

Native vs. Web vs. Hybrid

Building theApp You Need

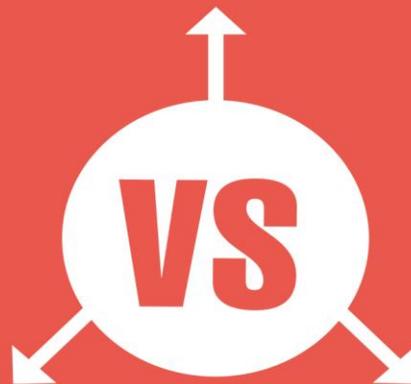


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Introduction

When it comes to mobile apps, the question has always been should you develop a native app or a web app? And the answer has never been particularly clear. Both offer significant benefits. Both also offer drawbacks, as well.

However, there's another option that's now become available – hybrid apps that combine some of the characteristics of native and web apps. Which is the right path forward for your business? Actually, the waters are pretty muddy here, and finding the clear path isn't as simple as it might seem.

You need to make a detailed comparison of each option, and then determine what your priorities are. Within this book, we'll take a look at all three app types, and help you come to the right conclusion for your specific needs.

Native

Native apps are those we're most familiar with. They're developed to run on a particular OS, or even a particular mobile device. For instance, apps on iTunes are developed to run on iOS, but some of them are optimized for the iPhone, while others are designed primarily for the iPad. Yet others work on both types of devices.

Not only are they built for specific devices, they're designed using tools specific to your device of choice. A specific type of software would be used to build an iOS app, and another for an Android app, for example. Is this the right choice for your needs? First, you'll need to consider some use case scenarios, and answer a few pertinent questions.



Native-Specific Features

One compelling reason to develop a native app is to make use of native-specific features. For instance, let's say that you have a team of sales reps who routinely travel long distances by air. A native app would give them the ability to update information within their app even offline, such as while they're flying. There are other native-specific app features that might be worth your time, as well, such as:

- ❖ Bluetooth connectivity
- ❖ GPS functionality
- ❖ SMS messaging
- ❖ Address books
- ❖ Push notifications
- ❖ Data download in the background

None of these features are available with a web app.

Other Considerations with Native Apps

Of course, there are many other considerations that need to be made here, as well. One of those is security. If you're developing a native app, then it will have to be downloaded to each employee's personal device (unless you supply your entire staff with mobile devices).

A BYOD (bring your own device) policy can offer convenience, but remember that your employees may find it frustrating. Your app might bring them critically close to maxing out their storage, or it could add unwanted clutter to the screen. There's also the question of whether or not their device is secure, and what an unauthorized user might do with access to your app.

Yet another important consideration here is building the API to support a native app. In quite a few cases, the costs required to develop that API might outstrip the costs to develop the app itself. Is that sort of expense worth it to your business? Will the app be used long enough to justify the expense of the API? Will the app be widely used enough to offer a good ROI?

Of course, there's also the question of what sort of native app you want to build. This is where things get even more complicated. Chances are good that not all of your employees use the same type of mobile device. Some might use iPhones, while others might use one of the dozens of different Android devices out there.

Then there's the question of device defection. While some people will pick a platform and stick with it for years, others switch from one to the other as new devices are produced and new features become available. Sure, you can develop a native app for both iOS and for Android devices, but that effectively doubles your costs just in app development alone, and it doesn't even include the cost needed for two separate APIs.



Web

Now that we've touched on native apps, let's look at the other end of the spectrum – web apps. These are built on HTML5, and are designed to run in a browser. The good news is that means they can be used on laptops and desktops, and can also be used on mobile devices with a browser.

While a web app might not be as seamless and elegant as a native app, there are some very compelling reasons to go this route, particularly if you don't have the cash to build a native app for multiple platforms. Web apps offer inherent cross-platform support without any additional time or costs. Of course, there are questions you'll need to answer here, as well.



Early Stage Mobile Strategy

Is your organization in the very early stages of your mobile strategy? Whether you're building an app for in-house use, or you're designing one for consumers, a web app might be the best way to go.

Unlike developing two or three different apps for separate operating systems, a web app will use the same codebase that works across several different platforms. This helps to reduce the time and cost for development, and eases the burden on your development team, as well. If you don't have your own development team and significant resources, this makes a web app the ideal way to go.

In fact, mobile app design might be the best way to go for a business looking to develop several different apps for use in-house, with multiple different departments. With native apps, you'd need to build the same app multiple times to account for different devices before you could move on to the next app, and then the process would begin again.

With a web app, that's not the case. It's a "once and done" sort of thing, allowing you to build one app, finish it and move to the next, without the repetition and time lost from allowing for more than one platform.

No Desire to Download an App

Our smart phones have become incredibly personal devices. They contain a wealth of personal data, and even our financial information. They're our gateway to connecting with friends and family on social networks, allow us to be more productive, and help us find needed information on almost any topic. For a lot of employees,

downloading a native app for business use can feel intrusive.

Why should they have to allocate some of the storage space they've personally paid for to use a business app? What about data transmission costs? This can get pretty sticky in a business with a BYOD policy. Then there's the question of security that we touched on previously. If your app includes sensitive business information, you might find that you also need to require your employees to download mobile device management software onto their device.

Not only does that increase your development costs, but it's intrusive and many employees will balk at the prospect. There's no need for this with a web app. Users can still access business data and work information securely, and their personal device remains just that – personal.

