Web Design Fundamentals

What to do, why to do it on the Web

Before we get started…

- What sites are you working on?
- What's the purpose of your site?
- What audience(s) are you trying to reach?

Site Planning

- **Determine** site goals
- **Analyze** your audience
- **Analyze** the "competition"
- **Know** your own abilities and resources
- **Map** the current site
- **Design** your new site

Site Goals and Guidelines

- Why are you creating this site?
- What does the site owner hope to achieve with this site?
- What action does the site owner want the audience to take as a result of visiting?
- What restrictions or guidelines must be followed when designing the site?
  - Accessibility guidelines (Kansas)
    - http://da.state.ks.us/itec/WASPriorities112001.htm
  - Style guidelines (for a sub-site)

Audience Analysis

- **Who** are you trying to reach?
  - Age
  - Language and Culture
  - Level of education
  - Access to the Web (High-speed? Dial-in?)
  - Familiarity with the Web
  - Barriers to access?
- **What** are they looking for at your site?
  - Information
  - Services
  - Community

Are there multiple audiences?

How do I find out about the audience?

- Ask the site owners
- Look at current site's logs and stats
- Talk to people who "fit the bill"
  - Students who are in the program (but were once prospective students)
  - People in the same demographic groups
- Review published research
- Build feedback capability into your site
- Know how audiences deal with the web in general

Analyze the “Competition”

- Look for sites with similar contents, purpose
  - Within KU
  - At other universities
  - At other organizations
  - In the private sector
- What are the trends and precedents?
- Where do they excel or fall short?
- Does your site need to “match” a parent site?

Know Resources & Abilities

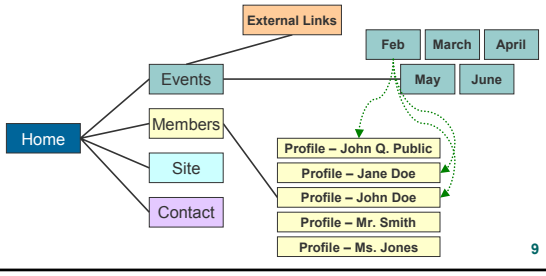
- What technical knowledge do you have?
- What tools, resources, and time do you have access to (now AND later)?
  - Software
    - Web authoring tools
    - Image editing and tools
    - Animation tools
  - Hardware
    - Camera (video and/or still)
    - Scanner (flatbed or slide)
  - Other people

Think long-term!

Be sure you have the resources (human and technical) to **maintain** the site once you’ve created it.

Site Map

- All the pages, all the links of the current site
- Boxes for pages, lines for links
- Shows how “deep” your site is



More on site “depth”

- Depth and “click-throughs”
- Deep and narrow
  - Few links on each page, many “levels” of pages
- Shallow and broad
  - Many links on a page (especially the main page), often fewer levels of pages
- Once again, consider your **audience** and **content**
  - NIH.gov: deep
  - Fool.com: broad

Design (or redesign) the site

- Review audience needs/wants with site owner
- Determine the site structure (site map)
- Gather content (visuals, information)
- Mock up a visual design
- Build the site in a “test” mode
- Perform (user) testing and make changes
- Put the site into production
- Maintain and update the site

Communicate with the site owner at each of these stages!

A few words on usability testing

- The testers should…
  - Reflect your audience demographics
  - Be (relatively) uncoached
- The test should…
  - Have clearly defined goals
    - “Find out how many computers are in the Budig Media lab.”
    - “Sign up for the next Access: Introduction workshop.”
  - Be *observed* in some way
  - Ask for tester feedback
    - Notes
    - Post-test interviews

Visual Design

What looks good? Why?

Before we get started…

Consistency is a good goal for any design.

