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# Launching Apps in an Overcrowded Market

In today's overcrowded market, getting your app noticed can be nearly impossible. In the first half of 2016, the most downloaded apps in the United States were Facebook's Messenger, Snapchat, Facebook and Instagram — all from already-established companies, leaving little room for the indie developer. But the market is far from being monopolized. Changing technology trends and new devices create intriguing opportunities all the time for the everyday app developer. 2016 saw augmented reality become the norm, whether users were chasing pocket monsters with the runaway hit Pokémon Go, or altering their appearance with Snapchat. Voice-activated assistants improved on smartphones, and even branched out into their own standalone devices. As the interest in the Internet of Things grows, so does the network of objects it contains. International markets are increasingly being considered as necessary for success, especially since China overtook the US in 2015 in total direct consumer spending on apps.

So how do you learn to recognize and harness these opportunities, and navigate the complicated and ever-changing world of apps? This report examines the pros and cons of different marketplaces and the technical and economic considerations to ensure as much success for your app as possible.

# Operating Systems

The first decision a developer needs to make is which platform to build on. They may think that it makes sense to launch on both iOS and Android simultaneously, but Izaak Rogan, the Founder of globetown.io, a consultancy, and a Mentor at Founders & Coders, doesn't advise it. "I have seen startups developing for both iOS and Android at the same time — on the whole I would say that's a business mistake, unless you know exactly what it is you want. Most people you speak to that have been through this will say that they were wrong, and that making adjustments is hard if you are making them cross platform. The advice from me to anyone without a pre-existing business will be 'Let's get this out, let's see what our users think, try and perfect the business model and then think about the next platform.'"
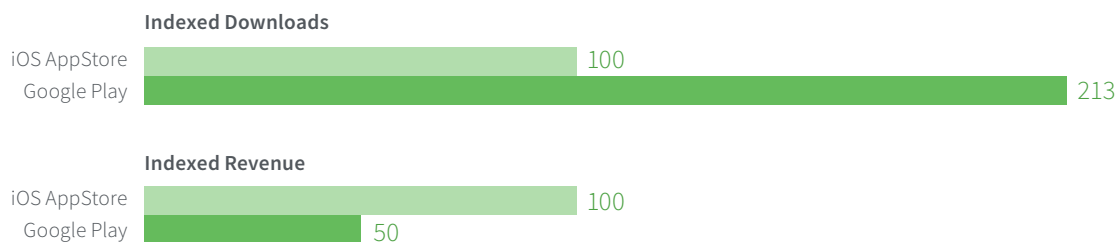
*"I have seen startups developing for both iOS and Android at the same time — on the whole I would say that's a business mistake, unless you know exactly what it is you want."*

— Izaak Rogan, Founder of globetown.io

The traditional path-to-market is to create an iOS app first. The limited range of generally six to eight devices that the app must work on allows the developer to identify and solve bugs in a relatively controlled environment. Rogan of globetown.io says, "Developing for both platforms is ultimately what you want to do. However, when you have early stage startups who have unproven ideas and business models, pushing out an MVP for one platform is more cost effective and makes more business sense."

This assertion is backed up by data from App Annie*, which shows that the iOS App Store has twice the revenue of Google Play, despite having less than half as many downloads.

## Worldwide Downloads and Revenue by Store, 2016

**Indexed Downloads**

| | |
|---|---|
| iOS AppStore | 100 |
| Google Play | 213 |

**Indexed Revenue**

| | |
|---|---|
| iOS AppStore | 100 |
| Google Play | 50 |

*Data was supplied directly by App Annie.*

Google Play, the original home of Android apps, immediately springs to mind an important option for Android developers. Google Play Services provides easy implementations of products such as Maps and Google+ that developers can include in their apps. Creating an app this way works exactly in the way it's designed to. It makes it as easy as possible for developers to create apps that are completely reliant on Google's infrastructure. This in essence creates Google's own walled garden.

