

# Web-Page design & form design

- Web page design
  - Page design
  - Content design
  - Site design
- Form designs
  - Basic principles
  - User action and control
  - Appropriate appearance
  - International UIs
- Prototyping

Interaction Design Basics 1 of 2

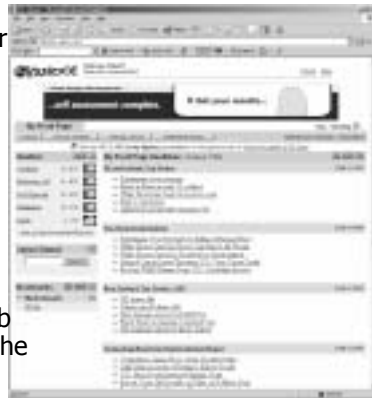
# Web-page design interlude

- Page design
  - Content design
  - Site design
- `Based on Jakob Nielsen's "Designing Web Usability" 2000, New Riders

Interaction Design Basics 1 of 2

# Page design: Screen real estate

- How much of the screen is used for major content
  - Window toolbars
  - Titles
  - Logos
  - Navigation
  - Banner ads
  - White space
- Aim for 50-80% content
- Systematically go through your web page and ask "is this needed?" if the answer is NO then take it out



Interaction Design Basics 1 of 2

# Page design: Cross-platform design

- Users platforms are diverse
  - PC, hand-held, cell-phone
- Screen acreage differs by a factor of 100
- Bandwidth differs by a factor of 1000
- Design for all screen resolutions
  - E.g., variable screen widths and printing
- Avoid non-standard content
- Avoid specific browsers and browser versions



Interaction Design Basics 1 of 2

# Page design

- Separating meaning and presentation
  - that is the point of markup languages like html and xml
  - E.g., heading tags (H1, H2, ...)
- Response times
  - Fast as possible
    - 0.1 second user feels system is 'instantaneous'
    - 1 second user can retain flow of work
    - 10 second limit for keeping user attention
  - Predictability, try to smooth out variability at server end
  - Limit use of images (or reduce image size/colour depth)
  - Link to same image to utilise cached copies, tile an image
  - Glimpse the first screenful

Interaction Design Basics 1 of 2

Assume 0.5 sec latency

# Page design

## Linking

- Describe links properly (ie not 'click here')
- Use TITLE for links to set context of link
- Use standard colouring for links
- Use same URL for the same page
- Allow links off your site, gives value added to your site
- Have linkable pages on your site (permanent URLs)
- Use style sheets
- Provide printable versions of long pages
  - Most users prefer hard copy as pages often disappear



Interaction Design Basics 1 of 2

# Content design

- Write for the web
  - Keep text short (screen reading is 15% slower than paper)
  - Use a copy editor (good writing, spelling, etc)
  - Make text scannable (structure, headings, bullets, highlight)
  - Plain language
  - Chunk pages
- Use good page titles
  - not in graphics
  - Visible in search engines, bookmarks, history
- Make text legible (colours/contrast, size, not uppercase)



Interaction Design Basics 1 of 2

# Content design

- Animation
  - Most users dislike, ignored because of banner advertising
  - Good for: showing continuity in transitions, indicating dimensionality in transitions, illustrating change over time, multiplexing the display, enriching graphical representations, visualising 3D structures, attracting attention
- Video/Audio where appropriate
- 3D graphics
  - Difficult to navigate, rotated text is difficult to read

Interaction Design Basics 1 of 2

# Site design

- The home page
  - What is the site for? How to navigate? How to search?
  - What size page? Width most important – but try for 1 screen at 1024x768
- Where are you in the site?
  - Deep linking from search engines
    - Where are you - navigation trees
    - Where have you been, where can you go
- Users control navigation in your site
  - In a navigation UI: aggregate, summarise, filter, truncate, provide example-based representations



Interaction Design Basics 1 of 2

# Site design

- Search capabilities
  - 1/2 of users are search-dominant, 1/5 are link-dominated
  - Boolean search is not used properly
    - cats AND dogs
    - "cats and dogs"
  - Use title and user's descriptions in results listings
  - Search box should be wide enough for a complex query
  - Use someone else site search (google :))
- URL design
  - Short and comprehensible (less than 75 chars for emailing)
  - No linkrot, support your old URLs
- User discussions?
  - Require significant and constant attention



Interaction Design Basics 1 of 2

# wider still ...

- style issues:
  - platform standards, consistency
  - Style sheets for organisation standards
  - Side bars and menu's – some sites have 3-4 menus :(
- functional issues
  - cut and paste
- navigation issues
  - embedded applications
  - links to other apps ... the web

Interaction Design Basics 1 of 2

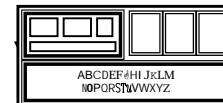
© 2004 Dix et al.

# screen design and layout



Dix, Alan  
Finlay, Janet  
Abowd, Gregory  
Beale, Russell

basic principles  
grouping, structure, order  
alignment  
use of white space



© 2004 Dix et al.

