

Will Progressive Web Apps replace Native Apps?

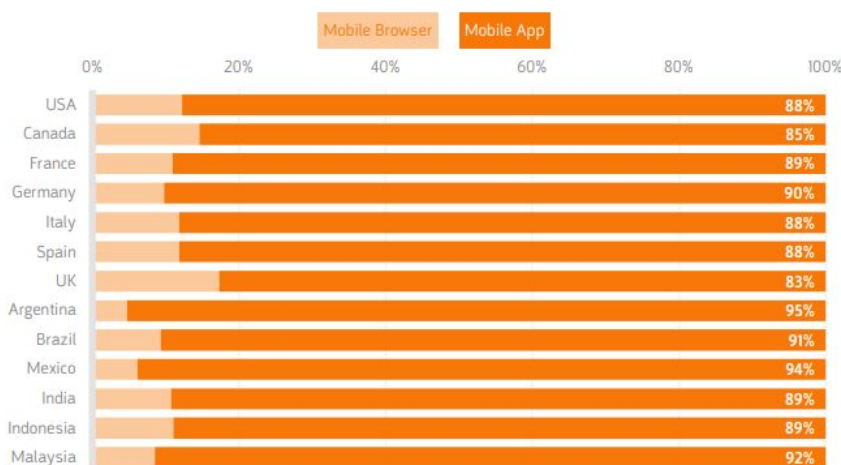
Content Management - DESI1206 -Agnes Ashun

A piece of software that can run through a web browser or offline on your computer, and on a smartphone phone, tablet or other electronic devices, including smart TVs and smartwatches. Apps may or may not have a connection to the internet.

An app is a modern term for a software application, and it is most often used in reference to a mobile app or a small piece of software that runs on a website.

Apps have been used in business to guide a user to a process of buying or consuming content in set space.

Apps Account for Over 80% of Mobile Time Share of Total Mobile Minutes by Browser / App



When considering mobile (smartphone and tablet) minutes in isolation, they are overwhelmingly dominated by app consumption – over 80% of all mobile time in the markets considered for this report.

Levels appear marginally higher in Latin America, with Argentina, Brazil and Mexico all falling within the top 5 of the markets shown here.

comSCORE

Source: comScore Mobile Matrix, Dec 2017

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A Research conducted by Comscore White Paper called Global Digital Future in Focus 2018¹ provided some insight in what happened on mobile devices. The research showed the in most countries he users utilise mobile apps there most with the highest being in Argentina,

Mexico, Malaysia, Brazil, with respectively 95%, 94%, 92%, 91% of users using time on Mobile apps versus Mobile browsers. This shows that most people are more likely to use Apps on their phone than use any browsers, making PWA not that used.



63%

of users access
the website via
a 2G network



60%

of users Set
homescreen
icon



+40%

User
engagement
increased

Despite the usage on Mobile Apps worldwide, history has shown that the innovation for PWA has not been a recent turn of events.

Steve Jobs, during Macworld 2007, provided a few details, of his vision for PWA.

“The full Safari engine is inside of iPhone. And so, you can write amazing Web 2.0 and Ajax apps that look exactly and behave exactly like apps on the iPhone. And these apps can integrate perfectly with iPhone services. And guess what? There’s no SDK that you need! You’ve got everything you need if you know how to write apps using the most modern web standards to write amazing apps for the iPhone today. So developers, we think we’ve got a very sweet story for you. You can begin building your iPhone apps today.”²

That showcased not only the design structure provided by Steve Jobs

² <https://youtu.be/ZIE7dzoD6GA-> "One last thing" June 11 2007, 18 days before shipping the iPhone.

but also the vision of what the mobile devices could be capable off.

To understand the vision of PWA, the very first definition by Alex Russell provides a base structure of what makes a PWA, helping summarise the main aspects.

“Responsive, connectivity-independent, app-like, fresh, safe, discoverable, re-engageable, installable, linkable web experiences.”³

The quote provided by Alex Russell is a quite a mouthful but it provides all the details that define a Progressive Web Application.