These two marketplaces are undoubtedly the largest options for an app developer. But should you limit yourself to them? After all, there are other app stores out there, including the Amazon Appstore, the world's fourth largest (after the Windows Store). Amazon developer evangelist Peter Heinrich advises branching out to both Google Play and Amazon Appstore to boost interest. "Posting on the Amazon Appstore and Google Play is not a zero-sum game — they complement each other. We find that people who run promos on the Amazon Appstore get a boost in revenue from Google Play. I assume there is an equivalent effect in reverse."
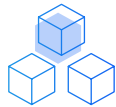
# Android Fragmentation

Switching from the comfort of Apple's walled garden to Android open source software comes with its challenges. Android fragmentation is the cumulative term that describes the different versions of Android, the multitude of different devices, the manufacturer skins that sit on top, and forks, such as Amazon's Fire OS. The slow adoption of the latest versions of Android has long been cited as not only an issue for developers trying to make apps for them, but also for security. The latest data from Google shows the distributions of platform versions and screen sizes.

| Version | Codename | API | Distribution |
|---------|----------|-----|--------------|
| 2.3.3 - 2.3.7 | Gingerbread | 10 | 1.0% |
| 4.0.3 - 4.0.4 | Ice Cream Sandwich | 15 | 1.0% |
| 4.1.x | Jelly Bean | 16 | 3.7% |
| 4.2.x | | 17 | 5.4% |
| 4.3 | | 18 | 1.5% |
| 4.4 | KitKat | 19 | 20.8% |
| 5.0 | Lollipop | 21 | 9.4% |
| 5.1 | | 22 | 23.1% |
| 6.0 | Marshmallow | 23 | 31.3% |
| 7.0 | Nougat | 24 | 2.4% |
| 7.1 | | 25 | 0.4% |
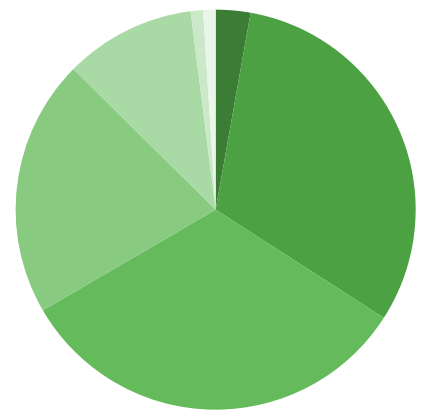


- **2.8%** Nougat  **31.3%** Marshmallow
- **32.5%** Lollipop  **20.8%** KitKat  **10.6%** Jelly Bean
- **1.0%** Ice Cream Sandwich  **1.0%** Gingerbread

*Data were compiled by Google over a 7-day period ending March 7, 2017, and are re-published here unchanged under the terms of the Creative Commons Attribution 2.5.*

## Screen Resolutions
of Android Devices

**34.6%** xhdpi

**16.3%** xxhdbi

**1.2%** ldpi

**8.8%** mdpi

**2.0%** tvdpi

**37.1%** hdpi
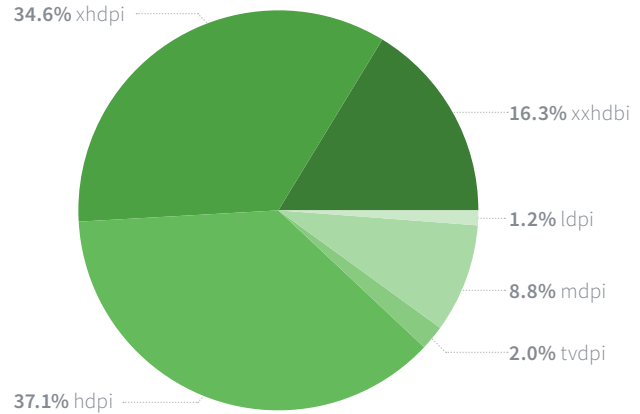
## Screen Sizes
of Android Devices
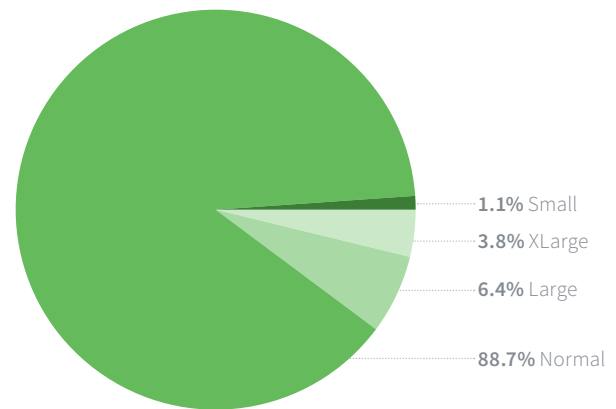
**1.1%** Small