Elements of Visual Design

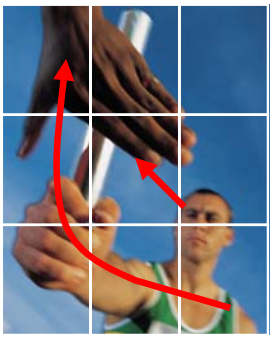
- Composition
  - Rule of Thirds (and Rule of Three)
  - Grids
  - Balance
  - White space
- Color
- Fonts
- Motion
- Examples

Grids and the Rule of Thirds

- For image composition
- Web Grids (the “page”)

More Rule of Thirds

- Image “flows” up and in
- Sight-line points towards the middle of the image



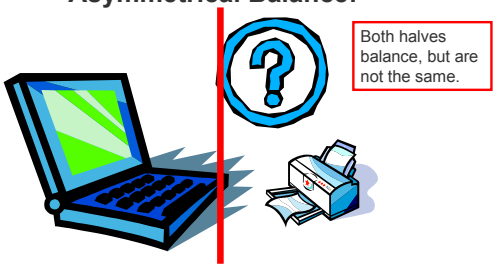
Grouping Objects/Balance

Symmetrical Balance:

(Can be seen as static and dull in some Western cultures, but common in the East and in Native American cultures.)

Grouping Objects/Balance

Asymmetrical Balance:



(Most frequently used in Western art and design.)

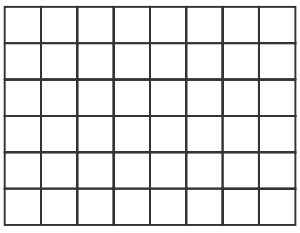
Grouping Objects/Balance

Radial Balance:

(For example, mandalas and other Eastern designs.)

Screen/Page Layout

- Where do you normally see page navigation?
- Where are page titles/headings?
- Where do graphic elements go?
- What about screen real estate?
- What about scrolling? (Do users scroll?)



White Space

- What is it? Why is it a good thing?
  - Absence of “visual clutter”
  - Helps readers scan/find info quickly
  - Avoids “information overload” syndrome
- How do you create it?
- Examples
  - ACS Site
  - ACSess Site
  - ACS Training Site

Color

- Color Theory
  - What does color mean?
  - What does **that** color mean?
  - Warm/cool
  - Cultural definitions
- Combining colors
- “Safe” Colors
  - What’s it all about?
  - Palette Man
- Light backgrounds with dark text or vice versa?

Fonts (aka typography)

- Keep it simple
  - Limit number of fonts per page and per site
  - Use the same fonts consistently throughout the site
- Make good font choices
  - Sans serif vs. serif
  - Commonly installed fonts
  - Mood
  - Readability
- USE CAPITALIZATION SPARINGLY

Font Moods

- what mood does this font evoke for you?
- What about this one? Is it formal? Casual?
- Would this font give your page a professional look? Why or why not?
- What assumptions about the content would you make from this font?
- **Can you even read what this says? If you had to read a whole page of this, how would you feel?**

More Font Moods

- 8-Pin Matrix Font
- PUNCH LABEL FONT
- font for the dumped

Specialty fonts like these are NOT intended for body text, but can be used for headings or other special uses to great effect.

Since they aren't likely to be installed on your visitor's computers, though, you'll have to create **image files** using the text you want to display.

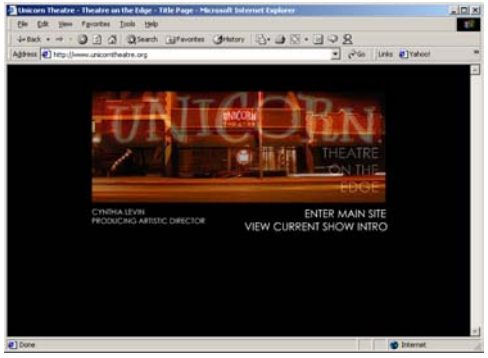
Motion

- Coolness factor vs. "dancing bologna"
- Plug-ins, plug-ins, plug-ins
- Bandwidth/download time
- Content is king
- Examples:
  - KU Theatre
  - lookandfeel new media
  - KU Endowment (by look and feel)
  - Julia Childs on PBS

The Fool

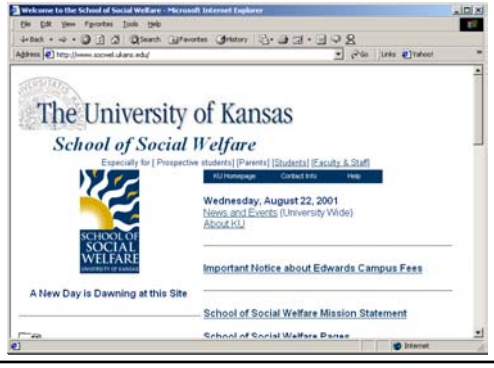
28

Unicorn Theatre



29

KU Department Web Sites



30

Web Design Fundamentals

All the Links

Site Planning

Kansas Web Accessibility Guidelines: da.state.ks.us/itec/WASPriorities112001.htm

Site Map – Generic Site example: www.ku.edu/acs/docs/wkshop/webdesign

Visual Design

Space and White Space

The browser grid from WPDFD: www.wpdfd.com/browsergrid.htm

White space usage examples:

- www.ku.edu/acs
- www.ku.edu/acs/news
- www.ku.edu/acs/train

Color

Color Theory from Poynter.org: www.poynter.org/special/colorproject/colorproject/color.html

Cultural color meanings from About.com: webdesign.about.com/library/weekly/aa070400c.htm

Color study resources from Sanford: www.sanford-artedventures.com/study/g_color.html

Webmonkey on the Colorsafe Palette: hotwired.lycos.com/webmonkey/00/37/index2a.html

Paletteman's color-combining tool: www.paletteman.com

Example of a site with **light text** and a **dark background**: www.ku.edu/~tv14

Example of a site with **dark text** and a **light background**: www.kansan.com

Fonts

Basic typography info from Fonts.com: www.fonts.com/fontent/fontent_home.asp?con=type101

Motion

KU Theatre: www.ku.edu/~theatre

lookandfeel new media: www.lookandfeel.com

KU Endowment: www.kuendowment.org

Julia Child on PBS: www.pbs.org/juliachild

General Design Examples

News/Informational Site: www.fool.com

Theatre/Arts Site: www.unicorntheatre.org

KU Sites:

www.ku.edu	www.kuathletics.com	www2.lib.ku.edu/anschutzlib/govdocs/
www.kumc.edu	www.ku.edu/~jschool	www.socwel.ku.edu

Web Design Fundamentals

A (Somewhat) Annotated Bibliography

Brinck, Tom, Darren Gergle, and Scott Wood. “Web Design From the Trenches.” Proceedings of the Conference on Chi 98 Summary : Human Factors in Computing Systems. New York: ACM Press, 1998. 133-34.

> “Most website design projects involve small to medium-sized sites consisting of between ten and fifty pages. Such projects require designers to operate on a tight schedule and a very limited budget. With tightly constrained resources, how can we maintain a high standard of design and create usable and useful products? This tutorial presents a practical approach to applying usability techniques in website design. Our design process includes techniques for project management, dealing with clients, sketching and comping techniques for quickly producing high-quality alternatives, and a set of website design guidelines.”
>
> http://doi.acm.org/10.1145/286498.286579

Chak, Andrew. "Effective Info Architecture." Web Techniques Oct 2001: 15-17.

Cruickshank, Alex. "How to Add Dhtml to Your Site." Internet Magazine Jan 2002: 96-98.

> “Are you tired of static HTML pages on your Web site and spending hours updating them after you've done a little redesign? Want to add dynamic, interactive features that won't put your site's server under strain? Then DHTML's for you, as Alex Cruickshank explains.”

Deaton, Mary. Guerilla Usability. 2001. Builder.com. Available: http://builder.com.com/article.jhtml?id=u00120010820gcn01.htm. 3/22 2002.

Fleming, Jennifer. Web Navigation: Designing the User Experience. Sebastopol, CA: O'Reilly & Associates, 1998.

> Available through netlibrary at KU:
> http://www.netlibrary.com/ebook_info.asp?product_id=24653

Fogg, B. J., et al. "What Makes Web Sites Credible?: A Report on a Large Quantitative Study." Proceedings of the Sigchi Conference on Human Factors in Computing Systems. Seattle, Washington, 2001. 61-68.