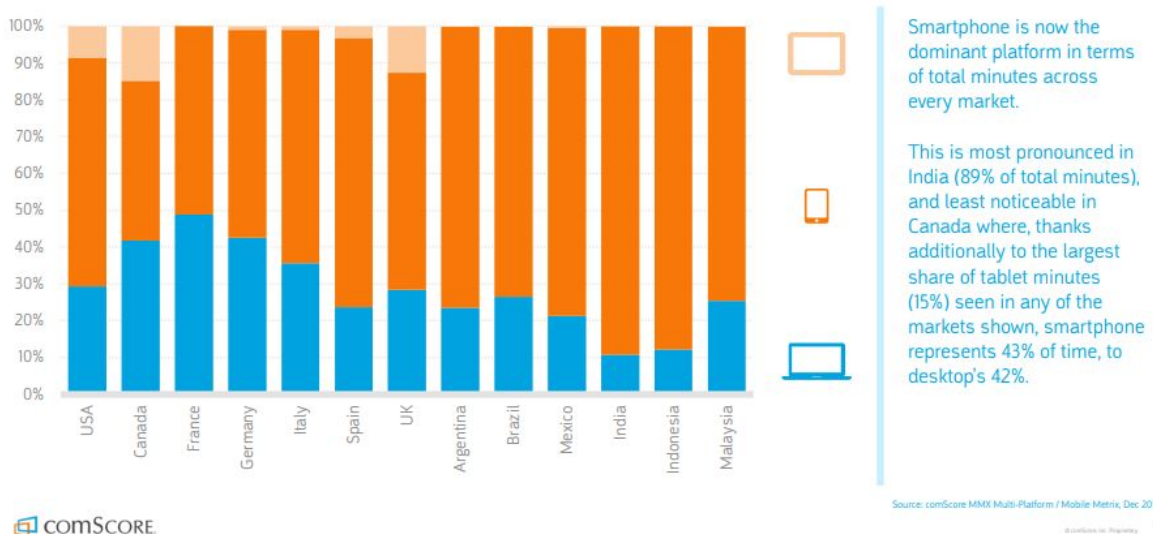
The Users

Analysis of mobile device users gives a stark insight on the reality of PWA vs Native apps.

Mobile usage is constantly prevalent, with users in majority using Smartphones. That is a essential to understand why native apps have such a grip on the market and also the tendency of usage.

Smartphone takes largest share of global digital minutes

Share of Total Digital Minutes by Platform (Desktop / Smartphone / Tablet)



³ <https://infrequently.org/2015/06/progressive-apps-escaping-tabs-without-losing-our-soul/>

An article on Medium⁴ provides a simple list of what each side provides and it's clear the divide between PWA's and Native App. With most users relying on mobile data to navigate the web it is essential that a website is accessible despite the connection.

Native apps have the disadvantage of needing updates, data and download making them hard to use if not equipped with a functional network. As such the PWA don't require all of those features making it lightweight and faster.

The graph below showcase the difference in a simple and effective way.



The table compares features of Progressive Web Apps (PWA) and Native Apps. The PWA column shows green checkmarks for all features, while the Native App column shows red X marks for features that are not supported or are more cumbersome. The features listed are: Functions Offline, Mobile-Specific Navigation, Push Notifications, Home Screen Access, No Download Required, Bypasses the Marketplace, Linkable and Shareable, Indexed by Google, Low Data Requirements, and Requires No Updates.

FEATURE	PROGRESSIVE WEB APP	NATIVE APP
FUNCTIONS OFFLINE	✓	✓
MOBILE-SPECIFIC NAVIGATION	✓	✓
PUSH NOTIFICATIONS	✓	✓
HOME SCREEN ACCESS	✓	✓
NO DOWNLOAD REQUIRED	✓	✗
BYPASSES THE MARKETPLACE	✓	✗
LINKABLE AND SHAREABLE	✓	✗
INDEXED BY GOOGLE	✓	✗
LOW DATA REQUIREMENTS	✓	✗
REQUIRES NO UPDATES	✓	✗

Following those distinctions we can imagine a user thinking twice about downloading a full native app and the following questions might come to mind:

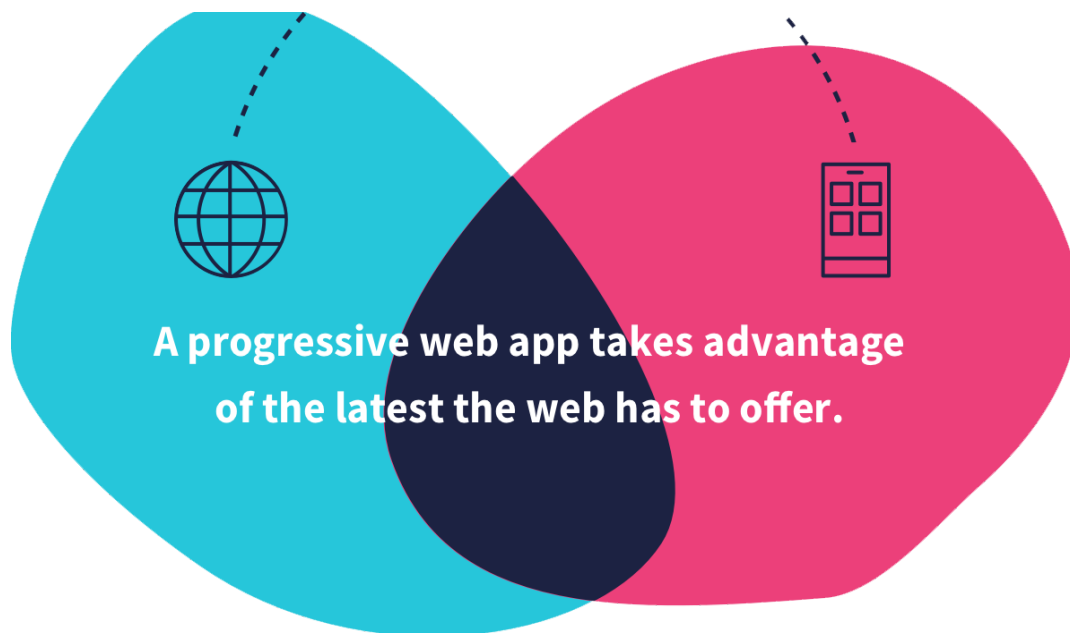
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<https://medium.com/awebdeveloper/progressive-web-apps-pwa-vs-native-apps-fcdd921f0e8a>

1. Is this app worth downloading?
2. Do I have enough space?
3. My available data is not sufficient.

PWA

The concept of PWA is simple and straightforward “ A progressive web app take advantage of the latest the web has to offer”



Alex Russell further exemplifies it by stating that PWA's are “just websites that took a lot of vitamins.”

With that concept in mind it's understandable that major companies have been pushing for PWA to become the new best thing with Google creating a simple guide to make it possible for users to create their own PWA or with companies such as the Financial Times, Twitter, and Cnet to name a few who have already implemented them.

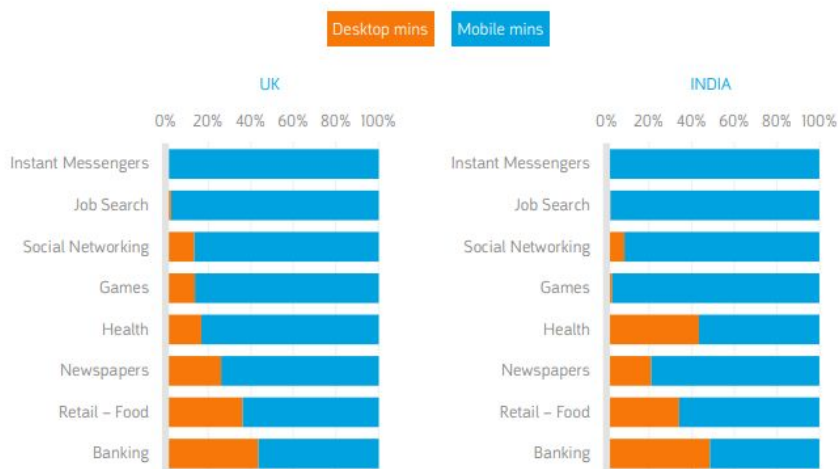
The reason is simple PWA are the future and cost much less for a company to implement than a native app.

