

React Native Versus Native App Development

Discover the Pros and
Cons of Each!



Dedicated
Developers

Introduction to Native iOS & Android

One of the most important decisions a company must make when it comes to developing a mobile app is what approach they want the developers to take when building it.

What Every Company Needs to Get Started on the Right Foot

Because the approach selected plays a huge role in how users will ultimately experience the app.

Currently, companies must decide between two popular developmental approaches:

- 1 Native
- 2 React Native

A Native Application is basically an application that is developed for a specific platform.

Currently, there are two mobile platforms that stand out from the crowd and are more popular than other platforms. Those two platforms are Android and iOS.

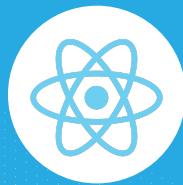
If a company wants to develop a Native App for Android it would develop it in the Android studio with Java and Kotlin as the languages.

If a company wants to develop a Native App for iOS, the Integrated Development Environment (IDE) would be Xcode and the language could be both Objective-C and Swift.

On the other hand, React Native is open source framework from Facebook that works with both Android and iOS.

React Native brings concepts from web development into mobile development. With React Native, the same code base can be used for both Android and iOS, and it even transforms the graphical elements to match the platform. React native apps are developed in JavaScript.

In this paper, we are going to take a closer look at each format so that you can learn the pros and cons of each and make an informed decision as to which will allow you to get an app that will impress your customers the most.



Introduction to React Native

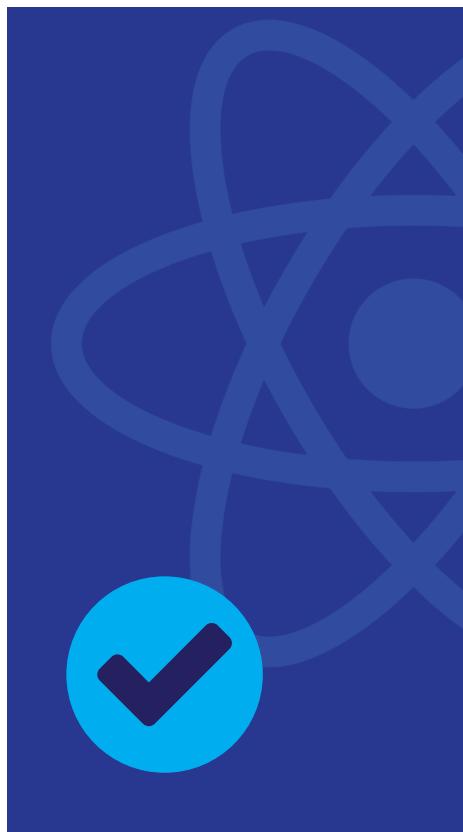
Facebook released React Native in 2015 as a solution to the time-consuming problem of having to create separate apps for Android and iOS.

This solution relies on the JavaScript framework to create a dynamic and powerful user interface. More specifically, it's based on React, Facebook's JavaScript library for building user interfaces. In this case, however, the library is being used to target mobile platforms instead of web browsers.

So to put it another way, React Native allows developers to write mobile applications that look and feel "native" while using a JavaScript library that they are already familiar with.

And since most of the code that is written can be shared between platforms, React Native makes it easy to simultaneously develop for both Android and iOS.

Not only does React Native currently support both iOS and Android, it also has the potential to expand to new platforms in the future as well.



Here are the pros of React Native:

One code base

This is the big advantage to React Native – developers don't have to develop two separate applications, one for Android and one for iOS. Instead the same code base can be used for both Android and iOS.

Time

This goes back to what we were just saying – with React Native there is no need to create two applications. This saves developers lots of production time.

Web concepts

For a web developer, going from web to mobile development can be tricky. React Native, thanks to its JavaScript framework, makes the transition from web to mobile development quick and easy. With React Native, web developers are able to easily make the transition to mobile development.

Hot reloading

Changes made to the app during development are immediately shown on the device where the app is running. This feature makes getting feedback on app changes fast and simple.

