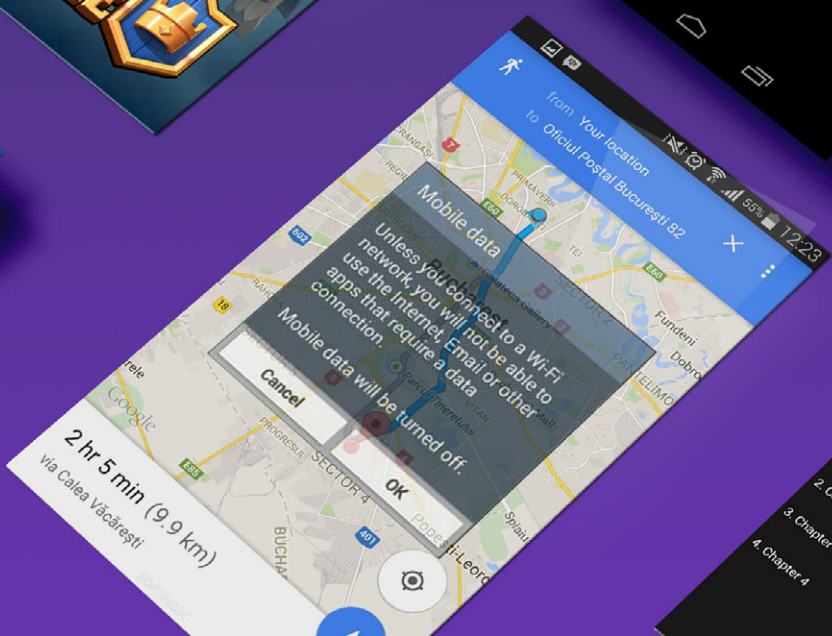
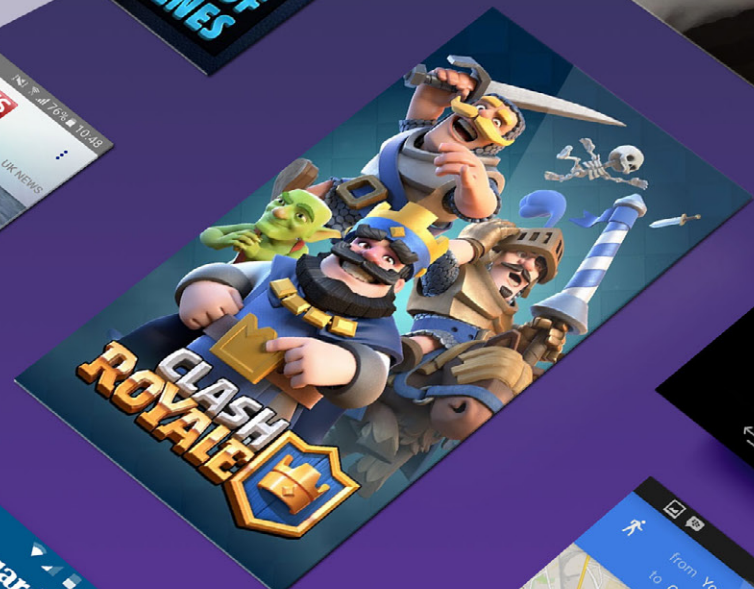
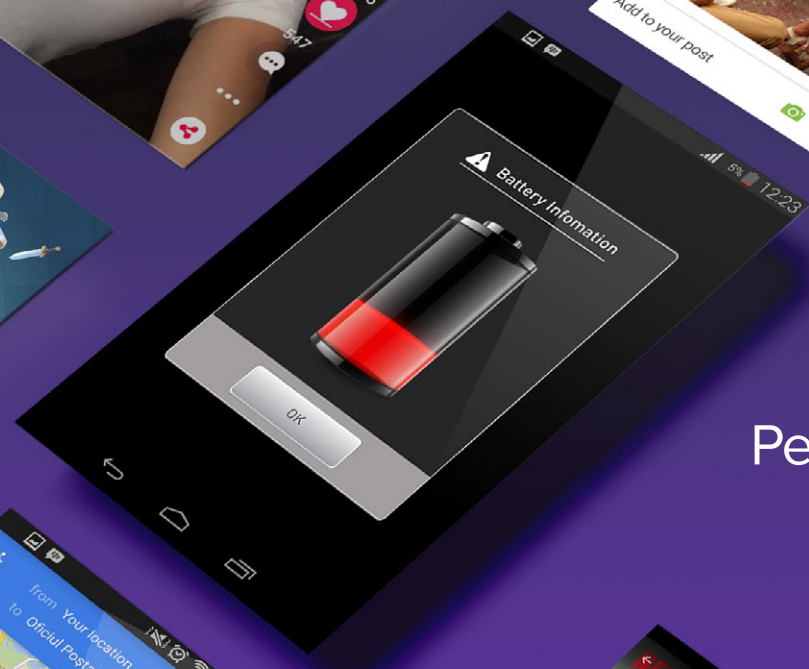
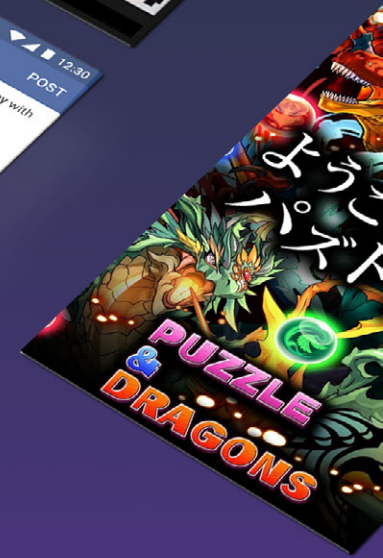




