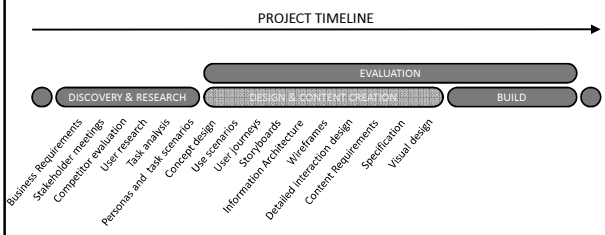
Postgraduate Certificate Web Design and Development

WDD 2.3
Information Architecture and content creation

Peter Otto

Recap: *What you've learned in the last session*

- **User Experience** – the way users experience your web site
- **User Centred Design** – a design process that is built around user input
- **Six layers** of user experience
- **Norman's model** – how the designer's view differs from the user's
- Understanding **business requirements** and **stakeholders**
- Conduction **user research**
- Documenting user **needs** and **goals** as **personas** – representative users of your site



Postgraduate Certificate Web Design and Development | *User-Centred Design on the Web*

Discuss: *How are you doing?*

- Were you be able to complete the **client survey?**
- Can you formulate a **proposition** for your site?
- What are the **site goals?**
- Are you clearer about who your **audience** is going to be?
- Did you manage to **research your audience** to identify its **goals and needs?**

Creating a concept design

The elements of user experience

Proposition	Value delivered to customer
Concept	Concept for how the value is delivered
Structure	Organisation of product components
Information	What information is used by users
Interaction	How users interact with product components
Appearance	What it looks like and how it is arranged

...one view of it. Here's another one

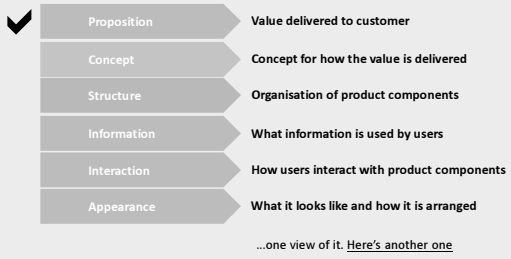
Creating a concept design

We followed a UCD process and have completed user research to understand:

- **Organisational structures** and **business goals**
- The overall **market**
- **Users** and their **goals** and **needs**
- **Personas** (models of the users) and **scenarios** (stories of what users want to do)

We've created a **value proposition and site goals that bring user goals and business objectives together.** We can now look **how to deliver this value** to the user.

The elements of user experience



...one view of it. Here's another one

What is concept design?

A thinking process involving:

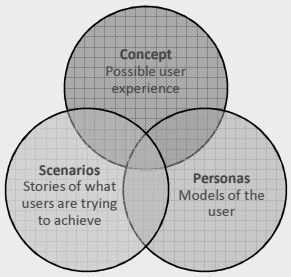
- Creation of **conceptual ideas** that bring user and business needs together
- **Refinement** of these ideas to define a ideal solution

In the UCD lifecycle concept design is not about:

- Defining business needs
- Defining user needs
- Understanding technology constraints

Generating ideas

- **Knowledge from user research** is used to generate ideas and make decisions about which ideas to eliminate and which to keep and improve.
- **Personas** and **scenarios** are tools we use to keep user focus.



Creating a concept design

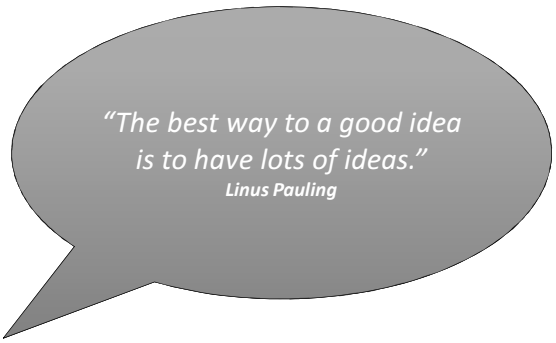
Look at your personas and task scenarios and think:

- **What shape could the design take?** Is it more like a magazine, a catalogue, a guided tour?
- **What existing Web patterns could you use?** Take advantage of conventions that you know work already
- **What real-world metaphors could work?** Take advantage of the fact that people already have an understanding of the way certain things work in the real world
- **Does your proposition change?**

Discuss: *Crocus.co.uk*

- check Crocus.co.uk
- Can you think of what key concepts the site is based on?