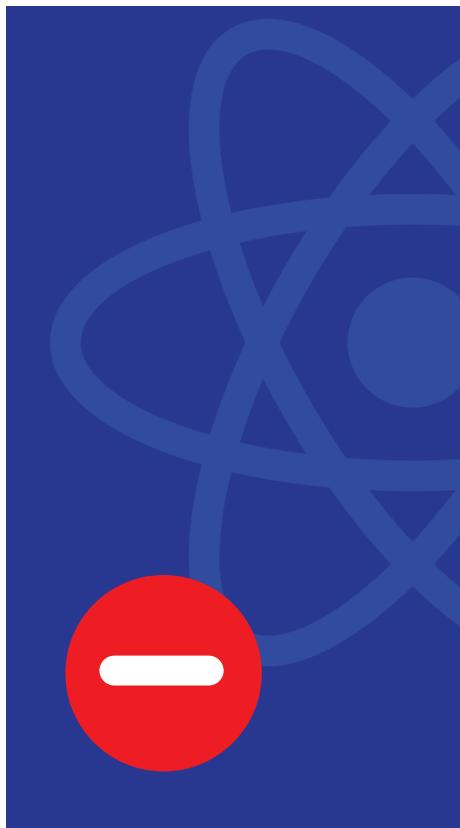
Open source

React Native is open source. That allows for greater understanding of the framework, better opportunities to inspect the code and also greater ease in improving the framework and fixing bugs or adding features.

Additional pros of React Native include:

- Makes it easier to find a developer since web developers are more plentiful than native developers
- Only need one team to create an app that works on both platforms (Android and iOS)
- Can develop and release apps for both platforms simultaneously
- React Native is widespread, easy-to-use web framework

Now here are React Native's cons:



Does not support all APIs

While React Native supports all of the most used APIs, it does not support them all. This can cause problems if access to a non-supported API is required.

Native Modules

To help solve the problem mentioned above, Native Modules were introduced to React Native. These modules are parts of the code which are written in the native language and then incorporated into the rest of the code. This solution requires developers to have knowledge of the native language, which is something the developer was trying to avoid by using React Native in the first place. As a result, this can lead to project delays or inferior work or even a non-performing app. One more thing, the Native Module has to be written for both Android and iOS – this eliminates the non code duplication benefit that React Native typically offers developers.

Third party libraries

The React Native community is smaller than the native platform community and thus has less third party libraries. Also, to use a third party library, a developer will have to use a Native Module.

Interaction with other native apps

Native frameworks make it much easier for users to access other native applications, like the camera. React Native does not support this type of interaction, which means that it will have to be written into a Native Module or obtained through a third party library, which would then have to be put into a Native Module).

Design

The Android and iOS platforms have different design guidelines that makes the apps look different depending on the platform it is being used on. This situation results in additional code to ensure design guidelines are followed in each platform.

Long-term Support

There are questions about the long-term support of React Native. Facebook could simply decide to stop updating the framework.

Other disadvantages of React Native include:

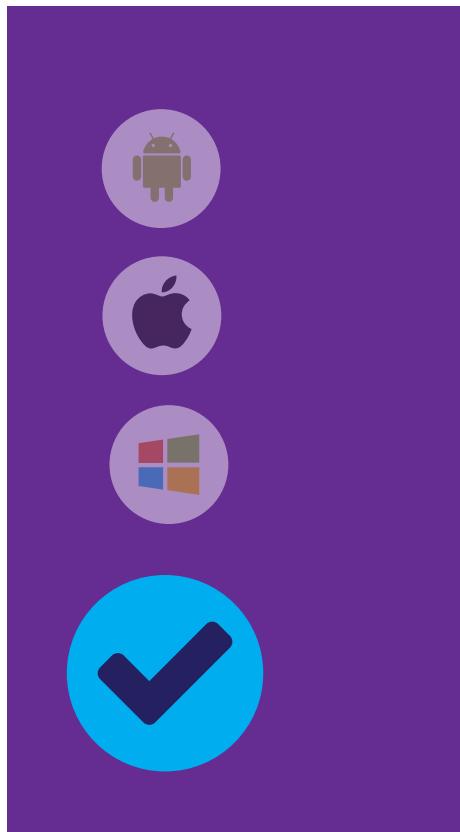
- At only 3 years old it is a young framework compared to native frameworks which have had more time to mature
- It has a reputation for requiring high maintenance
- Support for new platform features (like iPhone X notch) often take longer to appear
- React Native components do not always comply with the Human Interface Guidelines of Apple or Material Design Guidelines of Google



A Native App is a smartphone application that has been specifically coded to work on a specific platform, such as Android or iOS. For example, an app would be created in a specific programming language, such as Objective C for iOS or Java for Android.

