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New Mobile App Development Options for the Company

The purpose of this document is to explore and select from the various development options we have to choose from for our company's upcoming mobile application.

Introduction

When it comes to developing an app for our company, there are several approaches that we can take. Those development options include native, hybrid, and progressive web applications. To help make the tough decision, I will break down all three choices and choose what I believe will work best.

Native Application

Initially, the only way to install apps on smartphones, native applications allow for easier interaction with built-in features, as long as the developers are knowledgeable of the languages of the individual hardware. While efficient and full of features, some features will not work properly with specific hardware, limiting the app's capabilities on iOS devices. Furthermore, due to the language barrier across devices, we would need to develop separate applications for each platform, costing us more in the long run. Due to the cost and several complications we would run into with this option, we best avoid it entirely.

Hybrid Application

With the native option out of the way, our next possible alternative would be a hybrid application. This method combines a browser engine and a web application in a binary, so it only has to be developed once, allowing it to run on any platform and be accessed through interfaces.

While the slowest of our three options, it is much cheaper than native and is chock-full of features at our disposal. Using JavaScript, those features include view buttons and text style; typical native application elements. Unfortunately, developing the app once for use anywhere leads to differences across platforms. Android users will have access to the NFC, allowing easy sharing across android devices nearby, while iOS still will not let its users share songs via Bluetooth. While insignificant at the time being, the differences across platforms could lead to overloaded code logic. Likewise, long-term projects would be harder to maintain due to the complexity of the application. Compared to the native application, it is much cheaper and more flexible; however, we still have one more option to examine.

Progressive Web Applications

Our final potential option leads us to progressive web applications (PWA). A newer application, PWA keeps all assets in the browser, using web workers, allowing us to use it offline and add shortcuts on our home screen. PWA is also cheaper and more efficient than the alternatives while also running on devices other than mobile, such as fridges, tablets, desktops, and even dinosaurs like windows phones. However, some features, like creating a WebAPK, are limited to Android. On the other hand, anything a browser can access, like mics, cameras, geolocation, and specific sensors, our app can also, depending on our browser and the platform being used. Additionally, we can do whatever we want when it comes to style, depending on the devices. For example, on iPhones, we can put the “create” button on the top right, while on Android, we would put a floating button on the bottom right. One last advantage of using this application is the freedom of our code. We can write our tests, code our features, and then deploy the app. With no need to put our app in the store and the feasibility of updating it, we have much more freedom with our development than we do with the alternatives. Unfortunately, there is no way to run

processes in the background, so when a tab is closed in the browser, the entire application is terminated, which can become an issue.

Final Thoughts and Decision

Now that I have gone over the three options we can use to develop our new mobile app, I will give my thoughts on what we should select. I believe that PWA is our best option. Price-wise, PWA would be our best bet, as Native and Hybrid are more costly; however, we will be left with only the essential features. Although our app will not appear in the apple or android app stores using PWA, we have much more freedom due to the long list of policies that those stores require us to follow. Finally, using PWA, our app will have access to chats, maps, and even video calling, which is necessary for most smartphone users. I hope this document helps assist you all in making the right decision for this upcoming project.