

# State of Mobile Device Performance and Health

**TREND REPORT** Q2 2016

August 2016

# TABLE OF CONTENTS

---

INTRODUCTION	3
ABOUT THE DATA POWERING THE REPORT	3
KEY TRENDS & INSIGHTS	4
iOS Loses Performance Battle to Android, With iPhone 6 and iPhone 6S Plagued by High Failure Rates	4
Lenovo and LeTV Budget-Friendly Smartphones Surface as Poor Android Performers	5
iOS Devices Fail More Frequently Than Android Counterparts in North America and Asia	6
Crashing Apps, WiFi and Headset Cause Problems for iPhone Users	7
Camera, Battery Charging & Touch Screen Issues Abate on Android Devices	8
iOS Apps Crash at Greater Rate Than Android Apps	8
Snapchat, Instagram and Facebook Top List of Crashing iOS Apps	9
Google Play Services, Google Contacts Sync and Address Book Android Apps Crash Most Often	10
CONCLUSION	11
ABOUT THE MARKET	11
ABOUT THE TECHNOLOGY POWERING THE REPORT	11
ABOUT BLANCCO TECHNOLOGY GROUP	12
CONTACT US	12

# INTRODUCTION

---

At Mobile World Congress 2016, the theme was set as 'Mobile Is Everything.' That statement, as broad as it may seem, is aptly true in today's digitally connected world. To illustrate this, you only have to look at the latest figures released by IDC in its Worldwide Quarterly Mobile Phone Tracker report, which revealed that a total of 343.3 million smartphones were shipped worldwide in the second quarter of 2016.

Mobile offers different benefits for each audience it serves. For individuals, it is a definitive tool and extension of their everyday lives – offering them an easy, quick and effective way to communicate via email, SMS/text and chat apps, take photos/videos of important moments, browse the Internet, research and shop online, pay for goods/services in a matter of seconds with a single tap or swipe and so much more.

For mobile network operators/carriers and device manufacturers, it is the basis for their entire business model – constituting product sales and playing a key role in improving the post-sales customer experience. For enterprise businesses, it is a key tool in empowering employees to stay connected even when they are outside of the office perimeters, and in the process, stay engaged, meet constantly changing priorities and deadlines, increase their individual work performance and drive greater efficiencies and productivity for themselves, their teams and the businesses at large.

For each of these audiences that use and benefit from mobile, poor device performance is the one constant that can cause problems. In this report, we will share various data points that indicate key sources of device performance issues.

## 343.3 Million

In the second quarter of 2016, a total of 343.3 million smartphones were shipped worldwide.



## ABOUT THE DATA POWERING THE REPORT

---

The *State of Mobile Device Performance and Health* report is an in-depth quarterly review of global mobile device trends, including: diagnostics testing, performance issues and failures. The information contained in this report is based on internal data collected from Blancco Technology Group's [SmartChk platform](#), the global leader in mobile device diagnostics and business intelligence. Organizations of all types can leverage this information to ensure a better customer experience and satisfaction.

In this report, we will examine the roadblocks to mobile adoption based on data collected from millions of Android

and iOS smartphones that underwent diagnostics testing in North America, Europe and Asia during the second quarter of 2016 (Q2 2016). The report's findings are based on aggregate, anonymized data and include the following information:

- Device failure rates by operating systems, manufacturers, models and regions
- The most common types of performance issues – hardware, software and connectivity – by operating systems
- The top 10 iOS and Android apps with the highest crashing rates

# KEY TRENDS & INSIGHTS

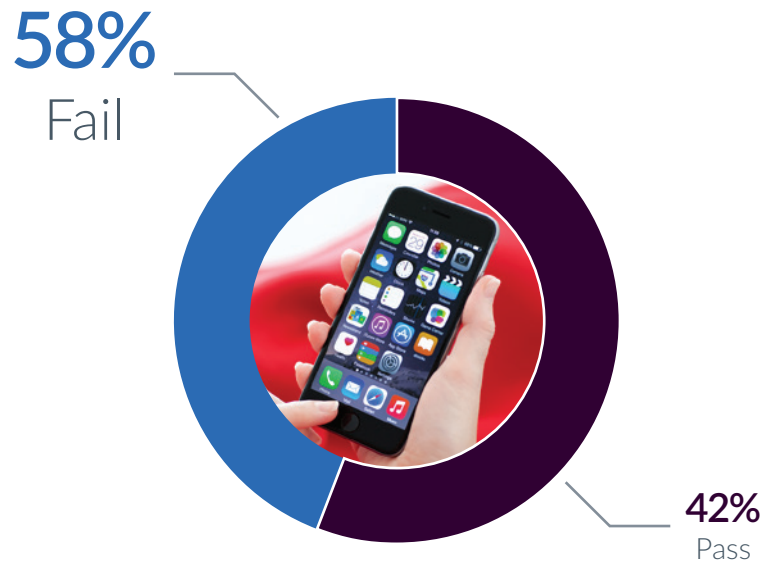
## iOS Loses Performance Battle to Android, With iPhone 6 and iPhone 6S Plagued by High Failure Rates

In the second quarter of 2016, iOS devices had a 58 percent failure rate. This is more than double the 25 percent failure rate of iOS devices in the first quarter of 2016. It is also the first time since we have been analyzing quarterly diagnostics testing data that iOS device performance fared worse than Android.