**3.8%** XLarge

**6.4%** Large

**88.7%** Normal

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How big a problem is Android fragmentation, really? "The problem exists, but it's not as big as people make out" says Zeh Fernando, a principal developer at Work & Co, a digital product agency. "Most people are thinking about screen sizes when they talk about fragmentation, but if you plan for that from the beginning of creating your layouts, it's very easy to solve for. In some ways, it's easier to manage device fragmentation on Android, since the system was designed from the ground up around the idea that there would be multiple devices, whereas iOS was designed around a single device."

*"Most people are thinking about screen sizes when they talk about fragmentation, but if you plan for that from the beginning of creating your layouts, it's very easy to solve for."*

— *Zeh Fernando, principal developer,* Work & Co

# Technical Considerations

There are a variety of other technical considerations to take into account when building for different app stores. If you're planning on building an app you can post in multiple places it's important to make some critical decisions during the build. Stay away from building with solely Google Play Services to avoid being locked in. "For a personal app project, I found it was relatively quick to get my Android app appropriate for the Amazon Appstore — only about a day," says Fernando of Work & Co.

*"The key thing is to know ahead of time that you're going to publish to different stores, so you can plan to build different flavors, and can abstract certain features. For example, if you hide store-specific services away in a library or wrapper code, you can build flavors."*

*— Zeh Fernando, principal developer,* Work & Co

Chris Newhouse, CTO of consultancy Appstem, adds that you should still pay attention to carriers' modifications of the Android operating system. "That can introduce a whole other host of bugs, and a lot of developers have had trouble not just testing on different operating system levels but also the different custom versions made by different carriers."

In addition, prepare for edge cases in things like logins — if you're going to distribute to third party stores, the logins may not necessarily be Google logins that are associated with the account. Make sure your market links goes to the correct app store (this can be done with an IF/ELSE argument around the package installer).

One way to make the build for multiple operating systems simpler is to use a cross-platform framework. There are options for almost whatever your preferred language is, although it is considered that the ease for doing so can sometimes sacrifice features and quality you only get with native languages. Fernando of Work & Co. thinks one cross-platform framework stands above the rest. "I've been moving towards React Native to create apps. The platform is maturing, although not fully mature yet — it only became a viable option in the last year. A lot of platforms make the promise of 'code once, run anywhere,' but most fall short on performance, how the app looks, et cetera. React Native seems to be fulfilling that promise in a way no one has before." Other popular platforms include Xamarin and Phonegap.

# Discovery

As well as the technical considerations, there are economic factors to take into account when deciding where to host your apps. First of these is discovery — what are the chances that your app is going to stand out amongst the competition? Low, if you limit your audience to that on the App Store and Google Play. Apple products tend to be owned by an older demographic, from a richer spectrum and more likely to have a graduate degree. Android products are by their nature more affordable and therefore owned by a younger demographic, however with statistics from June 2016 claiming that Google Play is the largest app store with 2.2 million apps (with Apple App store coming in second), getting visibility here will be tough. However, moves are being made by Google to assist with discovery in the form of Instant Apps, which was announced earlier in 2016. Instant Apps was built with the crowded market in mind and allows people to run apps straight for a URL without the app having to be installed. This allows users to discover the functionality of apps much quicker.

