# Digital Innovation Development for Entrepreneurs

# Online Design

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# design

# Objectives

► Understand how to approach web site design and the stages you need to go through

► Understand the importance of information architecture

# Introduction

The development of a website involves far more than just its design.

There are a lot of pre-design activities concerned with

- establishing the <span style="color:green">purpose of the site</span>,

- <span style="color:green">who</span> it is aimed at, and

- how it <span style="color:green">fits into</span> the organization's overall publicity strategy.

# Introduction

Many sites finish up as too large,

- trying to serve too many issues with the marketing people in charge;

- usability and engagement come a long way down the list of priorities.

- other infrastructure issues will need to be addressed such as

  - how, when and by whom the content is written and updated,

  - who deals with e-mails and site maintenance, and so forth.

# Design and Development

Aim - design and development of a site that is effective, learnable and accommodating

includes developing the structure of the site;

the information architecture,

# Design and Development

Web site design is also concerned with

- information design and,

- navigation design.

- Vital to the success of a website, of course, is the content.

- In website design the designer has to acquire another skill – that of writing and organizing information content

# Website Development

▶ The design of web sites should follow the principles of good interaction design

▶ who is going to use the site and what they are going to use it for

▶ well focused with clear objectives

▶ develop **personas** of the users

▶ understand clearly what goals they will have when using the site.

# Website Development

The design phases of

- understanding,
- envisionment,
- design and
- evaluation need to be undertaken

Scenarios of use should be

- developed,
- prototyped and
- evaluated

# Navigation

▶ Websites get large and so issues of how to move around a website become important

▶ structure and content of the site and to find their way to a particular part of the site is the key issue.

# Navigation

Information architecture is an area of study devoted to designing websites and helping people to answer questions such as:

- ▶ Where am I?

- ▶ Where can I go?

- ▶ Where have I been?

- ▶ What is nearby?

# Design principles

▶ Consistency is important and a clear design language should be developed including interaction patterns for the main recurring interactions.

▶ If it is not desirable to use the standard blue underlined links then ensure that links are consistent so people will quickly learn them.

▶ Many sites confuse people by not making links sufficiently visible and distinguishable from other text in the site.

▶ Provide people with feedback on where they are in the site and clarify contexts and content.

# Design principles

▶ Using meaningful URLs (Uniform Resource Locators, i.e. Web addresses) and familiar titles will help people find what they are looking for and understand what other content is in the site.

▶ A good design guideline for websites is to minimize the need for scrolling and

▶ plan for entry at (almost) any page, as not all your visitors will go in through the front page.

# Design principles

- In general there is a trade-off in designing pages between

  - people who have just arrived there and

  - people who have followed the navigational structure.

- Having a link to the 'home' (front) page of a site in a prominent position and having a site map will afford people getting oriented.

- The site's home page is particularly important and should feature a directory, a summary of important news/stories and a search facility.

# Design principles

Different people have different strategies on websites.

- ► Half of all site visitors are 'search dominant',

- ► 20 per cent 'link dominant'

and the rest mixed (Nielsen, 1993).

Ensure that it is clear what has been searched when designing the search facility.

- ► Search-focused people are task-centred and want to find what they want, whereas the others are more happy to browse around.

# 5 planes of web design

# 5 Planes of web site design

**Garrett's scheme:**

- ▶ strategy,
- ▶ scope,
- ▶ structure,
- ▶ skeleton, and
- ▶ surface

# Garrett's scheme: strategy

- The bottom layer is the 'strategy' plane

- concerned with understanding the overall objective of the website,

- the nature of the people who will be using the site

- and what their requirements of the site are.

- Strategy is concerned with business goals, the organization's brand and a market analysis.

# Garrett's scheme: scope

▶ where the emphasis is on functionality

   ▶ (what the site will let people do)

▶ and on content

   ▶ (the information the site will hold).

▶ Spending time on the scope plane is important so that Web designers know what they are designing

▶ and what they are not designing!

▶ The result of scoping the site is a clear, prioritized set of requirements.

# Garrett's scheme: structure

- It covers information architecture but also includes specifying the interaction design.

- The key feature here is to establish a clear conceptual model.

# Garrett's scheme: skeleton

The 'skeleton' plane is concerned with information design, navigation design and interface design.

# Garrett's scheme: surface

- The final element is the 'surface' plane

- concerned with the aesthetics of the site and

- with ensuring that good design guidelines are followed.

- For example, links should look like links and things that are not links should not!

# Information Design & Architecture

**Garrett said:**

Information design is primarily about perception, how people translate what they see and hear into knowledge.