Avast® Android™ App Performance & Trend Report

Q3 2016 | by Avast® Software





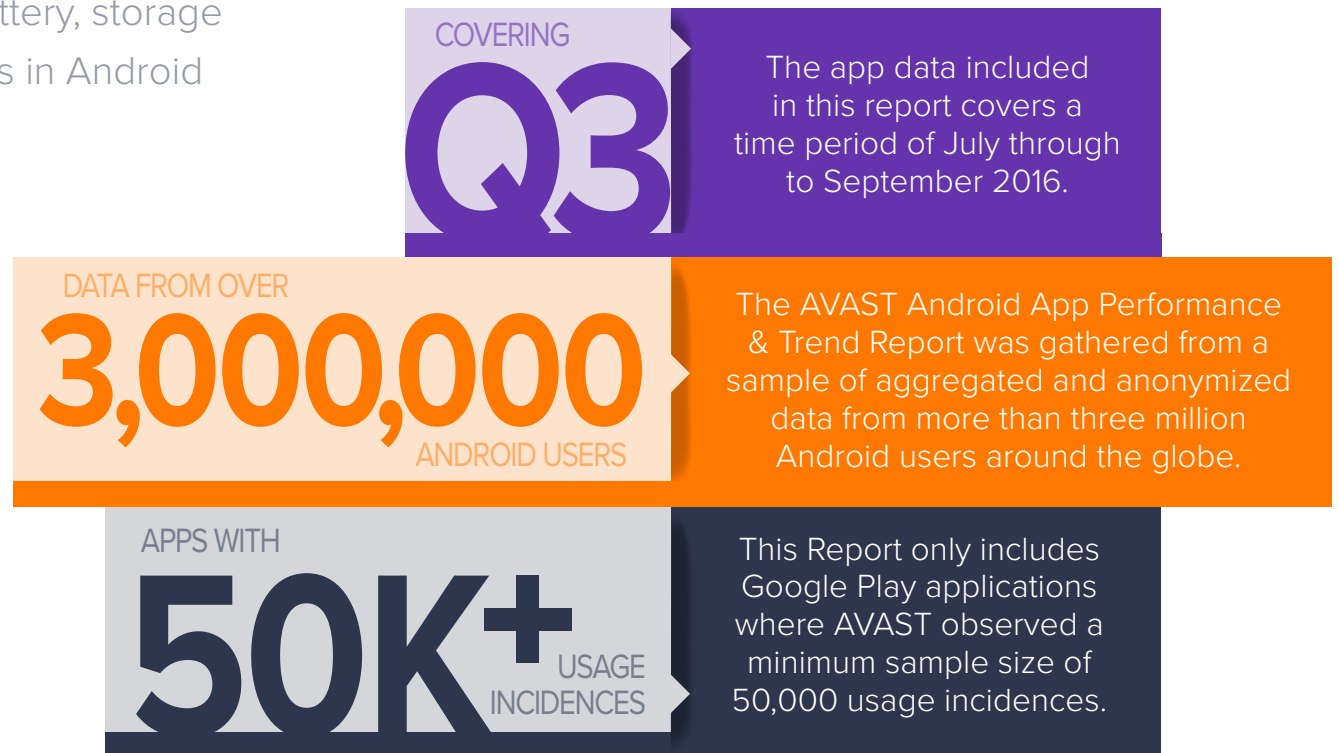
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Executive Summary

The Avast Android App Performance & Trend Report Q3 2016 reveals the top performance-draining apps for Android devices, based on battery, storage and data use, and the key recent trends in Android app use.

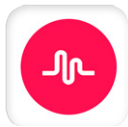
Methodology





A Insights and Analysis

1 **musical.ly** Video killed the battery bar



One of the fastest growing social networks of 2016, **musical.ly**, lets you record a 15 second clip of you and your friends lip-syncing to a popular song.

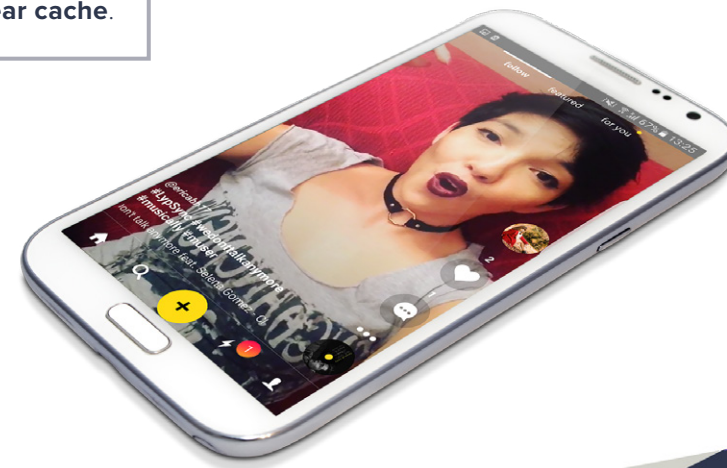
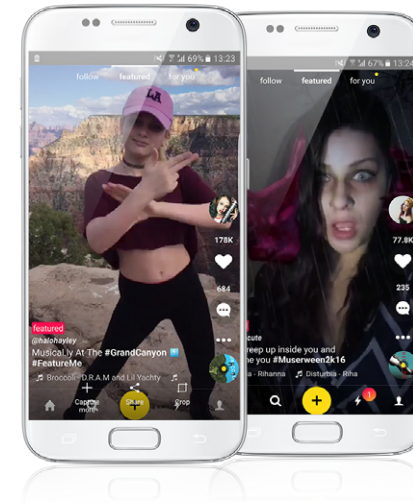
It's gone through the roof with over 100 million users watching and uploading these clips. It's a smart idea, great fun, and one of the worst battery eaters we've ever seen. In our tests, it drained a Samsung Galaxy S6 from 100% to 0% in just **2 hours**.

Even if it's used in short bursts, this app is heavy on data as well as on battery. Watching 25 clips in a row, which took just a few minutes, drained the battery by **11%** and used up more than **100 MB** of mobile data.