## basic principles

- ask
  - what is the user doing?
- think
  - what information, comparisons, order
- design
  - form follows function

## available tools

- grouping of items
- order of items
- decoration - fonts, boxes etc.
- alignment of items
- white space between items

## grouping and structure

logically together  $\Rightarrow$  physically together

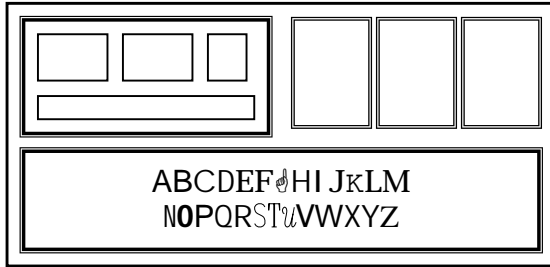
<b>Billing details:</b>		<b>Delivery details:</b>		
Name		Name		
Address: ...		Address: ...		
Credit card no		Delivery time		
<hr/>				
<b>Order details:</b>				
item		quantity	cost/item	cost
size 10 screws (boxes)		7	3.71	25.97
.....		...	...	...

## order of groups and items

- think! - what is natural order
- should match screen order!
  - use boxes, space etc.
  - set up tabbing right!
- instructions
  - beware the cake recipe syndrome!  
... mix milk and flour, add the fruit  
after beating them

## decoration

- use boxes to group logical items
- use fonts for emphasis, headings
- but not too many!!



## alignment - text

- you read from left to right (English and European)  
⇒ align left hand side

Willy Wonka and the Chocolate Factory  
Winston Churchill - A Biography  
Wizard of Oz  
Xena - Warrior Princess

boring but  
readable!

Willy Wonka and the Chocolate Factory  
Winston Churchill - A Biography  
Wizard of Oz  
Xena - Warrior Princess

fine for special effects  
but hard to scan

## alignment - names

- Usually scanning for surnames ⇒ make it easy!

Alan Dix  
Janet Finlay  
Gregory Abowd  
Russell Beale



Alan Dix  
Janet Finlay  
Gregory Abowd  
Russell Beale



Dix, Alan  
Finlay, Janet  
Abowd, Gregory  
Beale, Russell



## alignment - numbers

think purpose!

532.56  
179.3  
256.317  
15  
73.948  
1035

visually:

long number = big number

which is biggest?

align decimal points  
or right align integers

Better still

standardise on  
number of  
decimals

627.865  
1.005763  
382.583  
2502.56  
432.935

## multiple columns

scanning across gaps hard: (often hard to avoid with large data base fields)

sherbert	75
toffee	120
chocolate	35
fruit gums	27

sherbert	75
toffee	120
chocolate	35
fruit gums	27

sherbert	75
toffee	120
chocolate	35
fruit gums	27

Interaction Design Basics 1 of 2

© 2004 Dix et al.

## space to

separate

structure

highlight



Interaction Design Basics 1 of 2

© 2004 Dix et al.

## user action and control

entering information  
knowing what to do  
affordances

© 2004 Dix et al.

## entering information

- forms, dialogue boxes
  - presentation + data input
  - similar layout issues
  - alignment - N.B. different label lengths
- logical layout
  - use task analysis
  - groupings
  - natural order for entering information
    - top-bottom, left-right (depending on culture)
    - set tab order for keyboard entry
- What other ways could these boxes have been arranged?

The image shows three examples of form layouts for entering information. The first example is crossed out with a large X. The second example has a checkmark. The third example has a question mark. Each example shows a 'Name:' label followed by an input field containing 'Alan Dix' and an 'Address:' label followed by an input field containing 'Lancaster'.

Interaction Design Basics 1 of 2

© 2004 Dix et al.

## knowing what to do

- what is active what is passive
  - where do you click
  - where do you type
- consistent style helps
  - e.g. web underlined links
- labels and icons
  - standards for common actions
  - language – bold = current state or action

## affordances

- psychological term
- for physical objects
  - shape and size suggest actions
    - pick up, twist, throw
  - also cultural – buttons 'afford' pushing
- for screen objects
  - button-like object 'affords' mouse click
  - physical-like objects suggest use
- culture of computer use
  - icons 'afford' clicking
  - or even double clicking ... not like real buttons!



mug handle

'affords' grasping



## appropriate appearance

presenting information  
aesthetics and utility  
colour and 3D  
localisation & internationalisation

## presenting information

- purpose matters
  - sort order (which column, numeric alphabetic)
  - text vs. diagram
  - scatter graph vs. histogram
- use paper presentation principles!
- but add interactivity
  - softens design choices
    - e.g. re-ordering columns

name	size
chap10	12
chap5	16
chap1	17
chap14	22
chap20	27
chap8	32
...	...

