

The Battle of the Neighborhoods - Week 1

Introduction & Business Problem :

Problem Background:

A financial XYZ company, headquartered in Paris, France wants to open a branch office in any of the major financial hub of the world to further its business activities. For setting up the branch office, three major cities are initially selected 1) New York city in USA, 2) Toronto in Canada and 3) London in United Kingdom. Out of these 3 major cities, one city is to be selected for setting up the branch office.

The City of New York, is the most populous city in the United States. It is diverse and is the financial capital of USA. It is multicultural. It provides lot of business opportunities and business friendly environment. It has attracted many different players into the market. It is a global hub of business and commerce. The city is a major center for banking and finance, retailing, world trade, transportation, tourism, real estate, new media, traditional media, advertising, legal services, accountancy, insurance, theater, fashion, and the arts in the United States.

On the other hand, Toronto city in Canada and London city in United Kingdom are the financial capitals of their respective countries. Both these cities have excellent infrastructure, a very good and modern transport connectivity, a well developed modern facilities and all the required amenities to sustain any kind of business activities.

This means that the market is highly competitive. As it is highly developed city so cost of doing business is also one of the highest. Thus, any new business venture or expansion needs to be analyzed carefully. The insights derived from analysis will give good understanding of the business environment which help in strategically targeting the market. This will help in reduction of risk. And the Return on Investment will be good.

Problem Description:

A financial company XYZ, headquartered in Paris, France, is looking to open its first branch office in one of the major cities of the world to further its business interests and also to lower its cost by leveraging maximum with the location and its facilities.

XYZ financial company is in financial consultancy business where it advises its clients, spread across the world, about financial matters, cash flow management and cost reductions. By extending its branch office, it would not only be able to serve its clients better but will be able to hire local resident for its businesses and also reach out to new businesses.

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So to setup a new branch office, the company is looking for an advice to setup its first branch office outside Paris, France. In order to setup the branch office, it wants to find out that

1. Whether the city has required amenities to setup office facilities.
2. Whether the city has good infrastructure to hold businesses and to increase it.
3. Whether the city is too congested or has enough free spaces.
4. Whether the business will thrive in the city.

And like this many other questions which would be necessary to The list can go on...

Even though well funded XYZ Company Ltd. need to choose the correct location to start its first venture. If this is successful they can replicate the same in other locations. First move is very important, thereby choice of location is very important.

Target Audience:

To recommend the correct location, XYZ Company Ltd has appointed me to lead of the Data Science team. The objective is to locate and recommend to the management which city will be best choice to start its first branch office. The Management also expects to understand the rationale of the recommendations made.

This would interest anyone who wants to open a new office in any major city of the world. Although the report mainly evaluates three major cities New York city, Toronto and London.

Success Criteria:

The success criteria of the project will be a good recommendation of the city of choice to XYZ Company Ltd based on proper understanding and justification so that their business becomes easy and sees growth.

The data used is given in the next page of this report.

Data Acquisition and Preparation:

Data 1:

Toronto

Toronto city data is used. Its location of the downtown area is used. The foursquare API is used to fetch the location data of Toronto downtown and then the same API is used to fetch the nearby venues of the Toronto downtown.

Data 2:

New York City

The second data that is used for the analysis is about New York city. Its location of the downtown area is used. Again foursquare API is used to fetch the location data of New York city downtown and then the same API is used to fetch the nearby venues of the New York city downtown.

Data 3:

London City, United Kingdom

The third data that is used for the analysis is about London city which is the financial capital of United Kingdom. Again its location of the downtown area is used. The foursquare API is used to fetch its location data of latitude and longitude and then the same API is used to fetch the nearby venues of the London city downtown.

Data Acquisition:

To acquire data on venues and their categories, Foursquare API is used. Foursquare is one of the world largest sources of location and venue data. To retrieve the venues and their categories in a given neighborhood, the coordinates—the latitude and the longitude—of the neighborhood are sent in the API request. The API-request URL looks like the following:

```
https://api.foursquare.com/v2/venues/search?
&client_id=1234&client_secret=1234&v=20180605&ll=40.89470517661,-
73.84720052054902&radius=500&limit=100
```

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where search indicates the API endpoint used, client_id and client_secret are credentials used to access the API service and are obtained when registering a Foursquare developer account, v indicates the API version to use, ll indicates the latitude and longitude of the desired location, radius is the maximum distance in meters between the specified location and the retrieved venues, and limit is used to limit the number of returned results if necessary.

The result of this data-acquisition-and-preparation stage is a table (dataframes) that specify the venues of each of the major cities. Below is a part of the Toronto venues table, which is extracted using the foursquare API.

	name	categories	lat	lng	distance
0	Downtown Toronto	Neighborhood	43.653232	-79.385296	113
1	Nathan Phillips Square	Plaza	43.65227	-79.383516	138
2	Indigo	Bookstore	43.653515	-79.380696	260
3	Chatime ????	Bubble Tea Shop	43.655542	-79.384684	237
4	Textile Museum of Canada	Art Museum	43.654396	-79.3865	230
5	LUSH	Cosmetics Shop	43.653557	-79.3804	284
6	UNIQLO ????	Clothing Store	43.65591	-79.380641	378
7	CF Toronto Eaton Centre	Shopping Mall	43.65454	-79.380677	287
8	Ed Mirvish Theatre	Theater	43.655102	-79.379768	380
9	Four Seasons Centre for the Performing Arts	Concert Hall	43.650592	-79.385806	355
10	Japango	Sushi Restaurant	43.655268	-79.385165	222
11	Elgin And Winter Garden Theatres	Theater	43.653394	-79.378507	437

Once this data is acquired, then the data in this dataframe is further modified, aggregated and grouped to find out the required answers for the business case.

The attached project report explains all the results and the conclusions.