Postgraduate Certificate Web Design and Development 16 January 2010

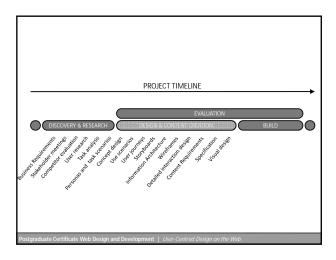
WDD2.2

Information Architecture and content creation

Andrew Harder, Design Research Specialist, Nokia, London
Peter Otto, Principal User Experience Consultant, Flow Interactive, London

### 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



### 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?

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### 2.2.1 Creating a concept design

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### Proposition Concept Concept Concept Concept for how the value is delivered Structure Organisation of product components Information What information is used by users How users interact with product components 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.

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# The elements of user experience Value delivered to customer Concept Concept Concept for how the value is delivered Structure Organisation of product components Unformation What information is used by users How users interact with product components What it looks like and how it is arranged ...one view of it. Here's another one

### What is concept design?

A thinking process involving:

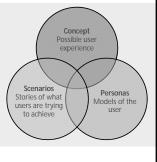
- Creation of conceptual ideas that bring user and business needs together
- Refinement of these ideas to define a ideal solution

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.



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### 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?

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### Discuss: Crocus.co.uk

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

Concept design is about creating	9
lots of ideas in rapid iteration!	

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### It's important to start simple...

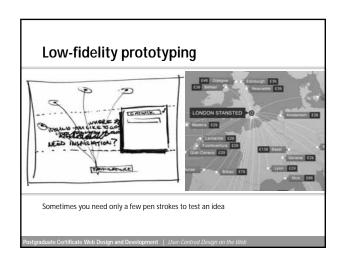
...sometimes a  $\mbox{\bf little doodle is enough}$  to test an idea.

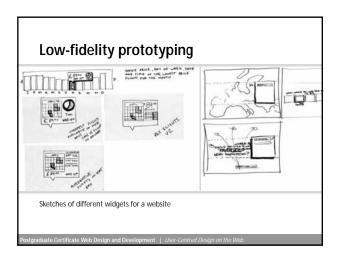
Many great designs have started with **simple sketches and prototypes**. It's too expensive to do the real thing and then watch it fail.

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





### 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

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### **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

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### 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 <u>Understanding Comics</u>
- See also <u>Adaptive Path's article</u> on "sketchboards" and downloadable templates

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### 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.

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### 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

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### 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.

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### 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.

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# 2.2.2 Organising Information Postgraduate Certificate Web Design and Development | User-Centred Design on the Web

# The elements of user experience Proposition Concept Concept Concept for how the value is delivered Structure Organisation of product components What information is used by users Interaction How users interact with product components What it looks like and how it is arranged ...one view of it. Here's another one Postgraduate Certificate Web Design and Development User-Centred Design on the Web

### Organisational challenges

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!

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### 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. <u>Twittervision</u>
- Topical, e.g. <u>DMOZ</u>
- Task-oriented, e.g. Blogger
- Audience-specific, e.g <u>UWE</u>
- Metaphor-driven, e.g. JK Rowling, Hothorse's old site.

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### Organising information: Classification and hierarchies

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

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### 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

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### 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. <u>Amazon</u> or <u>Ebay</u>

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### **Folksonomies**

As the web becomes more social and interactive, it becomes harder to maintain formal taxonomies and structures.

- Informal structures are becoming much more common and there's a move towards getting users to start tagging their own content e.g. <u>Flickr</u> or <u>del.icio.us</u>
- Tags are often visualised as a tag cloud
- See also: the Wikipedia entry for Folksonomy
- The implications of user-generated tags & content  $\underline{\text{are huge!}}$

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### Folksonomies \*\*Explore 118 other leans related to "paris hillion" Tags Customers Associate with This Product ("gast.nici) cick on a tag to find related items, decussions, and people. \*\*Explore 118 other leans, decussions, and people. \*\*Description of the related items, decussions, and people. \*\*See.all 211 tags... \*\*\*People of the related items, decussions, and people. \*\*The related items of the related items, decussions, and people. \*\*The related items of the related items, decussions, and people. \*\*The related items of the related items, decussions, and people. \*\*The related items of the related items, decussions, and people. \*\*The related items of the related items, decussions, and people. \*\*The related items of the related items, decussions, and people. \*\*The related items of the related items, decussions, and people. \*\*The related items, decussions, and people. \*\*Th

### 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!

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### **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

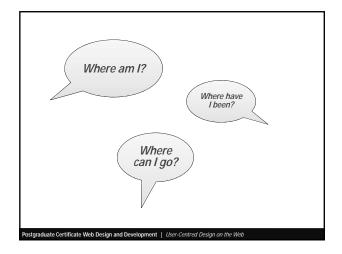


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### **Card sorting**

- 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: <u>Card sorting: a definitive guide</u> on Boxes & Arrows and <u>Information design using card sorting</u>


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	-
<ul> <li>Closed sort - how do the cards fit into an existing classification? (validation of an existing classification)</li> </ul>	
Analyse the results (common groupings? cluster analysis?)	-
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Task: Conduct a card sort	
Go to <u>optimalsort.com</u>	-
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.	-
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2.2.3 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.)

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### 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

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### Hierarchical navigation

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

For example, dmoz.