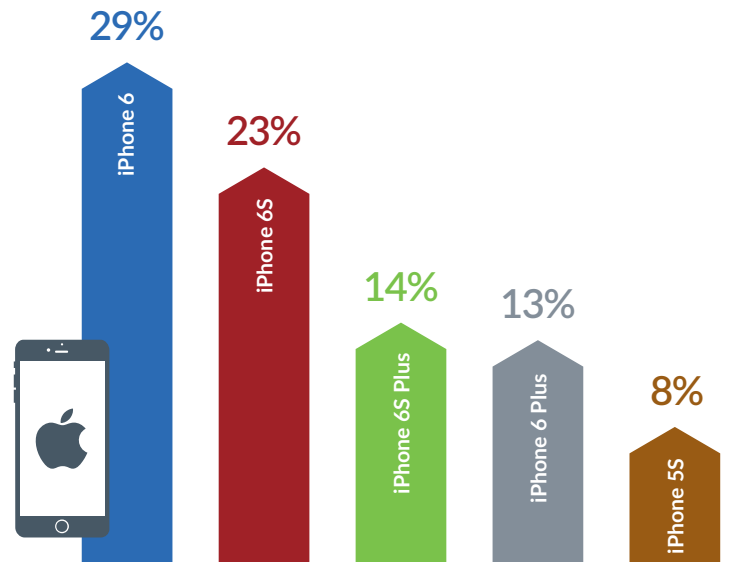
Upon analyzing the specific iOS device models contributing to this overall failure rate, the iPhone 6 had the highest failure rate (29 percent), followed by iPhone 6S (23 percent) and iPhone 6S Plus (14 percent). One possible explanation for why the iPhone 6 may have struggled with more performance issues and failures than other models in Q2 2016 could be Apple's recent software updates – iOS 9.3.1 released in April and iOS 9.3.2 released in May. Following both software updates, many iPhone and iPad users began to see major problems on their devices, such as faster battery drain, random crashes, poor sound quality when taking Bluetooth calls and WiFi connectivity problems.

In seeing that the iPhone 6S performed somewhat better than the iPhone 6, our experts believe this could be attributed to the fact that the iPhone 6S saw a 70 percent boost in CPU performance over the iPhone 6. As industry experts, wireless carriers and consumers look ahead to the highly anticipated iPhone 7 launch this September, it will be interesting to see how the newest model stacks up in overall performance in the following quarter.

iOS Device Performance, Q2 2016



Top 5 iOS Models By Failure Rate, Q2 2016



Note: The iOS model failure rates are taken as a percentage of the total iOS failure rate (58 percent) noted in the chart.

# KEY TRENDS & INSIGHTS

## Lenovo and LeTV Budget-Friendly Smartphones Surface as Poor Android Performers

In the second quarter of 2016, Android devices had an overall failure rate of 35 percent. This is a considerable improvement from the 44 percent failure rate of Android devices in the first quarter of 2016.

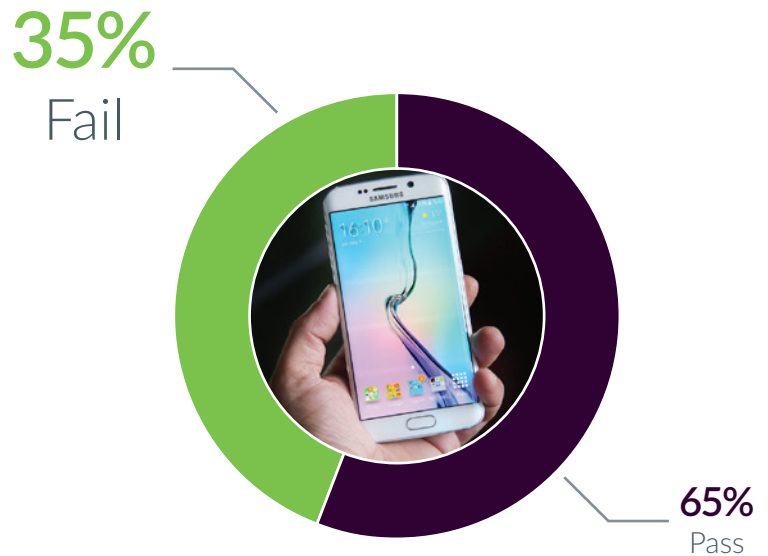
Of the total 35 percent Android failure rate, Samsung (26 percent), Lenovo (17 percent) and LeTV (17 percent) were among the smartphone manufacturers with the weakest performance and higher failure rates. It isn't all that surprising to see Samsung at the top of the list, given that it accounted for 37 percent of smartphone sales during the three-month period ending in May 2016, according to the latest data from IDC.