Concept design is about **creating lots of ideas in rapid iteration!**



It's important to start simple…

…sometimes a **little doodle is enough** to test an idea.

Many great designs have started with **simple sketches and prototypes.** It's too expensive to do the real thing and then watch it fail.

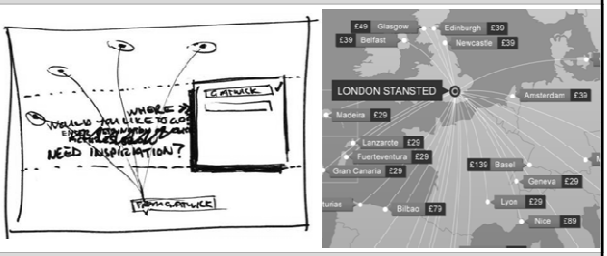
UCD is about **iterating your design** until it's right.

Therefore it's important to work at the **right level of fidelity** for each stage of the project – that is just doing enough to be able to evaluate the design

Low-fidelity prototyping

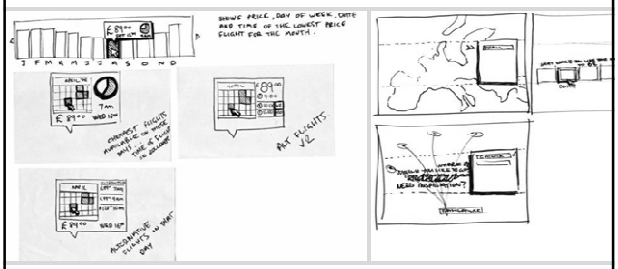
The first prototypes for Concorde – made out of a bit of paper and tape

Low-fidelity prototyping



Sometimes you need only a few pen strokes to test an idea

Low-fidelity prototyping



Sketches of different widgets for a website

Recap: *Scenarios*

Scenarios are user stories that describe the steps users go through to satisfy their goals:

- **Task scenarios** describe what users are doing currently
- **Use scenarios** describe how users will perform the same task using your product or service

Use Scenarios

- Take your task scenarios of your personas and turn them into use scenarios – **stories of how users would use your site**
- For each scenario think of the **user's goal,** the **tasks** it takes to achieve the goal, and what **functionality** and **information** of your site users will use to complete their task
- **Do users have the right information and functionality** to complete the task?
- **Does your solution align with the mental models** you found in your research?
- **Use your personas to validate**

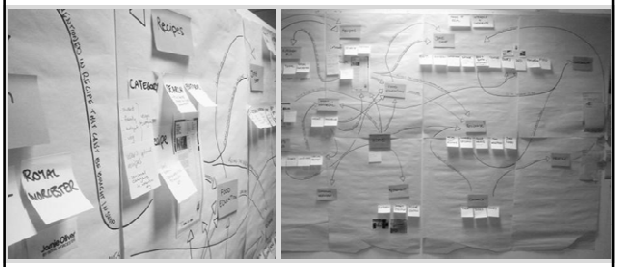
Storyboards

Storyboards allow you to prototype different task flows quickly without thinking of too much detail.

Storyboards

- **Storyboards are series of illustrations or images** displayed in sequence to create the outline structure of a motion graphic or interactive media sequence
- In web design you can use them to plan how a user would use your site
- You a can vary the level of detail as needed: Click-by-click or just showing key steps in the user journey
- A great book that will help you to understand how to effectively storyboard is Understanding Comics
- See also Adaptive Path's article on "sketchboards" and downloadable templates

User journeys



Often a few stickies and a bit of paper is enough to create a site structure. Working on the wall makes it easy to view and communicate structure and key task flows.

