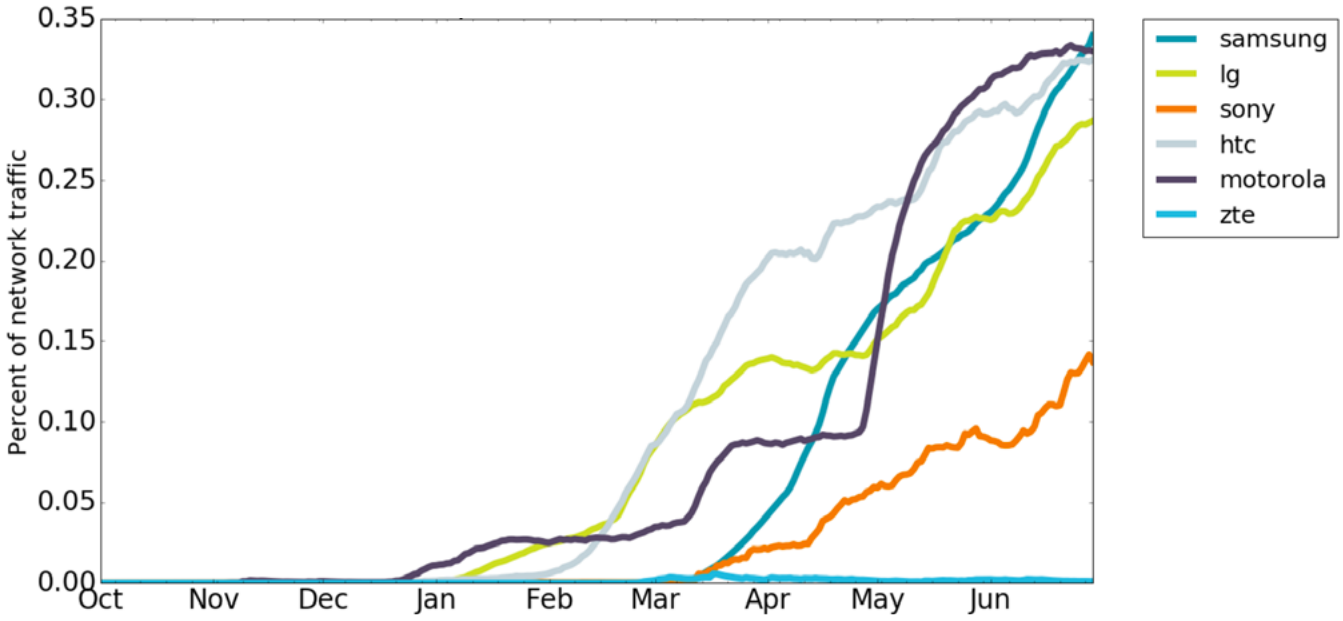
INTRODUCTION

In the quiet summer months leading up to the holiday shopping season, you'll see us start to analyze data relevant to consumer mobile purchases. In this report, we analyze Android manufacturers and recommend which one will deliver the best user experience based on OS update speed and crash rate.

WHICH ANDROID MANUFACTURER PUSHES OS UPDATES THE FASTEST?

One of the most common complaints about consumer Android devices is how long it takes to get the latest Android OS update. We examined device data for Samsung, LG, Sony, HTC, Motorola, and ZTE to determine which manufacturer pushes out OS updates the soonest. We excluded Nexus devices since they always receive the latest Android updates on the day they are released. For each manufacturer, we compared the time it took to upgrade from Android 5.x Lollipop to Android 6.0 Marshmallow. Below is a graph illustrating the update speeds for the aforementioned manufacturers in the US:

Android 6.0 Updates in the US (excludes Nexus)