> “The credibility of web sites is becoming an increasingly important area to understand. To expand knowledge in this domain, we conducted an online study that investigated how different elements of Web sites affect people's perception of credibility. Over 1400 people participated in this study, both from the U.S. and Europe, evaluating 51 different Web site elements. The data showed which elements boost and which elements hurt perceptions of Web credibility. Through analysis we found these elements fell into one of seven factors. In order of impact, the five types of elements that increased credibility perceptions were “real-world feel”, “ease of use”, “expertise”, “trustworthiness”, and “tailoring”. The two types of elements that hurt credibility were “commercial implications&rdquo ;and “amateurism”. This large-scale study lays the groundwork for further research into the elements that affect Web credibility. The results also suggest implications for designing credible Web sites.”
>
> http://doi.acm.org/10.1145/365024.365037

Grady, Helen M. "Web Site Design: A Case Study in Usability Testing Using Paper Prototypes." Proceedings of Ieee Professional Communication Society International Professional Communication Conference and Acm Special Interest Group on Documentation Conference on Technology & Teamwork. Piscataway, NJ: IEEE Educational Activities Department, 2000. 39-45.

> "Paper prototypes are a low-tech, low-cost, but highly effective, form of usability testing for web site design. Creating a web site is relatively easy, given the technology and tools now available. All too often, web site developers tend to be enamored with the technology and forget the needs of end user. As a result, many web site developers delay usability testing until their web site is completely designed, only to uncover significant interface, content, or structural problems with the site once the customers try to use it. Significant redesign may be impossible due to time, cost, or personnel constraints.This paper discusses the benefits of using paper prototypes to conduct usability testing of a web site for Mercer University's School of Engineering Center for Excellence in Engineering Education (CE^3)."

Holzschlag, Molly E. "The Fear of X - What Web Designers Should Know About Xml and Xhtml." PC Magazine August 1 2001: 1-3.

---. "Clean up, Flatten Out." Web Techniques August 2001: 26-27.

> "Eschew multimedia clutter, and smooth the bumps out of your pages. Simple design makes more sense than ever as new platforms emerge."

---. "14 Ways to Talk Clients out of Runing Their Sites: Temper Your Clients' Enthusiasm with the Wisdom of Experience." Web Techniques Dec 2001: 24-26.

> "Every design shop has dealt with a client who "knows better" than the designer. Combine an aggressive client with an overly accommodating designer, and the resulting site can become a primer for mistakes to avoid.
>
> "The best shops work closely with clients to teach them the tenets of solid Web design. But there are still plenty of novices out there. I've compiled 14 of the most common client-driven site design errors. Learning to address these issues diplomatically will mean successful sites for your customers, and an improved reputation for your shop."

---. "Raise Your Standards: Knowing the Rules Gives You Freedom to Break Them and the Skills to Make Your Content More Powerful." Web Techniques 7.2 (2002): 20-21.

Ivory, Melody Y., Rashmi R. Sinha, and Marti A. Hearst. "Empirically Validated Web Page Design Metrics." Proceedings of the Sigchi Conference on Human Factors in Computing Systems. New York: ACM Press, 2001. 53-60.

"A quantitative analysis of a large collection of expert-rated web sites reveals that page-level metrics can accurately predict if a site will be highly rated. The analysis also provides empirical evidence that important metrics, including page composition, page formatting, and overall page characteristics, differ among web site categories such as education, community, living, and finance. These results provide an empirical foundation for web site design guidelines and also suggest which metrics can be most important for evaluation via user studies."

http://doi.acm.org/10.1145/365024.365035

Mach, Michelle. "The Service of Server-Side Includes." Information Technology and Libraries 20.4 (2001): 213-19.

"The use of server-side includes (SSI) simplifies Web site maintenance by generating Web pages on-the-fly, rather than creating static HTML pages. This article provides examples and instructions for common uses of SSIs, including displaying environmental variables, inserting file information, and using the advanced capabilities of extended SSI (XSSI). Potential concerns including security, WYSIWYG (what-you-see-is-what-you-get) editors, filename extensions, and server load are discussed, as are the advantages and disadvantages of SSI over more well-known tools like CGL JavaScript, or Active Server Pages (ASP)."

Marcus, Aaron, and Emilie West Gould. "Crosscurrents: Cultural Dimensions and Global Web User-Interface Design." interactions 7.4 (2000): 32-46.

http://doi.acm.org/10.1145/345190.345238

McManus, Sean. "How to Avoid Web Design Crimes." Internet Magazine Jan 2002: 92-94.

McManus, Sean. "Improve Your Web Site's Navigation." Internet Magazine Nov 2001: 90-93.

Newman, Mark W., and James A. Landay. "Sitemaps, Storyboards, and Specifications: A Sketch of Web Site Design Practice." Conference proceedings on Designing interactive systems : processes, practices, methods, and techniques. New York, 2000. 263 - 74.