Creating a structure to your site

- You can now start thinking about a **structure** to your site
- Look at the different use scenarios: what **content and functionality** does the site need to provide?
- Create a **diagram of the key users journeys** through the site...
- Where do they **overlap?**

- An article about user journeys on boxes and arrows

Remember – UCD is iterative

- Successful evolution happens through many **alternative designs**
- Using **paper, pen and post-its** (and a digital camera to document progress) or **storyboards** helps you quickly explore alternative solutions
- Producing fancy diagrams and designs too early in the process is a waste of time

Task: *Create a concept and a storyboard*

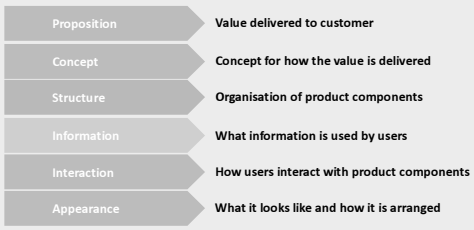
- You are a user experience designer who's been **asked to design the concept and information architecture for *Deliverease,*** a new online service to be launched by a major supermarket chain.
- *Deliverease* allows users to **find and view recipes and order all required ingredients** directly from the supermarket chain online store for home delivery.

Task: *Create a storyboard*

- For a meeting with the product team you need a **first draft of some of the key user journeys.**
- **Design for the persona supplied** (see worksheet).
- Think of a **conceptual metaphor** that addresses the challenge
- Work in teams of 3 to **storyboard one user journey** (i.e: Find and view a recipe and order ingredients) using the storyboard template provided. **Focus on the essential,** not the detail.
- **Validate against the persona** chosen.

Organising Information

The elements of user experience



...one view of it. Here's another one

Organising information

Organizing complex information on a web site presents huge challenges:

- **Findability:** Users need to be able to find what they want among a potentially huge numbers of items
- **Ambiguity:** Language is ambiguous, e.g. multiple definitions, cultural differences (the words "pitch", "catch")
- **Heterogeneity**: "Objects composed of unrelated or unlike parts" Most Web sites are very heterogeneous because they have multiple formats, usually all mixed up together
- **Differences in user perspectives**: Ignoring different user perspectives can make parts of your site unusable; make sure that you know your user!

Labelling systems

- **Can't present all information at once,** so need to use informative short cuts, i.e. labels
- These need to **communicate information effectively**

Why labels are important:

- Users have **short attention spans** (avoid high "cognitive load" for your users)
- **Bad labels make bad impressions;** they frustrate users
- **Self-centred labelling makes a bad impression** (avoid business-speak & terminology)
- Labelling systems need serious planning.

An unplanned labelling system…

- **Technology Interface Unit**
- **Project QA**
- **Business & Media Interaction**
- **Internal Services Office**
- **New Media Center**

These assume that the user knows what you are talking about!

A planned labelling system…

- **Arts & Humanities**
- **Business & Economy**
- **Computers & Internet**
- **Education**
- **Entertainment**
- **Health**

These might also make us wonder… e.g. what resources are contained within these categories? We do know what subject areas are covered, though. It's also a common system. Users have seen it before so they only need to learn the system, not individual labels (familiarity breeds contentment!)

Organising information

Information can be organized in the following ways:

- **Alphabetical,** e.g. Cambridge Uni
- **Chronological,** e.g. The food timeline
- **Geographical,** e.g. Flickr Map
- **Topical,** e.g. DMOZ
- **Task-oriented,** e.g. Three mobile
- **Audience-specific,** e.g Birkbeck
- **Metaphor-driven,** e.g. Harry Potter, Hothorse's old site.

Organising information: Classification and hierarchies

- **Taxonomy is the classification of things.** e.g. Dewey Decimal System, Linnaean classification
- **Not all taxonomies are hierarchical** e.g. days of week
- Classification schemes provide important metadata for a Web site. They provide the basis for efficient search and information retrieval and sharing of data between Web sites.

