Introducing of ED.BIKE business

1. Introduction

1.1 Background

For the purpose of Coursera Capstone , the assignment assumes ED.Bike as hypothetical start-up company. The company recently engineered a fine powerful paper in small thickness as much as possible. When covering a metal, the paper allows to capture solar, transform it into energy power. The company intends to use its innovation as electrical charger for bicycle. Having that special paper covering the body of a bike, it is enough to have it get charged by itself overtime. Though the cost of power to recharge the bike is insignificant, the manpower to collect the bikes and recharge them on a daily basis present a heavy expense for bikeshare companies. Therefore, the company believe that it is a game-changer in biking-share business. The innovation presents a comparative advantage by avoiding regular labor cost.

ED.Bike is lucky to be given patent and it will enjoy the monopoly of that technology for seven years going forward. Therefore, it does want to introduce its product as shared electric digital bicycle, move first, expand as soon as possible. By shared and digital mean that a platform will be made available, the service accessible by subscribers. subscribers will download a mobile application, be given an account and credential for regular self-service. The bicycle business system is kind of same as some established companies like Uber and Lyft do. The only difference will be in terms cost structure given that other companies deal with heavy daily cost.

1.2 problem statement

ED.Bike has got business but not able make it run yet. It can show case that the product is technologically working perfectly, it is momentarily protected against copyright. However, it does not have enough initial money to put the product on the market and have it used by customer to generate revenue. With few cash on account, the company think about running a trial of the business model in mind in few cities in order to attract potential investors with good offers. Our team of consultants is hired to make sense of how to locate good spots in Toronto city where they can expose few numbers of bikes, have them used and make some revenue; just to demonstrate that the business is attractive.

1.3 interest in study

The study is being conducted on behalf of ED.Bike.

1.4 Data and consulting contract

ED.Bike does not want to pay for broader study on different venues in Toronto. It does assume that some businesses' concentration in area, such as coffee shops, bar … correlate with the rate of human traffic in town. Therefore, it suggested that we identify neighborhoods with most populated by coffee shops. Therefore, our team is given a simple task; just to identify the neighborhoods with more concentration of coffee shops in Toronto.

Our team thinks sourcing data from 3 location points: Wikipedia, Geospatial_data and Foursquare. We scraped from Wikipedia (https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M) a dataset of detailed post code and neighborhoods. We also extracted data regarding Toronto from Geospatial dataset (http://cocl.us/Geospatial_data) obtained in CSV file containing information about postcode and latitude and longitude. The two datasets (one from Wikipedia and other from geospatial) are more useful when merged in one dataset. Both have postcodes and therefore a list of neighborhoods and its relative geocoordinates can form a useful dataset for this study.

Foursquare with its ability to provide details about venues will be used to have idea about the distribution of coffee shop in Toronto neighborhoods. That to say identifying how many coffee shops exist in each neighborhoods of Toronto area. We will also have latitude and longitude for each neighborhood and also for each coffee shop available. The information we have will sufficient to present the result of the study in choropleth map and in table. If we are successful to enumerate the neighborhoods and their shares of coffee shop in Toronto, our assignment from ED.Bike, will be looking complete and amazing.

2 Methodology and tools

It comes to take into consideration that our data are from different sources and probably are in different formats. Also, take into consideration the size of our datasets, whether the problem is simple to be answered by simple explanatory or complex such that advanced analysis is needed. Therefore, thought about the methodology, analytical tools used to analyze data in response to the problem is fundamental to this work.

2.1 Methodology and tools

The insight that our client requested is simple. It is just to identify the areas most populated by coffee shops. The exploratory approach is enough to answer questions regarding the problem of the study. We further do explanatory to give idea the client to understand the strength of their assumption and other option their have for each neighborhood.

The data was processed in Jupiter notebook and python different libraries were called to be able to handle different tasks. For example, we had Html and Json files, we called urllib.request, beautifulSoup, pandas …to be able to extract and clean data. We did read, drop, and merge data to have useful dataset we needed.

3 Data analysis and result.

One hundred and three neighborhoods were identified as area constituting the town of Toronto. Only 85 neighborhoods had at least one coffee shop in location and 27 neighborhoods had more than five coffee shops. The targeted neighborhoods and the number of coffee shops present in there are shown in table below:

Number of neighborhoods	7	6	3	6	1	2	1	1
number of coffee shops in neighborhoods	6	7	8	9	10	12	13	15

As the company suggested, the bicycles will be distributed in 27 neighborhoods considered most populated proportionally to the number of coffee shop in place.

4 Conclusion

The study was conducted following the instruction from the client. The task was to select the neighborhoods most populated by coffee shops. The company assume that the result will help in being used in efficiently in allocating their bicycles testing their business mode l. In additional to the mission given, we inform the client that based on details from FourSquare, there are other criteria kind of coffee

shops such as shopping mall, Pizza place … in total there are 335. The five most found in each neighborhood are highlighted in annex es.