*The more app stores you put your app on, the more likely it will be discovered by your intended audience — no matter where they may be based.*

Branching out to smaller app stores is a good solution. Despite having a smaller audience (according to App Annie, almost a quarter of the size of Google Play) Amazon has a groundbreaking recommendation system called DSSTNE (pronounced "Destiny") that allows customers to be shown apps that reflect their previous purchases and interests, rather than having to manually search.

Even smaller app stores are worth considering:

- Lithuanian third-party app market GetJar is the largest independent app store with more than 2 billion downloads to date. It rewards users with a points system for personally recommending apps; these points can be used to purchase app upgrades.

- Appolicious utilizes social media sites to help users find apps they are interested in. Rather than having to search through an endless list, users look at feeds and recommendations from their friends, from user reviews and their editorial team.

- If you're looking for a niche but very engaged audience you can upload to F-Droid, which is a collection of free, open source applications.

# International Markets

Completely ignoring Android can severely limit your audience reach. Most downloads from the iOS App Store come from China and the United States, with significant revenue from Japan. Even in these countries, the audience is limited to the people who can afford the premium range hardware. Android is much more varied, with many downloads in India, Brazil, Russia, Indonesia, Mexico, Turkey and South Korea.



● **iOS** Most Downloads

● **Android** Most Downloads
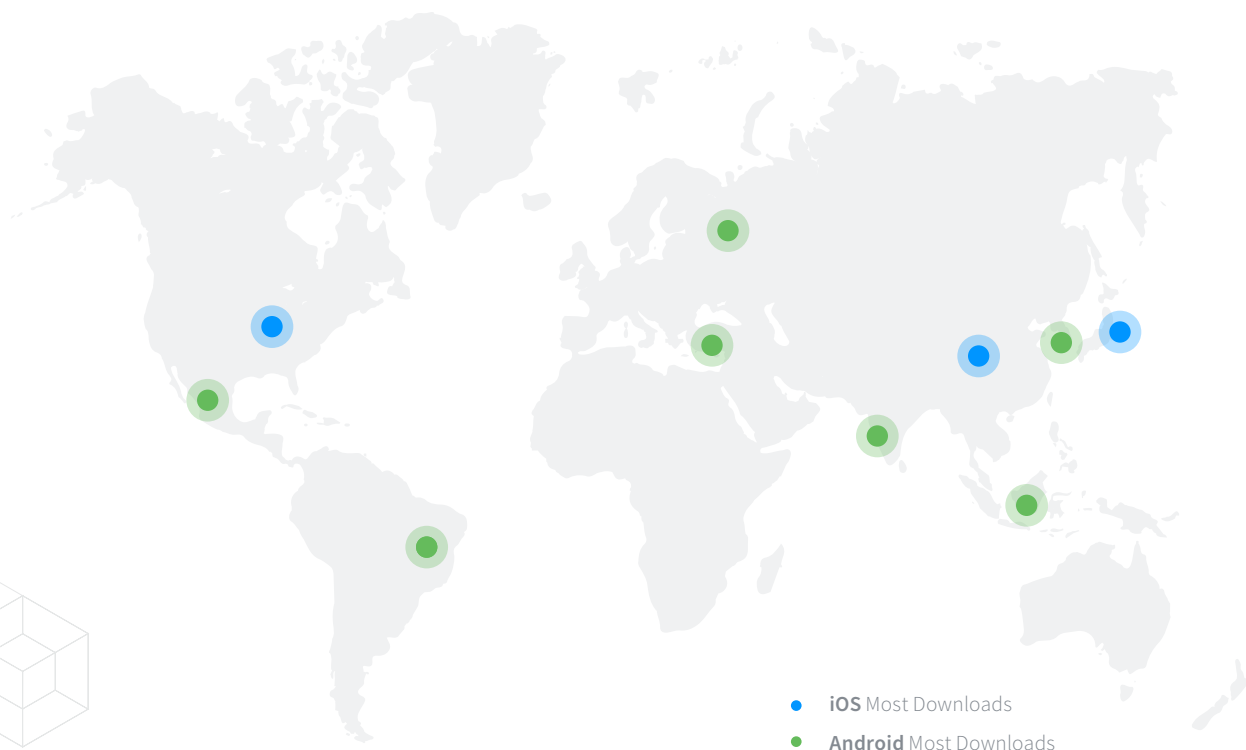
Matt Powell is the CEO of Fūzd, a company with an app that allows users from all over the world to communicate and get their messages instantly translated. He says, "Being able to build an audience in China and having access to that audience of hundreds of thousands gives you a huge competitive advantage. We found our Chinese users were spending way more money than anyone else. " So how simple is it to do so? "There are many layers of complexity. Google is blocked in many parts of China, which throws up a lot of roadblocks for Western developers. One thing to know is that China has a lot of third-party app stores to consider. Some of these stores require a Chinese phone number to create an account, and even once you've gone through the effort of signing up, a lot of these stores do not have English language portals and the way the website is architected means you can't use Google Translate. Often, they also require business documentation to show that you are legally allowed to operate in their country, and this can need to be in the local language. There is a lot to think about, but it can be worth it."

