HotUsers: A REALTIME CLIENT SOURCING APPLICATION

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INTRODUCTION

HotUsers is a model that predicts the closest ***hotzones***, which are locations with high concentration of population that are in need of transportation. HotUsers works in real time and has the ability to learn further using geographical data collated from clients during rush hours.

PROBLEM STATEMENT.

"Time delays, poor tracking and tracing capabilities and poor logistics quality and competence are all industry risks that weigh on growth prospects for logistics and transport industries." – **PwC.**

Arguably the biggest of all the major problems faced by consumers using ride- hailing applications in Nigeria is exceedingly long waiting times. This is causing by riders being a long distance away from their clients. This has resulted into customers cancelling booked rides and finding alternatives.

THE PAIN POINTS

There are three major different pain points to look at, which are explained in details below.

- **The Customer's Pain Point.**

"I only had to wait three minutes to be connected to a 'Champion'. Unfortunately, this champion was at least 20 minutes away from me. I tried Max later in the day and it was pretty much the same story. Both attempts required 20-30 minutes wait times. Absolutely no one wants to wait that long to find an Okada." **– a Max.ng User.**

HotUsers aims to bridge this pain point.

- **The Champion's Pain Point.**

Let's visualize a Champion dropping off a customer at a point X. Suppose the Champion has 2 options of moving towards the point Y, which is north of X. Or he could move in the direction of point Z, which is South of X.

Let's suppose the Champion made his way towards point Y, and then 20 minutes later on the Y axis, he connected to a customer on point Z. That is over 40 minutes worth of fuel wasted.

HotUsers aims to bridge this pain point.

- **The Company's Pain Point.**

This is a function of the two earlier pain points. Public opinion matters a lot to any business' life span. Once negative opinions start spreading around, the negativity affects the company.

For a company to have a high retention rate, the customers (and workers, maybe) have to be happy.

In simple words, the happier they are, the more money they'd be willing to pay.

WHAT HAPPENS IF THIS PROBLEM IS LEFT UNCHECKED?

If this problem persists, then we might have a case where customers dump Max.ng for supposedly better competitors.

There is also the risk of Champions leaving or decamping to other companies that offer (or promise to offer) a better value for work time.

And finally, it might leave a big dent on Max.ng's reputation, profits, and sustainability, if left unchecked.

OUR PROFFERED SOLUTION

THE IDEA

We have come up with HotUsers, a model that predicts the closest hotzones, which are locations with a high concentration of population that are in need of transportation.

HotUsers help 'Champions', Max.ng riders locate nearest hotzones to them. By being close to areas where customers are located, Champions help reduce the waiting time of clients, leading to higher consumer happiness and less number of trips being cancelled.

While various ride-hailing applications do not take into account where most of their clients are located, HotUsers aims to fill that gap.

THE LOGIC BEHIND HOTUSERS

The more residential buildings or settlements in a particular location, the greater the need for transportation would be, especially in the morning time.

The more factories, companies, government buildings, public buildings (e.g hospitals, schools, etc) are in a particular location, the greater the need for transportation would be, especially in the evening time (when they'd be closing for the day's work).

HOW IT WORKS

Built with K-Nearest Neighbors, a simplistic yet very powerful tool (just like HotUsers) used in most of the recommender systems in usage all over the globe currently (e.g. Netflix, Amazon, Kindle, etc), HotUsers recommends selected rush areas to champions within a 10-mile radius, allowing riders to reach these locations in five minutes or less.

HotUsers would be integrated into the Max.ng app for Champions.

DATASETS

Our datasets are geospatial datasets, gotten from the $GRID^3$ Nigeria official website. The Geo-Referenced Infrastructure and Demographic Data for Development ($GRID^3$) programme is an arm of a bigger global initiative which aims to improve access to quality data for decision

making in all participating countries.

PROBLEMS FACED

1. Time constraint. Exams are currently ongoing in our school.
2. Learning to work with geospatial data within the very short time frame.

HOW IT CAN BE IMPROVED FURTHER.

We implemented HotUsers using Content-based filtering. That is, we aggregated together the attributes (Geometric figures and numbers of settlement points, schools, factories, etc) of all viable locations in Lagos to build a recommendation.

We wish to make this a Hybrid Recommendation system, by combining the Content-based filtering with Collaborative-based recommendations (which will be based on users' data that are in custody of the company).

A Hybrid Recommendation System will be more effective than either of the two would be, individually.

SUMMARY

We solidly assured all parties concerned that HotUsers will give Max.ng a boost and also help in increasing customers' happiness and satisfaction through prompt and swift responses.

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