The hierarchy: a top-down approach

- A more rigid approach with usually **mutually exclusive categories**
- You can choose a **narrow and deep approach;** fewer sections, more levels of sub pages beneath
- Or a **broad and shallow approach:** lots of section with fewer sub pages.
- If you expect your site to grow, **it's easier to incorporate change into a broad and shallow design**
- **Don't feel trapped by hierarchies,** and don't force topics in a hierarchy, hyperlinked or database driven approaches are useful too

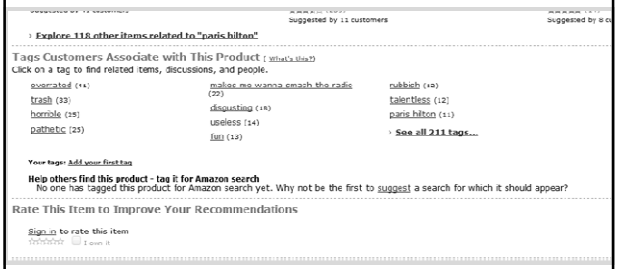
Relational databases: a bottom-up approach

- Better where users want to retrieve information in different ways, having different starting knowledge.
- Content created "on-the-fly" depending on requirements
- Examples of a bottom-up approach are **search based** sites, or **faceted navigation** e.g. Amazon or Ebay

Folksonomies

- Informal structures are becoming much more common and and in many websites users are tagging their own content e.g. Flickr or del.icio.us
- Tags are often visualised as a tag cloud
- See also: the Wikipedia entry for Folksonomy

Folksonomies



Sometimes the results of allowing users to tag content can be interesting…

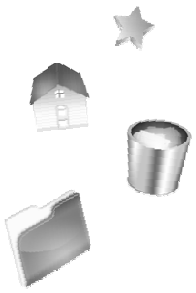
Common labels within navigation systems

- Home / home page / main / main page /
- Search / find / browse / sitemap / index / table of contents
- Contact / feedback
- Help / FAQ / frequently asked questions
- News / what's new

Some of these have clear user expectations attached to them; use these in your favour!

Using metaphors

- Sometimes the use of metaphors helps users understand things
- Use them wisely to support your navigation
- **Steer away from metaphors that are obscure or ambiguous,** or have different meanings in different cultures
- Common metaphors include: Checkout, Shopping basket, Home



Card sorting

- Card sorting is a simple, quick method for **understanding how site users classify content** (by shuffling cards around, hence the name).
- The method is used to generate an **overall structure for your information,** as well as **suggestions for navigation, menus,** and **possible taxonomies.**

- **See also: Card sorting: a definitive guide** on Boxes & Arrows and **Information design using card sorting**

Steps in a card sort

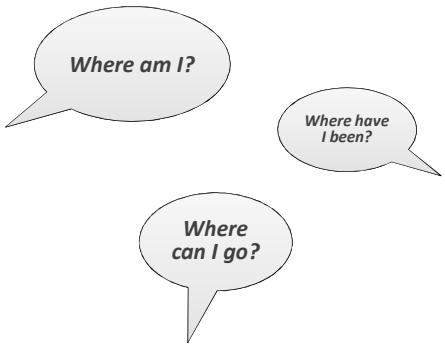
- **Select the content to be tested** (pages of existing site? new content?)
- **Find the participants** (should be representative of site users)
- **Prepare the cards** (write names of pages on cards)
- **Conduct the tests**
  - **Open sort** - participants create and label groups for the cards as they see fit
  - **Closed sort** - how do the cards fit into an existing classification? (validation of an existing classification)
- **Analyse the results** (common groupings? cluster analysis?)

Task: *Conduct a card sort*

Go to optimalsort.com

Working in groups of 3, conduct the open card sort on the site. Try to group the cards in a meaningful way (what is 'meaningful'?) and try to produce appropriate labels for the groups.

Designing navigation systems



Four modes of information search

See: Four Modes of Seeking Information

- **Known-item searching.** You know what you're looking for.
- **Exploration.** Seeing what's around.
- **Don't know what you need to know.** Know general area, but looking for guidance.
- **Re-finding.** Finding something that you've found before.

If we understand which of these modes our primary users are most likely to use, we can design our interface to support them (e.g. via search, navigation, contextual links, site indexes, bookmarks, wish lists etc.)