Information architecture (IA) is primarily about cognition, how people process information and construe relationships between different pieces of information.

http://www.kelake.org/articles/id/differences.html

# Information Design & Architecture

**Garrett said:**

Information architects have orientation toward language

Information designers tend to be oriented toward the visual arts

http://www.kelake.org/articles/id/differences.html

# Skeleton plane - wireframe

▶ This is concerned with information design, navigation design and interface design.

▶ A key technique for bringing all these elements together is the 'wireframe'.

  Wireframes aim to capture a skeleton of a general page layout.

▶ They are on the border between information architecture and information design as the various components of a page are assembled into the standard structures described by wireframes.

# Skeleton plane

To construct a wireframe

- ▶ designers need to identify the key components of the design for each different type of page, then place them on a layout.

- ▶ It is very important to consider not just the type of object – navigation bar, search box, banner headline, advert, text box, and so on

- ▶ – but what content that item can have.

- ▶ It is no use having a very small text box, for example, if there is a lot of text to go in it.

- ▶ It is no good having a drop-down menu if the user has to search through hundreds of items.

# Visual design

▶ Consistency and appropriateness of the presentation are critical here.

▶ An effective way of achieving this consistency is through the use of style sheets.

▶ Style sheets describe how Web documents are displayed,

▶ the colours that are used and

▶ other formatting issues that will make for a clear and logical layout.

▶ Just as the wireframe specifies the structure, so the style sheet specifies the visual language used.

# Visual design

▶ The World Wide Web Consortium, W3C, is responsible for developing the CSS ('cascading style sheets') language, a mark-up language for specifying over 100 different style features including layouts, colours and sounds.

▶ Different style sheets can be developed for different platforms

▶ (so, for example, the same data can be displayed on a computer or a mobile phone)

▶ so that the content looks sensible on the particular platform it is aimed at.

▶ XSL is an alternative language for specifying the look of XML documents.

# information architecture

▶ Information architecture is concerned with how the content is classified and organized.

▶ Techniques such as affinity diagrams and card sorts are used to understand how people conceptualize content.

▶ The difficulty is that different types of site have to serve many different purposes for many different people.

# information architecture

▶ Getting an information architecture that is robust enough to serve such multiple interests is difficult and website 'information architects' are in great demand.

▶ Information architecture for websites is to do with how the content of the site is organized and described:

▶ how to organize the content (i.e. create a taxonomy),

▶ how to label the items and categories,

▶ how to describe the content in the site and

▶ how to present the architecture to users and to other designers.

# Classification schemes

▶ The choice of an ontology or classification scheme is crucial to how easy it is to retrieve an instance of an object.

▶ Although at first sight an alphabetical organization is straightforward,

▶ it is not always easy, especially where forenames and surnames are muddled up,

▶ or where rogue characters can get into the name.

▶ Chronological organization is suitable for historical archives, diaries and calendars and event or TV guides, etc.

▶ Geographical organization suits travel subjects, social and political issues and regional organizations such as wine sites, local foods, etc.

# Classification schemes

▶ Subject or topic is another way popular for certain types of site.

▶ Task organization structures the website by particular activities that people may want to do ('Buy ticket'; 'Contact us').

▶ Audience is another popular structuring method.

▶ Hybrid schemes can be (and often are) used to mix these types of organization together.

# Alternatives:

- Task-based: 'Buy a Car'

- Audience: 'Car Buyers'

- Topic-based: 'Cars'

- Department: 'Sales Department'

# Faceted classification

- Any web site can be described in terms of three key features:

  - its dimensions,

  - the facets (or attributes) of those dimensions and

  - the values that these facets can take.

# Faceted classification

- The dimensions come from the ontology – the major concepts in the site.

- Each of these has certain common facets

- Each of these attributes, or facets, can take certain values.

- With clear and known facets and values the interface can be optimized to exploit the structure.

# Faceted classification

Example:

- ▶ music has genre, artist and title as facets

- ▶ a travel site has dimensions of flights, hotels, hire cars

- ▶ common facets such as price

- ▶ unique facets such as flights go from one city to another, hotels are in a city

- ▶ facets have values e.g. price $200, a city has a name, airports have a name

- ▶ amount of cities is too large to restrict but airports can be restricted to a list

# Organizational structures

- Rosenfeld and Morville (2002) point out the need to consider the granularity of the ontology as this leads to the breadth vs. depth debate in website design.

- A hierarchical structure

- (also sometimes called a 'tree', although it is an upside-down tree)

- arranges the pages with a single root at the top and a number of branches underneath, each of which has several sub-branches.