If a user were to do this everyday for a month, they would burn through 3 GB of data, which would exceed most standard data plans. Given musical.ly is geared towards teens, any bill-paying parent might like to know this.



TIP The app does get rid of some of that data after a period of time but you can proactively delete it manually if you're running low on space. Go to your profile page in **musical.ly**, tap on **Settings** and **Clear cache**.



A Insights and Analysis

2 **WhatsCall:** So call me maybe... not?



Ad-financed newcomer, **WhatsCall**, allows you to call any landline or mobile phone (internationally) or other WhatsCall users for free. No wonder it's a hit app, as competitors like Skype require the other user to have the same app installed and also charges for landline calls. Instead, WhatsCall awards you virtual credits for downloading apps, reading and tagging articles, watching ads and inviting friends. You then use these credits to make calls.

It may be cheaper than Skype but WhatsCall ranks 5th in our list of most resource draining apps. In our tests to find out why, it only drained the battery slightly faster than its well-known competitor Skype over the course of a five minute call. The real drain seems to come from background activity which keeps the phone busy even when you're not making calls.



3 **Jehovah's Witnesses:** App needs a miracle

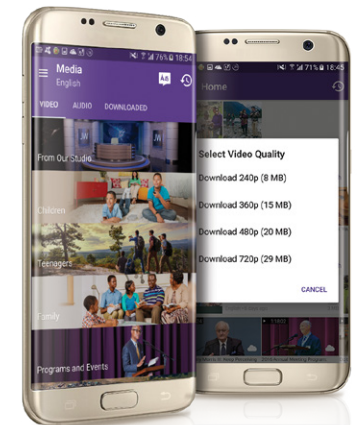


A newcomer to our rankings, the official **Jehovah's Witnesses** app went straight in at the No 1 spot on the highest storage eating applications list. This new app allows users to download their Bible (in all languages) and browse a library of video tutorials and introductions in high-resolution.

The digital cost of this rich content is 2 GB for the scripture and 3 GB for watching the introduction videos. It's no wonder it shows up at the top of our lists as it exceeds the traffic and local storage required by most apps. If you're using it, keep an eye on mobile data costs and make sure to check the **Downloaded** section and delete entries that you no longer use.



If you're using the app, keep an eye on mobile data costs and make sure to check the **downloaded** section and delete entries that you no longer use.



A Insights and Analysis

4 **WattPad:** More buzzkiller than bookworm



It's refreshing to see an app like **Wattpad** that unites writers and readers alike and allows you to write stories with others, share your own stories and enjoy good old fashioned books. Unfortunately, Wattpad also ranks at No 3 in our list of most resource heavy apps overall.

This is likely caused by its notifications and followers features, which constantly check for new books and act more like Facebook than a true reading app. If you want to limit the drain on your phone, go to the **Settings** section and turn off all notifications.



TIP If you want to limit the drain on resources, go to the **Settings** section and turn off all notifications.

A Insights and Analysis

5 **TayuTau Pedometer:** Gives your phone quite a workout



Fitness apps are all the rage, but they're also heavy battery drainers. A case in point is **TayuTau Pedometer**. A great and precise app for tracking how many steps you've taken, how many calories you've burned and how far you have walked, it does however rank at number seven in the top drainers that run automatically in the background on Android phones. In our tests, we used it for both a longer run and a shorter walk around the block:

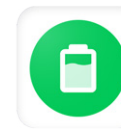


As you can see, in less than an hour, the battery drain was at a massive **31%**. But even walking around the block for a mere **five minutes** drained the battery by **3%**. In both cases, the screen was mostly off – we only turned it back on for a few 2 - 3 second glances to check progress.



TIP Luckily TayuTau offers some battery saving options under Settings such as enabling Energy-saving mode, Sleep mode and Automatic START/STOP. While this might impact the accuracy a bit, it also noticeably reduces the drain.

6 **LIONMOBI:** Isn't it ironic? The battery saver that drains your phone's battery



A relative newcomer to the range of battery saving apps, **LIONMOBI Power Battery** aims to show you all the power draining apps and then tweak some settings to improve battery life.

Unfortunately, the app itself drains more than it should as both it and its cleaner app sibling now occupy two of the top ten spots in the category of most battery draining apps. Users are reporting these issues on Google Play so the good news is the developer is most likely aware and we can hope to see a fix soon.

A Insights and Analysis

7 Most popular devices in Q3: Android 4.4 still the dominant OS

The Galaxy S3 Neo, a 2014 model, held the top spot among our user base in Q3 2016, but its market share dropped by almost 25% during this timeframe as consumers replaced the device with newer smartphones.

From a combined 1.2 million users at the beginning of the summer, only one million remained by the end of the quarter. We saw similar trends with the Samsung Galaxy S5 and the Sony Xperia Z2, which steadily declined by 10%.

The Samsung Galaxy S6 has seen a steady increase during the same period, climbing into the top 10 most used devices globally during Q3. In terms of OS, the only two devices delivering Google Android 5.0 are the Samsung S6 and the Sony Xperia M4 with all other phones still running on the three year old Android 4.4 (KitKat).