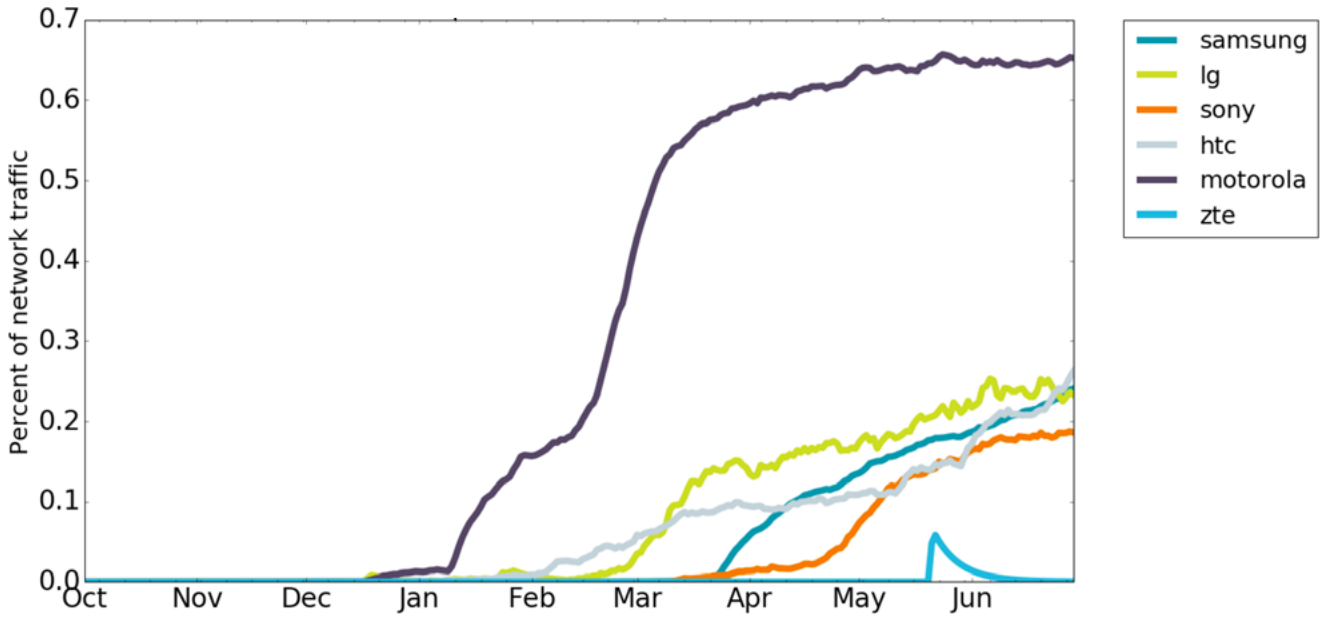


MOTOROLA PUSHES OUT UPDATES
THE FASTEST IN THE US

Android 6.0 Marshmallow was first released October 5, 2015. Our data shows that the device manufacturers clustered into two groups: those that pushed the update three months after the release and those that wait longer - a little over five months. Motorola tried the update first on a smaller set of devices, such as the Moto X Pure Edition / Moto X Style, for about two months and then rolled it out more widely. LG took the same approach starting with the LG G4 for about a month while HTC basically just pushed the release out to all compatible devices from the beginning. Both Samsung and Sony waited over 5 months before releasing the update to compatible devices. ZTE has released the Android M update to only a small handful of devices starting with the Axon line of devices February 2016.

We were also curious as to how those results might change based on geography. This graph below shows how those same manufacturers pushed out OS updates in India:

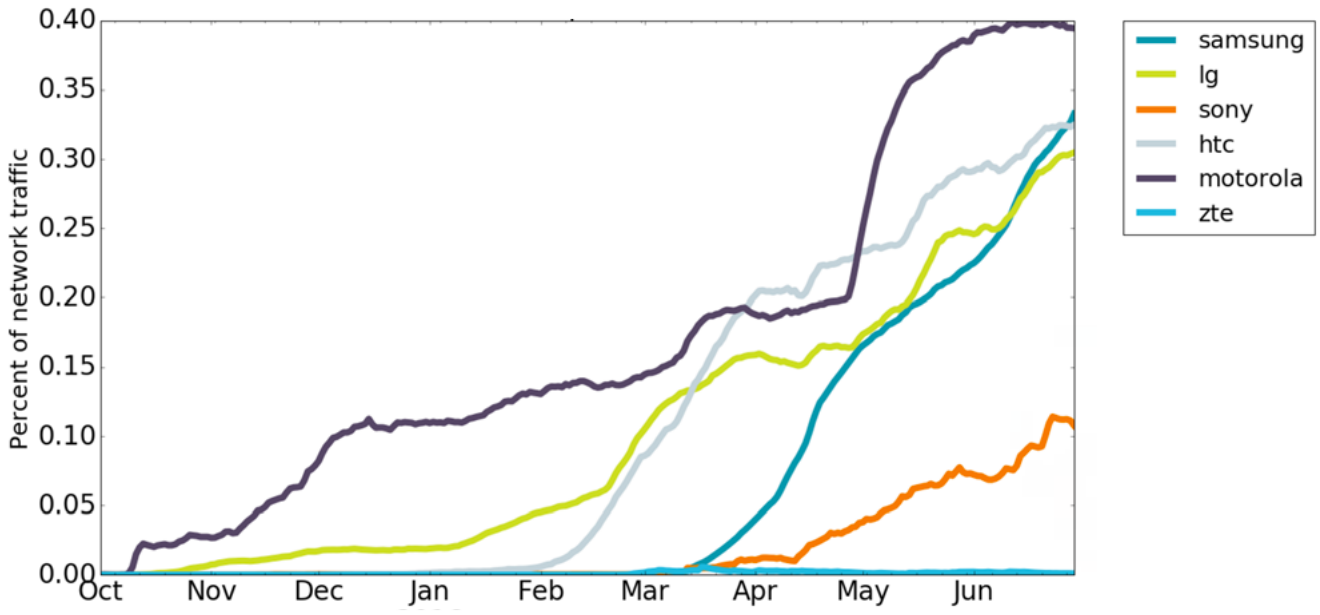
Android 6.0 Updates in India (excludes Nexus)