The scent of information

- This is an extremely important concept in designing navigation. It's "the magical force that pulls users to their content".
- **"Trigger" words and phrases** that users recognize give them confidence that their information quest is on the right track.
- Specific phrases that have direct meaning to the user (e.g. *Second Hand Audi, Arctic Monkeys CD*) produce a stronger scent than very general phrases (e.g. *Products, Solutions*).
- Use of the back button is usually associated with a lost scent of information.
- See: Getting Confidence From Lincoln

Hierarchical navigation

- Information hierarchy as primary navigation system
- Main options at each level taken are directly from hierarchy

For example, dmoz.

Global (primary) navigation systems

- **What's on the whole site?**
- Allows greater vertical & lateral navigational movement
- Simple navigation bar
- Usually have some indicator to show where you are (e.g. tabs change colour on Amazon)

Local navigation systems

- **What's nearby?**
- **Complement global navigation**
- Navigational options refer to **information in a specific category**
- Get list of **options for entire level** for example, Biz/ed
- Can get secondary, tertiary navigation, etc...
- Such navigation systems **can be challenging to design,** particularly when there are many options/levels
- How does the BBC site deal with multiple levels?

Ad hoc navigation

Embedded links

- Links within the page (hypertext)
- Must be informative (avoid "click here" and "more..."!)

Structural links

- Point to other levels of site structure
- e.g. "up to services and products"

Associative links

- "See also..."

Most easily implemented in database-driven sites where information has to be classified in detail e.g. BBC News

Browser navigation features

- **Open URL**
- **Back & Forward buttons**
- **Bookmark**
- **History**
- **Visited links**
- **URL display in status bar for links**

Don't override these features - support them! For example, the back button doesn't work on many Flash sites, or if new windows are spawned, and frames don't allow pages to be bookmarked.

Breadcrumbs paths

Breadcrumbs are a secondary navigation aid

Why are they useful:

- They tell users **where they are** and/or **where they have come from**
- They provide a **mechanism for back-tracking** (in addition to the back button)
- They are small: **low real-estate "cost"**

See: Guardian.co.uk or Tiso.co.uk

Navigation to avoid: mine-sweeping

Also known as Mystery Meat navigation

- Options are not clearly presented
- User has to roll-over every option to see what it is
- Can only really be justified if it's for entertainment, to get a sense of exploration (it can be useful for kids sites - kids love to explore!)
- Example: Flat Pak House

Task: *Navigation stress test*

Have a look at Keith Instone's navigation stress test

Developing prototypes

Creating a more detailed design

Once there is a direction to pursue, we can go into more detail:

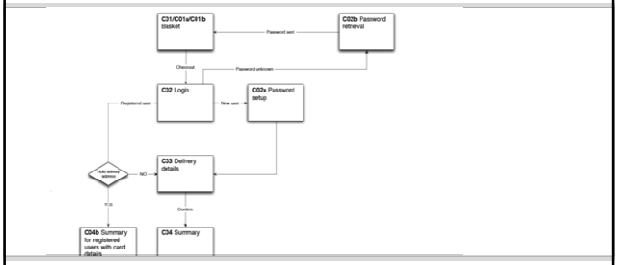
- Create more detailed use scenarios to work out the different pieces of **functionality** and **information** user will require
- Turn them into **flow charts** and **site architecture diagrams** to describe flow and structure
- Finally, we create **prototypes** at varying levels of fidelity

Throughout the process we evaluate and iterate the design

Site architecture diagrams

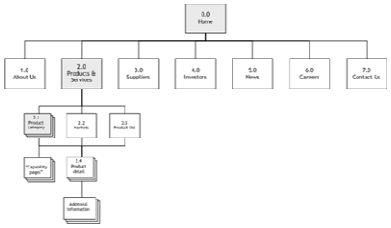
- **Flow charts** are a way to describe how users interact with a system in a **sequential** way
- **Site architecture diagrams** are a way to describe the content structure of a website in a diagrammatic format and a **hierarchical** way
  - Each page has a unique number
  - Represent each level on its own row