However, it's more interesting to see that several of Lenovo and LeTV's 'budget-friendly' smartphone models surfaced as the poorest performing models. For example, the Le 1S model had the highest failure rate among Android smartphone models (10 percent), followed by Le 1S Eco (7 percent) and Lenovo Vibe K5 Plus (6 percent). In the case of the Lenovo Vibe K5 Plus, a budget phone that's found significant traction in India, an AndroidCentral review of the smartphone model highlighted certain performance issues that occur. For instance, the Lenovo Vibe K5 Plus can heat up quite fast, has a limited battery charge capacity (takes long to fully recharge) and experiences lags when more apps are installed.

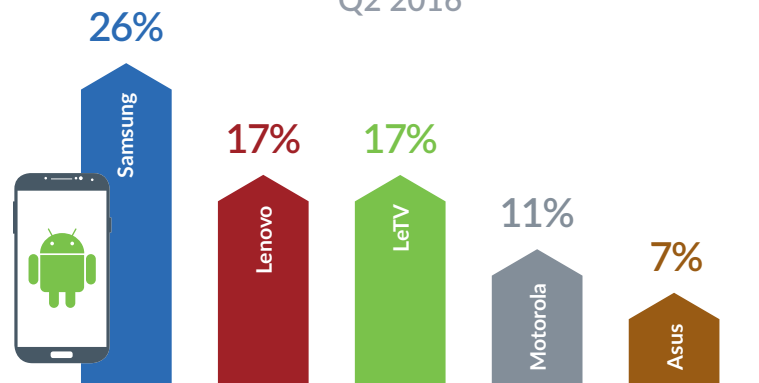
Our findings support what many industry analysts have been suggesting – smartphone growth has slowed down in recent years. This slowed growth can be attributed to several factors and trends. For one, users aren't upgrading to new devices as often these days due in part to how well devices are built by smartphone manufacturers. On top of that, the average price of smartphones has gradually decreased over the last few years, putting more affordable smartphone models into the hands of users. This is especially true in emerging markets, such as India, where the average selling price of a smartphone dropped by nearly half between 2010 and 2015. In fact, Strategy Analytics estimates that budget-friendly smartphones will account for more than a quarter of the global smartphone market and more than \$240 billion in sales by 2017.

According to Anthony Scarsella, Research Manager for IDC, "As smartphone prices continue to drop and competition escalates at the high-end, vendors will need to continue to push 'flagship-type' devices at affordable price points to encourage upgrading on a more frequent basis. Chinese brands such as Huawei, OPPO, Vivo and Xiaomi have witnessed success with this strategy by shipping premium styled devices that focus on the features that matters most to consumers, such as imaging, sound quality and design."

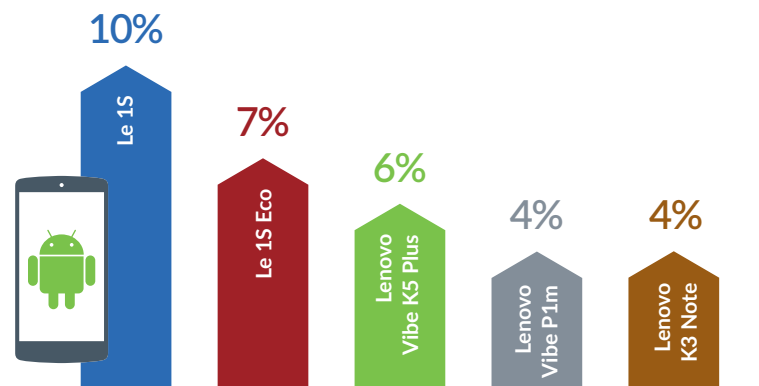
Android Device Performance, Q2 2016



Top 5 Android Manufacturers By Failure Rate, Q2 2016



Top 5 Android Models By Failure Rate, Q2 2016



Note: The Android model failure rates are taken as a percentage of the total Android failure rate (35 percent) noted in the chart.



