TO: President of the United States

FROM: Your loyal and devoted subject

SUBJECT: Native vs. Non-native Moible Applications

DATE: 04/09/16

Traditionally mobile applications are developed “natively” using the language and tools specific to each mobile platform – Java for Android; Swift/Objective-C for iOS; HTML and Javascript for a website and so on. This requires expertise of each platform and maintaining separate codebases. An alternative is developing the application “non-natively” in such a way that the same application can run on many platforms. One such way is using Adobe Phonegap or Apache Cordova which allow development of mobile applications using standard web technologies HTML and Javascript. The same application can be used on desktop or mobile web browsers, but additionally, it can be packaged as an application which can access mobile APIs such as GPS or WIFI.

There are pros and cons to going with non-native applications. But with all the proposed enhancements to the Android application from last capstone, it may be worth considering the switch.

**Cons**

* Would require starting from scratch rather than continuing from the existing application codebase.
* Wifi scanning APIs only exist on Android, so there isn’t necessarily any point in targeting multiple platforms.
* Getting non-native applications to look and feel like an application can be difficult.

**Pros**

* Part of the capstone involves creating browser-based maps or visualizations for the data. By developing the application using the same web technologies, the application could share the same codebase instead of reimplementing the same maps for mobile.
* The application could still be made available on other platforms in a limited functionality mode – such as allowing iOS or Windows Phone users to view nearby Wifi hotspots. Additionally, if those platforms ever expose Wifi scanning APIs, expanding to those platforms would be significantly easier.
* The required skillset to develop a non-native application betters aligns with the skills of the team. Several team members mentioned experience with Javascript/HTML.

**Resources**

* Adobe Phonegap: <http://phonegap.com>
* Apache Cordova: <https://cordova.apache.org/>
* WifiWizard Plugin for Wifi Scanning: <https://github.com/parsonsmatt/WifiWizard>
* Background Geolocation Plugin: https://www.npmjs.com/package/cordova-plugin-background-geolocation
* Presentation on Making Non-native apps feel native: <http://tricedesigns.com/presentations/dreamforce/native-like%20phonegap%20apps/#/7>