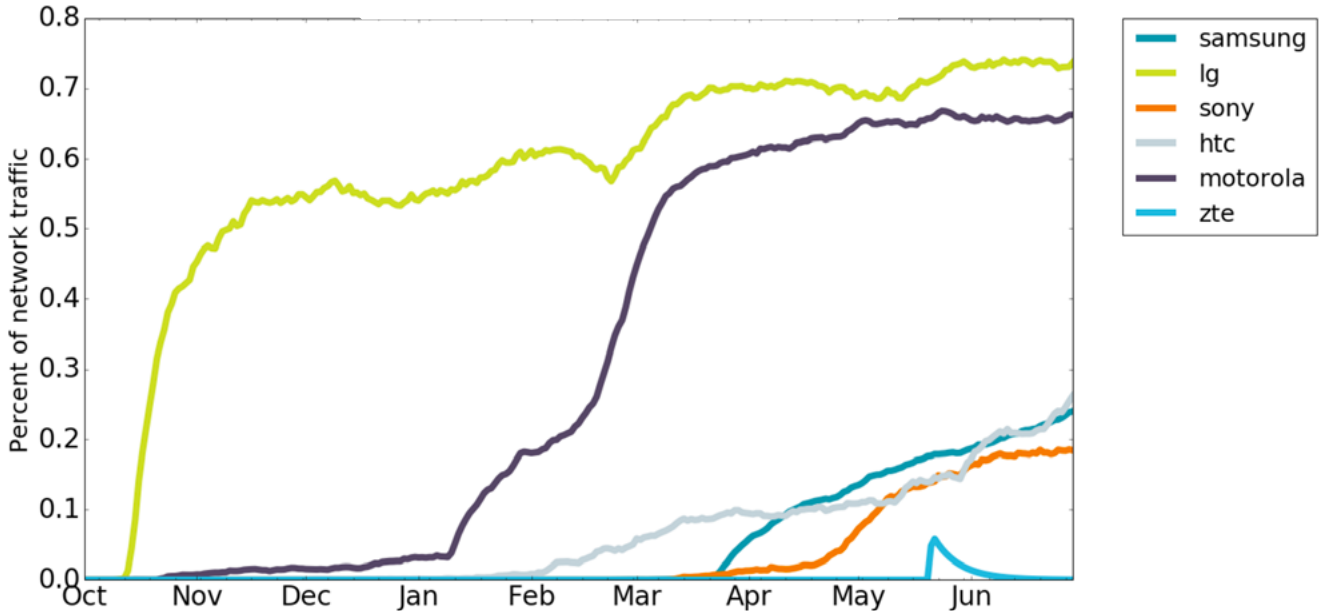
The general manufacturer cohorts remain: Motorola is first, followed by HTC and LG. Sony and Samsung continue to roll out the update last. Interestingly, Motorola doesn't seem to be as "careful" with the rollout in India as they were in the US.

If you're curious about how Nexus devices impact this data, the following charts are redrawn including those devices. The upgrade time-to-market speed favors manufacturers building Nexus devices as they get Android updates from Google instantaneously.

Android 6.0 Updates in the US



Android 6.0 Updates in India



After including Nexus devices you can see that LG, because of the Nexus 5x, and Motorola, due to the Nexus 6, are shifted left on the x-axis towards the Android 6.0 GA date in October. The rest of the manufacturers remained relatively unchanged. Samsung hasn't had a Nexus device since the Nexus 10 in 2012, ZTE and Sony have never produced one, and HTC last produced the Nexus 9 in 2014.

