Computing Project

(COMP08053)

Lecture 5

Usability

What is Usability?

Defined by key quality components:

Learnability: How easy it is for users to accomplish basic tasks the first time they encounter design?

Efficiency: Once users have learned the design, how quickly they perform tasks?

Memorability: When returning to design, how easy they re-establish proficiency?

What is Usability?

Defined by key quality components:

Errors: How many errors do users make, how severe are these errors, how easily can they recover from errors?

Satisfaction: How pleasant is it to use the design?

Utility: Does the design's functionality do what users' need?

Why is usability important?

If an application, game or web site etc is difficult to use

then...

...people **wont use it** and **leave**

Why is usability important?

Apple transformed the MP3 player market with the **iPod**, the mobile phone market with the **iPhone** and the tablet computer market with the **iPad** primarily due to...

...getting **design** and **usability** right

Rules of usability

To design easy-to-use interfaces, **pay attention to what users do**, not what they say, so:

Watch what people do

Do not believe what people **say they do**

Do not believe what people predict they **may do in the future**

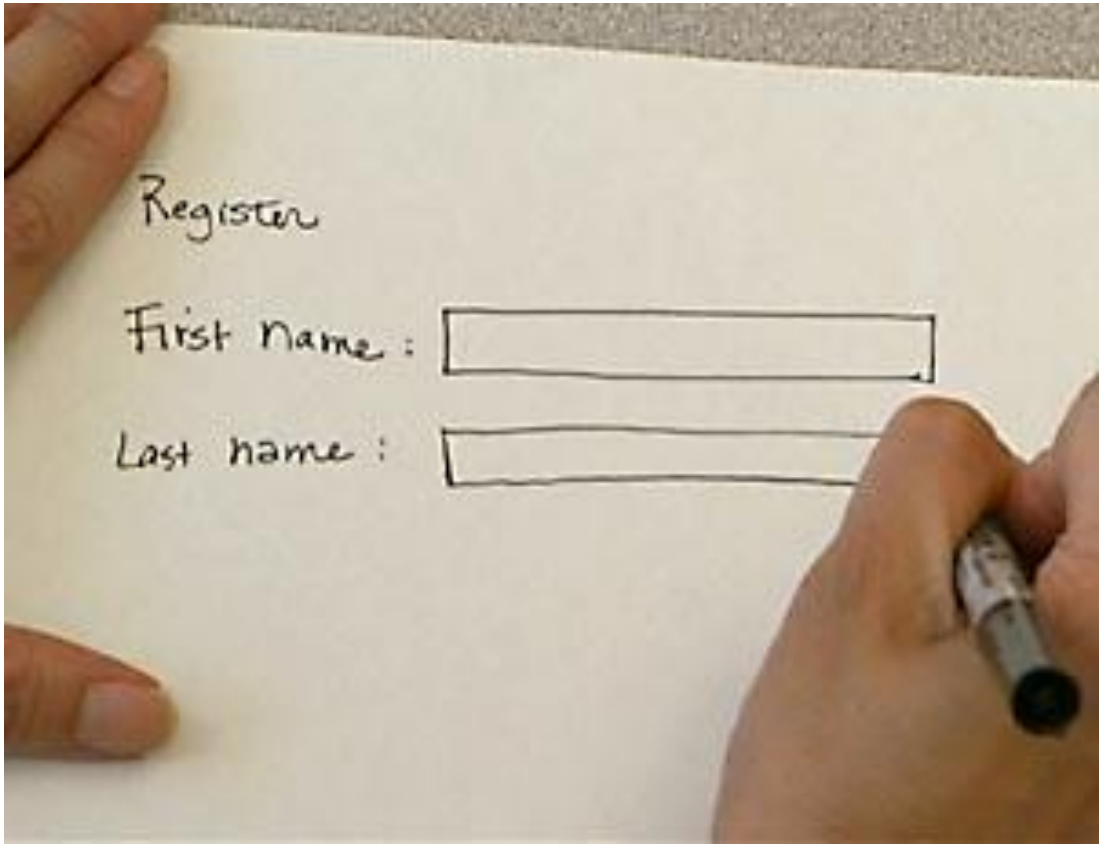
How to get user feedback

In answering questions (for example in **focus groups**), people often **bend the truth** to be closer to what they think **you want to hear** or what is socially acceptable

