

MONASH University  
Information Technology  
IMS5302  
Human factors and usability

**HCI and website design.  
What is different?**

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Comments on Assignment 2

- Generally very well written assignments, understood and followed the requirements.
- Use of table for comparison of methods good.

Criticisms:

- not enough literature support for claims
- Insufficient detail on methods
- Too descriptive rather than critiquing SDLC.

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Usability evaluation results

- What information can you get from an evaluation?
  - Can users complete the tasks?
  - What users liked or disliked
  - How easy a site is to use
  - How easy it is for users to get information they need
  - What problems users face
  - Comparative data, how did the site compare with other similar sites
  - Collective data – what does this mean in terms of website design generally?

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Task completion

Dog registration 84%  
Finding lost dog 70%  
Council minutes 87%

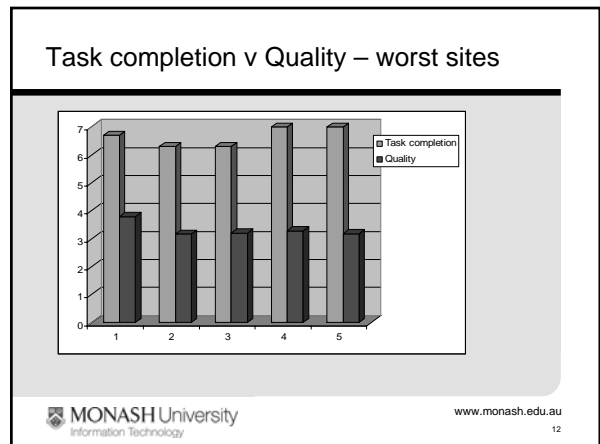
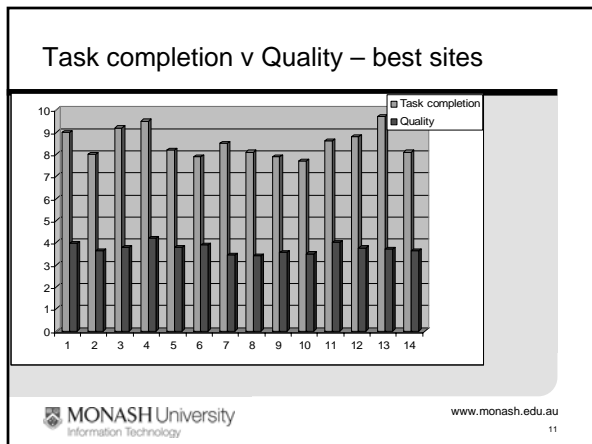
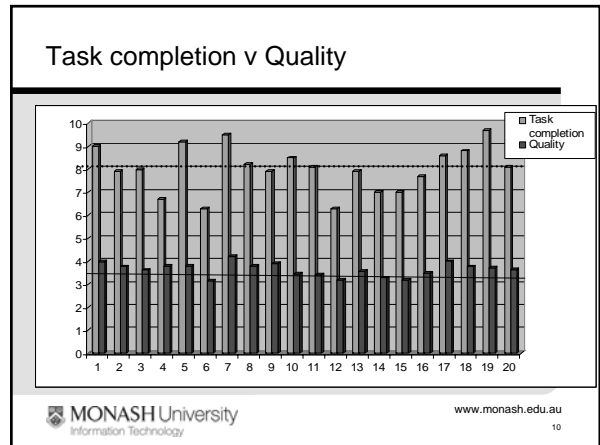
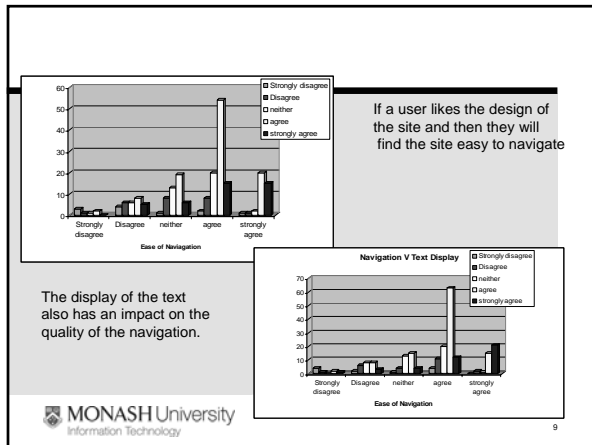
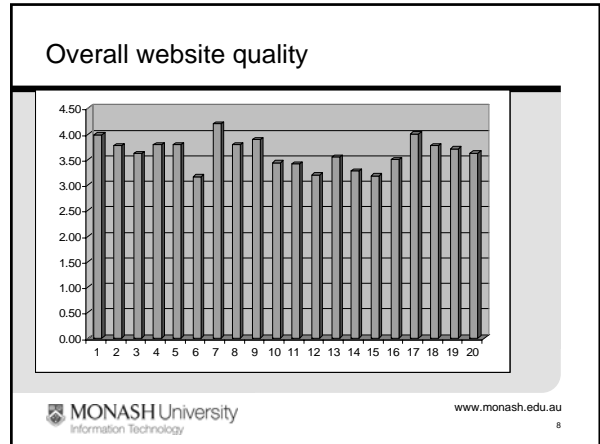
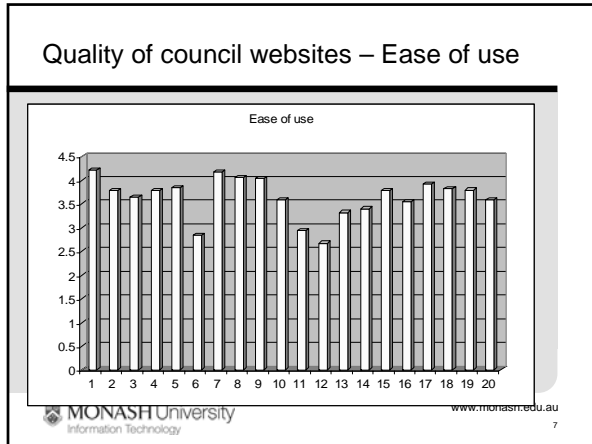
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Quality of council websites - design