# Monetization

If you are considering monetizing your app, the traditional ways of cashing in still hold true. "A typical route is the freemium model — a version with limited functionality to get the downloads and encourage users to buy the paid version," says Armstrong of Appstem. "Downloads for an upfront fee will drop substantially just because there are so many apps out there, many for free." Other options include advertising, for which you can use AdMob, Amazon Mobile Ad Network, or third party services.

But times are beginning to change. There has been a notable shift towards subscription payments, the appetite for this being encouraged by subscription services for music and film/television. Examples of this approach include Tinder's May 2016 introduction of a paid tier for users over the age of 30, and Rovio launching subsidiary company Hatch Entertainment, a subscription video game streaming service for mobile. Apple is also reducing the fees it charges to developers of apps that will monetize through its new auto-renewable subscriptions service.

Premium download prices are also a strong trend. Apple has introduced a "Pay Once and Play" section to its App Store as an alternative to the popular "freemium' format. This section of the store allows users to find a game with an upfront cost that will unlock the entire game, thus avoiding the sometimes intrusive in-app payment notifications. While the much-anticipated Super Mario Run is free to play, unlocking the full game costs $9.99, much higher than the average app price. All eyes were on Super Mario Run's launch: although the concept of a freemium pricing structure is common, the high premium price is not. Early download numbers (40 million in the first few days) indicate high interest, however the disparity between this and the revenue generated may not imply a guaranteed money maker in this method.

Another interesting development for app monetization is a new model from Amazon Appstore, Amazon Underground. This format is unique in that Amazon pays the developers based on the amount of time a user spends playing their app — $0.02 a minute. According to Wired, royalties paid to developers are up 3,600 percent from the period of August to September in 2016, and the customer base has grown by 870 percent. This works for customers who see no change in payment from their side and get to enjoy the benefits of developers trying to make their games as engaging as possible. "We are always innovating, and have a customer-first approach. The customer to us is the app developer," says Amazon's Peter Heinrich. "While we don't expect the monetization method to completely replace other methods, it's one more arrow to their quiver. We have calculators available that allow people to play with different methods and see what works. We support payment by cheque and have localised payment methods. Amazon customers tend to be savvy about purchasing, and have a payment method already on file." This seems a winning combination, since the average revenue per paying user on Amazon is higher than the Android average ($23.40 vs $22.67).

# App Submission

When you're ready to submit your apps, be aware of the difference in the processes between iTunes, Google Play and Amazon. Robert Armstrong, the CEO of Appstem, says, "the Google Play submission process is automated — you can submit an app this morning and have it published by this afternoon. The difference is night and day between this and the iTunes submission process, which we would say in our experience takes about a week. It's a lot more stringent and if they come back to you with questions it can become a back-and-forth process."