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### 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 <u>Amazon</u>)

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### 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,  $\underline{\text{Biz/ed}}$
- Can get secondary, tertiary navigation, etc...
- Such navigation systems can be challenging to design, particularly when there are many options/levels
- How does the <u>BBC</u> 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. <u>BBC News</u>

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### **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.

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### **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	
<ul> <li>User has to roll-over every option to see what it is</li> </ul>	
<ul> <li>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</li> </ul>	
to explore!)  • Example: 10 Worst Web Site Uses of Navigation for 2008,	
The Matrix, The CSI Companies	
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Task: Navigation stress test	
Have a look at Keith Instone's <u>navigation stress test</u>	
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2.2.4 Developing prototypes	
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### 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

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### 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

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### Flow chart This flow diagram shows part of a e-commerce checkout flow

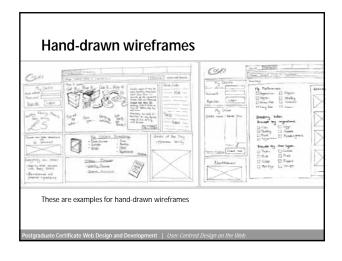

# Site architecture diagrams The structure of a website is usually shown in a site architecture diagram Postgraduate Certificate Web Design and Development | User-Centred Design on the Web

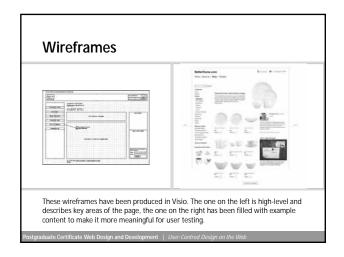
# Site architecture diagrams This diagram show clearly how many levels exist in the page hierarchy Postgraduate Certificate Web Design and Development | User-Centred Design on the Web

### Wireframes

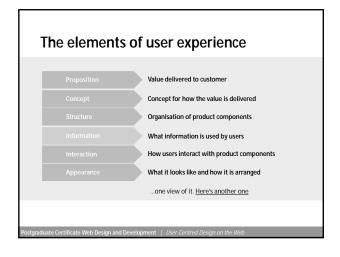
Wireframes are low to medium fidelity prototypes of interfaces

- 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





### 2.2.5 Producing great content



### 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 prewritten material, you need to conduct a content audit
- You can often do this automatically using a tool such as Xenu Link Sleuth
- See also: <u>Doing a Content Inventory (Or, A Mind-Numbingly Detailed Odyssey Through Your Web Site)</u>, <u>How to do a content audit</u>

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### 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!
- Scannability 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, e.g. Open Text
- Follow a style guide if possible e.g. webstyleguide.com, Apple's style guide
- See also **The Elements of Style**

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George Orwell's tips:

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

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### 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'** <u>Jakob's</u> <u>alert on this topic</u>
- 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. <u>Boxes and arrows</u> versus <u>Useit</u>
- "Inverted pyramid" style of writing: summarise first, e.g. BBC
- Compare these pages: <u>HROD Consultancy</u>, <u>Craig's list</u>, <u>The Guardian</u>

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### 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 <u>scrollstoppers</u>

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### Make it legible

- Use plain backgrounds, <u>Circlemakers</u> 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

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ITIC VEDV DIFFIGURE TO DEAD FDOM A CODEFN	
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.	
REALLY NEED TO.	
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	]
Links	
<u>Writing for the Web</u> (from Jakob Nielsen) <u>Writing for the Web</u> (from Dartmouth College)	
Writing for the Web (from Gerry McGovern)	
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Task: Re-write a text for the web	
Take a look at a <u>passage of text</u> from a real website.	
Is this an appropriate style of writing for the web?	
What would you do to improve it if you could?	
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### 2.2.7 Designing effective homepages

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### A bad example...



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### 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

### Look here.

### Some recommendations for designing

effective homepages:

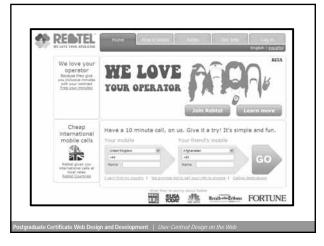
- Show a clear **proposition message**: "What is this site for?"
- Show a clear **Unique Selling Point**: "What makes this site better than the alternatives?"
- Call to action: for priority tasks make it clear what the
- Create **clear entrypoints** into the site that consider different user needs (remember four modes of information
- 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
- <u>blogger.com</u>
- <u>facebook.com</u>

### 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

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### 2.2.8 Interaction design

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# The elements of user experience Proposition Value delivered to customer Concept Concept Concept for how the value is delivered Structure Organisation of product components Unformation What information is used by users How users interact with product components What it looks like and how it is arranged ...one view of it. Here's another one Postgraduate Certificate Web Design and Development | User-Centred Design on the Web

### 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).

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### **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

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### Web interfaces: pattern libraries

- Web design patterns
- UI patterns
- Factory Joe
- · Yahoo! design pattern library
- AJAX patterns
- See also: 37 Signals' article <u>An Introduction to Using Patterns in Web Design</u>

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### 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.

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### Visualising interactions

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

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### A visual vocabulary

- From <a href="http://www.jjq.net/ia/visvocab">http://www.jjq.net/ia/visvocab</a>
- This vocabulary is based on a simple conceptual model encompassing both information architecture and interaction design:
  - $\,-\,$  The system presents the user with  ${\bf paths}$
  - The user moves along these paths through actions
  - These actions then cause the system to generate **results**
- You can download a file containing <u>PowerPoint versions of these shapes</u>.
- Example from jig.net: Metafilter interaction design.

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### 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)