

Content Organization

After ensuring that content is useful, well-written

and in a format that is suitable for the Web, it is important to ensure that the information is clearly organized. In some cases, the content on a site can be organized in multiple ways to accommodate multiple audiences.

Organizing content includes putting critical information near the “top” of the site, grouping related elements, and ensuring that all necessary information is available without slowing the user with unneeded information. Content should be formatted to facilitate scanning, and to enable quick understanding.

Relative Importance:
12345

Strength of Evidence:
12340

Guideline: Organize information at each level of the website so that it shows a clear and logical structure to typical users.

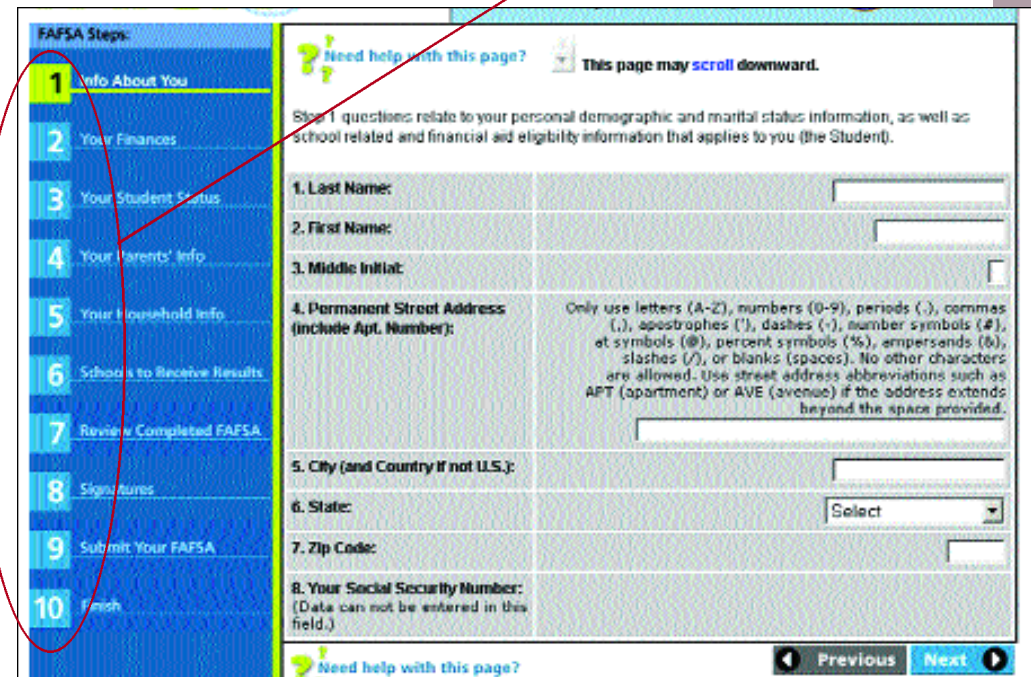
Comments: Designers should present information in a structure that reflects user needs and the site’s goals. Information should be well-organized at the website level, page level, and paragraph or list level.

Good website and page design enables users to understand the nature of the site’s organizational relationships and will support users in locating information efficiently. A clear, logical structure will reduce the chances of users becoming bored, disinterested, or frustrated.

Sources: Benson, 1985; Clark and Haviland, 1975; Detweiler and Omanson, 1996; Dixon, 1987; Evans, 1998; Farkas and Farkas, 2000; Keyes, 1993; Keyes, Sykes and Lewis, 1988; Lynch and Horton, 2002; Nielsen and Tahir, 2002; Redish, 1993; Redish, Felker and Rose, 1981; Schroeder, 1999; Spyridakis, 2000; Tiller and Green, 1999; Wright, 1987; Zimmerman and Akerele, 2002; Zimmerman, et al., 2002.

Example:

This design clearly illustrates to the user the logical structure of the website. The structure is built on the user’s needs—namely, completing a form in ten steps.



16:2 Put Critical Information Near the Top of the Website

Guideline: Put critical information high in the hierarchy of a website.

Comments: Critical information should be provided as close to the homepage as possible. This reduces the need for users to click deep into the site and make additional decisions on intervening pages. The more steps (or clicks) users must take to find the desired information, the greater the likelihood they will make an incorrect choice. Important information should be available within two or three clicks of the homepage.

Sources: Evans, 1998; Levine, 1996; Nall, Koyani and Lafond, 2001; Nielsen and Tahir, 2002; Spyridakis, 2000; Zimmerman, et al., 1996; Zimmerman, et al., 2002.

Example:

Relative Importance:
12345

Strength of Evidence:
12300

Research-Based Web Design & Usability Guidelines
NATIONAL CANCER INSTITUTE

Current Evidence-Based Guidelines on Web Design and Usability Issues

About This Site
How to Use This Site

Submit Additional Research
Printing Complete Guidelines

Reading and Scanning

Search

Design Process

Titles/Headings

Page Length

Page Layout

Design Considerations

Content/Content Organization

Font/Text Size

Links (Circled in red)

Navigation

Software/Hardware

Accessibility

A key topic area, "Links," is placed on the homepage, and its content is only one click away.

