

Solution to the App Hassle

Why Apps Won't Matter in the Future and the Way Forward.

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Abstract—Downloading, installing and constantly updating apps on your smartphones is annoying. Applications eat up some valuable resources on your device and cost a ton of money for service providers to build and maintain them. Pretty much everything we currently do on our smartphones are through an app of one kind or the other. Although apps still currently remain the best way to live our digital lives in, I believe that they don't have a long lasting future. I state the reasons for the same and also go ahead and give you the various technologies that have the full potential to replace our app-based smartphone experience.

Keywords—App Gap; Progressive Web Apps ;
Virtual
Assistance Game-Streaming;

I. INTRODUCTION

Just like in the first decade of this century, when every business model needed to have a website, we are now in a patch of time when having your application available on various operating systems is becoming mandatory for all companies and institutions. If you don't have an app, you are bound to lose out on the 2.30 billion people that currently use smartphones and other similar devices. Mobile sites are certainly not appealing to the more interface oriented user base. Since the inception of the first app store by apple, the app market has grown exponentially and has taken the internet towards a more private, user-specific path. App stores are the make or break barrier for most operating systems. Take the windows mobile operating system for example. Not having enough apps on their store proved to be the deciding factor to the company not making inroads into the huge smartphone market.

The clean and neat interface of these applications that work seemingly perfect on small screen devices has made the whole smartphone experience what it is today. The smart phone gaming market is one of the biggest gainers from the app revolution.

Having said that, all this comes at a cost. Companies need to shell out a lot of money, time and man-power towards having a successful app. Most these apps are not meant to make profits but only act as platforms where the firm can sell its product or service. This app market might look to have huge monetary potential from the outside but the stats don't quite suggest so.

Less than 0.1% of all apps are profitable. About 52% of all apps lose at least half of their peak users after three

months. 90% of the app usage of all users is restricted to the top 25 apps available in the market. Most apps in the top bracket require at least one hundred and forty thousand dollars (~1Cr. INR) to develop and about forty thousand dollars (~0.25 Cr. INR) for maintenance. These facts clearly show why manufacturers and service providers are looking for alternatives.



“Fig 1. The App Revolution. All apps need to be stored on the device”.

II. THE PROBLEM WITH APPS

A. Applications make the internet confined.

Search engines like Google feed on the data available on various websites in order to provide their results. Because of the app revolution, the data is not available to these giants and hence there is a decrease in the public content. These apps could dent the blooming big data analytics industry. All the more reason why super companies like Google will want to move away from the app based model despite them profiting from various apps available on android.

B. Applications eat up resources on a device.

All apps need to be stored on the device of the user. A user has to go through the trouble of downloading it from the store, and also has to keep updating them from time to time. This model is time, data and money consuming. They eat up the limited RAM space. More the apps, more is the RAM required. This increases the cost of owning a smartphone even more.

C. The problem of multiple Operating Systems.

A developer not only has to convert the site into an application, he also needs to create various apps that could run on various operating systems. Most of these Operating Systems require individual development and maintenance. It can take anywhere between 4 to 6 months for a typical company to come up with an app.

D. App-base eliminates the possibility of new operating systems.

We haven't seen the rise of any new mobile operating systems due to this fact alone. Without apps no user will use the operating system and without users, no developer wants to develop an app for that OS. This cycle has turned good mobile operating systems like the amazon fire OS and UNIX into bad jokes.

E. Companies need to pay more in advertising.

Online business firms need to spend more money in advertisement in order to get their website user base to their app user base. According to a survey, it costs only a tenth to get users to use mobile sites rather than mobile apps.

III. THE SOLUTION

The app gap that exists was first publically noticed about two years ago and since then, many have come up with various possible solutions. The fix to the app gap that has been created could possibly lie in one or more of these technologies.

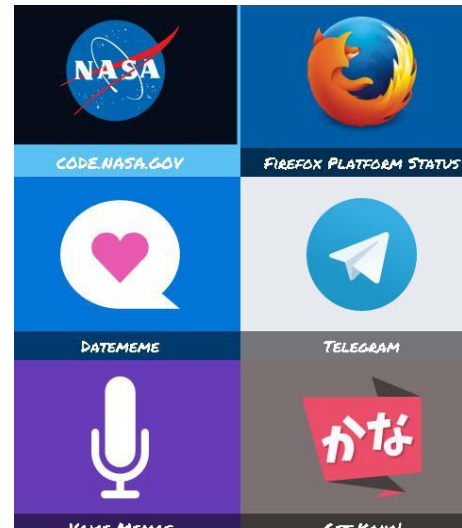
A. PROGRESSIVE WEB APPLICATIONS.

Progressive web applications are the most promising candidate in the near future to replace our mobile apps. So much so, that in 2016 Google went ahead and said that this was the way forward at the annual Google developer's summit.

"A Progressive Web App uses modern web capabilities to deliver an app-like user experience." In simple words, they are mobile websites that look and behave as apps. They have almost all the features of a typical mobile app but instead of being available as apps on app store, they are sites that can be accessed by anyone, regardless of the browser or the device they are using. A progressive web application takes advantage of the latest technologies to combine the best of web and mobile apps. Think of it as a website built using web technologies but that acts and feels like an app. Recent advancements in the browser and in the availability of service workers and in the Cache and Push APIs have enabled web developers to allow users to install web apps to their home screen, receive push notifications and even work offline.