Online **surveys** often don’t get sufficient responses and can be unreliable

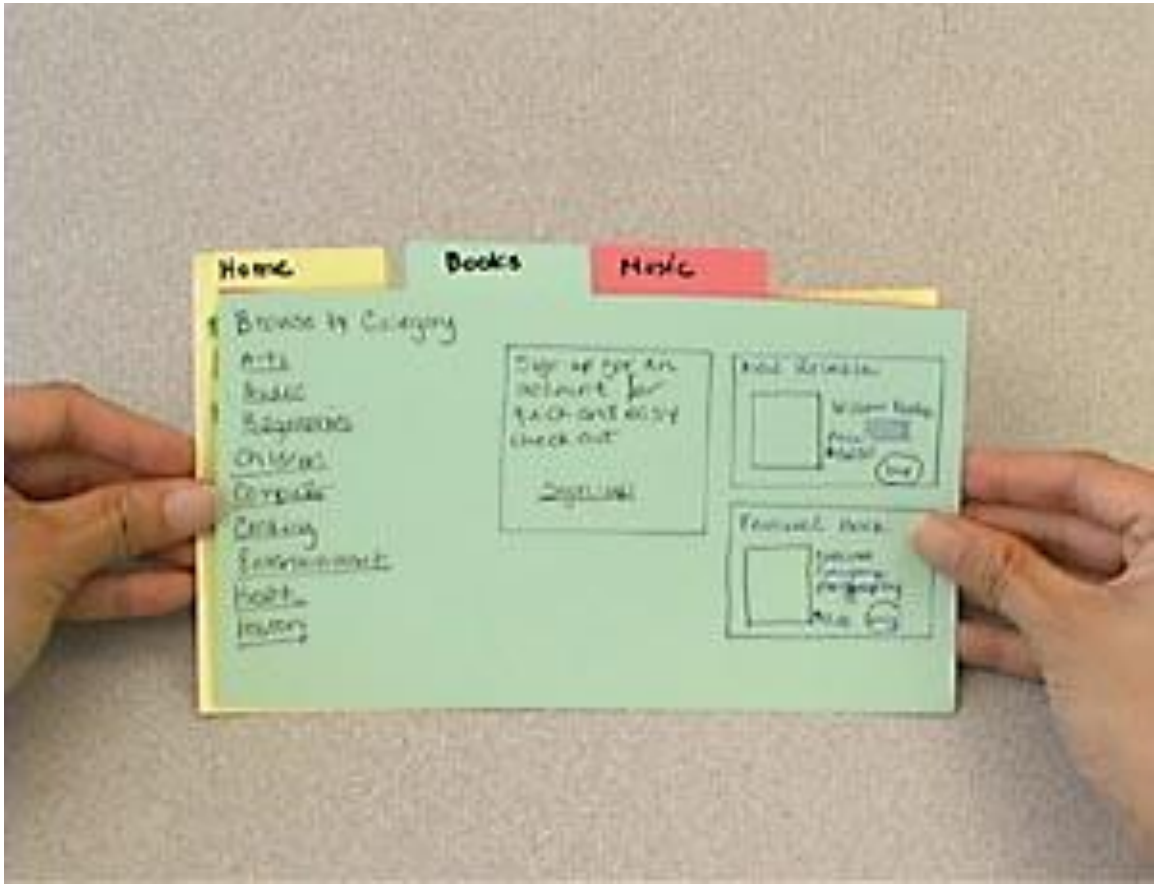
Best way can be with a captive audience – **conduct formal testing** and get users to complete survey at end

Paper prototyping – test designs and question users easily



Paper prototype of form filling screen

Source: Nielson Norman http://www.nngroup.com/reports/prototyping/video_stills.html



Paper prototype of tab based design

Source: Nielson Norman http://www.nngroup.com/reports/prototyping/video_stills.html

Typical testing session with paper prototype

Source: Nielson Norman http://www.nngroup.com/reports/prototyping/video_stills.html

Low-fidelity paper prototype

Source: Nielson Norman http://www.nngroup.com/reports/prototyping/video_stills.html

High-fidelity paper prototype

Source: Nielson Norman http://www.nngroup.com/reports/prototyping/video_stills.html

