Introduction / Business Problem

Quite recently I have been conducting some Real Estate research in order to buy myself an apartment as official Government-controlled interest rate in Brazil (SELIC) is reaching its historical lowest point (2,0% on a monthly basis) and financial investments are losing their attractiveness after decades of good returns. A frequent answer to this “bear-like” scenario lies on the Real Estate market. Some people buy just for diversification purposes and some buy for future renting purposes.

For some months I have been visiting showrooms and talking a lot to Residential Real Estate Professionals in order to understand their mindset when trying to sell and see how they could help me finding a decent offer.

Because of the new generation of young professionals´ aspirations, these salespeople had to relearn their trade and had to become more sophisticated even for words selection. But it is quite clear they lack methods and systems to leverage their daily work.

After spending all this time observing and taking mental notes, I could visualize some patterns emerging from these conversations. On the side of demand, there were prospective customers that wanted to extract very precise information not only about apartments but also about the neighborhood where the future building would be erected.

Young professionals, usually newly graduated, singles, averse to car driving and addicted to technology and exotic cuisines asked about subway stations, fitness gym and laundry services.

On the other hand, car-loving married people with children and years of professional life under their belts asked about supermarkets, drugstores, schools and the like.

It seems that different people in different moments of their lives want different places to live with very specific surroundings, albeit sometimes they asked for common services but valuated them differently like Coworking spaces.

For all these questions, Real Estate salespeople had average answers for most of the time, because, in order to make their living, they are frequently allocated to several sites and regardless of their efforts, they fail to catch up what is around when they set foot for the first time on a new showroom.

São Paulo is a big city. With 15 million inhabitants it is “most populated brazilian city”.Some city boroughs have excellent reputation when it comes to Real Estate and, apart from possessing the financial power to live in any of these boroughs, most people visit showrooms there. Satellite cities of the metropolitan area display a total population of 6 million and most of them waste 3 hours on a daily basis commuting from home to work and back home. Their dream? Easy…they want to move to São Paulo.

In a nutshell, it is a big market and opportunities could be better seized if a model could translate to real estate salesforce what prospective buyers care at most (and vice-versa), so that they could calibrate their recommendations using what they have to offer and where accordingly.

Therefore, the Model will use geographical data of boroughs from the City of São Paulo to provide lists of venues, services, facilities and utilities to which prospective customers give values as percentage or absolute numbers.

For instance: as noted above, an young professional might value a subway station as the most important venue around (7 in a scale from 1 to 10) whereas a more seasoned professional would give it a 3 as a car is more than a vehicle but also a symbol of social status.

The Model will work with venues, services, facilities and utilities and the values given to them by different types of prospective buyers to build a mathematical “Attractiveness Index” to each borough and recommend the best borough for every type of buyer. Hopefully it can also help real estate professionals “to better read” their customers´ aspirations and provide a more accurate suggestion.

Data:

Two datasets will be enough to build the model foundations:

- Data from FourSquare for all boroughs selected for the study. I will need type of venue (restaurant or gym or medical center or whatever comes from it) and its correspondent geographical coordinates.
- Data from customers´ valuation for all these venue types according to their needs or to their social aspirations or simply to their present moment of life.

The second batch of data was obtained from informal interviews with both buyers (myself included) and sellers. The underlying idea was to cast a batch of grades to all venue types with the total sum being 1 (or 100%).

The multiplication of the venue occurrence frequency for each borough by the value cast by different type of buyers will build the “Attractiveness Index” of that borough to that type of buyer. After all computations are performed both sides (demand and supply) can use the model to leverage their positions.

A very simple example to help illustrate the model:

Burough A:

- supermarkets = 4
- young buyer value to supermarkets = 0,2
- seasoned professional value to supermarkets = 0,8
- “Attractiveness Index” are 0,8 and 3,2 respectively and a seller should not recommend this borough for young buyers.

Burough B:

- fitness centers = 6
- young buyer value to fitness centers = 0,7
- seasoned professional value to fitness centers = 0,3
- “Attractiveness Index” are 4,2 and 1,8 respectively and a seller should not recommend this borough for seasoned professionals.