## aesthetics and utility

- aesthetically pleasing designs
  - increase user satisfaction and improve productivity
- beauty and utility may conflict
  - mixed up visual styles → easy to distinguish
  - clean design – little differentiation → confusing
  - backgrounds behind text
    - ... good to look at, but hard to read
- but can work together
  - e.g. the design of the counter
  - in consumer products – key differentiator (e.g. iMac)

Interaction Design Basics 1 of 2

© 2004 Dix et al.

## colour and 3D

- both often used very badly!
- colour
  - older monitors limited palette
  - colour over used because 'it is there'
  - beware colour blind!
  - use sparingly to reinforce other information
- 3D effects
  - good for physical information and some graphs
  - but if over used ...
    - e.g. text in perspective!! 3D pie charts



Interaction Design Basics 1 of 2

© 2004 Dix et al.

## bad use of colour

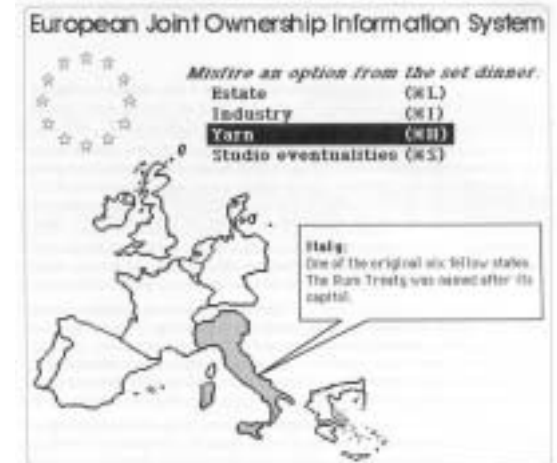
- **OVER USE** – without very good reason (e.g. kids' site)
- colour blindness
- poor use of contrast
- do adjust your set!
  - adjust your monitor to greys only
  - can you still read your screen?

Interaction Design Basics 1 of 2

© 2004 Dix et al.

## International UIs





- Automated translation example



Interaction Design Basics 1 of 2



# International UIs

- International graphical interfaces
  - Resemblance icons 
  - Reference icons 
  - Arbitrary icons 
  - Non-iconic graphics can also be problematic  Font Substitution?
- International usability engineering
  - Follow same usability engineering process for each interface
  - Avoid complicated language, idiom, or local culture references
- Simply change language?
  - use 'resource' database instead of literal text
  - ... but changes sizes, left-right order etc.

Interaction Design Basics 1 of 2

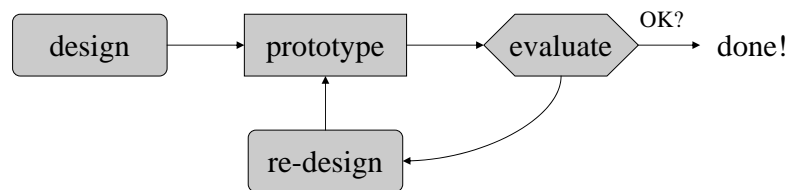
# International UIs

- Guidelines for internationalisation
  - Use the appropriate character set
    - Difficulties translating between lowercase and uppercase (É & é)
    - Sorting order can be different (e.g., ß)
  - Time and measurement vary
    - Dates are problematic (e.g., D/M/Y, M/D/Y, Y.M.D, Y-M-D, etc)
      - Perhaps force month to be written (e.g., 17-Sep-01)
    - Metric or imperial units (e.g., °C or °F)
  - Numbers and currency vary
    - Separators differ (e.g., \$10,000.00 and 10.000,00 kr)
  - Separate interface resources from system's functionality
  - Allow users to specify locale for their interface (e.g., Fiji or NZ)

Interaction Design Basics 1 of 2

# prototyping

- you never get it right first time
- if at first you don't succeed ...

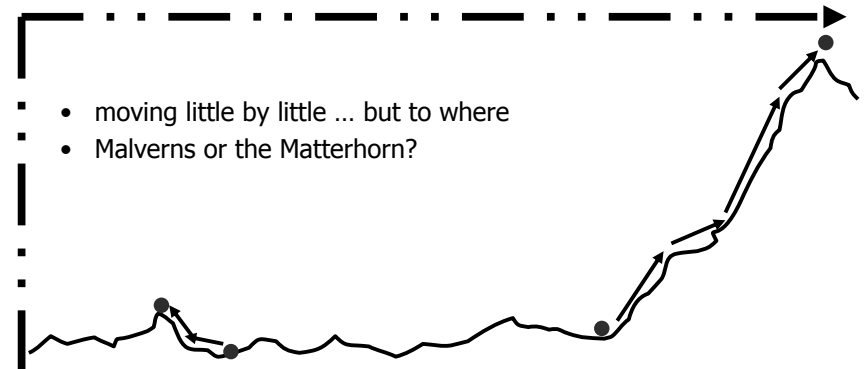


Interaction Design Basics 1 of 2

© 2004 Dix et al.

# pitfalls of prototyping

- moving little by little ... but to where
- Malverns or the Matterhorn?



1. need a good start point
2. need to understand what is wrong

Interaction Design Basics 1 of 2

© 2004 Dix et al.