User test of a mobile device interaction

Source: Nielson Norman http://www.nngroup.com/reports/prototyping/video_stills.html

Rules for user testing

1. Get **representative** users
2. Ask them to **perform representative tasks** with the design
3. **Shut up** and let the users do the talking

Most companies recruit their own test participants

Google’s Usability Lab

http://usabilitynews.bcs.org/content/conWebDoc/41737

Main steps in usability

1. Before starting on the new design – **test the old design** to identify good parts and bad parts

2. **Test your competitors' designs** – gives you cheap data

3. **Conduct field study** to see how users behave in their natural habitat

4. **Make paper prototypes** of one or more designs and test them – less time and expense

Main steps in usability

5. **Refine designs** and test through multiple iterations gradually moving from low-fidelity to high-fidelity representations

6. **Inspect designs** relative to established usability guidelines

7. **Test final design again** – subtle usability problems always creep in during implementation

Advantages of user research driven design

Don’t spend time on **features users don’t need**

Helps settle arguments among development team

Instead of debating what users might want or do… **go and find out**

Some current web pages that could have benefited from conducting a usability study…

HOME PAGE
MENU
Help / FAQ frequently asked questions and conditions of sale
BAIZE
BONING AND HOOPING
BRIDAL FABRICS
BRIDAL SATINS
BROCADES FOR EVENING AND BRIDAL WEAR
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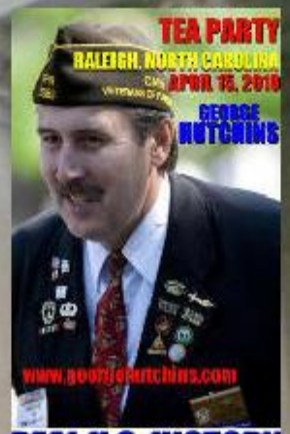

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An example of bad navigation…

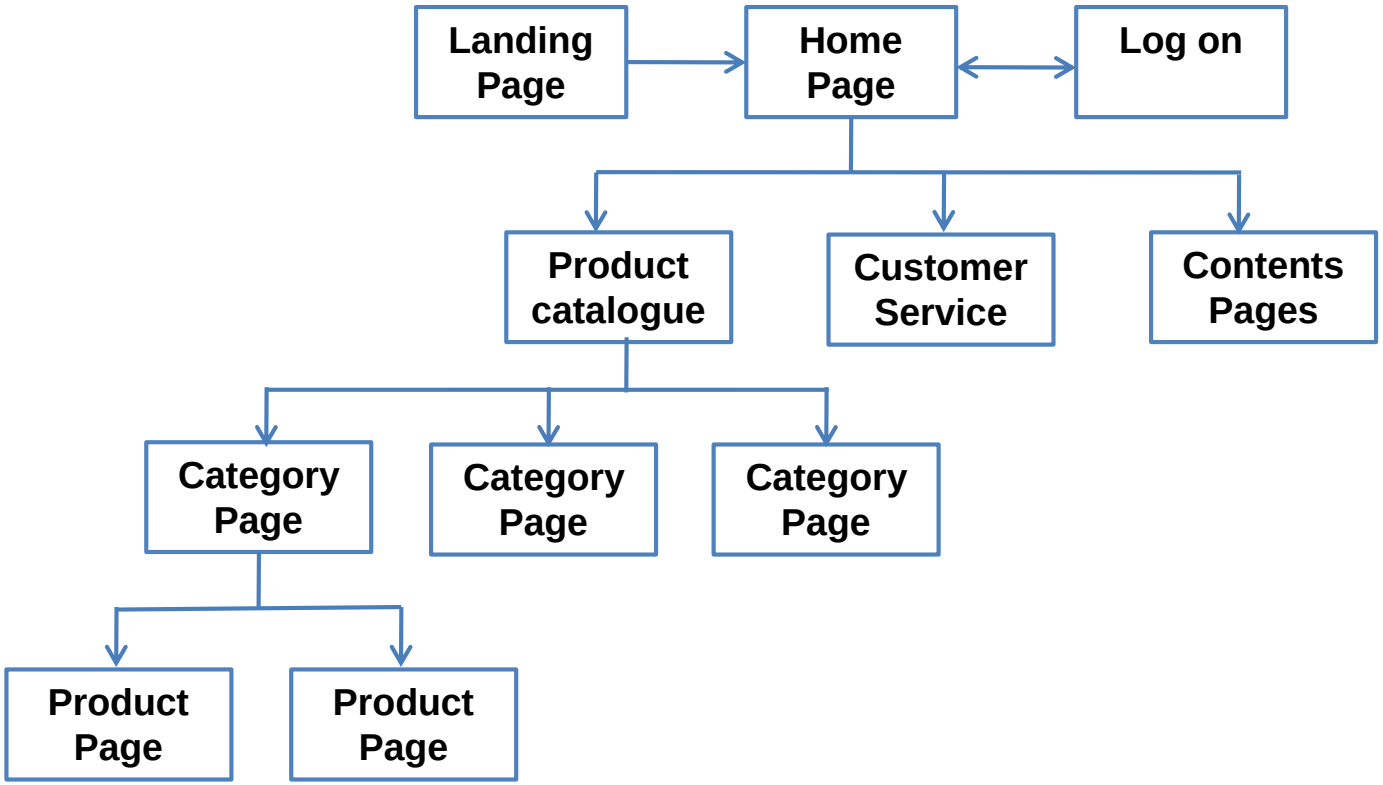
http://www.youtube.com/watch?v=7GFXk-5tEhg

