user language dependent messaging app

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# Abstract

This project proposes an android application for improving communication between two individual who speaks different languages.

# Acknowledgement

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# Chapter 1: Introduction

In this section we will talk about the Background Research that were implemented while developing this project. The communication gap that is being faced by the people globally and the overview of the steps taken to tackle the problem.

Human migration has led to the mixing of people speaking different languages in vast numbers. Be it for professional or personal reasons, it has become very important for people to be able to communicate freely and correctly. Moreover, because of the availability of more advanced and cheap technology, today smartphone has become an integral part of everybody’s life. Hence, this project aims to build a messaging application that provides real-time language translation to the language of the receiver’s choice. For example: if user A has language set as English and user B has language set as French, then when A sends a message to B in English, B receives it in French and vice versa.

This application provides uses for people from all fields, from students to employees. It provides a platform where users can send their messages in their native language and the receiver can receive it in their native language.

In this chapter we discuss about the Background Research, the Problem Statement and the Development Methodology followed.

## Background Research

### Bilingual people around the world:

Multilingualism is the use of two or more languages. Bilingualism is the use of two languages, such as English and Spanish. It has already been established that there are more than 50% of the world’s population that are multilingual. Its present in all continent, countries, classes of people and age groups. In Asia and Africa there are a huge number of bilinguals. In Europe, more than half the population is bilingual, 35% in Canada and about 20% in North America are bilinguals (Grosjean, 2010). Moreover, in some countries such as China and India, there are policies that recognise a number of languages as official or national language. For example, in India the Eight Schedule of the Constitution of India has 22 languages and there are 99 languages that are not included in the Eight Schedule of the Constitution of India (Anon., 2018). The main cause of bilingualism is the movement of people for reasons such as political, social, economic, religious. For instance, students moving in to United Kingdom for education purpose. The total international student in the year 2017-18 was 468,385 with China and India among the top non-EU sending countries and Italy and France as the top most EU sending countries. In the year of 2017-18 Cardiff University had a total of 7,975 international students (Anon., 2019).

### Smartphone users:

Following is the timeline of smartphone since world’s first smartphone:

* 1992 IBM launched world’s first smartphone, Simon Personal Communicator. It had features such as email, fax, touchscreen and 1 hour of battery life. (Andrew, 2018)
* Next, BlackBerry launched its mobile device with BlackBerry 5810. Its targeted business professionals and gained the smartphone market before Apple launched its smartphone device. (Andrew, 2018)
* Apple launched its first smartphone device with iPhone and it was one of the most advanced smartphones consumers had ever seen. Since its launch, Apple had sold 1.4 million in its first year. (Andrew, 2018)

The present smartphones have faster and more powerful multi-core processor, more memory, HD cameras, longer lasting battery etc. With advanced technology coupled with cheaper rates, the number of smartphone users globally have risen to 3 billion with Asia-Pacific leading. The forecast for the number of active smartphone users is made to be risen to 3.8 billion by 2021. The following graph shows the rise of active smartphone users from 2016 onwards. (Kooistra, 2018)

