Brunel University London

[CS2003 Usability Engineering]

The academic year 2018-2019

Task 1 – Group Report

Problem 6 – inter-vehicle messaging system

CEDPS

Department of Computer Science

Group 38

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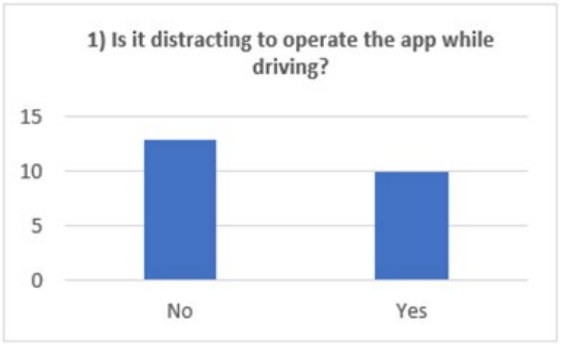
1 - User Requirements Details and Data

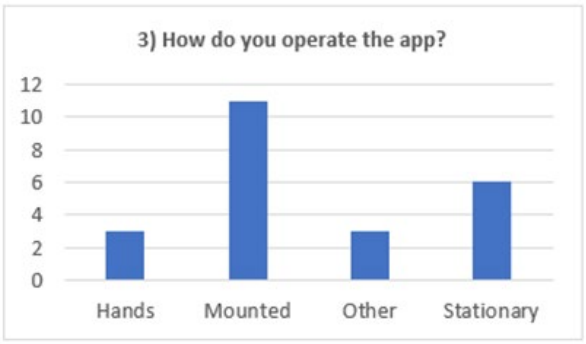
Our main form of data collection was sending out a questionnaire to various students at Brunel, doing this meant that we did not need to have additional ethical approval since Dr. Perry organised this research. One of the main ways in which we got people to give feedback was by posting the questionnaires on group chats and asking them to complete it, this proved to be successful, in total we got 20 responses in total, whilst this wasn't as many as we had originally planned for, it still gives us enough feedback and shows us where the ideas need to be improved.

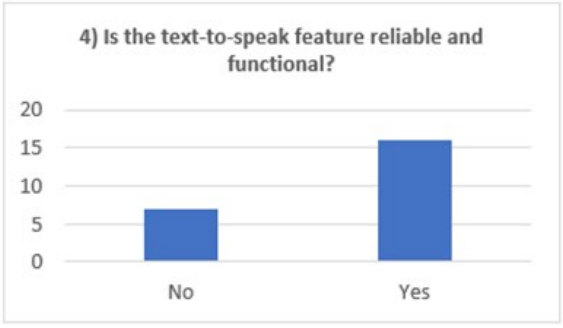
We used Google forms to present the questions and collect data because Google forms allowed us to quickly send out questionnaires and make small changes to the questions asked if need be.

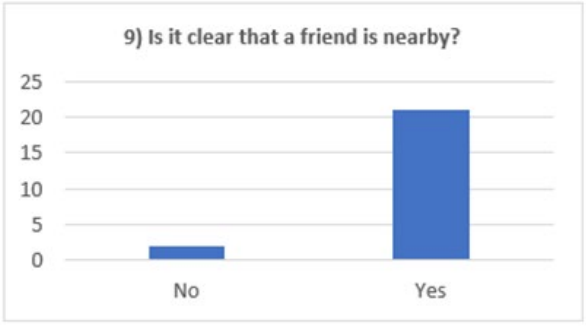
Link to questionnaire :
https://docs.google.com/forms/d/e/1FAIpQLScK0J35xXwj3ozILpyPjjlcEfPa20Qn2qt9us196yslz_gczw/formResponse

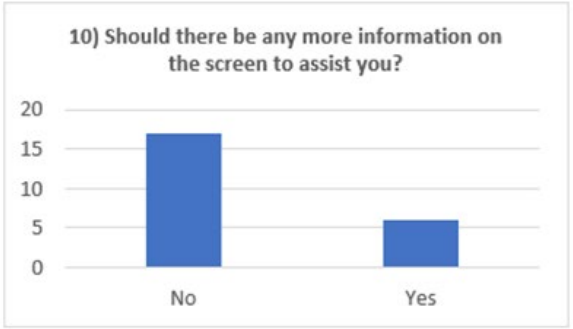
In order to come up with the appropriate questions for our participants we discussed as a group several questions we would want them to answer and narrowed down our suggestions to which questions would be most relevant to the development of our system and more importantly designing a usable system. We came up with 12 questions to ask our **20 participants (All aged between 19 -25 years old, 17 of which were male and 7 who were female**), the results of the 6 main questions (i.e. other 6 questions were based around their experience with driving, e.g. Do you have a valid UK driving license?) are displayed as bar charts below:

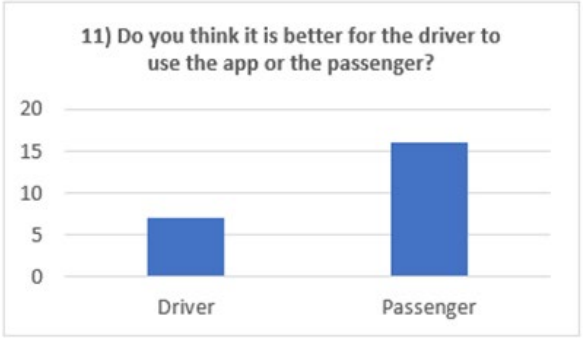












2 - Prototype design and description of interaction

https://marvelapp.com/b3adch0/screen/54289831

Clicking the link above will take you to our interactive prototype, this prototype highlights the apps functionality, it also contains a couple of comments describing how everything functions.

Useful key binds

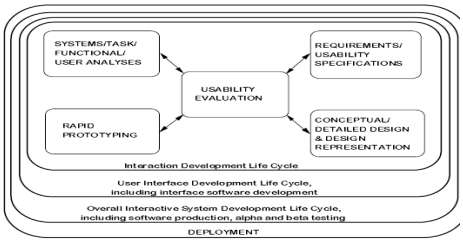
G will bring up every screen so you can go through them manually

H will bring you back to the first screen

https://userflows.marvelapp.com/b3adch0?utm_campaign=prototype-player&utm_source=other&utm_medium=web-app&utm_term=player&utm_content=userflows (a link to a use flow so you can see how each screen is linked together)

3 - Usability Evaluation Details and Data

We took the systems problems and evaluated the key points, as we choose the Star Life Cycle (or LUCID model). We chose the star model because it provides the basic activities that are required to complete this project, those are; analysis of requirements, design, implementation and evaluation. Evaluation is a key point of this method. This lifecycle is based on the principle that after every stage, a process of evaluation is necessary to assure that the section has been done properly.



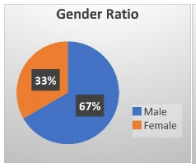
(Helms, 2015)

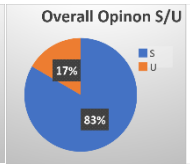
We found that 4 key points should be evaluated in particular:

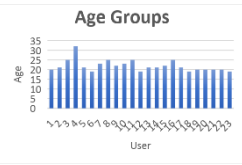
1. **Observational Study:** seeing how the user interacts with the system and how visible it is to use it in different lighting intensities.
2. **System`s Performance:** How fast is the response of the system, how quickly can the user send and receive messages from another application.
3. **Rememberability:** Is the system easy to use? Will the user remember how to use it easily so that it can be a quick interaction with the system?
4. **External factors:** Is the application backing up the messages in case the battery of the phone runs out, the connection has been interrupted, other factors that the system may experience.

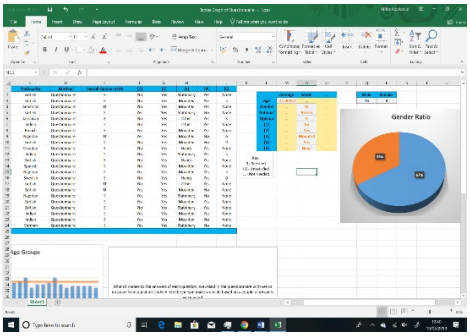
We asked 24 individuals on campus to participate in our questionnaire. We created multiple charts from the data we collected to represent it in an informative manner, meaning that the data is clearly visible and that it reflects the methodology that we have chosen. Evaluating during the process ensured that each stage kept reflecting to the centre of the 'Star' methodology (which is evaluation) so that any redundant data could have easily been spotted and removed, making our data more accurate towards the given scenario.

In Excel, we created a main table that consisted of all the data we collected from the individuals around campus. The table contained the answers from the questionnaire, age, gender, background, overall opinion of the app and method of gathering the information. With this information implemented in Excel, we used multiple functions to find the mode and the average from the data we collected. This gave us a better understanding of our target audience.









we recruited evaluators by giving the participant the PI (Participant Information Application) followed by the questionnaire which was used to give us a brief background (do they have a license? driving convictions? etc) of the user and to see what they think of the app's functionality. With this information in hand, we then proceeded to use Excel to store our data in one main table and evaluate further to see if every data included is valuable and relevant in the most professional way.

The questionnaire was created to gather relevant data about how the individual felt about the app and asking about their background. With the questionnaire, all the data was then represented on Excel to be evaluated by the group and made sure that any irrelevant data was removed and deleted from the table. As we added more data, different alternatives such as pie and bar charts were involved to make them more visible and understandable.

4 - bibliography

1. Helms, James William. “Developing and Evaluating the (LUCID/Star)*Usability Engineering Process Model.” Educational. [archived via archive.org] Virginia Tech, October 25, 2015. https://web.archive.org/web/20151025100216/https://scholar.lib.vt.edu/theses/available/etd-05102001-190814/unrestricted/jhelmsthesisnew.pdf.