An example of bad add on features…

http://www.youtube.com/watch?v=EP9A_0bhUm4&feature=related

Designing a hierarchy

Determines how information on a web site or application etc is organised



Interactive design

According to Jakob Nielsen a usability guru, you need to test with at least **15 users**

It is better to use more smaller tests that one large test

Better to have **three tests** with **5 users each**

You want to run multiple tests because real goal of usability engineering is to **improve design**, not just document weaknesses

Interactive design

Nielsen also states that:

A **second test** will discover whether the **fixes worked** and in introducing a new design, there is always a risk of introducing a new usability problem

Further tests probe deeper into the usability of the fundamental structure of a site or application

Assesses issues such as information architecture, task flow, match with user needs, often obscured in initial studies

Interactive design

The ultimate user experience is improved much more by **three tests** with **5 users** than a single test with 15 users

Interactive design

In testing multiple groups of disparate users, Nielsen recommends:

3-4 users from each category if testing two groups of users

3 users from each category if testing three or more groups of users (always want at least 3 users to ensure you have covered diversity of behaviour with group)

Selecting users

1. **Who are the users**, what do they know, what can they learn?
2. What do the users **want or need to know**?
3. What is the users' **general background**?
4. What is the **users' context** for working or using the application?

Users considerations

1. Can users accomplish intended tasks at the **desired speed**?
2. How much **training** do users need?
3. What **documentation or other supporting materials** are available to help the user?
4. What and **how many errors** do users make when they interact with application?

Users considerations

5. Can users **recover from errors**? What do the users have to do to recover from errors?

6. Does the application meet the requirements for **accessibility and enabling support users**? This is very important

7. Is there a **one-size-fits-all** or are there **cognitive differences** between various users?

For e-commerce sites

1. Will the user be **in a hurry** or have time to read large amounts of information?
2. Will the user have **all necessary information** to complete registration and make purchase?
3. Will user be able to make **purchase decision immediately**?
4. Will be user be accessing web site from **home or work**?

For e-commerce sites

5. What **external distractions** will the user encounter?

6. At what point will the user be comfortable **providing personal information**?

Lund's usability maxims

1. You are **not** the user
2. Things that **look the same** should **act the same**
3. The **information for a decision** should be there when a decision is needed
4. **Error messages** should actually mean something
5. **Every action** should have a **reaction**

Lund’s usability maxims

5. Don’t **overwhelm** the user
6. **Consistency**, consistency, consistency
7. Keep it **simple**
8. The user should always know **what is happening**
9. The more you do something the **easier it should be to do**

Lund’s usability maxims

10. The user **should control the system**, not the other way around

11. The best journey has the **fewest steps**, shorten the distance between the user and the goal

12. Things that **look different** should **act different**

References

Nielsen Norman Group Website
http://www.nngroup.com/

A.M. Lund (1997) Expert ratings of usability maxims.
Ergonomics in design, 5(3). pp15-20