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Quality of council websites – information design

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### What impacts on task completion?

- How engaged a user was with the site
- How well the text was displayed
- How easy the site was to use and to navigate
- All the information was provided
- Interface was consistent

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### What impacted on task completion?

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### What causes frustration?

Obviously how easy a site is to use and how easy it is to navigate will impact on a user's level of frustration. However there are number of other elements that also impact on frustration levels:

- The quality of the text display
- Size of the text
- How appealing the design of the site was.
- The quality of the graphics
- The level of consistency on the site
- The amount of information on the site, both too much and too little.

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### What increases user engagement with websites?

Obviously how easy a site is to use, how easy it is to navigate and design generally will impact on how engaged a user is with a site. However there are number of other elements that also increase user engagement:

- Quality and Size of text display
- The quality of the graphics
- The level of consistency on the site
- Providing enough information
- Language used on the site

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### Messages

- Users read very little from a website (average 2.37). Need to get the message across without relying too much on people reading.
- However more a user reads, more they are engaged with the site.
- Users prefer more not less information
- Poor design generally does impact on task completion.
- Appealing graphics have little impact on how easy a site is to navigate, how much is read etc.

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### Overview

- What is different when designing for the web?
- High level design issues – understanding role of goals/organisation.
- Categorising web sites.
- Users and their tasks.
- Objects/actions in web site design
- Design issues:
  - Technology
  - Information
  - Navigation
  - Ease-of-use

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### Background

- Shneiderman suggests that Web site design quality varies with the genre and author's goals.
- Common high-level goals include:
  - Visual appeal
  - Comprehensibility
  - Utility
  - Efficacy
  - Navigation

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### Neilsen's top 10 mistakes in web design

- <http://www.useit.com/alertbox/9605.html> (2004)
- 1. Bad search: "search is the user's lifeline when navigation fails"
- 2. PDF files for online reading
- 3. Not changing the colour of visited links
- 4. Non scannable text
- 5. Fixed font size

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### Top ten mistakes in Web design

6. Page titles with low search engine visibility
7. Anything that looks like an advertisement
8. Violating design conventions
9. Opening new browser windows
10. Not answering users questions

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### Other Web design mistakes (Neilson )

- Using frames: confuses users
- Gratuitous use of bleeding edge technology: mainstream users care more about useful content and effectiveness of site
- Scrolling text/animation: "moving images have an overpowering effect on the human peripheral vision."
- Long scrolling pages: only 10% of users scroll past first page.
- Non standard link colours
- Outdated information

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### Why is good design important?

- Users likely to visit the site again if they have had a good experience first time and have found the information they want
- Users will be more likely to make a transaction if the design is effective
- More successful transactions are completed
- Users' reactions to a web site has direct impact on whether they are prepared to purchase goods from that site.

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### Why is good design important? Cont...


- Users will make more use of site and more information distributed, if easily navigated.
- Users more satisfied. "Web sites which are developed using human factors input do actually produce higher user satisfaction levels than sites which, however well crafted technically, have not benefited from this kind of input". (Kirakowski, Claridge and Whitehand 1998)
- Web sites that take account range of user skills including those with disabilities will encourage greater use .
- Users spend more time at the site.
- Users more likely to recommend the site to someone

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### How can we improve design?

Categorisation of web sites

- Understanding the identity of the web site "owner" helps establish likely goals and content. Categories include:
  - Individuals and groups
  - Corporations
  - Not-for-profit organisations  
<http://www.redcross.org.au/>
  - Government and government agencies  
<http://www.vichealth.vic.gov.au/>

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- Other methods of categorising web sites can be by goals of originators. i.e. what is the purpose of the site?
- Sites can be categorised by number of pages or amount of accessible information.
- Categorisation can also be determined by success of web site (measures of success will vary depending on goals)

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### How would you measure success of a website?


A:

- Bank site
- Council site
- Health information site
- Qantas travel site
- Online grocery store
- A not for profit eg Red Cross

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### Users and their tasks

- Web design principles very similar to principles in any interface design.
- One major difference is unknown nature of the audience.
- Need to ask: Who are the users? What are the tasks?
- Web sites more effective when directed to specific audience niches.

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### Who are the users?

- Types of audiences include:
  - Gender
  - Age
  - Economic status
  - Ethnic origin
  - Educational background
  - Language
  - Physical factors e.g. disabilities

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### Specific user knowledge

- What does the audience already know?
- Web site for doctors treating lung cancer content, terminology, writing style etc different for web site for patients with lung cancer.
- Identifying user task guides designers in shaping web site. Tasks may range from fact finding to purchasing.

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### Web site design elements


- Information
- Display
- Navigation
- Ease of use

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### Information


Important factors:

- Quality of information and content
- Quantity of information
- Accessibility, (how easy is the site to read?)
- Understanding of the audience
- Appropriateness

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### Information design

- Nielsen (1999) says “content is king” generally users not visiting a web site for entertainment.
- Will site be a single page with simple structure or several pages? Requiring users to scroll will reduce likelihood they will find information.
- Distracting animation also reduces information retrieval.
- Careful chunking of information required, must consider careful sequencing and links.

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### Other considerations

- Users do not read online. They scan text picking out highlights and links, only read selected paragraphs.
- One option is to provide “tasters” with links to more detailed information.
- Users generally impatient whilst using the Web. Nielsen claims this leads to new writing style.
- “writing multiple short segments interlinked with Hypertext, designed for skimming.” (Nielsen 1999)

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### Guidelines


- Keep sentences brief,
- Use bulleted lists
- Highlight keywords
- Use colourful descriptive paragraph headings.
- One idea per paragraph.
- Use short pages.
- Make sure contact details for the business on every page.