SONY HAS THE LOWEST OVERALL CRASH RATE

To determine which manufacturer has the lowest overall crash rate, we decided to analyze only apps that have over half a million app loads a day. These apps tend to have low crash rates and are highly optimized. Also newer devices will be a larger share of the population sample, which helps reduce the impact of older devices on the crash rate. Samsung in particular has a long tail of devices, and the older models tend to have higher crash rates. This way our analysis evens the playing field by focusing only on the most popular devices.

Apps with 500K or more App Loads / Day - Crash Rate by Manufacturer

Rank	Manufacturer	# Device Types > 0.5M loads/day	Average Crash Rate
1	Sony	35	0.08%
2	Motorola	17	0.09%
3	HTC	17	0.1%
4	Samsung	117	0.11%
4	LG	70	0.11%
5	ZTE	18	0.28%

WHICH NEW DEVICES TO CHOOSE?

There are many new devices coming out this summer, and some will be released by the time this report goes out. Others will appear in the fall, in time for the holiday season. Here is a sample of the new devices coming out:

Samsung - Galaxy Note 7

LG - V11 will take on the Note 7, V20 will be the first Android Nougat smartphone

HTC - Building the next Nexus device(s)

Motorola (via Lenovo) - Moto Z and Moto Z Force

Sony - Xperia™ XA Ultra

ZTE - Axon 7

Based on OS updates and crash rates alone, the next HTC Nexus device might be worth waiting for. If you'd like to be one of the first users of Android 7.0 Nougat, LG's V20 is also a safe bet. LG has a history of getting OS releases out the door quickly and has an average crash rate. If you'd like to optimize for stability and update speed, then the Motorola Moto Z and Moto Z Force is a great choice. The Z series is Motorola's flagship line and will receive the Android 7.0 Nougat update the quickest.