Flow chart



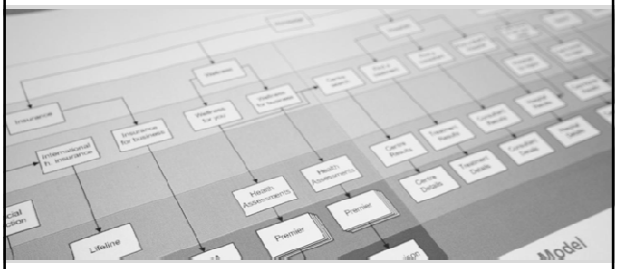
This flow diagram shows part of a e-commerce checkout flow

Site architecture diagrams



The structure of a website is usually shown in a site architecture diagram

Site architecture diagrams



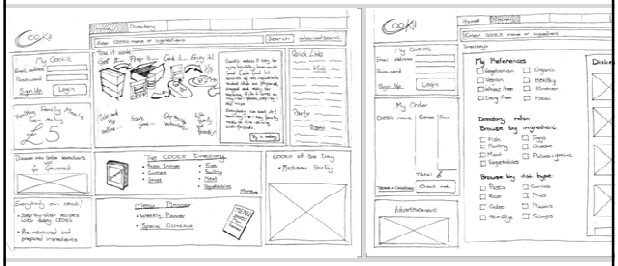
This diagram show clearly how many levels exist in the page hierarchy

Wireframes

Wireframes are low to medium fidelity prototypes of interfaces

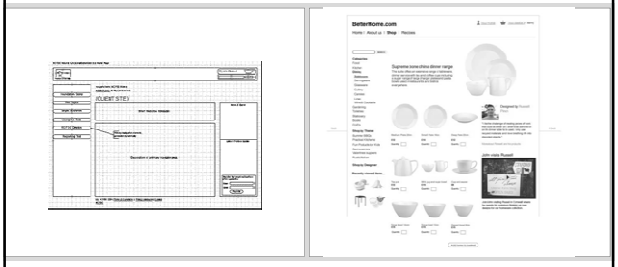
- They describe **structure** and **types** of content
- They normally show **navigation** and form part of a **bigger prototypes**
- Normally, before visual design commences, the interaction design or information architect(s) create a wireframe specification outlining **page structures, content, task flows** and **site structure**

Hand-drawn wireframes



These are examples for hand-drawn wireframes

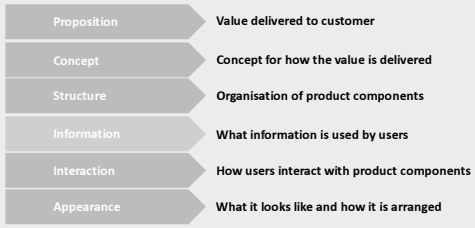
Wireframes



These wireframes have been produced in Visio. The one on the left is high-level and describes key areas of the page, the one on the right has been filled with example content to make it more meaningful for user testing.

Producing content

The elements of user experience



...one view of it. Here's another one

Identifying content needs

- Now you've got a rough structure, you can start thinking about **what content you require** for the site for example: an "About us" page, product information, contact details
- If you're dealing with an existing site, of have lots on pre-written material, you need to conduct a content audit
- You can often do this automatically using a tool such as Xenu Link Sleuth
- See also: Doing a Content Inventory (Or, A Mind-Numbingly Detailed Odyssey Through Your Web Site), How to do a content audit

What to look out for

On the web, these things matter most about content:

- **Quality** – users need to see quality content to gain trust in your site
- **Relevance to user goals** –the content needs to match what users are looking for
- **Succinctness** – don't waste your site visitor's time!
- **Scanability** – the ability of users to quickly scan the page to relevant information
- **Legibility** – reading from a screen is tiresome, don't make it harder than it needs to be
- **Authenticity and Credibility** – if your content doesn't come across as credible, visitors will leave

