Comp 388/441 - Human-Computer Interface Design

Week 13 - 9th April 2015

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Testing and evaluating usability - 1

Initial considerations

- consider our design for a user interface
    - *may include prototype or a full product/application*
    - *how do we decide and ensure that it meets our users' needs?*
    - *how are we sure it is sufficiently usable?*

- many ways to test and evaluate the usability of a product/application's design
- before testing and evaluation itself
    - *ensure we have a clear idea of our target goals*
    - *type of information desired in our usability evaluations*

Testing and evaluating usability - 2

Selecting goals for our usability testing

- always a good idea to be sure of the data or learning goals desired from the testing
- helps us determine the best and most appropriate methods to employ
- by setting goals we are also more likely to stay focused on testing requirements...
- such goals may include
  - *find places where users become easily confused, hesitant, or unsure how to proceed*
  - *which places in your application are causing users to make the most errors*
    - any error hotspots within the application's design
  - *which places cause users to regularly consult documentation and application help*
  - *collect information, feedback, suggestions etc from your users*
    - what they think is working well, what needs improvement
  - *collect general judgements and feedback from your users on*
    - general aesthetics, usability, and value of the application and its available features
  - *collect feedback from users on similar, competing applications they may have used or tried*
    - how does your application compare to these alternative options
  - *for each given application task, determine percentage of users able to complete it successfully*
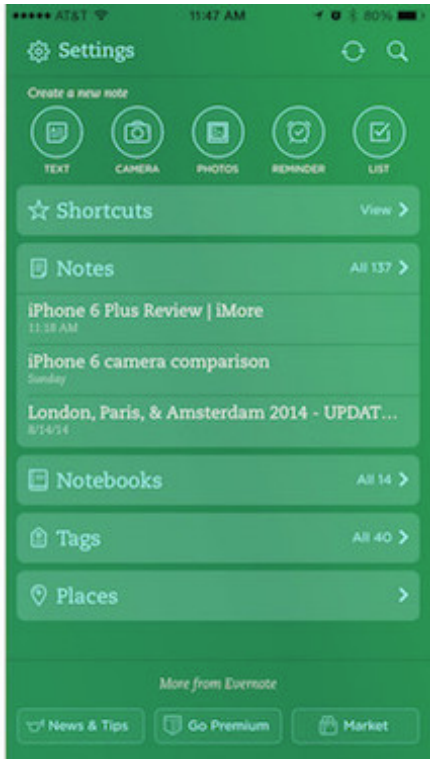
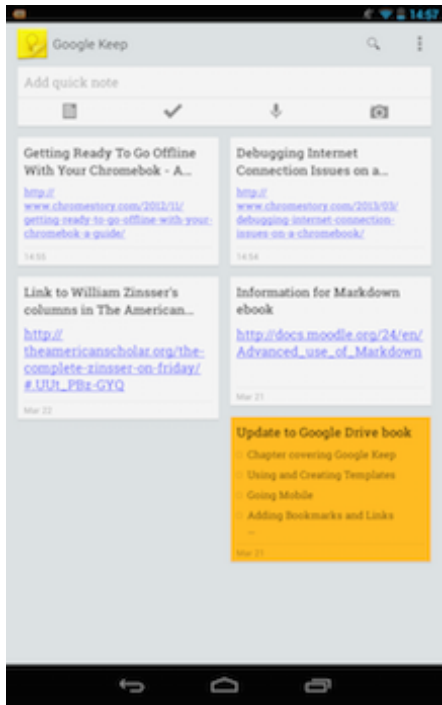# Testing and evaluating usability - comparisons

Offer users examples of different interfaces for comparison

Source - Mobile Comparison

Testing and evaluating usability - comparisons

Offer users examples of competing applications for comparison

Evernote	iOS Notes	Google Keep

Testing and evaluating usability - comparisons

Offer users examples of previous iterations for comparison

Source - Windows Comparison

Testing and evaluating usability - 3

Metrics

- usability testing enables us to collect metrics for general application usability
  - *in particular relative to prototypes and models*

- for example, this might include
  - *measure and record user error rates*
  - *average times for tasks*

- compare statistics across different iterations of designs, testing sessions
  - *determine whether application changes actually led to quantifiable improvements or not*

- Tyldesley in 1998 suggested a few considerations for testing and usability, including
  - *amount of time a user spends on errors*
  - *percentage or number of errors*
  - *number of commands used to complete a given action or task*
  - *amount of time a user spends using the help system or documentation*
  - *user frequency of help system or documentation*
  - *number of users who prefer your application to competing options*

and many more...

Evaluating our users

- need to consider options we might employ to help effective usability testing
- not all options suitable for all evaluation scenarios
  - *pick and choose most appropriate options for testing requirements*

- a few examples include
  - *user observation*
  - *cognitive walkthrough*
  - *analytics*
  - *focus groups*
  - *questionnaires and surveys*
  - *heuristic evaluation*

References

- Tyldesley, D.A. *Employing usability engineering in the development of office products.* Computer Journal, Vol. 31. No. 5, PP. 431-436. 1988.