The Catch with Web Apps

While web apps offer significant cross-platform capabilities, there are a couple of catches here. For instance, not all platforms support the same HTML5 capabilities. That means you'll need to analyze the platforms/devices that will be using the app and then tailor your development for those considerations.

Testing is vital to ensure that the app's features will actually work on all devices, and this can take a significant amount of time and effort, particularly if the number of devices is high. You will also need to build for older browsers and devices to ensure that the newest features are available for most users, but older browsers are not crippled at the same time.

As a final note, building a web app also means that you need to ensure your design matches well with the capabilities of the browser's rendering engine. If they're mismatched, it will result in juddering, skipping, stuttering and other problems that decrease both usability and satisfaction with the app. In this day and age, you truly cannot afford to deliver a subpar user experience, even if the app is only going to be used within your organization and will never be available to the general public.



Hybrid

Now it's time to touch on your final option, one that you might not have even been aware was available to you. Hybrid apps are interesting combinations of native and web apps, but they're also unique in many different ways.

Essentially, these are native apps that display HTML content through what are called web views – native widgets that show webpages but don't have the conventional address bar or navigation system inherent to browsers. This allows developers to achieve something impossible with web or native apps. Developers can blend both native app and

web content into a seamless whole, often on the same screen.

A native app can be native only. A web app is limited to the World Wide Web alone. A hybrid app doesn't run to either extreme, and allows the creation of a spectrum of different functionality. For instance, the app could primarily display web content, but feature native functionality in specific areas. There might be GPS functionality built into it, or there might be a way to activate a Smartphone's camera to scan or photograph items.

Why So Many Enterprises Are Opting for Hybrid Apps

There are almost as many reasons for an enterprise to choose a hybrid app as there are businesses in need of app development. With that being said, one of the most common reasons is the need to develop an app that works across platforms with minimal need for repetitive rebuilding of app components, while avoiding some of the limitations imposed by web-only apps.

With a hybrid app, web views can be reused across devices and platforms. The same codebase will be used for iOS, Android, Blackberry and Windows phones. Only those aspects that utilize native capabilities will need to be rebuilt for each platform. Depending on your needs and the features in question, that could be very minimal, indeed.

In short, it allows you to harness native capabilities and features without the full time and cost outlay inherent to mobile app development.

Another reason that many enterprises are now opting for a hybrid app is to access

information that changes frequently. Updating a native app every time something changes can be time consuming, and when that information changes on a weekly or daily basis, it can become prohibitively difficult and expensive. Web app functionality allows you to update information from the web, within an app, without the same difficulty and time spent.

As a final note, you will find that a hybrid app may allow you to get around the high cost of API development mentioned previously. Web views allow you to provide functionality from the web itself without the need to build that functionality from the ground up for each app.

A Surprising Revelation from Apple

Did you know that Apple itself uses a hybrid app? The App Store app is actually a hybrid design that harnesses both native capabilities, as well as web-based information. When you fire up the app and start looking for options to download, the search cards you see are pulled right from the Internet with web views.

However, you can't tell by looking at the app that this is the case. It's completely seamless, with no delineation between "native" and "web" areas. With the right design team, you can easily create a hybrid app that looks and feels like a native app, but doesn't have the drawbacks.

Not a One-Size-Fits-All Approach

While hybrid apps offer a lot of benefits, they're not ideal for all organizations. If you need high performance from your app, or you're in need of the fastest possible speed for accessing native functionality on devices, a native app is the best approach.

For instance, multimedia production, or 3D rendering would be best accomplished using a native app. However, Apple's example shows that hybrid apps can be very successful and deliver powerful performance in a seamless way. There's also the cost inherent with native app development to be considered.

The Path Forward

It can be hard to choose the right option when it comes to app development. Even with the two traditional choices (native and web), the decision can be difficult. Throw the option of hybrid app development into the mix and things become even more challenging. All three options provide unique benefits, as well as very specific drawbacks. While a hybrid app manages to combine the best features of native and web, with only a few disadvantages, it may or may not be the right way forward for your organization.

If you're developing an app that requires high performance and low latency hardware access, a native app might be the best option. If you're trying to create an app for in-house use with little budget and no development team, and need it to work across all platforms, a web app might be the best choice. However, if you want to distribute your app across multiple devices but still use native device features, such as GPS or camera functionality, a hybrid app might be the way to go.

In all instances, the first step toward developing the app for you is to define your needs, your goals, your budget and then evaluate the benefits and drawbacks of each app type and how they affect your business. What's right for one company will

not necessarily be right for another. App development should not be a cookie-cutter process – it's a very specific thing, unique to each organization.

Openxcell

At OpenXcell, we have been at the forefront of app development since the very beginning. We're proud of the reputation we've built for excellence, innovation and quality. We also understand the need for custom development for each organization, and that your needs and requirements may be very different from another organization within your industry.

We offer a full range of app development solutions, whether you're in need of a native app for iOS, Android, Blackberry or Windows, you're interested in the benefits of a web app, or want to explore the significant capabilities offered by hybrid apps. Our developers are among the best in the industry, and our process ensures that the app not only meets your needs now, but can be future proofed to stand the test of time and grow with your organization as needs and usage patterns shift.

We invite you today to know more about us and know how we can help you create the ideal app for your specific needs.