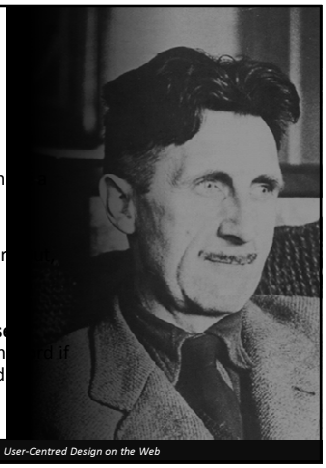
Make sure the content is of high quality

- **No spelling errors or typos** – use a spellchecker (SHIFT + F7 in Dreamweaver)
- **Good grammar**
- Provide **engaging,** well-written text (be creative!)
- **Avoid jargon & acronyms**
- **Follow a style guide** if possible e.g. webstyleguide.com
- See also **The Elements of Style**

Be succinct!

George Orwell's tips:

1. **Never use a long word** wh
   short one will do.
2. If it is possible to cut a wor
   then always **cut it out.**
3. **Never use a foreign phras**
   scientific word, or a jargon d if
   you can think of an everyd
   equivalent.



Make pages scannable

- **On the web, people scan-read** looking for salient words and the next hyperlink that seems to be the closest match to their goal (the 'scent of information')
- This process is also called **'information foraging'** Jakob's alert on this topic
- This is very similar to the way we read newspapers. Why? What are the design implications?

Make pages scannable

Allow users to scan-read the page to find relevant content:

- Use **meaningful headlines**
- Split text into paragraphs with **sub headings**
- **Bullet points** are useful
- **Highlighting** and *emphasis* where appropriate
- Good **visual hierarchy** of text, e.g. Boxes and arrows
- **"Inverted pyramid"** style of writing: summarise first, e.g. BBC
- Compare these pages: HROD Consultancy, Craig's list, The Guardian

Make pages scannable

- **Avoid pages becoming too long**
- Generally users don't have a problem to scroll a little if they think they will find what they are looking for
- **However, try to split up very long pages** (but provide printable versions of the full text)
- **It's 25% slower to read from screen** than paper
- **Avoid horizontal scrolling**
- **Be concise** – avoid waffle
- **Avoid scrollstoppers**

Make it legible

- **Use plain backgrounds,** Circlemakers is an example how not to do it.
- **Don't write in uppercase**
- **Avoid small font sizes** for key content
- **Avoid long paragraphs** of text
- **Avoid wide fixed column widths**

IT'S VERY DIFFICULT TO READ FROM A SCREEN ANYWAY. PUTTING EVERYTHING IN UPPERCASE MAKES IT EVEN HARDER BECAUSE IT REDUCES THE SPACING BETWEEN LETTERS. IT ALSO MAKES IT SOUND LIKE YOU ARE SHOUTING ALL THE TIME. SO THE BEST THING TO DO IS AVOID IT UNLESS YOU REALLY NEED TO.

Links

- Writing for the Web (from Jakob Nielsen)

Task: *Re-write a text for the web*

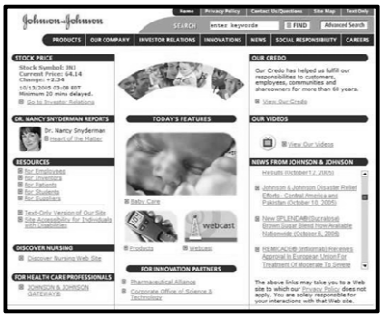
Take a look at a passage of text from a real website.

Is this an appropriate style of writing for the web?
What would you do to improve it if you could?

Designing effective homepages

A bad example…

A bad example…



- Overwhelming number of links
- No clear path for eye to follow
- Every department has their share of space so they are politically "satisfied"
- No clear sense of proposition, brand or any clear calls to action.

"The opportunity lost by increasing the amount of blank space is gained back with enhanced attention on what remains."