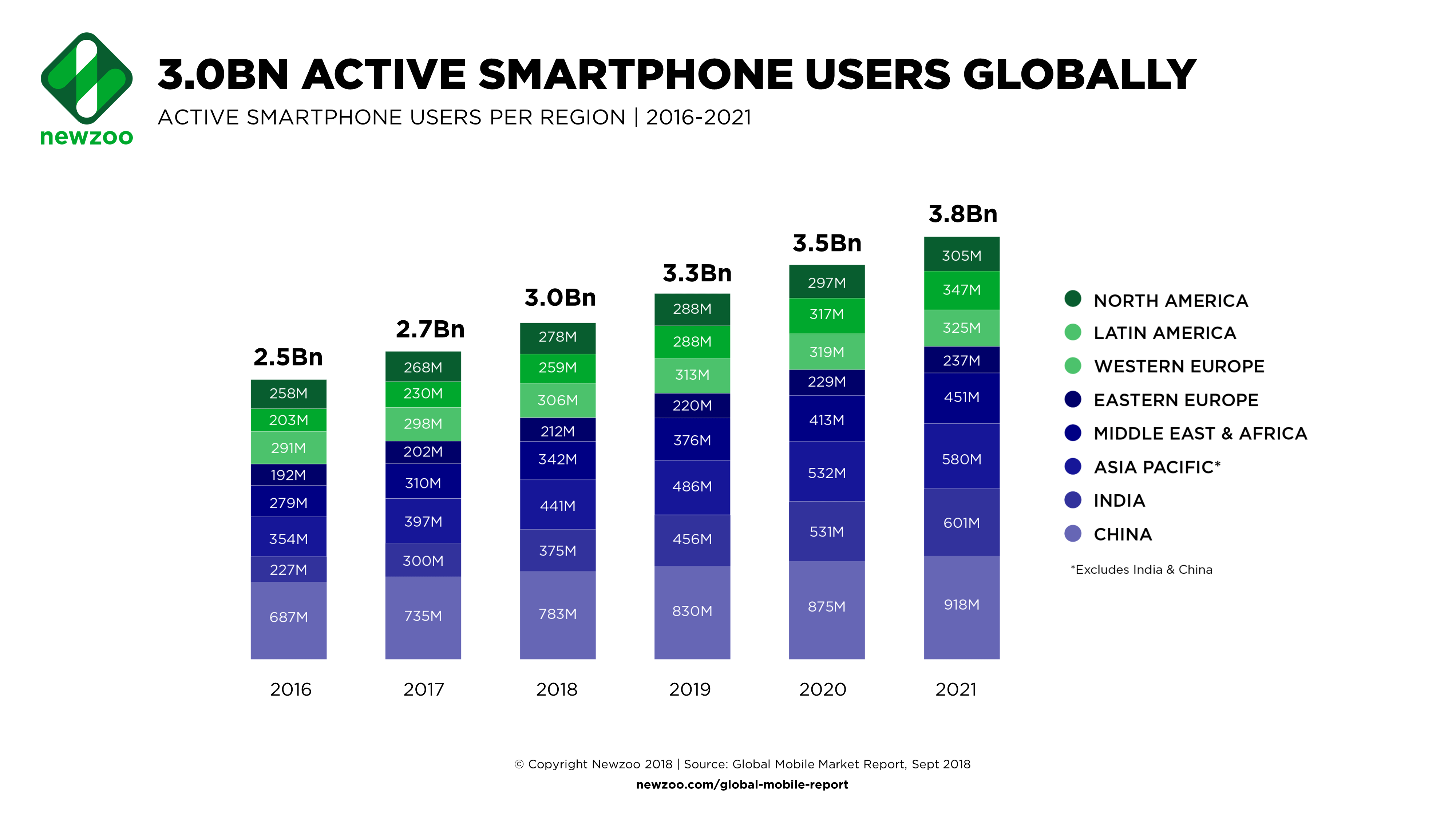


Figure 1: Active smartphone users globally (Kooistra, 2018)

More than 1.5 billion smartphones were sold globally and smartphone penetration rate is higher than 70 in highly populated countries such as India and China. Hence even though there is a stagnation in the smartphone market due to high average Selling Price, it still has a growth potential. (Holst, 2019)

### Most popular form of communication:

According to surveys texting is the most common platform used for communication. In United States 68% of Americans younger than 30 and 47% from age 30-49 use mobile phones for texting (Newport, 2014). Similarly, in the United Kingdom (UK), text messaging has overtaken phone calls as the most common form of communication. 58% of UK adults use text messages at least once a day (Noah, 2012).

Among all numerous numbers of chat apps available the most common ones are (Kim, 2018):

* **WhatsApp**: WhatsApp is the most used messaging app globally. It provides end-end encrypted secure message transmission, voice and video calling. It is used by more than 1.5 billion people worldwide.
* **Facebook Messenger**: Facebook messenger app is used by about 1.3 billion users globally. It is Facebook’s native messaging app.
* **WeChat**: The messaging app market in China is dominated by WeChat. It is used by more than 1 billion users.