# KEY TRENDS & INSIGHTS

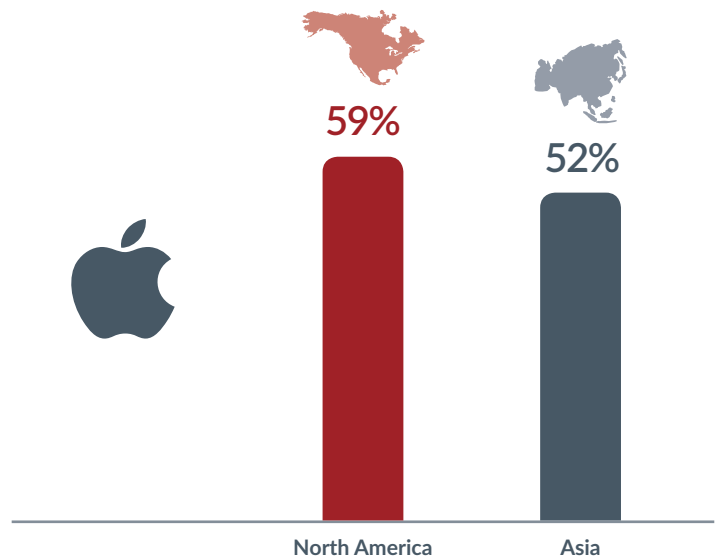
## iOS Devices Fail More Frequently Than Android Counterparts in North America and Asia

According to our data from Q2 2016, there was a higher rate of iOS device failures in North America (59 percent) and Asia (52 percent), compared to Android device failures in North America (29 percent) and Asia (41 percent). While it may be possible that failure rates could be influenced and increased by variances in the quantity of smartphone shipments and market share sizes of both operating systems in specific markets, data from TrendForce seems to contradict this notion.

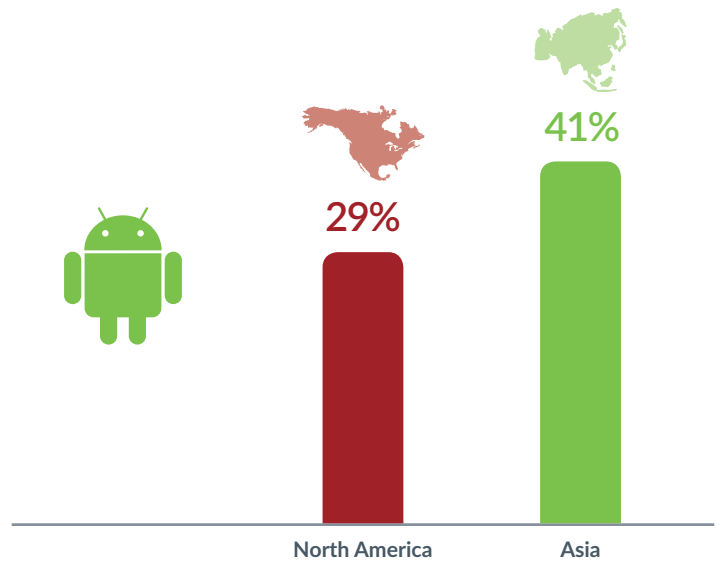
For example, the TrendForce data indicates that Samsung, once again, came out as the leader in smartphone sales worldwide with a total of 77 million units being shipped in the second quarter of 2016 – representing 24.5 percent of overall market share. And yet, our data indicates that Android device failures were significantly less than iOS device failures in North America and Asia. Another explanation for why Android device failures were so much lower than iOS device failures in these regions is that Android users in North America and Asia may be more tech savvy and understand how to optimize their device performance better than their iOS counterparts.