By definition, a progressive web app must work on any device and enhance progressively, taking advantage of any features available on the user's device and browser.

Because a progressive web app is a website, it should be discoverable in search engines. This is a major advantage over native applications, which still lag behind websites in search ability. A progressive web app's UI must fit the device's form factor and screen size.



"Fig 2. Examples of a progressive web application site."

A progressive web app should look like a native app and be built on the application shell model, with minimal page refreshes. It should work in areas of low connectivity or offline (our favorite characteristic). Mobile app users are more likely to reuse their apps, and progressive web apps are intended to achieve the same goals through features such as push notifications. A progressive web app can be installed on the device's home screen, making it readily available.

When new content is published and the user is connected to the Internet that content should be made available in the app. They are safe as they must be hosted over HTTPS. The best part is that they need not be developed individually for different operating systems as they work the same on any device or browser.

Here is an example of how PWA's look like. This pokedex.org site is as smooth and efficient as a hybrid app. At the same time it is faster and safe.

B. SUPEAPPLICATIONS.

Super-applications are already currently in use parts but you might have not noticed them. They are applications which offer the services of multiple apps like a package. They are the

„All-in-one“ apps. The application is lite and overall resource consumption is minimum compared to having individual apps. The best example to this would be WeChat.

WeChat started off as just another messaging tool but now taken over the entire smartphone market of china quietly. It is everything you could imagine. WeChat's 700 million users can chat, book appointments, hail a cab, pay bills, transfer money, make reservations, share photos, go shopping, book healthcare services, go dating and so much more. Pretty much every internet based service out there is available on the app. Users essentially never have to leave the app. All this for a super-app that is just the size of any other app. The concept is super convenient and its success in china is a clear indication.

Some even term this model as the "Guide to the future".

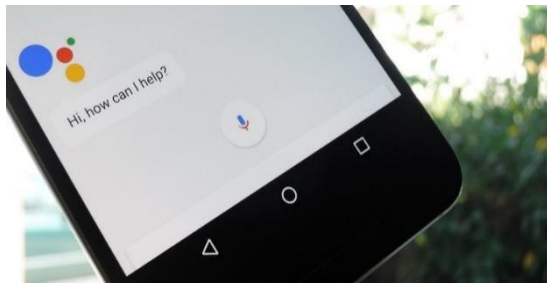
Other examples of super-apps include tapzo, 1-task, hound, justdial etc.

C. Virtual Assistants

The push for Artificial Intelligence by every tech-giant has fuelled the chances of Virtual Assistants being a major part of our lives in the near future. A digital assistant, also called a virtual assistant, is an application program that can understand natural language and complete electronic tasks for the end user. In this case, they are digital virtual assistants available on your smartphone.

Be it Microsoft's Cortana, Apple's Siri, Amazon's Alexa or the new Google's Assistant, virtual assistance could well be the way forward and offer us the solution to the app gap. While the other solutions mentioned above are on a user's visual and touch senses, these take the game to a whole new level. With most of these assistants based on speech.

Instead of you booking a cab, you could ask the assistant to do so. You would ask it to make a reservation for you at the nearest Chinese restaurant. Be it playing you your favorite music playlist or reminding you to pick groceries when you stop nearby a supermarket, assistants have it all covered. Simple and effortless. Add to that the ability to make jokes, search the web, make calls for you or pay through your credit card, Virtual Assistants are covering big grounds at rapid pace.



"Fig 3. Virtual assistants are now big players in the service provider field."

With the growing advancements in the AI field, the day isn't far when assistants could literally perform any digital task you ask them to do. Slowly they are replacing the traditional dedicated apps on your device and reducing the need to have individual apps for individual tasks. They could even wipe out the entire need to have a browser to use the internet. They also have the ability to learn along the way and this makes this tech look even more promising. They are universal and advanced. They are like a complex merger of millions of Chatbots. The financial model associated with running a VA is considered stable with service providers having to pay the VA companies in order to get the first preference to the service request made by users.

D. CONTENT STREAMING

The above three methods don't provide solutions to apps like games or to heavy software like Photoshop, office or utility drivers. That is where content streaming comes into the picture. It is a rather simple model where a cloud service provides a device with anything like games, files or services-ware on-demand.

and TV shows. You no longer need to have CDs of individual games. The game will be directly streamed to your console as soon as you make the required payment. With the internet speeds increasing globally, this way of streaming everything needed to run a PC is a near possibility. HP is already testing streaming the entire operating system to a device rather than having it stored in its internal memory. This way only parts of the OS that are currently required for the running tasks are streamed hence making the whole system faster and lite.

This model could be replicated on a phone. The application could either be stored on the cloud or on a PC connected to the phone and then the app could virtually run on the cloud/PC and the results are only displayed on the phone. This way heavy, complex tools like Photoshop could be run on just about every device.



"Fig 4. An example of content streaming-NVIDIA gamestream."

NVIDIA, XBOX and others like PlayStation are doing the same to games what NETFLIX is doing to movies.

IV. CONCLUSION

The future of app-based model is bleak and we are slowly moving towards a more "all-in-one" solutions. While progressive web apps could be the short term solution, Super-apps and virtual assistants seem to be the stable options in the long run. Gaming apps and professional tools could be replaced by content streaming.

VII. REFERENCES

- [1] Video by TechAltar (The story behind series).
- [2] Video by The New York times (How china is changing the internet)
- [3] Various website for facts.