Following image shows the messaging app most used around the world

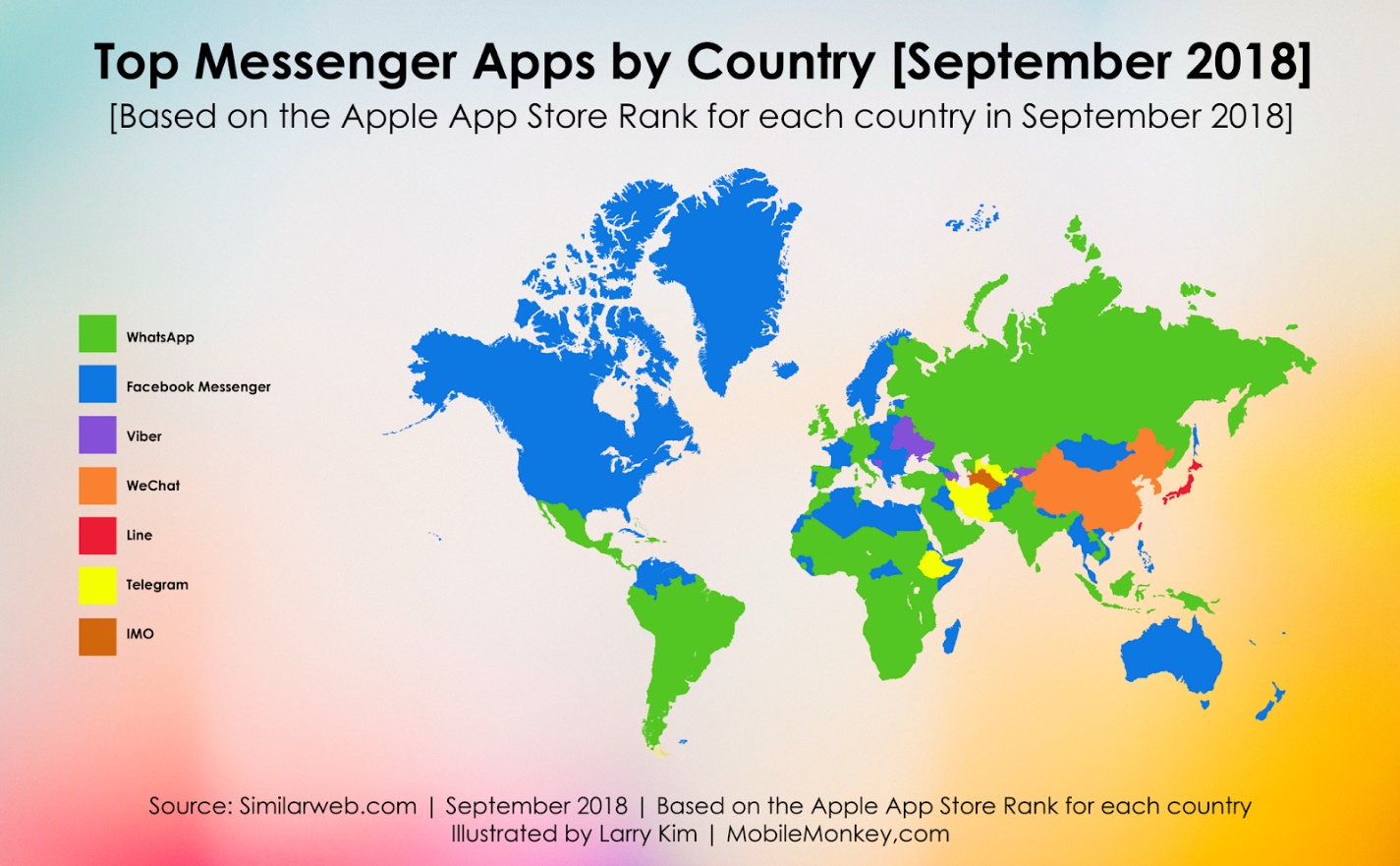


Figure 2: Messaging app most common globally.

### How do bilingual people communicate?

How people communicate non-native language

<https://www.researchgate.net/post/How_does_the_brain_understand_and_interpret_two_different_languages>

## Problem Statement

* Talk about the lack of quasi-real time translations and how the problem was faced by me in Software Engineering assignment. Cardiff University international student ratio narrowing it down to computer science school
* Define the demand for this app from the above.
* Talk about how sending a message in a different language doesnot get translated to the receiver language.
* How this app tries to lessen the cognitive load used by people communicating in non-native language.

## Research Methodology and Structure:

* Talk about development process and user feedback taken.
* Outcome expected from the thesis
* And the structure of the thesis

# Chapter 2: Literature Review

* Talk about work done so far regarding translations.

Example:

1. Translation in posts. (how does that happen?)
2. Camera translations
3. Google translation
4. Translations provided in chat platform.

Notes:

1. Talk about FCM integration and data flow there. And the data flow used
2. Talk about why react-native, express, socketio.
3. Talk about why android and not ios
4. Talk about image storage facility
5. Talk about API changeability
6. Talk about nosql
7. Talk about Sprints and version control.
8. Talk about connection to Contacts and using phone number
9. Talk about only showing users whose email is saved

Save languages in DB so that internet connection is not needed to get the languages from Microsoft.

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