iOS Device Failure Rates, Q2 2016



Android Device Failure Rates, Q2 2016



# KEY TRENDS & INSIGHTS

## Crashing Apps, WiFi and Headset Cause Problems for iPhone Users

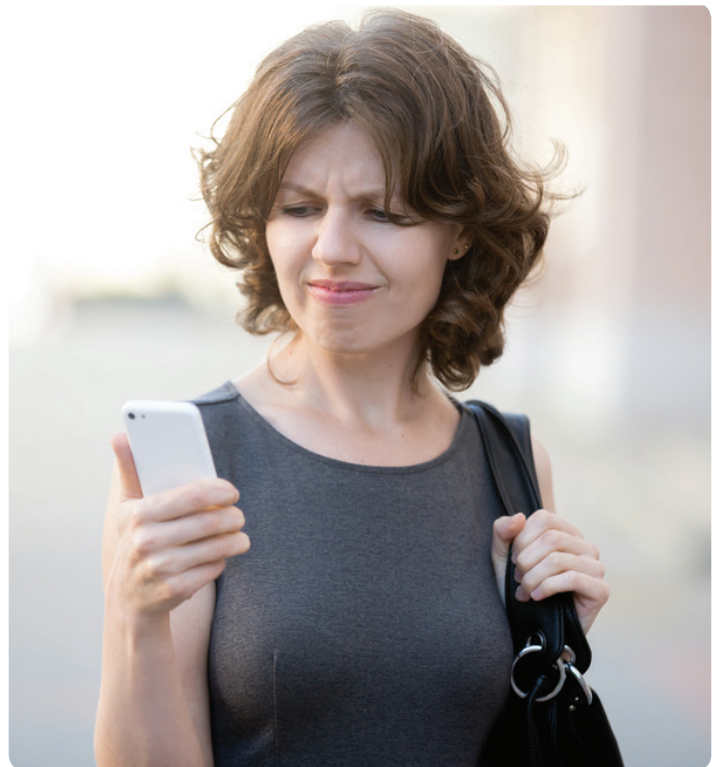
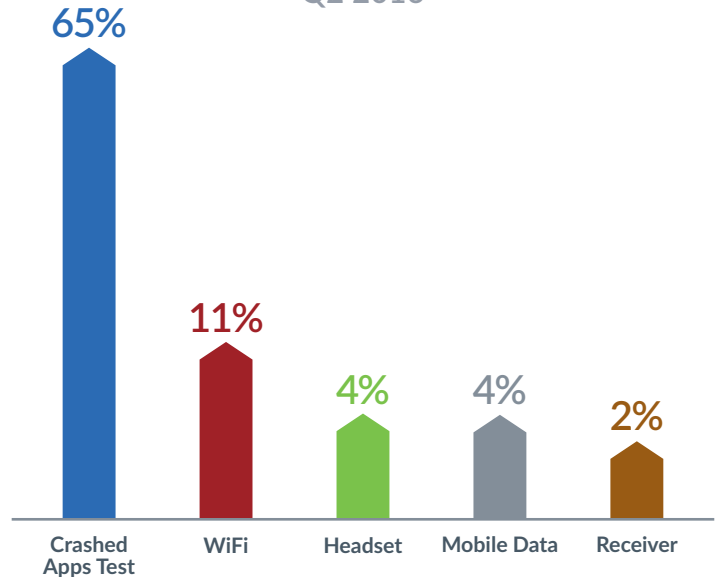
Upon analyzing the top five performance issues occurring on iOS devices in the second quarter of 2016, crashing apps, WiFi and headset arose as the three most common sources of failures.

As we explained earlier, Apple released its iOS 9.3, iOS 9.3.1 and iOS 9.3.2 software updates in March, April and May, respectively, to remedy bugs and flaws that users were experiencing. However, many users who updated their iPhones or iPads with the iOS 9.3.2 software reported not being able to connect to a WiFi network, having WiFi settings grayed out, dropped connections, slow speeds and incorrect password prompts. These reported issues fall in line with the types of performance issues our diagnostics tests found on iOS devices in the second quarter of 2016.

As our diagnostics testing data reveals, WiFi was the second most prevalent performance issue on iOS devices in Q2 2016. To understand why this could be causing problems for iPhone users, we looked at [Apple's published iOS 9.3 release notes](#) and found that WiFi is specifically listed as one of the software update's 'known issues.' As Apple describes it, when multiple devices are connected to a single access point in a classroom environment, "devices may intermittently lose data connectivity with the Classroom, other devices and the Internet, even though the status bar shows the device to be connected to a WiFi access point." In order to resolve the issue, Apple suggests users disable and then re-enable WiFi connectivity from their device's settings.



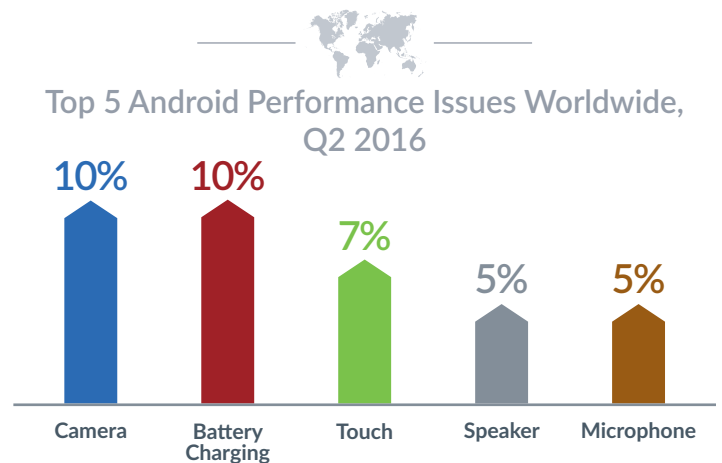
Top 5 iOS Performance Issues Worldwide, Q2 2016



# KEY TRENDS & INSIGHTS

## Camera, Battery Charging & Touch Screen Issues Abate on Android Devices

As with other operating systems, Android software updates can bring with them various bugs and performance issues. This has been the case with the Android Marshmallow 6.0 update, with users reporting slow battery charge, WiFi connectivity issues, crashing apps, syncing problems and random reboots. This software update – and its associated bugs – could have contributed to the types of performance issues our diagnostics platform detected on Android devices. And as we've stated previously, these issues could also be occurring due to user behavior.