1 **Samsung Galaxy S3 Neo+ Duos/S3 Neo**
Google Android 4.3



2 **Samsung Galaxy S5 Duos 4G LTE-A**
Google Android 4.4.4



3 **Sony Xperia Z2 LTE**
Google Android 4.4.2



4 **Sony Xperia Z3 LTE**
Google Android 4.4.4



5 **Samsung Galaxy S4 Black Edition 32GB**
Google Android 4.2.2



6 **Samsung Galaxy S6 LTE-A**
Google Android 5.0.2



7 **Sony Xperia Z3 LTE**
Google Android 4.4.4



8 **Sony Xperia M4 Aqua dual LTE**
Google Android 5.0



9 **Samsung Galaxy S4 Mini LTE**
Google Android 4.2.2 (Japanese)



10 **Samsung Galaxy S3 Neo/Galaxy S3 VE**
Google Android 4.4.2



A Insights and Analysis

Top 50 Most Installed Android Apps

1 WhatsApp Messenger		11 Spotify		21 Pinterest		31 PicsArt Photo Studio		41 slither.io	
2 Facebook		12 Viber Messenger		22 LINE: Free Calls & Messages		32 SoundCloud - Music & Audio		42 Clash Royale	
3 Chrome Browser (Google)		13 Pokémon GO		23 Waze - GPS, Maps & Traffic		33 AliExpress Shopping App		43 MP3 Video Converter	
4 Messenger		14 Candy Crush Saga		24 ZEDGE™		34 Piano Tiles 2™		44 Prisma	
5 Instagram		15 Shazam		25 Candy Crush Soda Saga		35 UC Browser - Fast Download		45 Telegram	
6 Dropbox		16 Netflix		26 Facebook Lite		36 VLC for Android		46 Color Switch	
7 Skype		17 imo free video calls and chat		27 Subway Surfers		37 Photo Grid		47 My Talking Tom	
8 Twitter		18 Uber		28 ES File Explorer File Manager		38 B612 - Selfie from the heart		48 Tinder	
9 Snapchat		19 Adobe Acrobat Reader		29 Firefox		39 Pou		49 Super-Bright LED Flashlight	
10 Clean Master		20 SHAREit		30 Truecaller: Caller ID & Dialer		40 MX Player		50 Opera Mini	

Top 50 Most Installed Apps: Pokémon GO, Shazam and Uber storm the list

New to the list of top installed apps this quarter are Uber, the ride-sharing app, and Shazam, one of the oldest apps around. Only very few apps tend to stay relevant after just a few weeks, yet Shazam still enjoys a vivid community and continues to acquire new users after its initial mobile release in 2008. However, this year's surprise phenomenon was...

A Insights and Analysis

Top 50 Most Installed Android Apps cont...

...**Pokémon GO!** Since launch, the initial spike has died down quite significantly across our user base. While we logged 300,000 installs (or app updates) per day in August, we are now seeing less installs – dropping to 20-30K in September and falling as low as 5,000 in November. Despite it using augmented reality to deliver a rich gaming experience, Pokémon Go didn't quite make it into our top 10 but at position 13, was still a major resource drainer as it:

- Shares location via GPS
- Keeps the screen fully lit
- Operates the camera
- Plays sounds through the speakers
- Renders 3D graphics.

In our tests, we determined that a Samsung Galaxy S6 battery will drop from **100%** to **0%** in **2 hours** and **40 minutes**.

If you are a keen Pokémon GO player, you can find some tips [here](#) to help you get the best from your phone while playing.





Key Findings **B**
World's Greediest
Mobile Apps

B Key Findings

World's Greediest Mobile Apps

In this section, we reveal which apps had the most overall impact on mobile devices, draining battery life, storage and data plan.

TOP 10 PERFORMANCE-DRAINING APPS THAT RUN AT START-UP



CATEGORY: Social Communication Tools Newspaper & Magazines Media & Video Business

In comparison to the first half of 2016, we have seen a lot of change in the list of most resource hungry automatic applications. Top ranking apps in the first half of 2016, **WhatsApp**, **Kik Messenger** and **WeChat** have completely disappeared from the top slots, replaced by **WhatsCall** and **musical.ly**.

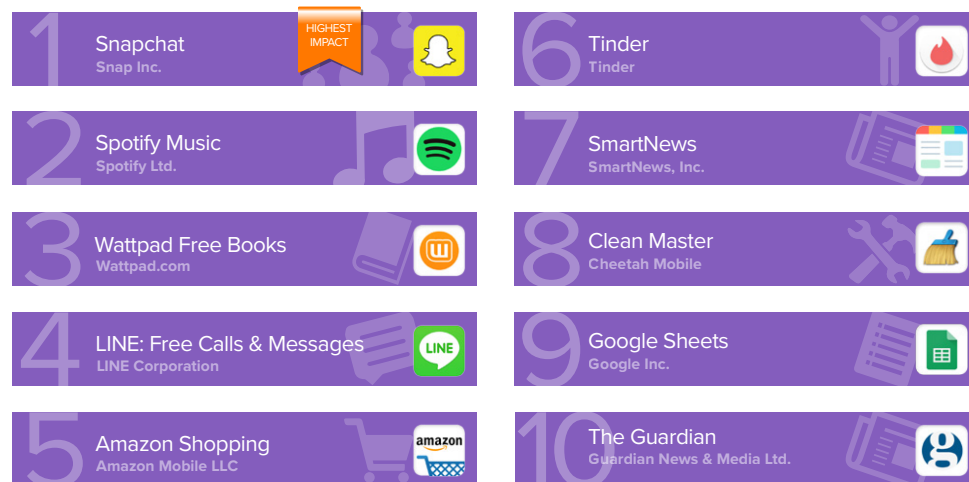
It goes without saying that, **Facebook**, **Google Maps**, and **Instagram** continue to rank high and should be avoided if there's no outlet in sight. For users in Israel, it's worth noting that local app **ynet** shows a significant draw on resources that is on par with Instagram, which is likely caused by its notifications.



B Key Findings

World's Greediest Mobile Apps cont...

TOP 10 PERFORMANCE-DRAINING APPS RUN BY USERS



CATEGORY: Social Music & Audio Communication Tools Shopping Productivity Lifestyle Newspaper & Magazines

Top drainers **Snapchat** and **Spotify** haven't changed from H1 2016, but **Wattpad** is now the third position as a resource drainer across the board. New entrants **Tinder** and **Google Sheets** stole the number six and number nine spots respectively.

Google Sheets, a simple spreadsheet app, is a bit of a surprise – our tests showed even the fast Samsung Galaxy S6 struggles displaying simple sheets as CPU and graphics usage rises, and the phone gets hotter just by scrolling and editing the in-app files.