This important topic, "Good Nutrition," is not represented on the homepage. The topic's content is only available after several clicks.

As cholesterol levels increase, most people are unaware that heart disease begins in childhood. This site is dedicated to providing heart-healthy tips for the entire family. Remember, an ounce of prevention is worth a pound of cure!

Open the Door...

Open the Door to a Healthy Heart!

Good Nutrition
A Family Affair

- Are you a "Flip Flopper" When It Comes To Nutrition?
- Test Your Sat Fat IQ
- Heart-Healthy Recipes [\[links recipes\]](#) [\[Adult recipes\]](#)
- What Should I Eat? [Foods to Choose More Often and Less Often](#)
- Women's Eating Habits
- Good Nutrition: A Wise Investment** (Circled in red)

Home What's New Search

Open the Door to a Healthy Heart, 5175-G Peachtree-Dunwoody Rd., Suite 500, Atlanta, GA 30342, (404) 252-2663.

16:3 Facilitate Scanning

Relative Importance:
12340

Strength of Evidence:
12345

Guideline: Structure each content page to facilitate scanning: use clear, well-located headings; short phrases and sentences; and small readable paragraphs.

Comments: Websites that are optimized for scanning can help users find desired information. Users that scan generally read headings, but do not read full text prose—this results in users missing information when a page contains dense text.

Studies report that about eighty percent of users scan any new page. Only sixteen percent read word-by-word. Users spend about twelve percent of their time trying to locate desired information on a page.

To facilitate the finding of information, place important headings high in the center section of a page. Users tend to scan until they find something interesting and then they read. Designers should help users ignore large chunks of the page in a single glance.

Sources: Bailey, Koyani and Nall, 2000; Byrne, John, et al., 1999; Evans, 1998; Morkes and Nielsen, 1997; Morkes and Nielsen, 1998; Nielsen, 1997e; Nielsen, 2000; Schriver, 1997; Spool, et al., 1997; Spyridakis, 2000; Sticht, 1985; Sullivan and Flower, 1986; Toms, 2000; Zimmerman, et al., 1996.

Example:

This page facilitates scanning.

Recording the Test Design

PDA's and computers require different scenarios.

Method:
The CIS Web site was used to determine potential scenarios. Conversations with employees from the CIS regional offices determined job responsibilities and tasks that occurred on a day-to-day basis.

Lessons Learned:
Scenarios designed for the Web did not necessarily translate to the PDA because PDA users saw the ability to access cancer content on handhelds as a supplement to the information available online. This altered their behavior and usage patterns on PDA.

For example, users requested that the topics be arranged by cancer type in order to access the content more quickly.

Hardware and software on PDA's vary significantly.
Usability testing on PDA's needs to take into account variability in hardware and software.

For example, there are four different pathways to input data onto the PDA:

1. Character Recognition
2. On-screen keyboard
3. Portable, foldout keyboard
4. Thumb keyboards (Blackberry)

This may have a significant effect on usability testing for performance.

Users are aware of the limited memory capability in their PDA's.
This has an effect on the likelihood of the user downloading content, especially large amounts of it. Communicating the level of remaining memory on PDA's and size of content to download may help alter the user's behavior.

Handheld	Operating System Version	Expandable Memory Potential
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See page xxi for detailed descriptions of the rating scales

12340

16:4 Group Related Elements

Guideline: Group all related information and functions in order to decrease time spent searching or scanning.

Comments: All information related to one topic should be grouped together. This minimizes the need for users to search or scan the site for related information. Users will consider items that are placed in close spatial proximity to belong together conceptually. Text items that share the same background color typically will be seen as being related to each other.

Sources: Ahlstrom and Longo, 2001; Cakir, Hart and Stewart, 1980; Faraday, 2000; Gerhardt-Powals, 1996; Kahn, Tan and Beaton, 1990; Kim and Yoo, 2000; Nall, Koyani and Lafond, 2001; Niemela and Saarinen, 2000; Nygren and Allard, 1996; Spyridakis, 2000.

Example: This site organizes information well by grouping core navigation elements and key topic areas. These features allow users to search and scan for information faster.

