Evaluation

Usability measures the quality of a user's experience when interacting with a product or system

– Ease of learning

– Efficiency of use

– Memorability

– Error frequency and severity

– Subjective satisfaction

In order to finish the evaluation better, we will improve the evaluation for our visualizations by six steps.

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| --- | --- |
| 1st step | • Determine the goals. |
| 2nd step | • Explore the questions. |
| 3rd step | • Choose the evaluation approach and methods. |
| 4th step | • Identify the practical issues. |
| 5th step | • Decide how to deal with the ethical issues. |
| 6th step | • Evaluate, analyze, interpret and present the data. |

1 Determine the goals.

In this part, we need to set high-level goals for the evaluation.

− Ensure the final interface is still consistent.

− Investigate how tool improve or affect our visualization results.

− Improve the usability of our visualizations.

1Identify critical routes

2Identify critical airports/nodes

Summary of overall network

The goals are required by professor and audience, because goal is very important. At first, I determine the goals ,which could help us to ensure the overall direction to complete the whole evaluation.

2 Explore the questions.

The questions can also guide us to finish the evaluation better.

1a

1b

1c

2a

3 Choose the evaluation approach and methods.

Actually, we choose three types of evaluation methods to finish it.

1. Interview

Pros – It is flexible. – It generates quick results. – It costs little to conduct. – Group dynamics often bring out aspects of the topic or reveal information about the subject that may not have been anticipated by the researcher or emerged from individual interviews.

• Cons – The researcher has less control over the session than he or she does in individual interviews. – Data are often difficult to analyse. – Moderators require certain skills.

2.Questionnaire

3. Cognitive walkthroughs

4. Controlled experiment

• Empirical evaluation:

– Observational experiment

• Observation, problem identification

– Controlled Experiment

• Formal controlled scientific experiment

• Comparisons, statistical analysis

4 Identify the practical issues.

• For example, how to:

Interview part:

– Select users

Select from

– Stay on budget

– Stay on schedule

19/10 morning telephone interview

active users, summary;

19/10 afternoon phone booking 10~12 days of customers, simple chat, as far as possible to the mobile phone and detailed address: phone confirmation, call in. 11, 12, 2 days

– Find evaluators

– Select equipment

5 Decide how to deal with the ethical issues.

Develop an informed consent form

• Users have a right to: - Know the goals of the study; - Know what will happen to the findings; - Privacy of personal information; - Leave when they wish; - Be treated politely.

6 Evaluate, analyze, interpret and present the data.

We

Interview:

A user interview outline the purpose and significance

1. In order to

2. methods:

The research task 1: irrelevant users.

Sample number: 10 cases were random, 5 samples were valid, and the effect was additional.

Form: telephone interview.

Objective overview: why active? Help us find the "possible" breakthrough point.

The research task 2: Relevant airline users

Sample Number: 3 selected city, each randomly selected 10 cases, 3 cases in each city to ensure.

Form: telephone + visit.

Objective overview: why not active? The proportion of being completely fooled? Proportion of possible transformation? The activation of task

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| Name: | Shuhao | Interviewer: | Alan |
| Occupation: | Student | Time: | 19/10/2017 |
| Background: | | Irrelevant users | |
| Interview content: | | | |
| Hello. My name’s shuhao. I’m student.  Today, I attend this Interview for Group 30’s visualizations.  At first, when I read the overall visualization, the graph is very clear and informative. It involve plenty of information about flight line and delay reasons, something like that.  According to the first visualization, I can easily figure out when is the best month to go travelling actually. Each day is represented by squares and shows flight delay percentage for the day. According to the size of the dataset, the calendar represent the delay data effectively and directly.  Two map visualizations are very attracting. The heat map show the different airport sizes and different delay level. In the second map, colour scale indicates percentage delay. This interactive visualization contain the info from 1987 to 2008.SO great.  Followed by that, what I can call that? Bubble chart. Actually, I don’t see that kind of chart before. The appearance is very new. | | | |
| Suggestion: | | | |
| At last, I may give some suggestions. That is, the visualization could be tough and complex. If you could simply it, it could be better.  That’s all. | | | |

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Questionnaire:

Cognitive Walkthrough:

Controlled experiment:

In conclusion,

The approach and methods used influence how data is evaluated, interpreted and presented.

• The following need to be considered:

- Reliability: can the study be replicated?

- Validity: is it measuring what you expected?

- Biases: is the process creating biases?

- Scope: can the findings be generalized?

- Ecological validity: is the environment influencing the findings?