B Key Findings

Top Ten Battery Draining Apps

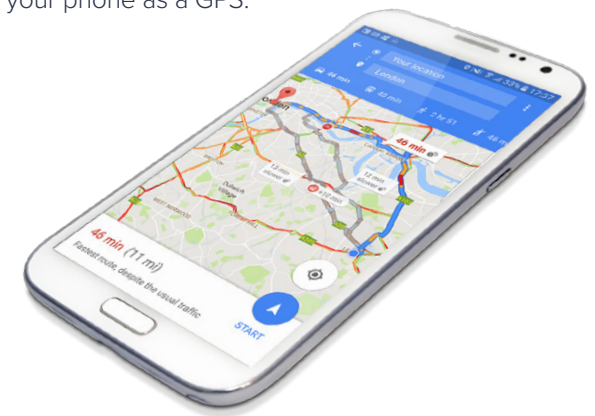
TOP 10 BATTERY DRAINERS THAT RUN AT START-UP



CATEGORY: Social Productivity Tools Entertainment Transportation Health & Fitness

Over the course of almost two years, this list has barely changed. We still see **Samsung Link** (previously known as Samsung AllShare) and **Beaming Service for Samsung** which allows you to access a remote display using your phone, topping the charts. Ironically, spots eight and 10 are occupied by **LIONMOBI's battery saving and cleaning apps**.

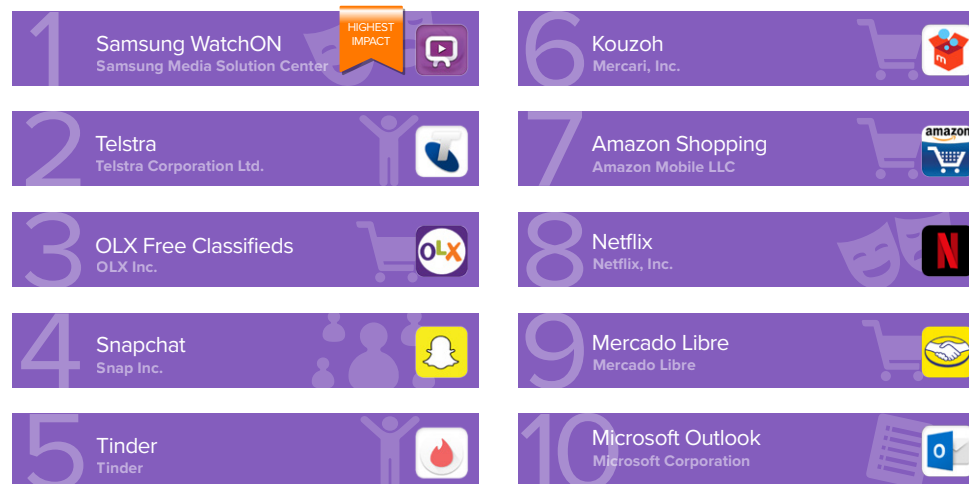
Also new on the list is the useful **Navigation Shortcut**, which simply launches Google Maps in navigation mode. In this case, there's no need to worry as this is a normal feature of using your phone as a GPS.



B Key Findings

Top Ten Battery Draining Apps cont...

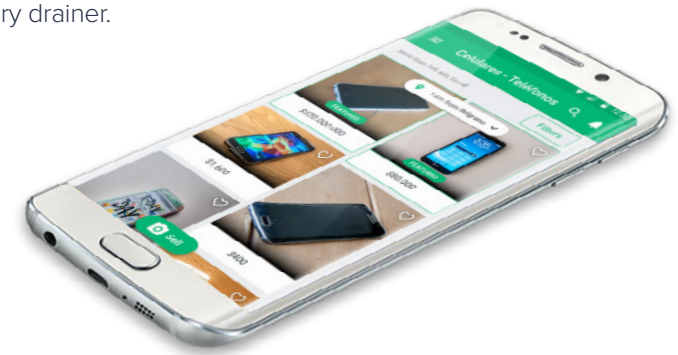
TOP 10 BATTERY-DRAINERS RUN BY USERS



CATEGORY: Social Entertainment Shopping Productivity Lifestyle

Last appearing in our Q4 App Report of 2014, the old version of the **TelstraOne** app is back as one of the top battery hogs for our friends down under, even though all it does is redirect to the new Telstra 24 x 7 app.

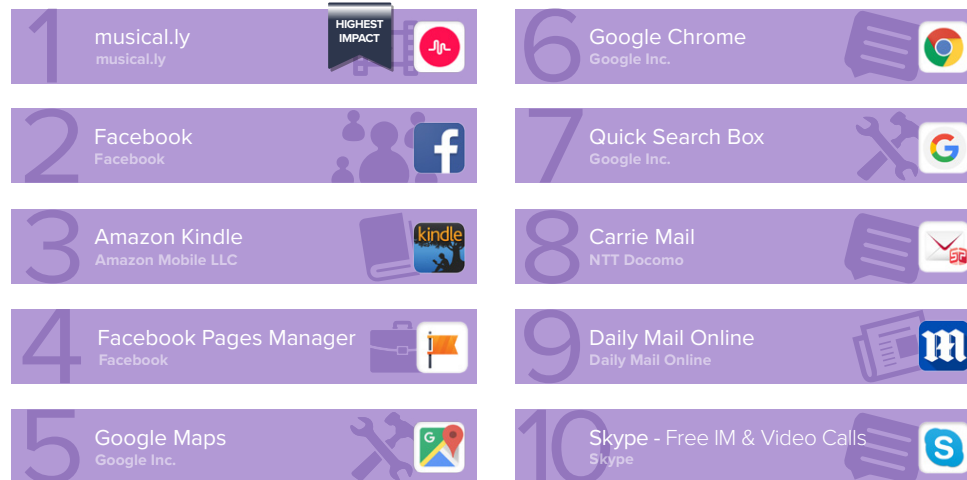
Also back, for the first time in two years, is **OLX Free Classifieds** which helps you sell and buy items in your area - its location features and use of heavy imagery make it a major battery drainer.