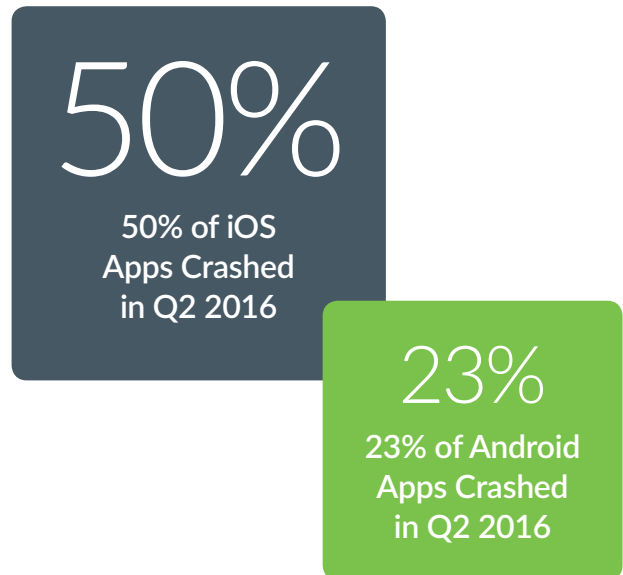
## iOS Apps Crash at Greater Rate Than Android Apps

According to our data, apps crashed on 50 percent of the iOS devices tested in the second quarter of 2016. This is over double the rate of crashing apps on Android devices – at only 23 percent – in the same period.

To understand what could be accounting for iOS apps to crash more frequently than Android apps, it's important to consider some key factors. On March 21, 2016, Apple released its iOS 9.3 software update with key features and fixes, such as Night Shift, Verizon WiFi calling and improvements to Notes. But it was far from perfect and many users were quick to call out issues and bugs they experienced when the update was installed on their devices.

Acting fast, Apple released its [iOS 9.3.1 update](#) just ten days later on March 31, 2016 to fix an issue that caused apps to be unresponsive after tapping on links in Safari and other apps. But soon after, it was discovered that iOS 9.3.1 contained a bug that made it easy to bypass lock screen security (both PIN and fingerprint) to access users' contacts and photos.

These weren't the only bugs found in the iOS 9.3.1 update – iPhone SE owners had their audio distorted on Bluetooth phone calls. If you consider the number of mobile users in the world who drive and use in-car Bluetooth capabilities to make their lives easier and more productive, it is clear just how widespread and frustrating of a problem this can be. This is particularly interesting, given that our diagnostics data showed that the iPhone SE was among the top 10 iOS devices with the highest failure rates.





