Evaluation

1)Executive Summary

The goal of this evaluation was to measure the usability of the created application in order to increase the involvement in our city through the use of technology. In addition, we wanted to collect information about how successfully the application proceeded from points of view of visitors from outside the city, people who live in the city, people who manage the city or its services. This assessment involved these user groups in the evaluation activities and in the development of evaluation materials to be used in the classes.

In order to evaluate the users' opinion about the application, we measured it by a questionnaire given after the implementation. The questionnaire included questions to navigate the user through the application, small tasks to make the users interact in detail with the system and questions for their point of view.

The evaluation team made critical contributions to the evaluation process, both in terms of their insights into the effectiveness of program activities and the assistance they provided the us – the evaluators, in carrying out the evaluation.

2)Evaluation Goals

The primary goal of this evaluation was to measure how easy is to use the application and is to going to be interesting for the end users - the summative evaluation. A secondary goal was to collect information about how successfully the application proceeded from the user groups. This assessment was done by sending the survey to people that are involved with our city – Glasgow, and after that we did some data analysis which allowed us to grade our application.

3)Methods and Techniques

The evaluation that we did was a summative evaluation – which took place after the completion of the project to appraise its success. We used this type of evaluation, because it was used to identify areas of weakness – the application can be improved for future if we collect as many users' opinions as possible. As said above, the method that we used for the summative evaluation was creating and sending a questionnaire. Testing can also be include in our summative methods, since the survey includes questions about the application's features and some tasks to complete. We measured the time that each task was completed by each user during the evaluation.

The evaluation can also be seen as close interview - like a spoken questionnaire.

4)Stake Holders

We decide what to evaluate from the stakeholders. Our requirements for the projects were including the following user groups:

- Visitors from outside the city
- People who live in the city
- People who manage the city or its services

We decided to combine this groups into two new groups:

- Expert users - smartphone application professionals
- No-expert users - users without development background

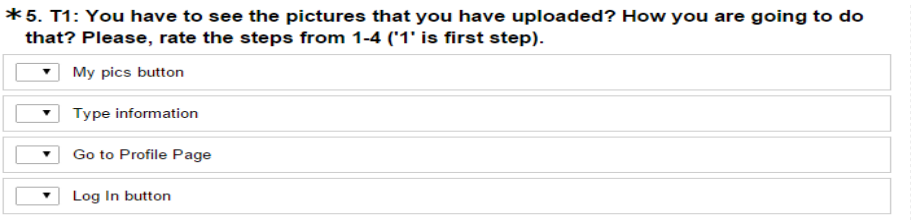
All the group members from the first group were smartphone application developers with experience of developing different smartphone platforms. Most of the group members had developed different smartphone applications on iPhone, Android and Windows Mobile platforms. The second group was chosen from people without any background of smartphone application development.

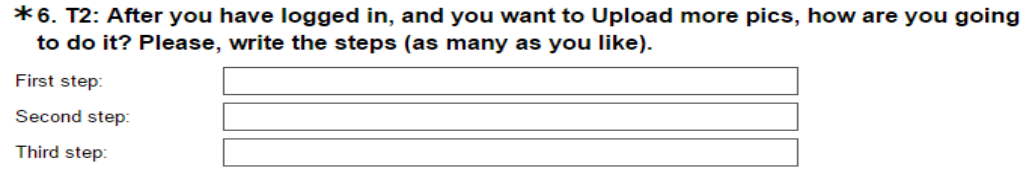
5)Instruments and Data analysis

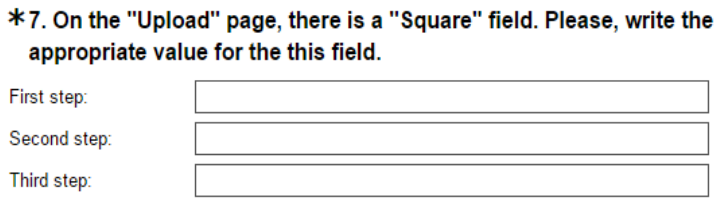
The instruments in the study were a set of questionnaire in which three tasks were defined in order to measure the level of usability in the designed prototype. By performing the tasks by users, the usability problems found in the prototype were reported. The selected tasks contained the main features of the prototype which cover all phases of SunnyGlasgow consisting logging, user profile, taking/uploading a picture and map visualization, . The data gathered for each task included:

- Time to perform each task
- Total errors made for each task

The experiment procedure consisted of three phases. Before performing the tasks, in the first phase, an introduction was given about the SunnyGlasgow application and it's features. All the participants had to answer some questions in order to look around and play with the application – these are the pre-questions. In Furthermore, all subjects were given a description of their tasks. In the second phase, participants were asked to perform the defined tasks using the prototype. We were required to write the time when they started and finished each task. Finally, in the third phase, users were asked about their opinion of the application – these were the post-questions. The defined tasks were as follows:







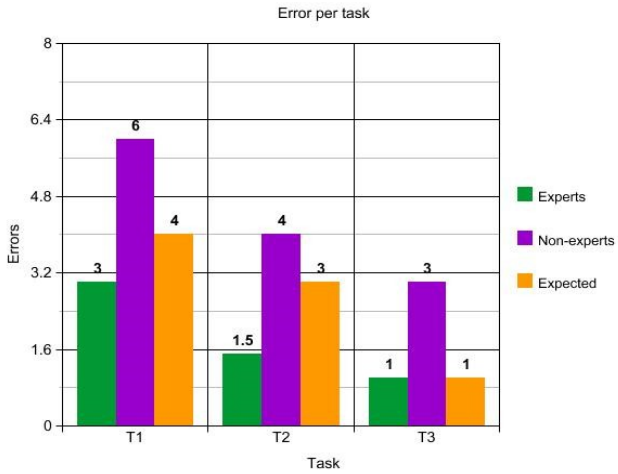


Figure:1

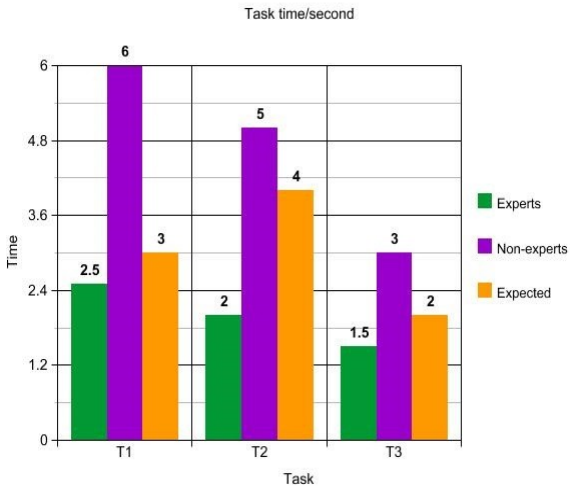


Figure:2

It can also be seen in Figure 1 that the average number of errors in performing the three tasks. It shows that none of the groups had good results in performing the mentioned task therefore the application has user-friendly design.

Figure 2 shows the average group time per task and the total average time for all users. In addition, the expected time was calculated by performing the same tasks by us – the evaluators. The expected time for each task was calculated by adding extra seconds or minutes, depending on the complexity of the task. It can be seen that the most time was spent on T1 and T2.

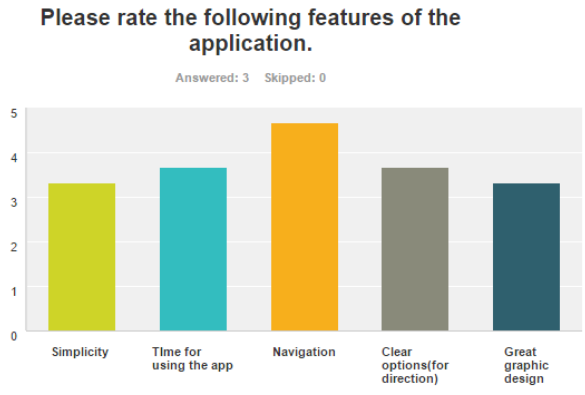


Figure:3

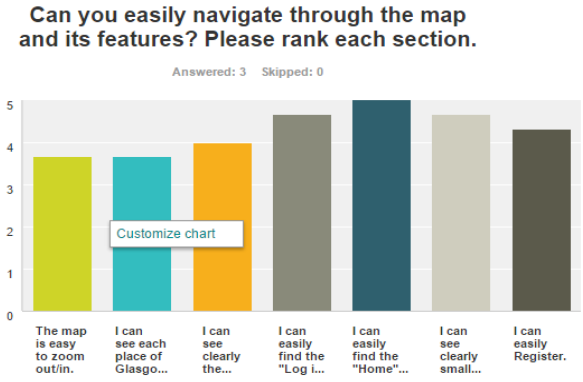


Figure:4

Figure 3 and Figure 4 show two of the post-questions of the questionnaire. The y-axis for both of them is a ranking from 0 to 5. A we can see the charts show that all of the users has ranked the features of the application above the 2.5 (which is the average from the ranking). The system is well designed, yet, it could be improved even more.

While completing the post-questions, the users discussed the application with the evaluators. Users' answers and analysis of the collected data during the experiment helped us to develop a set of usability suggestions in order to improve the prototype usability. The list of the considered suggestions is given bellow:

- It's a useful feature to add filed for comments;
- Search area would be a valuable feature, especially in the future when there would even more data (images of Glasgow).
- “Like” or “Favourite” buttons would be a fun and interesting options for the end user.

Conclusions and future work

Rapid progress of mobile phone technologies has formed a new generation of mobile devices - smartphones. As the popularity of such phones is growing, it has turned to be of a critical importance for developers to select a proper quality model for smartphone applications.

The application is well implemented and according from the data that we collected from the users, the system is user-friendly and it's a great idea for interaction. We believe that there still is some space for improvement which can be done as future work.