Microsoft Spot Market 2 | 28/10/16

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Introduction

After we had a number of meetings among ourselves as well as with the client, we had shifted our focus to the next steps to be taken in the next two weeks. The objective of the project was already clear to us in terms of what the client wants us to achieve in the final stage of the process. Some issues arose due to the unavailability of the clients.

Progress

Team roles are clear as stated in the first bi-weekly report despite there had been some minor shifts between roles. Research has been started in order for us to gain a better understanding of the project and we store all documents in the shared google drive for every team member. Moreover, the project's website had been created and uploaded as part of the requirements to keep both the client and Department of Computer Science updated on the progress we are making in every stage.

Project's requirements had also been established in the second meeting with the clients. According to them, the guiding system would not have to directly take a user to an item of interest, instead it should segment a store into zones informing the user which zones he/she as well as the item are accordingly via a use of beacons. Also, we would have to create a platform (potentially a web application) where shopkeepers can input details (e.g. floor plans) of their corresponding stores into a database.

<u>Research</u>

The project is mostly associated with indoor positioning which all team members had little knowledge of. It was necessary for everyone to conduct their own research in order to come up with the best possible method. There was a wide range of technologies available for us to pick from, including bluetooth beacons, wifi beacons (routers), available wifi connection and even phone's sensors (accelerometers, gyroscopes and digital compasses). Each of them has its own upsides and downsides, but beacons seemed to be the best one as the system beacons are based on is relatively simple. However, the disadvantage is that beacons are infrastructure-based, so they require a deployment of additional dedicated equipments. After discussing all of these with the client, we decided that bluetooth beacons is the best approach, as bluetooth connection is more reliable than wifi. Another key reason of the choice is the simplicity of using and deploying bluetooth beacons over wifi based technology. Moreover, they are also cheaper and they cost less to maintain than the wifi routers.

Meetings held

Meeting #5 - 14/10/16

Attendants: Cosmin-Nicolae Bresug, Tudor Nica, Phoom (Thomas) Yenbamroong

We kicked off the second bi-week by discussing about the approach to be used. We discovered that a wide range of potentially useful and related technologies was available in the market. Provided that we have very little or no experience with regard to the subject (indoor positioning) at all, a large amount of research was needed in order to finely select the most appropriate tool for the project. The conclusion was that we all separately study about available technologies and discuss what we found in the next meeting.

Meeting #6 - 18/10/16

Attendants: Cosmin-Nicolae Bresug, Tudor Nica, Phoom (Thomas) Yenbamroong

In this meeting we discussed and combined the results of our research. We all found various research material about indoor positioning, so we had to check each one and see if it is feasible or not. For example, some proved more costly than others, which did not meet the client requirements. At the end, we compiled a list of the best indoor positioning methods out there which we plan to the discuss with the client on the 31st of October.

Meeting #7 - 25/10/16

Attendants: Cosmin-Nicolae Bresug, Tudor Nica, Phoom (Thomas) Yenbamroong

The main focus of today's meeting was to finish off the website we had been working. Many main features were up and running prior to the meeting, only minor modifications needed to be implemented and it was what the meeting was about. We got together to brainstorm changes to be made with the interface for example re-arranging components to make the site more user-friendly and adding some extra contents like bi-weekly reports for the client to look at.

Meeting #8 - 31/10/16 (with the clients)

Attendants: Cosmin-Nicolae Bresug, Tudor Nica, Phoom (Thomas) Yenbamroong

We came up with some questions to ask the client prior to the meeting. A wide range of technologies with lots of different benefits and limitations were available to us leading to a difficulty in making a decision. After discussing with the clients, we reached the conclusion that the best we was to use beacons due to many good reasons like the convenience in employing them for shopkeepers as well as the fact that items are frequently moved around within stores (so by using beacons it would not be as complex to update the data). Also, requirements and project deliverables were established in the session.

Evaluation

Our overall performance of the period is considered appropriately good. We managed to cover many grounds and complete numerous tasks including establishing requirements for the project, launching our project's website and doing research on tools we expected to be using in the coming weeks.

In the next two weeks

In the following weeks, we will start focusing on designing concepts for the app while keeping the clients updated through our plan to constantly upload new information on to the project's website.

Individual contributions

Cosmin Nicolae Bresug

The past 2 weeks I have started working on the website, creating a design for it and dividing it in categories. Moreover, I have researched indoor positioning technologies and found one called AnyPlace which I have brought up in the second meeting. However, my main work was setting up the project website on which the client and Department of Computer Science can check our progress. In the future, I will keep this website updated as we acquire more information and we get closer to making a proof of concept.

<u>Tudor Nica</u>

During the previous 2 weeks, my main responsability was to carry out research on various companies that are currently providing indoor positioning services and the technologies they used. I found out about various approaches (described in the **Research** section) and discussed about them with the client. I have also started making sketches of a tool gathering data required by the system (e.g. floor zone map, in which zone each of the store's item is etc.) that would be provided by the retailer.

Phoom (Thomas) Yenbamroong

Most tasks I did during the period were non-technical. I was responsible for setting up meetings and ensuring that everything was running as smoothly as possible. I came up with plans for each meeting beforehand, in that way I thought we would make the most out of them. Also, researching on potential technologies had given me a better understanding of the big picture of the project. Another responsibility of mine is that I write up most of each bi-week's report including this time round.