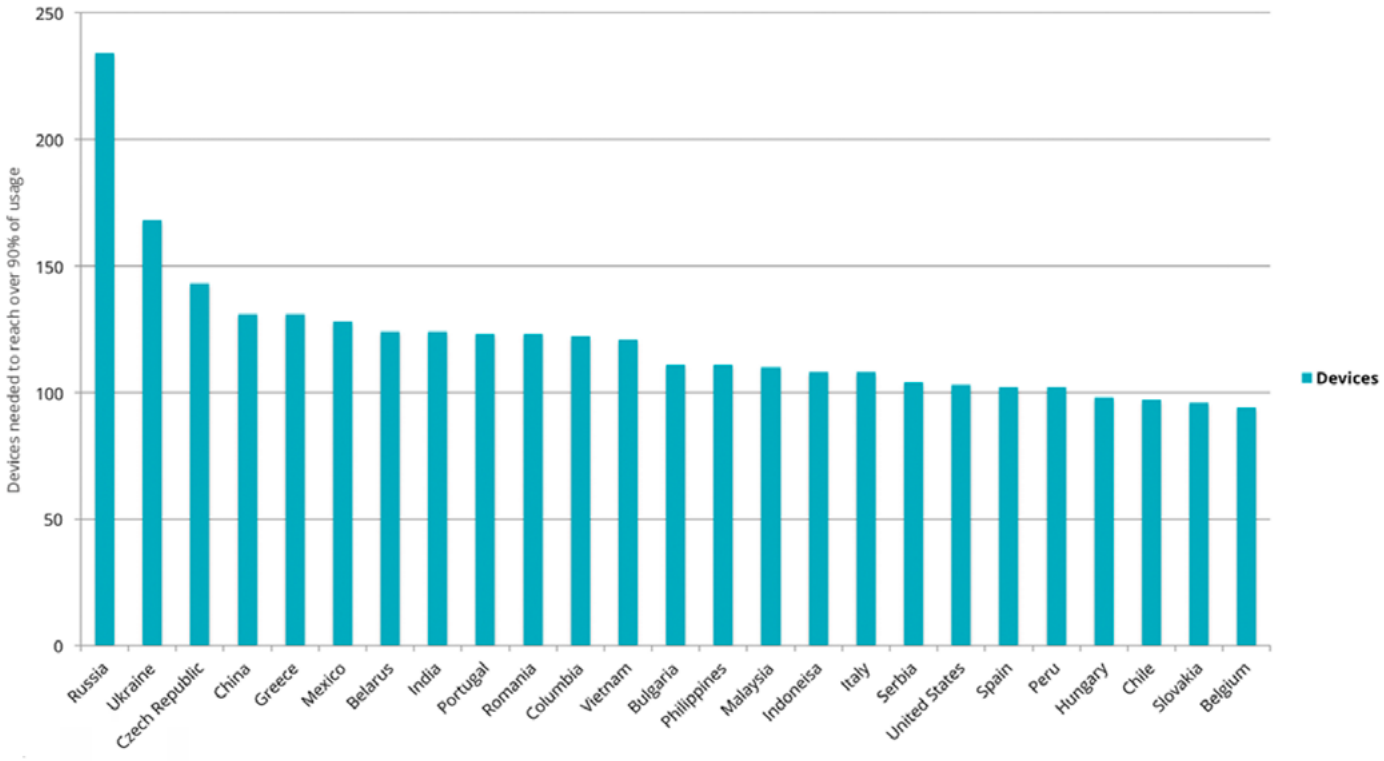
Winner: Tie between HTC and Motorola

Runner Up: LG

DEVICE FRAGMENTATION BY USAGE

In the previous section, we analyzed how quickly manufacturers push out operating system updates as well as the overall stability of apps running on those manufacturers' devices. This reduces fragmentation on the software side, but the sheer number of unique devices in a region is still problematic. In this section we examine the countries that have the largest device fragmentation. We define fragmentation by answering the following question: how many devices in a given country represent over 90% of device usage?

Android Fragmentation by Device Usage



RUSSIA HAS THE WORST ANDROID

Device fragmentation in the world

The chart above yields interesting results. In Russia, it takes over 230 devices to finally reach 90% of device usage in the region. To see how big of an issue this is, take a look at the top 10 devices in Russia in the table below. The most popular device takes only a little over 5% of the market. This puts a huge strain on app publishers who, in order to support this region, would need to test on many hardware and software configurations.

The Top 10 Devices in Russia - Only 27% of device usage

Rank	Device	Most Popular OS	Usage Share	Average Latency (ms)
1	ZenFone 2	Android 5.0	5.23%	479
2	Samsung Galaxy Note 3	Android 5.0	4.25%	422
3	Samsung Galaxy S5	Android 5.0	3.78%	439
4	Samsung Galaxy S4	Android 5.0	3.01%	444
5	Samsung Galaxy Grand Prime	Android 5.1	1.95%	468
6	Samsung Galaxy S3	Android 4.3	1.87%	470
7	Samsung Galaxy A5	Android 5.0	1.77%	426
8	Zenfone 5	Android 4.4	1.70%	413
9	Samsung Galaxy S4 Mini	Android 4.4	1.67%	483
10	Samsung Galaxy A3	Android 5.0	1.56%	430

Compare this against the United States, where the top device, the Samsung Galaxy S5 has about 12% usage share and the top 10 devices in total reach about 44%. Even more dramatic is Australia, where that same device has over 48% of the market and the top 10 devices represent about 74% of device usage.

IN CONCLUSION

Google is working on several remedies for Android fragmentation, such as pushing more functionality via Google Play services, as well as partnering with device manufacturers to build its Nexus line of devices. Those devices represent the “purest” form of Android without bloatware and custom skins. They also are the first devices to receive Android updates. Non-Nexus devices still face a lengthy approval process between carriers and OEMs, but clearly Google has been working to mitigate this issue.

A note on our data

Our data is benchmarked across tens of thousands of mobile apps representing hundreds of millions of application launches. Adoption rate is based on app loads and network data, which means it is based on actual usage of the operating system. You may see slightly different numbers reported in the future by Apple, which are solely based on activations vs actual device usage.

You can find mobile industry benchmarks updated daily at data.apteligent.com. In addition, every month we publish a recap of the trends and movements in the industry.

ABOUT APTELIGENT

If you develop an app, or are responsible for the success of a mobile app, Apteligent's lightweight SDK helps you optimize user experience by identifying performance issues, such as crashes and network failures, that impact user behavior.

The company's solution provides a real-time global view of apps across iOS, Android, Windows Phone 10, Hybrid and HTML5. Trusted by three of the top five credit card issuers, three of the top five media companies, three of the top five retailers, and two of the top three hotel chains with the success of their strategic mobile app initiatives. Apteligent is leading the drive to the App Economy.

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