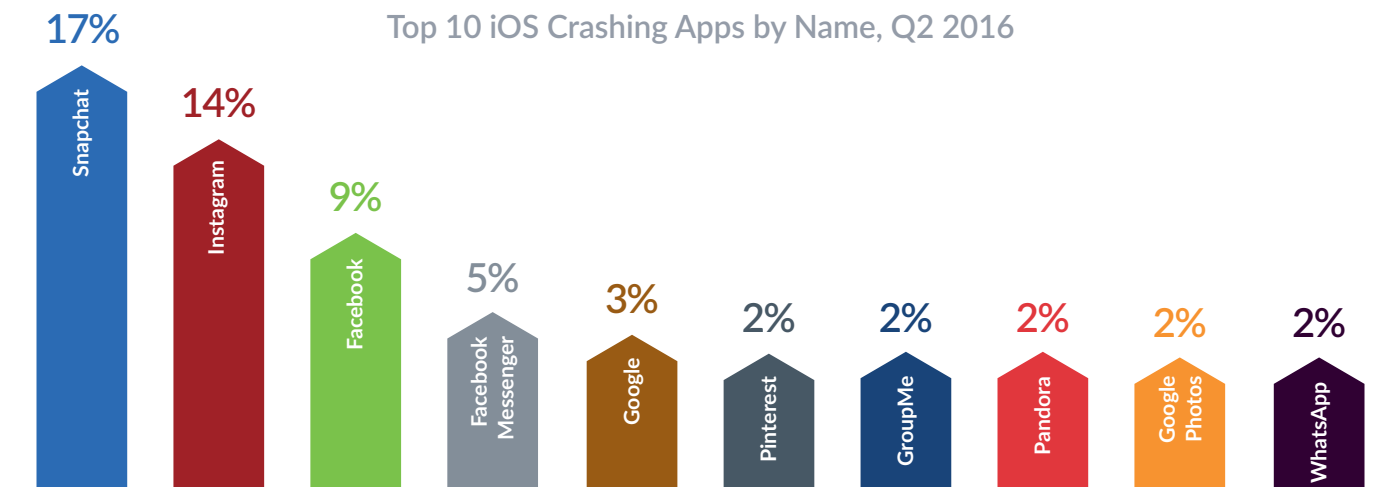
# KEY TRENDS & INSIGHTS

## Snapchat, Instagram and Facebook Top List of Crashing iOS Apps

According to our Q2 2016 data, five out of the top 10 iOS crashing apps were social media apps, including Snapchat, Instagram, Facebook, Facebook Messenger and Pinterest. In looking at the top three crashing iOS apps – Snapchat (17 percent), Instagram (14 percent) and Facebook (9 percent) – it's important to note that all three have seen considerable growth in downloads, installs and monthly active users worldwide. It could be possible that as these social media apps increase in popularity and usage among iPhone users, their incidence rates of crashing are also likely to increase.

Of the social media apps, Snapchat has been the one with the most promise and labeled the new 'darling' of the social media world. That makes sense when you look at its growth numbers – it ranks number six in the US in terms of monthly active users and took the No. 1 spot in iOS app downloads in May, according to App Annie's monthly index. This immense popularity could be one possible explanation for why the social media app had such a high crashing rate on iOS devices in the second quarter of 2016.

Meanwhile, the Instagram and Facebook apps came in just behind Snapchat in the list of iOS crashing apps, at 14 percent and 9 percent, respectively. To see why these apps are crashing so frequently, we once again looked at their adoption and usage rates. Most users around the world – and even businesses – have come to use and love the snap-and-share Instagram app to take photos of everything – from selfies to posed food pictures to humorous videos. In June 2016, Instagram reinforced its strong growth by publicly sharing its usage stats – it had reached 500 million monthly active users and of those, 300 million (60 percent) use the app every day.

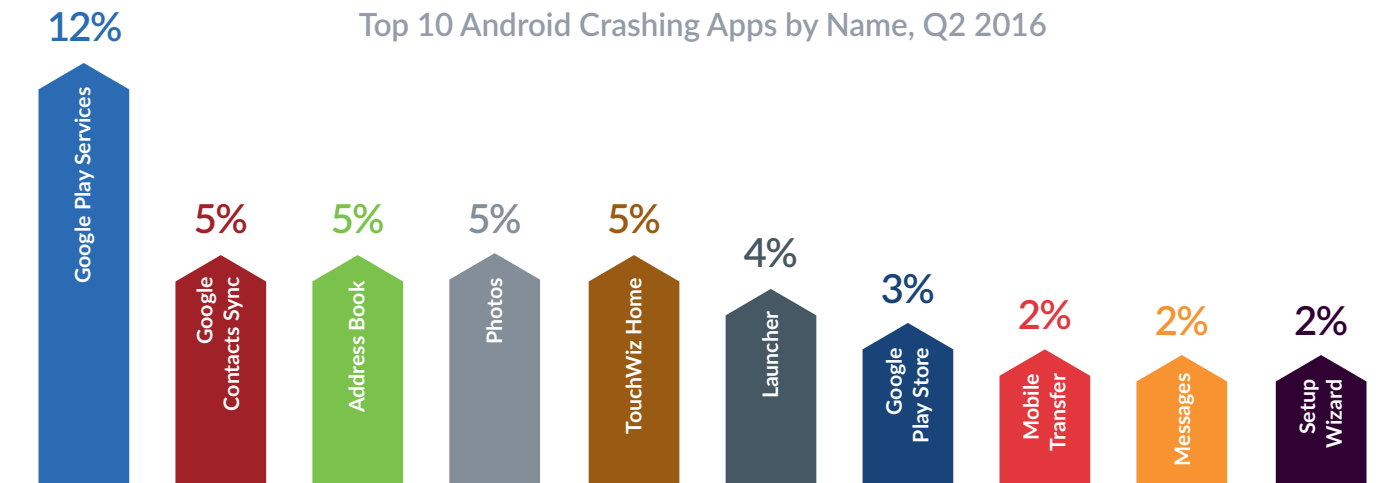


# KEY TRENDS & INSIGHTS

## Google Play Services, Google Contacts Sync and Address Book Android Apps Crash Most Often

In contrast to what our diagnostics data revealed about iOS app performance, social media apps didn't top the list of crashing Android apps. In fact, they were nowhere to be seen on the Android apps with the highest crashing rates. Instead, Google Play Services (12 percent), Google Contacts Sync

(5 percent) and the Address Book (5 percent) were among the top 3 crashing Android apps in the second quarter of 2016. As many Android user forums and blogs have indicated, many Android users have reported that Google Play Services has crashed unexpectedly and constantly on their devices.