Native apps are known for delivering fast performance along with a high degree of reliability.

These apps can also provide optimized performance and take advantage of the latest technology, such as a GPS, compared to web apps or mobile cloud apps developed that are required to be generic because they are being used across multiple systems.



Here are the pros of Native Apps:

API Access

With Native Apps, all of the APIs and the functionality that the platform offers can be accessed through a native development environment. No extra mapping layer is required over the functionality that will need to be updated. There are also no restrictions or dependencies other than those of the native environment.

Third party libraries

The Native App community is large and offers a variety of third parties for developers to choose from. The community is known for offering numerous resources that can improve the application and the development process.

Deeper Understanding

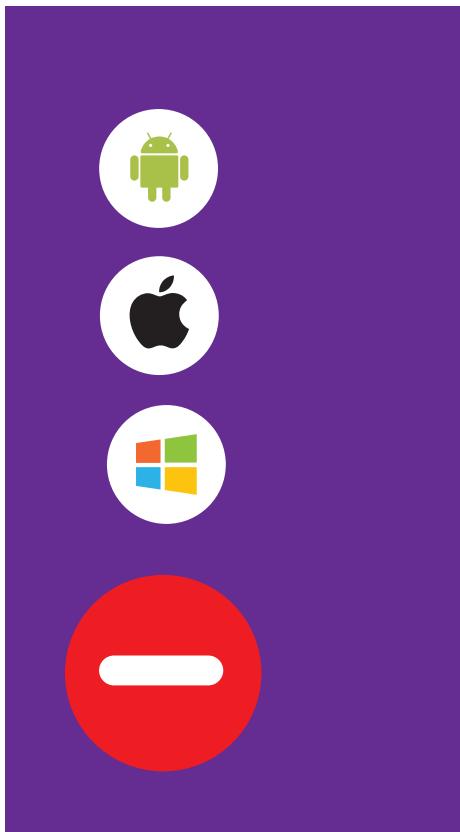
With Native Apps, developers acquire a deep understanding of the environment, which includes the platform and underlying architecture. This knowledge can lead to better quality, improved performance and greater ease of use of the app.

Safety

Over the long run, staying in the native environment can help ensure that the platform will be updated and taken care of. For other platforms it may be a case of here today and gone tomorrow which can render your app obsolete.

Strict language

Android and iOS native languages are strict languages, which makes it easier to find and fix hidden errors. Strict languages are also easier to learn.



Now here are the cons of Native Apps:

Development of two Applications

This is the big disadvantage of Native Apps, developers have to create two separate applications in order for their applications to work on both Android and iOS. The applications will also differ significantly and no code can be shared between them.

Lengthy Downloading Process

Native apps must be downloaded from an app store – such as Google Play or Apple App Store. This downloading process requires a lot steps (as many as 5 or 6) and experts say that at each step 20% of potential users are lost.

Limited Flexibility

Developers have to code for one platform at a time, with separate coding for Android and iOS. This means that you also may have to hire two teams of developers – one for Android and one for iOS.

Expensive Development

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Expensive Development

Programming Native Apps can be complicated. Adding to the development expense is the fact that developers who code in this language are scarce. Native app development requires more labor, which adds to the time and cost of development. Also, the more a native app costs to develop, the higher the maintenance costs will be, too.

Frequent Upgrades

When fixing a bug or making an update to a Native App the new version of the app must be posted to the app store. You must then hope that users update their apps to the new version. If they don't, you may lose users due to the unfixed glitch.

Native and React Native

Best Apps

The thing companies must keep in mind when deciding what app development process to use is user experience.

In this day and age, user experience is critical for a successful app. Users want to be able to use apps on their phone in a way that they are used to the phone functioning. A robust user experience must address the adaptability and layout, navigation, modal structure, interactivity and feedback, animation, color and typography, and in-app branding.

Now let's take a look at some popular React Native and Native apps so that you can better understand what is possible with both.



Popular **React Native Apps:**



Facebook Ads Manager

This was the very first cross-platform application created with React Native. The technology allowed the development team to make the most of code sharing across iOS and Android.



Instagram

React Native played a big role in the upgrade of Instagram's mobile application. The whole transition process was smooth and free of serious issues. React Native also allowed engineers to save their efforts due to significant code sharing (85-99% depending on products).



Skype

In 2017, Skype upgraded to a Universal Windows platform app built on React Native. Users immediately reported faster responsiveness and updated design.



