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The three mobile app development processes, native, hybrid, and PWA, all are different approaches to take with pros and cons for each. Out of the three, PWA is the newest and by far best approach to take for newly created apps.

What is Native?

Native mobile development refers to building a mobile app exclusively for a single platform (i.e an Android app for Java or Kotlin for iOS) (Uptech, 2021).

Pros and Cons of Native

A few pros of native mobile development would be the compatibility with other hardware processes along with giving better performance. This is also where native mobile development has its issues, due to it only being accessible for one platform at a time, it must be developed for both iOS and Android, making it much more expensive and time consuming. You would also have to figure out the programming language for each platform used.

What is Hybrid?

Hybrid applications combine both elements from native apps and web applications. For clarification, web applications run on a web server instead of a computer based software (StackPath, 2021). Essentially hybrid apps take web applications and put them into an operating system's native shell (SearchSoftware, 2019).

Pros and Cons of Hybrid

Hybrid apps are very popular due to the fact they allow developers to create and write code for a mobile app that works across all platforms. Due to this, you only would have to develop an app once and be able to run it everywhere, along with being able to access hardware across multiple interfaces. While hybrid applications allow cross-interface access, they have the issue of being slower than native applications. You also have the issue of compatibility between operating systems. For example, iOS may not allow bluetooth access, whereas Android would and vice versa.

What is PWA

Progressive Web Applications, or PWA for short, are web applications that keep all assets in the web browser itself through service web workers and

progressive enhancement (allowing for all browsers and operating systems to use the app itself) (MDN, 2021).

Pros and Cons of PWA

PWA due to being a newly created process, allows it to run on almost anything anywhere. PWA's are able to be installed anywhere and used either online or offline. PWA's can also be fit and changed to anything a company would need. Due to the app being a web application, you already have most of a web version for your app for basically free along with being able to update the app instantaneously. A few things to consider however, since your app is browser based, it would be put in an app store. Since the app is browser based, it has limited access to the hardware for both operating systems, but enough to usually get by. Again, due to browser based nature of the app, it's impossible to have the app running around in the background.

What is the Best?

Out of the three mobile app development processes, I would personally recommend PWA development over hybrid and native for a few reasons. The

benefits of PWA far outweigh the negatives in my opinion. PWAs are newer and therefore run on almost everything. PWAs are also easily updatable, and changeable to a company's needs, along with already having a stronger and less expensive base for a web based version. Of course there is the issue of not being able to be put on app stores, but with the headache and fixes required to even put those up in the first place, that's for the best. Browser based apps also have enough access to hardware that an app would need. Now onto the other types of mobile app development, native and hybrid. Native mobile app development is very outdated and expensive, requiring multiple coding languages to be learned for coders, along with two new versions to be developed for both Android and iOS. Hybrid fixes these issues, however is much slower than native and PWAs, along with the same issues PWAs face trying to be put onto app stores, without the benefits PWAs provide.

Conclusion

The three mobile app development processes, native, hybrid, and PWA, all are different approaches to take with pros and cons for each. Out of the three, PWA is the newest and by far best approach to take for newly created

apps. Native apps are far more expensive both money and teaching wise, outdated, and outclassed. Hybrid apps are much slower than either, while having the same pitfalls of PWAs. PWAs are the best bang for your buck in this day and age due to scalability, progressive enhancement, and usability.

References

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