Business Model Optimization Using Location Based Data with Foursquare

Bachelorarbeit

zur Erlangung des akademischen Grades "Bachelor of Science (B.Sc.)" im Studien-

gang Wirtschaftswissenschaften der Wirtschaftswissenschaftlichen

Fakultät der Leibniz Universität Hannover

vorgelegt von

Name: Richter   Vorname: Christopher

██████████████████████   ████████████

Prüfer: Prof. Dr. Michael H. Breitner

Ort, den: Hannover, 22. April. 2014

Table of content

1. Introduction

"Choosing a business location is perhaps the most important decision a small business owner or startup will make, so it requires precise planning and research."[1]
(Administrator)

1.1 Motivation and Relevance

Mobile devices have taken over the daily life. Social networks like Facebook have become a big part of social interactions. These changes in the last decade led to the situation that it is hard to find someone who is not permanently online.

However, these changes in the social and technological attitude were followed by new problems. Users have become traceable. Many became aware of these intrusions into privacy with the revelations of the national security agency and the espionage of confidential information. The transparent citizen has become reality.

With this background, it is only a matter of time until enterprises will start to take advantage of this data. Many users forget that they already gave this data to certain enterprises without further reflection of their behavior and doing.

Social networks and mobile applications are utilizing the data they are allowed to collect to provide the user with information about his location. This is called location based services. This functionality can help the user but it also shows the enterprises that the user will give them strategically usable data with a minor effort. Also, mainly in combination with the usage in social networks, the location data is connectable with pictures, comments of the user and a time profile.

With this, in addition often openly accessible data profiles which exist, due to the functionality of the privacy adjustment in social networks, not only the operator of the network can get these data, but also third party enterprises.

---

[1] (Administrator)

The possible usage for business process optimization with the help of this openly accessible information should be analyzed in this thesis.

1.2 Objective

The goal of this paper is to show how location based data is gained by using the GPS Technology and the social Networks "Facebook" and "Foursquare" and one possible way of using this data to archive an improvement in the business model regarding the factor location.

This factor can be seen in many different ways. The target of this thesis is to archive data regarding only the location of possible places for business models with a direct costumer support and not those models that relate to the costumer as a part of a logistic event, in form of a transportation problem.

The approach of interaction with the costumer in the classic logistic problem is to find the place that is the geographical best point to build a plant, factory or others. The optimization model can be used, if a transportation to the costumer is needed and wanted. In those models, the important data is the destination of the transportation.

Destination → Optimizing logistical distance → Costumer
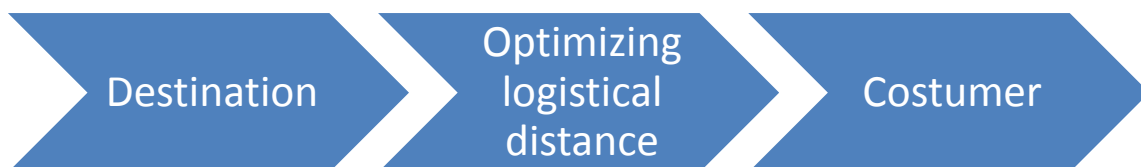
Figure 1: classical logistic problem[2]

The used models cannot help solving those problems. The used data base is not the point of destination, but a place that is part of the movement of the costumer to attract a visit of the business location.

---

[2] Own demonstration

Figure 2: Concept of the paper[3]

1.3 Structure and Methodical Approach

The first part will be used to show the general ideas and used techniques. These techniques will be the determination of positions of mobile devices with the "Global Positioning System"(GPS) and the use of this data in social networks, with the focus on "Foursquare" and "Facebook". Especially the social network Foursquare will be shown as a possible information platform due to the focus of this platform on location based data.

In addition, a mathematical model, which can be used to approximate a movement profile for single users and for groups of users, will be introduced.

Adjacent to this theoretical part is a survey with the objective to examine the usage behavior of private users in social networks. The focus will be the voluntary disclosure of location based information to openly accessible platforms like "Facebook" and "Foursquare". In addition, the acceptance of the social network Foursquare is to be tested.

The final part of this paper will be a SWOT Analysis about the possible usage of movement profiles for business model optimization and a recommendation for further research on this topic.

---

[3] Own demonstration

7. Conclusion and Outlook

This last part will be used to find a general conclusion regarding the possible usage of location based data and possible further research topics.

7.1 Conclusion

Social networks have brought new possibiltys and new informations about possible costumers. At no moment in history such a huge amount of data was available. The possible usage options are yet to define.

With the help of mobile end devices like smartphones or tablets, direct location data of users are uploaded in social networks. This data can be used to find significant places. With the help of this significant places, areas of interest for target groups can be assigned. But a real movement profile is not predictable with the current state of data creation. It is, however, possible to use the available data and get advantages for business decisions. This decisions can create a surplus for enterprises or start ups. A possible way of usage is shown as well as an general approach of data usage.

The approach as shown is not the only possible way, but is a way of data usage that can locate a possible area with the help of existing data. If used to create possible advantages, it has the potential to create a surplus as long as no competeting company is using the free available data aswell.

7.2 Outlook

With the help of the new accessible data that can be obtained from social networks, a wide array of possible research topics is open. Due to the lack of data analysis regarding the possibilty of movement profile creation with the help of social networks, this could be a very interesting topic.

Foursquare has only a small costumer base in Germany. The flaws in the marketing could be analyzed to understand why the network has no such impact as Facebook, Twitter or else. A higher amount of network users could help create more data that could possibly usable to create movement profiles due to the connections between significant places that are already within the social network. The existing data could aswell used in an analyzis regarding further possible usage for enterprises.

The incentive systems used by Foursquare are quite new. Those systems could be analyzed regarding the impact of gamification on user behavior and possible ways of usage for other models.

But the most interesting fiel of research could build the analyzis of the systems that are used in within the mobile end devices of Apple[55] or Android[56]. Both can learn the movements of the user and predict the point of leaving a significant place. The data that is collected within the mobile end devices can be used to get notification for situations that are usual for the user like leaving work and going home. These data is able to predict the every usual movement of a person and can help to predict to significant differences, it can be used to evaluate new significant places and also can be used to see unusual behavior of the user. A general study about the usage possibilty within these systems would be foundamental and could create an impact.

---

[55] Siri

[56] GoogleNow