B Key Findings

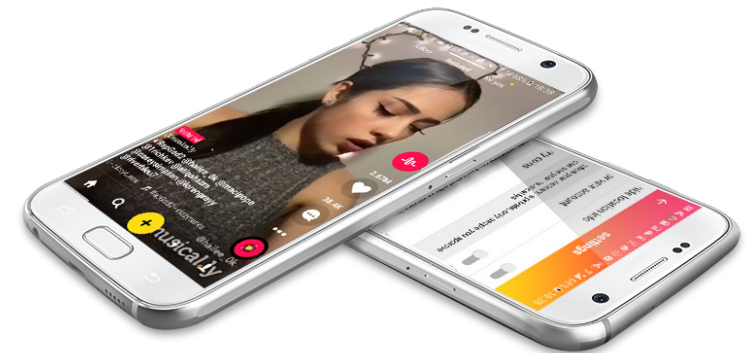
Top Ten Storage Hogging Apps

TOP 10 STORAGE-EATERS THAT RUN AT START UP



CATEGORY: Social Communication Tools Books & Reference Media & Video Newspaper & Magazines Business

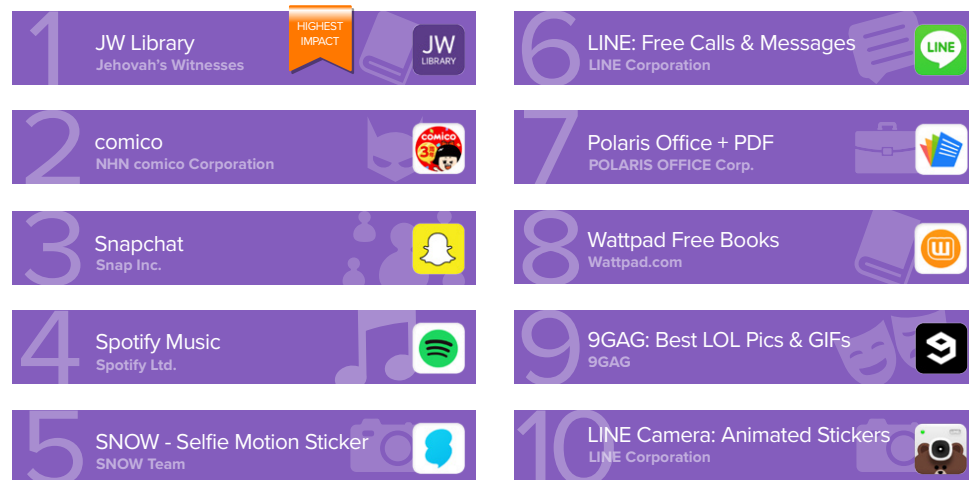
In addition to topping the list of apps with the most overall impact on devices, **musical.ly** also holds the top spot in list of most storage consuming apps for Android. In our tests, just flicking through 30 videos grew the app's cache to over **300 MB** as the videos were downloaded on the phone.



B Key Findings

Top Ten Storage Hogging Apps cont...

TOP 10 STORAGE-EATERS RUN BY USERS



CATEGORY: Music & Audio Communication Comics Social Photography Entertainment Books & Reference Business

Aside from the heavy hitter that is the **Jehovah's Witnesses'** library app, newcomer **Comico** also exceeds the typical storage eaters **Snapchat** and **Spotify**. Available only in Japan, it allows you to download and read Mangas, which can be quite resource heavy. It's worth deleting the Mangas once you have read them to free up this space.

Ever used the SNOW (Selfie Motion Sticker) app? It allows you to take selfies and add stickers on top of your face and apply photo filters. No wonder it's a storage hog, as it constantly saves photos and allows you to share them with your friends.

Note to parents: if your kid is complaining about their phone, don't assume you need to buy them a new one. Get them to use a photo cleaner tool to free up some space and restore their device to its former speed.



B Key Findings

Top Data Traffic Hogging Apps

TOP DATA TRAFFIC HOGS THAT RUN AT START-UP



CATEGORY: Social Tools Communication Newspaper & Magazines Travel & Local

Japanese users take note: not only is **Yahoo! Japan** still on the list of the most traffic eating apps, but social network app **2chMate** now holds a top spot as it consumes more bandwidth than even Facebook in the background.



B Key Findings

Top Data Traffic Hogging Apps cont...

TOP 10 DATA TRAFFIC HOGS RUN BY USERS



CATEGORY: Social Music & Audio Newspaper & Magazines Tools Entertainment Productivity Books & Reference

Whether it was the rise in subscribers, the increasing amount of TV shows and movies or the app draining more battery life, but **Netflix** was responsible for consuming more traffic than any other app. News apps **TheGuardian** and **SmartNews** came in a close second and third.

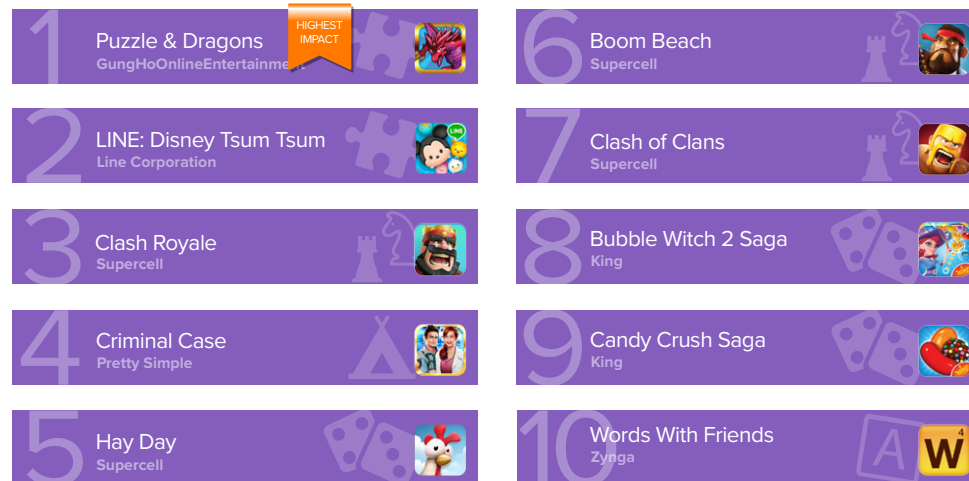
If you need to use these news apps on the go, you could limit yourself to just reading the articles and avoid their video coverage.



