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Analysis of hybrid mobile apps

According to a report by Emil Protalinski, 51.7 percent of Facebook users now log in their account and check feeds only through mobile devices. Considering that there are 1.59 billion active users each month on Facebook by the fourth quarter of 2015, this fact manifest how much potential there is in the mobile application industry. For this simple reason, there are lots of people and companies who want to ride this mobile application hype train and gain a fair share out from it. However, many of them are barred because of difficulties in mobile app development. What’s making matters worse, the mobile application development environment is constantly changing and “every six months, there’s a new mobile operating system, with unique features only accessible with native APIs” (Mario Korf and Eugene Oksman). Then comes the question, is it possible that we can make use of the skills we have currently and have a easy transition into mobile app development? The answer is yes, and it is called hybrid mobile apps. This essay is going to introduce hybrid mobile apps, compare it with the other existing forms of developing mobile apps, and talk about its advantages and disadvantages.

Before we talk about what hybrid apps are, we should look at the two other forms of application that exist in the market. The native apps and the HTML5 apps. Native apps are the ones associated with specific platforms (iOS and Android) and are developed with specific tools and languages (Xcode and Swift for iOS, Eclipse and Java for Android) (Mario Korf and Eugene Oksman). These apps have great performance, high platform consistency, and can make the most use out of the mobile phone’s exclusive features such as multi touch and built-in components. However, the downside of native apps is that it is generally very difficult to develop and there are tons of requirements. HTML5 apps, on the other hand, is of complete opposite. It is essentially a web page and can be opened through any browser on a smart phone and is mostly developed with HTML5, JavaScript and CSS. Such characteristic means that these apps provide great cross-platform compatibility. Also, since it is distributed through the web, the development and testing cycle is much shorter than native apps because the developer can just release the new feature immediately rather than uploading it to App Stores and wait for the reviews. However, the flaws of this kind of apps is critical. For one, the performance is slow and this is the reason why most mobile games are developed natively rather than as an HTML5 app. What’s more, multi-touch support, offline storage, and securities are the fields HTML5 apps fall short at because of its nature.

Hybrid mobile app combines goods and evils of both native apps and HTML5 apps. To do such thing, it embeds an HTML5 app inside a native container, which makes it possible for the developer to write code in HTML5 and JavaScript and at the same time still get access to specific platform features. In fact, many popular mobile apps nowadays, such as Yelp, Netflix, and Instagram, are developed as hybrid mobile apps without people noticing (John Bristowe). The most direct interaction a user has with the app is the user interface, and a native looking interface can be easily achieved on hybrid mobile app with certain frameworks. While Hybrid Apps still need to be distributed through App Stores, it’s way easier for the developers to make changes to the application and push it into production compared to native apps as well as to do A-B testing. Although the performance of hybrid mobile apps is still slow due to its HTML5 nature, developers can come up with workarounds to make use of native components. For example, to stream a video on an HTML5 app would be very inconsistent on user side, but a hybrid app could delegate this feature to a native layer and achieve optimal performance as well as best user experience. Although hybrid apps can be made with web development languages, we need frameworks to support such features. Popular frameworks such as Apache Cordova rely on plugins to support the access to various device capabilities, including accelerometer, contacts, and camera. Other frameworks such as NativeScript even advertise that the developer can get access to all mobile phone APIs without the reliance on plugins. However, these frameworks, unlike the ones with limited access of APIs, could potentially come with a higher learning curve. With these tools in hand, the developer is able to use web development skills to develop a cross-platform, cross-device app that has extensive device access as well as compatibility with multi touch gestures.

However, hybrid app also has its downsides and it can sometimes be significant. Firstly, since the framework for developing hybrid apps is provided by a third party, it doesn’t always keep up to date with the newest technology and features immediately. This might not be an issue for individual developers or small-scale company, but for big companies who want to stay ahead of the trend, it could be a critical issue. Moreover, security and copy-rights could also cause immense trouble for developers. For example, most of the plugins of Cordova are open-source and developed by the community. Using these plugins implies that the developers are potentially sharing users’ information with whoever created the plugins and the developers may get into legal issues for using these plugins if they are not careful enough. Also, according to Matthew Mead, a technologist and app developer at Redpoint, hybrid apps increase the complexity of the architecture and increase the potential points of failure. Also, unlike a native app that maps its features to its own platforms capacity, hybrid apps might cause issues that are unexpected and very hard to debug. Also, Matthew Mead found that “hybrid projects require specialized skills for short durations” and “more technologies are involved, so it is harder to staff”.

To conclude, hybrid app is definitely a wise choice for web developers who want to make mobile apps and at the same time don’t want to invest too much into into learning native mobile app development. It uses similar skill set as HTML5 apps and have most of the access to device capability as native apps. It also has its downfalls such as poor performance and unexpected bugs during development.

Works Cited

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