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### Display

Important factors:

- Quality of the display
- The design of the text (topography)
- Colours and graphics presented
- Animations?

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### Designing displays

- Requires care and skill.
- Grid layouts and consistent structure help guide readers.
- Distinctive headings, graphics signal boundaries and provide landmarks for navigation.
- Traditional graphic design rules often apply in Web environment. The graphics simple and meaningful.

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### Considerations

- Download speeds – what will the impact on users be if complex graphics are used? Speed of download most common complaint of Web users.
- Limit number of graphics per page.
- Limit use of animation and plug-in requirements. Contributes to slow download times
- Is there a need for a search engine within the site?
- Use thumbnails – give user choice of whether or not to wait for the larger graphic

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### Navigation

- Must have strong sense of structure and navigation supporting the site so users know where they are and where they have been.
- Site maps useful because gives users an overview of navigation space.
- Hierarchical navigation structures suit users with strong visualisation skills. Do not necessarily work for those who do not have the skills.

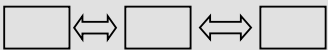
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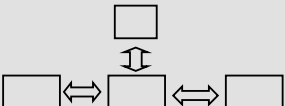
### Considerations

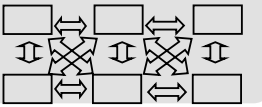
- Deeper Web structure research found harmed performance while medium depth and breadth better than broadest shallow Web structure.
- No common navigational patterns.
- include:

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### Different web organisational structures

**Linear structure** 

**Hierarchical structure** 

**Cross-linked structure** 

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### Guidelines

- Use well labelled accurate links
- Avoid using frames
- Keep navigation consistent
- Provide effective search engine
- Use distinctive hot buttons
- Use long pages with links rather than subsequent pages
- Avoid links that open up a new browsers or pop-up ads.

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## Ease-of-use

### Important factors:

- Usability of the site
- Quality and effectiveness of links
- Ease of navigation
- Ability to complete the task effectively
- Time taken to complete task including down load time

## Guidelines

- Make sure users can get useful information in no more than four clicks.
- Provide links to contents, map, index and home page on each page.
- Use meaningful page titles
- Plan assuming any page could be first page user encounters.
- Avoid concise menus explain what each link contains.

- Before starting define key scenarios of use, describe specific examples of people accessing the site and what they might want to achieve.
- Identify any niche markets and interests which can be supported by the site without additional investment.

## Web design approaches

- “Companies enjoying Web success study users needs and behaviours, and consider the human factors of design.... It takes a systematic approach to incorporate human factors into a complete set of user centred solutions.” (Israelski, 2000, 55)

## Designing high-level architecture

- Involves designing first 7 to 9 top-level screens.
- Well designed sites provide easy navigation through these topic screens.
- Requires usability testing with representative users on most critical tasks.
- Redesign as a result of usability test, checks high-level architecture meets users' objectives

## Testing detailed design

- Detailed design requires additional data gathering from representative users at greater level of details than at high level architecture level.
- Too often web sites designed for company's satisfaction, not the users.
- Consistency throughout site important.



### Measuring user satisfaction

- Too often web site awards “go to sites that have the most breathtaking graphics or sophisticated animation. Visual appeal has its place, but it is not as important as the ease with which users can get the information they’re looking for and accomplish their intended tasks.” (Israelski, 56)

- Studies show that 80 % of most obstacles to building web sites occur within first two process steps:
  - Determining functional level
  - Determining task low-level

### References

- D. Cunliffe “Developing a usable web site”, Internet Research: Electronic Networking Applications and Policy, vol 10, No 4, 2000.
- Shneiderman B. (1998) *Designing the User Interface*, Addison Wesley.
- Israelski, E (2000) “Five steps to unlocking a web sites potential.”, IEEE IT Professional , Volume: 2 Issue: 4 , Jul/Aug 2000
- Nielsen (1999) ‘User interface directions for the Web’, The communications of the ACM Vol 42