B Key Findings

Mobile Gaming - What Gamers Should Know

TOP 10 PERFORMANCE-DRAINING APPS - GAMES



CATEGORY: Strategy Casual Arcade Puzzle Adventure Word

Japanese messaging giant Line and Disney have collaborated to launch the addictive **Tsum Tsum** game. Despite its simple 2D graphics and gameplay, it has however managed to climb to the number two spot of our list most resource hungry games. In our initial tests, we found that LINE: Disney Tsum Tsum drains the battery of a Samsung Galaxy S6 in **2 hours and 35 minutes**, so if you're not at home, you might want to keep play to a minimum.

Aside from the other newcomers **Clash Royal** and **Criminal Case**, the usual suspects were still in this chart including **Puzzle & Dragons**, **Clash of Clans**, the "**Saga**" series, **Hay Day** and **Words with Friends**.



C Addressing the Issues

7 Ways to Boost Battery Life, Free Up Storage and Reduce Mobile Data Traffic

Here are 7 easy steps to help you boost battery life, stop storage eaters and save mobile traffic.

✔ Limit notifications to save battery life, performance and mobile data

Phone notifications are one of the most useful mobile inventions, giving users information they need to know about new appointments or messages at a glance. But not all of them are useful, and they can consume resources.

✔ Limit apps battery & performance drain

Reduce background features, refresh intervals, location usage or in-app notifications.

✔ Free up space

Apps collect clutter over time. Use [AVG Cleaner for Android](#), an Avast product, to get rid of temporary files.

✔ Reduce data traffic

Turn off background data transfers or any offline reading features within your app if you don't want it to consume mobile traffic.

✔ Turn off Wi-Fi, Bluetooth and GPS

To save more battery life, turn off all the hardware features you don't need at any given moment.

✔ Turn down brightness

If you're not in bright sunlight, we recommend turning the brightness levels down to 50-70%. Why? On many of today's big phones and tablets, the display is responsible for up to 80% of the entire power consumption.

✔ Get rid of performance-sapping apps

Our [AVG Cleaner for Android](#) app analyzes the top battery, storage, and traffic-hogging apps on your device. If you don't need one of these apps, you can easily uninstall it and look for more resource-friendly alternatives.

We've put together a comprehensive guide for all consumers and businesses looking to address the issues outlined in this report.

Click [here](#) to download the full PDF guide.



For further info, please visit: Our blogs, press info and resources on how to get the most out of your connected devices at: blog.avast.com and AVG Now now.avg.com Our website for details about our performance products: avast.com/en-gb/battery-saver and avg.com/performance

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Appendix App Resource Consumption Analysis **D**

In this section, you can find the app resource consumption analysis for the United States and the United Kingdom. We used the same methods to calculate the rankings as before, but this time only took into account performance data of users from these specific countries.

D Appendix

USA

TOP PERFORMANCE DRAINING APPS - EXCLUDING GAMES



CATEGORY: 👤 Social 💬 Communication 🎮 Entertainment 🛠️ Tools 📖 Books & Reference ☀️ Weather