The Advantages are big enough to warrant a change in techniques for companies but the strength of native apps are still there. Users spend most of their time on Mobile but when utilising it they are different reasons.

A research found that when users use mobiles it's mostly for Games or Instant messaging whilst desktop is still largely used for issues regarding health and job.

Platform Splits for selected categories

Share of Category Minutes by Platform



The share of total minutes between desktop and mobile devices reveal global trends (mobile-first categories in one country often exhibit this preference globally), but can also unlock local preferences and nuances.

Of the categories shown opposite, the Health category is significantly less mobile in India than in the UK, which can be related to the properties present in each market, as well as cultural preferences.

That means users are more like to use native apps for things they deem “serious” like banking and Health whilst using mobile for leisure.

The market for native apps is pretty consolidated with the 5 top apps by reach worldwide a combination of instant messaging or social media.

Snapchat breaks into the top 5 apps in two major markets

Top 5 Apps by Reach

USA	Canada	France	Germany	Italy	Spain	UK
Facebook	Facebook	Google Play	Google Play	WhatsApp	WhatsApp	YouTube
YouTube	FB Messenger	Google Search	WhatsApp	Google Play	YouTube	Facebook
Google Search	YouTube	YouTube	Google Search	Google Search	Google Play	Google Search
FB Messenger	Google Search	FB Messenger	YouTube	YouTube	Google Search	FB Messenger
Snapchat	Google Maps	Gmail	Facebook	Facebook	Google Maps	Snapchat

Argentina	Brazil	Mexico	India	Indonesia	Malaysia
WhatsApp	WhatsApp	WhatsApp	WhatsApp	Google Play	WhatsApp
Google Play	Google Play	YouTube	Google Play	WhatsApp	Google Play
YouTube	YouTube	Google Play	YouTube	YouTube	YouTube
Google Search	Google Search	Google Search	Gmail	Google Search	Google Search
Google Calendar	Gmail	Facebook	Google Search	Gmail	Facebook

comSCORE

Google and Facebook continue to enjoy dominance of top 5 app charts around the globe, but Snapchat is a notable new entry in the rankings for two of the largest digital economies.

It now ranks in 5th position by reach, up significantly versus the same point 12 months previously, when it was 9th in the US and 16th in the UK.

Source: comScore Mobile Metrix, Dec 2017

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Does comes the issue with PWA.

Despite being innovative, they lack the solid background and notoriety that native apps such as Facebook and Youtube have built.

Users are have been trained to look for a new application in specific places and they have also been taught to wait for feature to be updated regularly.

To be able to put PWA at the same level , they will need to become more accessible (like app store are) and easily findable.

The research and evidence shows the change will soon come.

Answer

Pwa will not replace native apps today but might in the future. They provide the necessary path for the development of the web and the way that users interact with their mobile phones.

Despite their advancement thought native apps are still very present and they take a big market share because they are known and relied upon.

The possibility of change will come when companies and individuals start learning new ways to achieve the same process that native apps provide.

Native apps that are commonly used will retain their audience but for ecommerce and new websites PWA will be an increasing solution.

Reference List

<https://medium.com/@amberleyjohanna/seriously-though-what-is-a-progressive-web-app-56130600a093>

<https://developers.google.com/web/progressive-web-apps/>

<https://developers.google.com/web/fundamentals/codelabs/your-first-pwapp/>

<https://developer.mozilla.org/en-US/docs/Web/Apps/Progressive>

<https://www.smashingmagazine.com/2018/11/guide-pwa-progressive-web-applications/>

<https://www.forbes.com/sites/forbestechcouncil/2018/03/09/why-progressive-web-apps-will-replace-native-mobile-apps/#67c15ff32112>

<https://medium.com/samsung-internet-dev/6-myths-of-progressive-web-apps-81e28ca9d2b1>

<https://codeburst.io/all-you-need-to-know-about-progressive-web-app-4ba73368da66>

<https://developers.google.com/web/progressive-web-apps/>

<https://medium.com/awebdeveloper/progressive-web-apps-pwa-vs-native-apps-fcdd921f0e8a>