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Section 1 - Introduction

If people could take control of their motor insurance, receiving a more realistic & personalised bill at the end of the month, wouldn't they?

Section 2 - Research Outcomes

Section 2.1 - React Native vs Native (iOS vs Android)

*“With the rise of React Native popularity and the growing number of popular mobile apps (such as Facebook, Instagram, Pinterest, Uber, Discord, SoundCloud, Skype...) being partially or completely rewritten in React Native, the question arises: **Should mobile developers use React Native for mobile development instead of going full native with Java or Swift?**” (Trnka, 2019)*

Section 2.1.1 - React Native

To make the decision to develop in React Native, first a look at the development environments, layouts and styles is necessary.

<https://medium.com/mop-developers/mobile-app-development-react-native-vs-native-ios-android-49c5c168045b>

<https://facebook.github.io/react-native/>

<https://flutter.dev/docs/get-started/flutter-for/react-native-devs>

Include section on flutter as an option???

Talk about single code base development for both iOS and Android

Downfalls?

API Capabilities?

Section 2.1.2 - Native

To be able to choose one single mobile application platform, the argument of iOS vs Android, then research brings up an often bias and complicated debate that even market statistics can make it unclear.

If a decision is made by numbers then two main factors can be researched:

Market Share

If the choice of which platform to develop for was made by looking at market share then Android would be a clear leader (as shown in Figure 1 and 2 below). As this project is directed towards an Ireland customer base Figure 3 gives more relevant and interesting figures specific to Ireland.

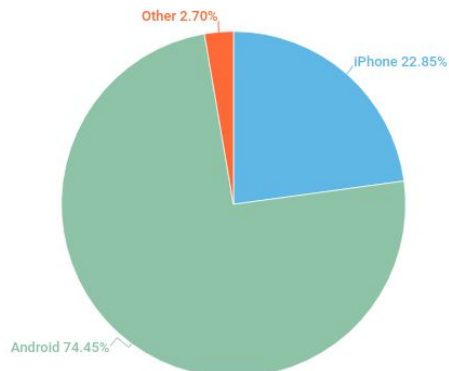
Fig. 3 supports use of react native to develop for both platforms

Gross app revenue

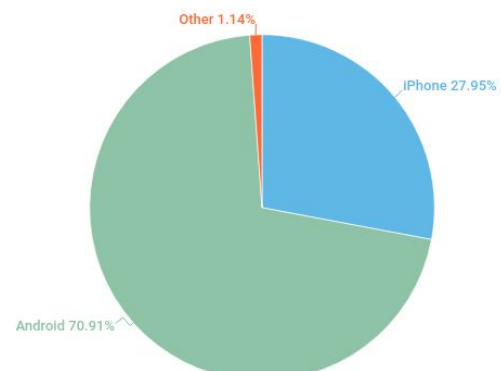
Deploying apps to store

iPhone vs Android market share Infogram

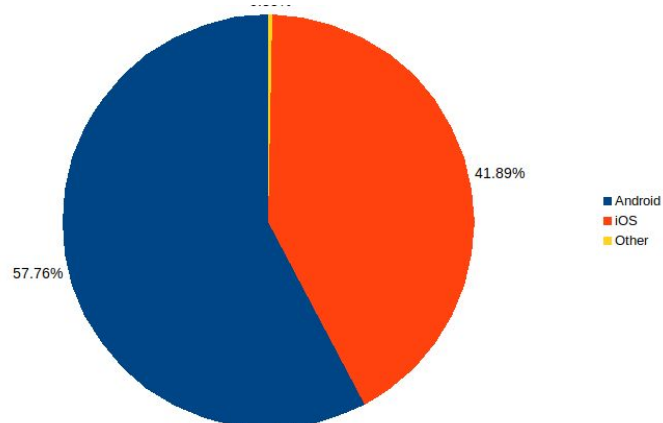
Global - Figure 1



Europe - Figure 2



Ireland - Figure 3



Section 2.2 - User Geolocation Tracking

The main functionality of the app is based around monitoring a user whilst driving, storing their habits to analyse and calculate insurance statistics. Google maps is the most popular and community supported geolocation service providing map information and tracking services. Google Maps API has a comprehensive suite for mobile application development, and specifically with React Native through supported react native community libraries.

What does the app track:

- Speed
- Location
- Abrupt motion/Smoothness? (Braking, turning speed/motion)
- Distance travelled

Offline functionality

Section 2.2.1 - React-native-maps

github.com/react-native-community/react-native-maps

React native maps is a react native package that provides Google Maps API for React Native. The Google Maps API gives access to location tracking, specifically using the `watchPosition` method to react to user movement.

Export of tracking data + format

Can it measure speed

Section 2.3 - Backend Structures

Section 2.3.1 - Firebase

Firebase is described as Backend-as-a-Service (BaaS), originally developed by Firebase in 2011 and acquired in 2014 by Google. The aim of Firebase it to supply all the Backend tools needed to quickly and securely develop high-quality apps.

Firebase research in this document focuses on the 'Realtime Database' functionality, although 'Cloud Storage', 'Authentication' and 'Hosting' may be useful tools for adding functionality to the project, and will be looked at.



Build your app
























-  Cloud Firestore
iOS  
-  ML Kit
iOS 
-  Cloud Functions
iOS   C++ 
-  Authentication
iOS   C++ 
-  Hosting

-  Cloud Storage
iOS   C++ 
-  Realtime Database
iOS   C++ 

Figure 3 - Firebase applications (firebase.google.com/docs, 2019)

Section 2.3.2 - SQLite

"SQLite is a C-language library that implements a small, fast, self-contained, high-reliability, full-featured, SQL database engine." (SQLite org, 2019)

Section 2.4 - Existing/Similar Applications

AXA

What does boxymo track

Conclusion

Algorithms & Approach

Glossary

Bibliography

Trnka, D. (2019). *Mobile App Development: React Native vs Native (iOS, Android)*. [online] Medium. Available at:

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