Prof. John Maeda MIT

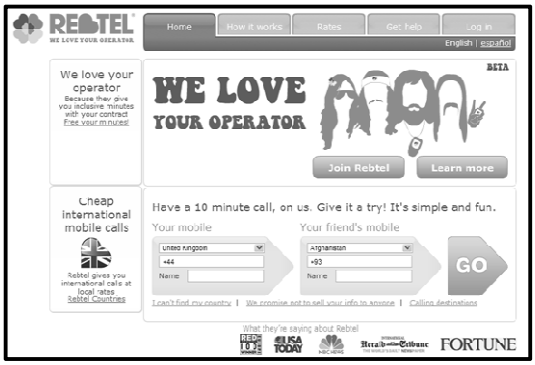
Some recommendations for designing effective homepages:

- Show a clear **proposition message:** "What is this site for?"
- Show a clear **Unique Selling Point:** "What makes this site better than the alternatives?"
- **Call to action:** for priority tasks – make it clear what the user can do
- Create **clear entrypoints** into the site that consider different user needs (remember four modes of information seeking)
- **Actual content:** don't provide abstract description of what the site will offer – provide excerpts of the actual content
- **Search box:** if you can provide a high-quality search do so: some users just want to search

Discuss: *Review this homepage*

Have a look at the next page

- What does this company offer?
- What questions do you have?



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Discuss: *Some other examples*

- **twitter.com**
- **blogger.com**
- **facebook.com**

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Task: *Sketch a wireframe*

- Think of the *Deliverease* homepage
- How will you explain the **proposition** of the site?
- What could the **structure** of the page look like?
- How can users **navigate** the site?

- **Sketch a wireframe** of the page
- **Annotate** with your comments
- Start simple, then progressively layer on more detail

Interaction design

The elements of user experience

Proposition	Value delivered to customer
Concept	Concept for how the value is delivered
Structure	Organisation of product components
Information	What information is used by users
Interaction	How users interact with product components
Appearance	What it looks like and how it is arranged

...one view of it. Here's another one

Interfaces & interactions

- Task analysis allowed us to specify the **main goals of users** and the **steps required** to achieve them
- We now need to start translating this detailed **interactions** and how this will be achieved using the **user interface**
- **Interaction design** is concerned with designing the dialogue between the human and the machine
- Key aspects of interaction design are:
  - Task flow & Task Support
  - Action/Reaction
  - Behaviour of UI component
  - State of UI components
  - Error prevention

(see also Introducing Interaction design).

Patterns

- A **pattern** describes an **optimal solution to a common problem** within a specific context
- **Patterns** for interface and interaction design are now emerging
- The term is taken from the book 'A Pattern language', originally invented by the architect Christopher Alexander

Web interfaces: pattern libraries

- **Factory Joe**
- **Yahoo! design pattern library**
- **AJAX patterns**

- **See also:** 37 Signals' article An Introduction to Using Patterns in Web Design

Pattern language applied to interactions and tasks

- **What are the components of an online shopping experience?** e.g. login, selection, shopping cart, payment, order-tracking, etc...
- **How do these parts fit together?** e.g. need to have login before anything else can happen, payment must occur before order tracking, an error message needs to be generated if the password is wrong, etc...
- **What's the best way to design individual interface components?** e.g. use drop down boxes or free text for dates when registering? radio buttons or check boxes for making selections? etc...
- **Once you know about user tasks and goals, and what content is available, you have to be precise** and logical to map interactions that support these goals.

Visualising interactions

- User experience designers usually use **flowcharts (workflows)** to describe the interactions in the site they are designing
- Usually use a tool like **Microsoft Visio** (PC) or **Omni Graffle** (Mac)

A visual vocabulary

- From http://www.jjg.net/ia/visvocab
- This vocabulary is based on a simple conceptual model encompassing both information architecture and interaction design:
  - The system presents the user with **paths**
  - The user moves along these paths through **actions**
  - These actions then cause the system to generate **results**
- You can download a file containing PowerPoint versions of these shapes.
- Example from jjg.net: Metafilter interaction design.

Creating a functional specification

Some or all of the following may be found in a **functional specification document:**

- Business analysis
- Competitor analysis
- User analysis (may include personas)
- Task analysis (may include scenarios)
- Technical requirements
- Site map/architecture
- Task/workflows (interaction design)
- Prototypes (mock-ups)