# Vocabularies

▶ A taxonomy is a classification scheme.

▶ There are many different types that serve many different purposes.

▶ One of the problems with devising a taxonomy is that different people use different concepts to organize things.

▶ Another is that people use different words and terms to refer to the same thing.

▶ There are

    ▶ synonyms (e.g. as in a thesaurus)    e.g. diverse / different

    ▶ homonyms (same, same but different)    e.g. bank or bank

    ▶ homophones (pronounced the same)    e.g. cell or sell

    ▶ homographs (spelled the same)    e.g. desert  - very hot or gone!

# Summary

▶ As with the design of all interactive systems, the design of web sites understanding, envisionment, design and evaluation and a clear view of the purpose of the system.

▶ Web site design needs to follow sound design principles and will include the development of personas, scenarios and a clear design language.

▶ Information architecture is concerned with understanding the structure and organization of the content of the site

▶ Navigation concerns how people move around the site and how they get to know what is on the site and where it is.
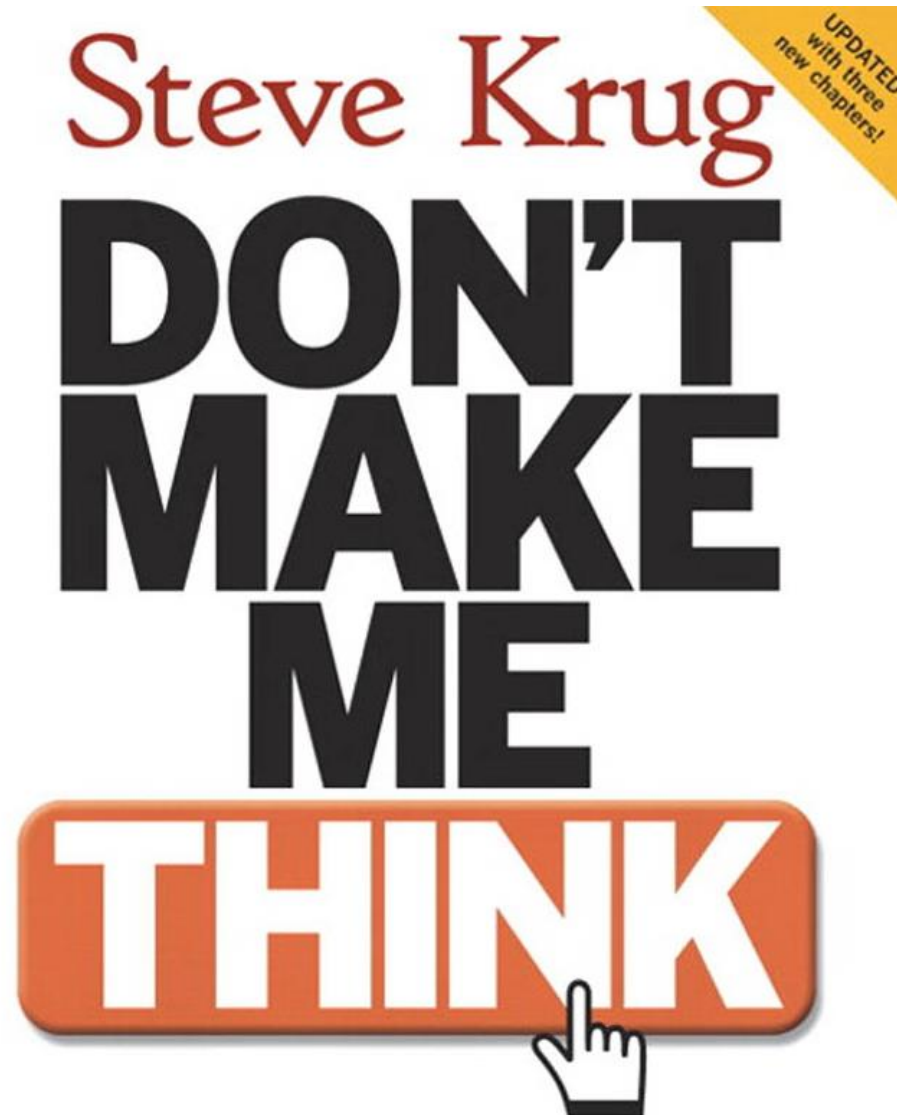
Lesson notes based on:

Krug S. (2006) *Don't make me think: A Common Sense Approach to Web Usability,* 2nd Edition, New Riders, Berkeley, California, USA

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- Benyon D. (2010) *Designing Interactive systems*, 2nd Edition, Addison Welsey, Harlow

# Thank you!

any questions?