# CONCLUSION

---

Through data collected from millions of iOS and Android devices brought into wireless carriers and device manufacturers for testing, we have learned that iOS devices struggled with performance issues, high failure rates and double the rate of crashing apps than their Android counterparts. Additionally, our Q2 2016 data indicates that software updates made to each operating system could potentially factor into the types of performance issues detected by our diagnostics platform.

## For Manufacturers and Carriers

In today's competitive marketplace, mobile carriers and device manufacturers must deliver maximum value for their customers and improve the customer care experience across every channel. This has led to greater investments in staff training, education and technology – with the intent of keeping existing customers satisfied and loyal, boosting their

Net Promoter Scores, reducing subscriber churn, increasing foot traffic and driving contract upsell opportunities. But the key to achieving these goals is being able to diagnose and repair device issues quickly, easily and accurately. To assess the high costs needlessly incurred from inaccurately diagnosing device performance issues and, as a result, unnecessarily processing NTF returns, [calculate your NTF savings](#) today.

## For Enterprise Organizations

More employees use their personal mobile devices inside and outside the workplace than those who don't. Because of BYOD's increasing popularity and adoption by enterprise businesses, IT and support desk teams have ultimately become the go-to 'fix it' source when employees' devices don't function properly. This creates a burden on IT and support desk workloads and manpower, which could be reduced significantly if employees understand how to optimize their own devices.

# ABOUT THE MARKET

---

The global enterprise mobility and BYOD market is expected to reach a value of \$360 billion by 2020.<sup>1</sup> In North America, there are more than 250 million unique mobile subscribers and 360 million connections, with three-quarters of connections being smartphones.<sup>2</sup> Meanwhile, the Asia Pacific region boasts more than one billion smartphone users, with countries such as China and India emerging as the latest growth markets.<sup>3</sup> In Europe, operator investments in 4G and 5G network quality and coverage, growth in smartphone use and increased data usage are all contributing factors to a growing subscriber base expected to reach 450 million by the end of 2020.<sup>4</sup>

# ABOUT THE TECHNOLOGY POWERING THE REPORT

---

Through our SmartChk mobile diagnostics solutions, we help some of the world's biggest and most iconic wireless carriers and device manufacturers automate and scale the diagnostics process across the entire mobile lifecycle and across every channel. To see how our SmartChk diagnostics solutions and business intelligence can help reduce the quantity and frequency of 'No Trouble Found' device returns, increase your Net Promoter Score and save millions of dollars each year, [request a demo](#) today.

<sup>1</sup> Research and Markets, BYOD and Enterprise Mobility Market by Solution, by Device, by Security, by Vertical, by Region Analysis and Forecasts till 2020 Report, December 2015

<sup>2</sup> GSMA, The Mobile Economy – North America 2015

<sup>3</sup> eMarketer, September 2015

<sup>4</sup> GSMA, The Mobile Economy – Europe 2015

# ABOUT BLANCCO TECHNOLOGY GROUP

---



**Blanco Technology Group** is a leading, global provider of mobile device diagnostics and secure data erasure solutions. We help our clients' customers test, diagnose, repair and repurpose IT devices with the most proven and certified software. Our clientele consists of equipment manufacturers, mobile network operators, retailers, financial institutions, healthcare providers and government organizations worldwide. The company is headquartered in Alpharetta, GA, United States, with a distributed workforce and customer base across the globe.

For more information visit:  
[www.blanccotechnologygroup.com](http://www.blanccotechnologygroup.com)



**Blanco**, a division of Blanco Technology Group, is the global de facto standard in certified data erasure. We provide thousands of organizations with an absolute line of defense against costly security breaches, as well as verification of regulatory compliance through a 100% tamper-proof audit trail.



**SmartChk**, a division of Blanco Technology Group, is a global innovator in mobile asset diagnostics and business intelligence. We partner with our customers to improve their customers' experience by providing seamless solutions to test, diagnose and repair mobile assets. SmartChk provides world-class support, pre and post implementation, allowing our customers to derive measurable business results.



## CONTACT US

---

**For Sales & Marketing, Please Contact:**

Email: [info@blanccotechgroup.com](mailto:info@blanccotechgroup.com)

**For Corporate Communications & PR, Please Contact:**

Email: [press@blanccotechgroup.com](mailto:press@blanccotechgroup.com)