TOP BATTERY DRAINERS THAT RUN AT START UP

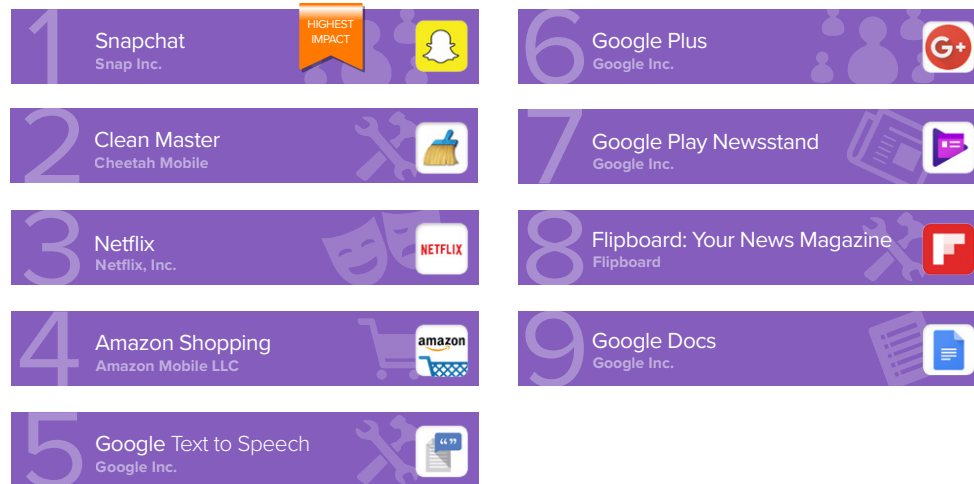


CATEGORY: 💬 Communication 📖 Productivity 🛠️ Tools 👤 Social ☀️ Weather

D Appendix

USA

TOP BATTERY DRAINERS RUN BY USERS



CATEGORY: Social Tools Shopping Productivity Newspaper & Magazines Entertainment

TOP 10 STORAGE EATERS - EXCLUDING GAMES



CATEGORY: Communication Social Books & Reference Tools

D Appendix

USA

TOP 10 DATA TRAFFIC HOGS - EXCLUDING GAMES



CATEGORY:  Productivity  Social  Entertainment  Weather  Tools  Communication

D Appendix

UNITED KINGDOM

TOP PERFORMANCE DRAINING APPS - EXCLUDING GAMES



CATEGORY: Social Communication Tools Newspaper & Magazines

TOP BATTERY DRAINERS THAT RUN AT START UP

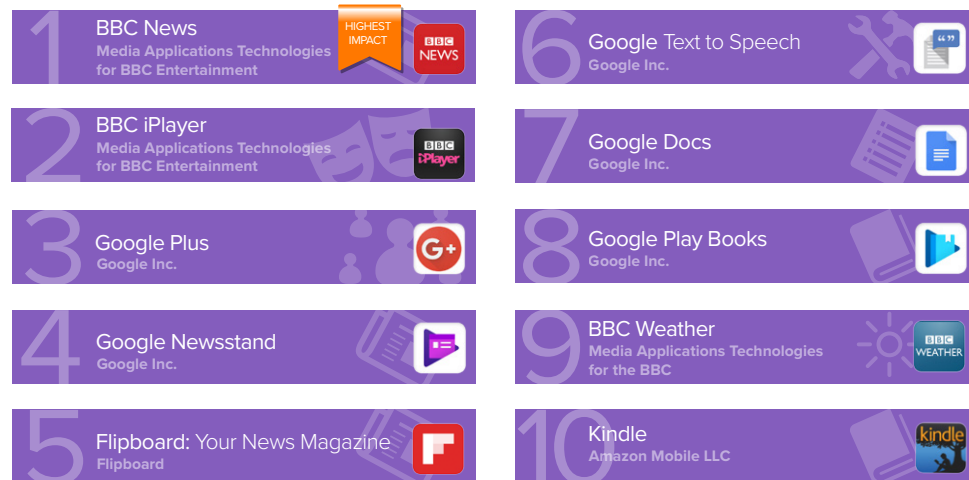


CATEGORY: Social Communication Tools Productivity Newspaper & Magazines

D Appendix

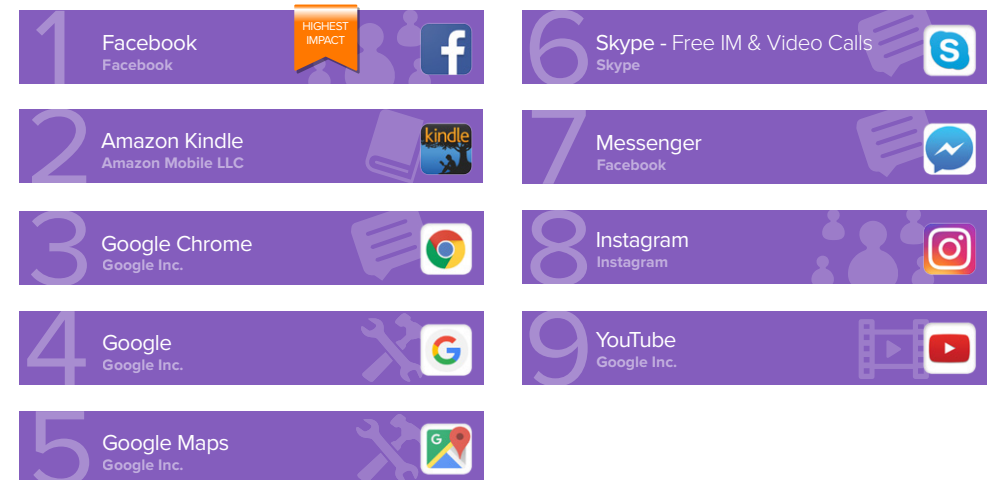
UNITED KINGDOM

TOP 10 BATTERY DRAINERS RUN BY USERS



CATEGORY: Social Tools Entertainment Newspaper & Magazines Books & Reference Productivity Weather

TOP STORAGE EATERS - EXCLUDING GAMES

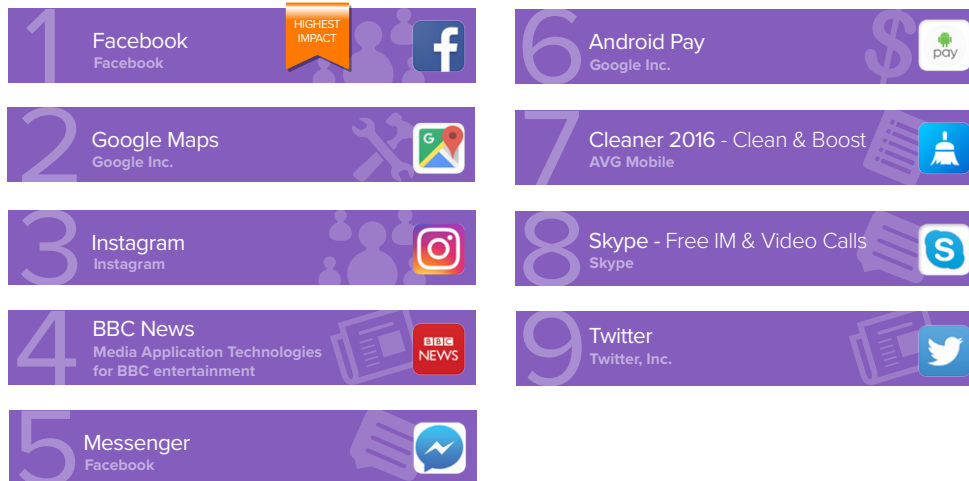


CATEGORY: Social Media & Video Communication Books & Reference Tools

D Appendix

UNITED KINGDOM

TOP DATA TRAFFIC HOGS - EXCLUDING GAMES



CATEGORY:  Social  Newspaper & Magazines  Communication  Tools  Finance  Productivity



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