*When you're ready to submit your apps, be aware of the difference in the processes between iTunes, Google Play and Amazon.*

Newhouse of Appstem adds, "Google's process is born out the fact that there traditionally was no approval process — everything went through the system and live straight away, and any issues with rule-breaking had to be reported and were therefore detected after the fact. This resulted in them seeing a lot of spam in their store, but understanding that the quick approval process was considered an advantage they chose to go automated. When you submit an app behind the scenes they look through all your media and screenshots and make sure there is no copyrighted material, such as a movie poster. If so, their computers will detect that and stop your app from being published. All of this can be done in an hour or so, and then your app is live. Meanwhile at Apple they're looking for far more — bugs in your app and UI issues, to make sure it fits what they want in their ecosystem."

Amazon has worked hard to keep its review times down, having dedicated a large content relations team to provide meaningful and timely feedback on app submissions. And contrary to iTunes and Google Play, there is no submission cost.

# Devices

The final consideration is devices. Google Play is the largest app store in terms of downloads due to its compatibility with so many devices, making it the obvious choice for Android developers to host their apps. With its closed ecosystem, developers making iOS apps are completely reliant on the sales of Apple products to reach their audiences. While 2016 Q4 sales are down, Apple still enjoys a huge market share and the highest app store revenue, so this will be dominant for a while. Amazon has a similar product suite - the tech giant's tablet sales have propelled it to third place after Apple and Samsung in 2016, largely driven by accessible pricing.

# Upcoming Trends

Looking outside of the traditional platforms of tablets and smartphones is also an interesting route to take in 2017. As smart watches, smart home devices and streaming TV services become more popular, more opportunities present themselves to developers. Smart TVs require their own apps on all operating systems — after all, a TV screen is the largest in the house and users sit further back than they do on phones, so smaller details are missed. Navigation is also different (remote controls rather than touch control) so building an app for TV will have to be done almost from scratch. Whilst tvOS from Apple is derived from iOS, it is a distinct operating system in itself and uses some different frameworks exclusive to itself. Amazon has a 'Web Apps for Fire TV' starter kit on Github to help developers through the process. Google allows Android apps to be extended to Android TV, but encourages use of its Android Studio instead.

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*As smart watches, smart home devices and streaming TV services become more popular, more opportunities present themselves to developers.*

Voice-activated assistants are gaining more traction. Amazon, Google, Apple and Microsoft all have voice-activated assistants with APIs available for developers to add a new dynamic to their apps. Google and Amazon have gone a step further with the launch of Google Home and Amazon Echo, the standalone device to house their respective Assistant and Alexa technology. Having an assistant device in its own right has created a new dynamic for apps. One example is Automatic, an app that tells you where you parked your car and how much gas it has. Whilst the number of apps (or 'skills,' in Alexa's case) are limited, now creates opportunity for a developer to dominate the market in their chosen field — as long as you are ready to switch from Android to Node.js.

"A lot of companies are trying to tap into Google Fit and Apple HealthKit — all the health data that your phones are keeping track of on a daily basis." says Newhouse of Appstem. Armstrong of Appstem adds, "we are seeing a lot more apps that integrate into some sort of hardware device — whether it's bike locks, healthcare devices, or connected homes. We are also seeing an increase in augmented reality after Pokemon Go, so I think this will be an emerging space. We also saw a client last year in the connected home space that created an Android app that controls your door locks, your thermostats and even your lights. They created an app to connect with the Amazon Echo, which allowed the user to use voice activation to, for example, turn on and off lights. You can see the popularity of these increasing."

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# Conclusion

The landscape for apps is continually changing. As users move away from their traditional devices, payment methods, behaviors and expectations, so must the app developer. While the positions for most popular paid and free apps are dominated by the larger companies, more opportunities will arise to create the next big thing. To do this:

🚀 Build your app as marketplace-neutral as possible — get maximum exposure by launching on multiple marketplaces.

🤖 Work with what the tech giants offer - add voice control, launch on different devices (and test for them), looking out for training sessions and videos provided.

In a time of such breakneck advancement, anyone has the chance to get to the forefront of the next big trend.