"Through a study of web site design practice, we observed that designers employ multiple representations of web sites as they progress through the design process, and that these representations allow them to focus on different aspects of the design. Designers also employ multiple tools during the course of a project, including graphic design, web development, presentation, and word processing software, as well as pen and paper. Sketching on paper is especially important during the design exploration phase of a project, when designers wish to explore many design possibilities quickly without focusing on low-level details. Web site design tools intended to support the early phases of the design process should employ informal interaction techniques, should support multiple site representations, and should integrate well with other applications that designers use regularly."

http://portal.acm.org/citation.cfm?doid=347642.347758

Niederst, Jennifer. Web Design in a Nutshell. O'Reilly, 2001.

The O'Reilly books are very popular in the computing world, because they tend to offer accurate content in a readable, understandable format, without dummying down the material (a la the "For Dummies," "Idiots," etc.).

Nielsen, Jacob. Designing Web Usability. Indianapolis, Ind.: New Riders, 2000.

This book has become one of the most widely used and cited works on designing usable web pages, and Jacob Nielson is the premiere expert on usability. If there is a must-read on the topic, this is it. You might also check out www.useit.com, Nielsen's site, for columns and articles on web usability.

Otto, Joseph C. "Building a Great Web Site." T H E Journal (Technological Horizons In Education) 29.7 (2002): 40-42.

Slocombe, Mike. "How to Plan a Great Web Site." Internet Magazine August 2001: 86-88.

Smart, Karl L., Judy Cossell Rice, and Larry E. Wood. "Meeting the Needs of Users: Toward a Semiotics of the Web." Proceedings of Ieee Professional Communication Society International Professional Communication Conference and Acm Special Interest Group on Documentation Conference on Technology & Teamwork. Cambridge, Massachusetts: IEEE Educational Activities Department Piscataway, NJ, USA, 2000. 593-605.

"The tremendous growth of the Internet has brought a heightened awareness of the importance of designing information to meet customers' needs. Although we may never develop universal design standards that apply to every situation, we need more empirically supported guidelines to inform design decisions. Guidelines must be based on commonly shared semiology of Web conventions. A semiotics of the Web can help us determine how meaning is derived from Web pages and the Web, and in turn how to better design sites to convey intended and desired meanings. This article identifies six categories or dimensions of design issues relating to the Web that serves as a beginning of a Web semiotics. Each dimension is explained, with various research issues and questions suggested."

Spool, Jared. Web Site Usability. Morgan Kaufmann, 1998.

Another usability expert worth consulting; another place to look is his consulting company's web site, User Interface Engineering (http://www.uie.com/).

Sullivan, Terry. User Testing Techniques - a Reader-Friendliness Checklist. 9/12/96 1996. All Things Web. Available: http://www.pantos.org/atw/35317.html. 3/22 2002.

"Periodic user testing is an important element in developing and maintaining a reader-friendly Website. But formal usability tests are expensive and time-consuming -- often prohibitively so. Happily, inspection-based user testing methods, ranging from a free-form site review to more structured approaches, provide a cost-effective means of assessing (and thus improving) the usability of almost any Website.

> "One of the most effective forms of inspection-based user testing involves the use of a "usability checklist." Checklist-based user testing is extremely inexpensive to implement, and requires a surprisingly small number of testers to be effective. It's also easy to schedule; it can be used at virtually any time throughout the development cycle, from the earliest prototype screens to a full-blown Website."

Tufte, Edward R. The Visual Display of Quantitative Information. Cheshire, Conn.: Graphics Press, 1983.

---. Envisioning Information. Cheshire, Conn.: Graphics Press, 1990.

---. Visual Explanations: Images and Quantities, Evidence and Narrative. Cheshire, Conn.: Graphics Press, 1997.

Williams, Robin. The Non-Designer'S Design Book: Design and Typographic Principles for the Visual Novice. Berkeley: Peachpit Press, 1994.

Zimmermann, Beverly B. "Applying Tufte's Principles of Information Design to Creating Effective Web Sites." Proceedings of the 15th Annual International Conference on Computer Documentation. New York: ACM Press, 1997. 309-17.

http://doi.acm.org/10.1145/263367.263406