Nielsen J. - Usability Test

- About the Author

established the **"discount usability engineering" movement** for **fast and cheap improvements of user interfaces** and has **invented several usability methods**, including heuristic evaluation. He holds 79 United States patents, mainly on ways of **making the Internet easier to use**.

- Abstract of the the book Usability Engineering

wrote in 1993
provides the tools needed to avoid usability surprises and **improve product quality**
Step-by-step information on **which method to use at various stages** during the development lifecycle
detailed information on **how to run a usability test** and the **unique issues relating to international usability**
cost-effective methods, and when to use what
strategies to avoid the four most frequently listed reasons for delay in software projects
how to run a usability test

- usability test reading

— Problems
    - reliability - whether one gets the same results if the test were to be repeated

1. users varies significantly
2. statistics methods to make decision on which design to choose; choose number of test users
    - validity - whether the result actually reflects the usability issue one wants to test
3. wrong users; confounding effect (include other factors)

— Test Goals and Test Plan
    - Formative or summative
    - Formative Evaluation - improve detailed aspects of design; e.g.. think-aloud test
    - summative evaluation - asses overall quality of design; e.g.. measurement test
    - test plan
    - test budget: track common spending values for future use
    - pilot test: easy-to-choose test users, may not be representative; 1+ pilot

subject should be taken from the same pool as other test users >> refine the experiments/experiment procedures

— Get test users
- be representative of the end users, e.g.. sales people >> demo ability increases sales
- discount usability > average users, not outliers (few test users); choose users from several groups to cover main categories (more test users)
- internal test users: encourage managers to choose a broad sample, instead of most able staff [Jack Ma, HP random select]
- target certain type of users, involve test users from different customer locations [we setup pilot test in a branch, representative sample, target seniors]
- separate novice and expert users >> quite different results
- train users with respect to unfamiliar aspects but not relevant for the main usability test
- between subjects vs within subjects

— Choose experimenters
- experienced > inexperienced > none
- extensive knowledge, understand users, and the systems, no need to know systems in detail [HP IT manager was beside]

— Ethical aspects of tests with human subjects
- deep respect users emotions and well-being [test when I was in depression, not relaxed, disruptions]
- suggestions for before, during, after the test

— Test tasks
- business oriented
- as realistic as possible
- increase user’s confidence, give very simple tests at the very beginning

— Stages of test
1. Preparation
   - minimize users discomfort and confusion
2. Introduction
   - respect ethical aspects
   - physical set-up suit for individual test user
3. running the experiment
   - let users discover solutions
   - help when got stuck or become unhappy
4. Debriefing

- satisfaction questionnaire
- before any discussion of the system
- check test results labeled by user numbers
- write a report asap

— Performance Measurement
- whether usability goals have been met
- quantified usability measurements

— Think Aloud
- most single valuable usability engineering method
- users verbalize their thoughts >> understand how they view the computer system; direct understand which parts cause direct problems; make test records more readable; may give false impression of the cause
- what are they doing, why they are doing it
- faster, more efficient
- experimenters ask, no answer to test users' questions
- constructive interaction
- retrospective testing
- coaching method

— Usability lab
- decrease cost of time and money
- encourage more tests
- more well equipped
- videotape is essential, cameraless videotape is less appealing
- portable usability lab
- usability kiosks

Class notes:

— earlier test, cheaper because :
when the system is more complete, users are more hesitate to do the test
things change

— ratio of benefit and cost
true experimental design: 10, 12 per condition >> to show specific difference, also get core data
4, 5 covers 80% usability deficiencies >> trying to know the main problems
A/B testing

Test Observations:

- users have different devices, some have more advanced features to help them finish the tasks, need to record how did they finish the tasks or need to prevent them from using various features?
- users from same background can have various personalities, which may influence whether there are able to finish the tasks, if the tests are very new to them
- environment also varies the test results, makes me think what motivates users to attend the test, whether this motivation will influence their behavior
- normal, relaxed environment is very important
- It is inevitable for users think the test is to them them instead of the system, even if you keep telling them it’s the test about system not them