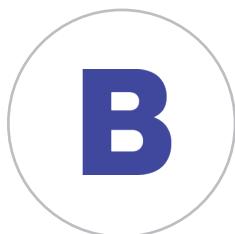
Classcraft

This educational portal enhances its learning environment with games and technologies to create a truly collaborative experience. Classcraft was built with React Native to cut maintenance expenses and improve the development cycle.



Wal-Mart

By revising their mobile app into React Native, Wal-Mart reports that it was able to improve performance of the app on both iOS and Android while using less resources and in a much shorter time span than what would have been possible otherwise.



Bloomberg

The company used React Native to develop a new consumer mobile application for iOS and Android. The app gives clients a streamlined, interactive experience with simple-to-access personalized content, videos and live feeds.



SoundCloud

This React Native app helps creators manage their accounts and keep their community running smoothly. The company says it used React Native for two main reasons: because experienced iOS developers were hard to find and because they didn't want a big delay between iOS and Android releases.



The following list comes from [Medium.com](https://medium.mybridge.co) (<https://medium.mybridge.co>).

At Medium.com, the company uses its Mybridge AI to evaluate the quality of content and rank the best articles for professionals. In this observation, the company compared nearly 900 open source apps written in Swift and picked the top 21 projects. Here are the top seven on that list:

No.1

[Official] Firefox iOS app built in Swift
(Github Stars: **5,906**)

No.2

[Official] WordPress for iOS written in Swift
(Github Stars: **1,225**)

No.3

[Official] Artsy: Auction App for Arts written in Swift
(Github Stars: **1,302**)

No.4

Designer News App Built in Swift
(Github Stars: **1,760**)

No.5

Flappy iOS App in Swift
(Github Stars: **7,854**)

No.6

[Official] Wire iPhone and iPad app built in Swift
(Github Stars: **1,239**)

No.7

[Official] Turn On your VPN like a hero. Open
source app built in Swift
(Github Stars: **2,523**)



The following information was obtained at www.AndroidAuthority.com



Weather

1Weather features a simple, paginated design that shows the user the current weather, forecast for up to 12 weeks, a radar, and other fun stats. Along with that, users get a fairly decent set of lightly customizable widgets and the standard stuff like severe weather notifications and a radar so you can see the storms approaching. AndroidAuthority says that perhaps its best feature is its minimal design which just shows the weather (and fun facts, if the user wants).



Google Drive Suite

Google Drive is a cloud storage solution available on Android where all new users get 15GB for free permanently upon signing up. You can, of course, buy more if needed. What makes Google Drive special are the suite of Android apps that are attached to it. They include Google Docs, Google Sheets, Google Slides, Google Photos, Gmail, Google Calendar, and Google Keep. Between the office apps, the Photos app (which allows unlimited photo and video backup), and Keep for note taking, you have apps for practically anything you need to do in terms of productivity. Some of the features of these apps include live collaboration, deep sharing features, and compatibility with Microsoft Office documents. Microsoft Office has a similar setup with OneDrive and Office. However, Google's solution is easier to use, according to AndroidAuthority.



Google Maps

Google Maps virtually owns the navigation apps scene and it remains one of the best Android apps ever. It gets frequent, almost weekly updates that seem to only add to its incredibly generous list of existing features. Aside from the very basics, Google Maps gives users access to places of interest, traffic data, directions to things like rest stops or gas stations, and they even let users have offline maps now (albeit temporarily).

Conclusion

As outlined in this paper, the choice between a native app and a React Native App is both a difficult one and an important one for companies.

There are many things that you must consider including cost, time, user experience and more. When you properly weigh these factors then the right decision will become clear to you.

Here are some things to keep in mind:

React Native is a good solution for anyone who wants to develop a not too complicated app for both platforms with a smaller budget and/or with a team that has a lot of web or React experience.

If you have access to an experienced developer, particularly when it comes to iOS, then a Native App build will provide your users with a better experience.

If you decide on a React Native build then you must also be aware of the rapidly changing and developing React Native environment.

You should schedule time to make React Native updates toward the end of your build to ensure you won't be left behind by updates and advances.

To learn
much more
about app
development,
visit



www.DedicatedDevelopers.com

Dedicated Developers is a leading app development company. Its dedicated team of highly qualified and professional developers strives towards fulfilling client needs across the digital landscape by offering expert knowledge and skills through a wide array of services.