Relative Importance:
12340
Strength of Evidence:
12345



See page xxi for detailed descriptions of the rating scales
12340

16:5 Display Only Necessary Information

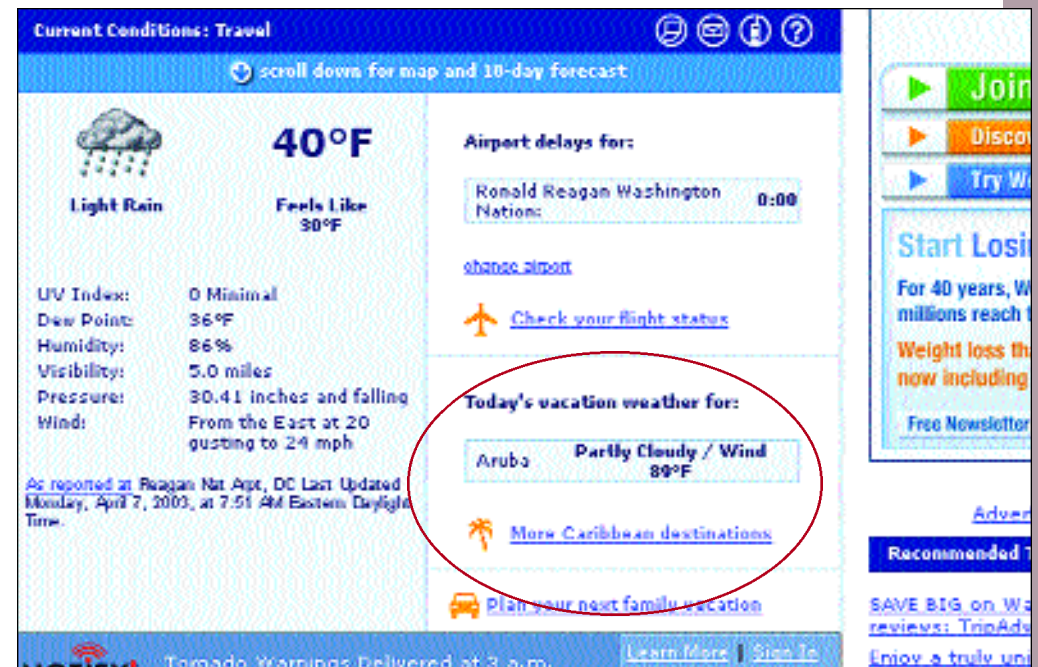
Guideline: Limit page information only to that which is needed by users while on that page.

Comments: Do not overload pages or interactions with extraneous information. Displaying too much information may confuse users and hinder assimilation of needed information. Allow users to remain focused on the desired task by excluding information that task analysis and usability testing indicates is not relevant to their current task. When user information requirements cannot be precisely anticipated by the designer, allow users to tailor displays online.

Sources: Engel and Granda, 1975; Mayhew, 1992; Morkes and Nielsen, 1998; Powers, et al., 1961; Smith and Mosier, 1986; Spyridakis, 2000; Stewart, 1980; Tullis, 1981.

Example: An example of extraneous information. In this case, the user is looking for a weather forecast for Washington, D.C. The site provides this information, but also indicates today's vacation weather for Aruba—which this information is extraneous to the user's original task.

Relative Importance:
12340
Strength of Evidence:
12340



16:6 Ensure that Necessary Information is Displayed

Guideline: Ensure that all needed information is available and displayed on the page where and when it is needed.

Relative Importance:

Strength of Evidence:

Comments: Users should not have to remember data from one page to the next or when scrolling from one screenful to the next. Heading information should be retained when users scroll data tables, or repeated often enough so that header information can be seen on each screenful.

Sources: Engel and Granda, 1975; Smith and Mosier, 1986; Spyridakis, 2000; Stewart, 1980; Tullis, 1983.

Example: This header row disappears as users scroll down the table. This can negatively effect users' performance on the site by exceeding their "working memory" capacity.

REGION 1	# Submitted Relative TS Permits	# Submitted Issued TS Permits	% Issued (TS only)
Connecticut	99	63	64%
Massachusetts	187	87	47%
Maine	71	50	70%
New Hampshire	55	45	82%
Rhode Island	40	26	53%
Vermont	23	20	87%
TOTAL	484	291	60%
REGION 2			
New Jersey	295	148	49%
New York	534	465	87%
Puerto Rico	56	28	37%
Virgin Islands	7	0	0%
TOTAL	909	706	71%
REGION 3			
District of Columbia	34	34	100%
Delaware	05	01	20%
Maryland	167	120	72%

See page xxi for detailed descriptions of the rating scales

16:7 Format Information for Multiple Audiences

Guideline: Provide information in multiple formats if the website has distinct audiences who will be interested in the same information.

Relative Importance:

Strength of Evidence:

Comments: Information can be provided in varying formats and at different levels of detail on the same site. For example, information about cancer can be presented in differing ways for physicians and patients.

When segmenting content for two or more distinct groups of users, allow users from each audience to easily access information intended for other audiences. One study showed that users want to see information that is intended for a health professional audience, as well as for a patient or consumer audience. Users want access to all versions of the information without first having to declare themselves as a health professional, a patient, a caregiver, etc. To accommodate these users, audiences were not segmented until they reached a page where links to multiple versions of a document (i.e., technical, non-technical) were provided.

Sources: Nall, Koyani and Lafond, 2001; Zimmerman and Prickett, 2000; Zimmerman, et al., 2002.

Example: These are examples of ways to provide different audiences access to information.

- Mental Disorder Information
- Clinical Trials
- Material en Español
- Science on Our Minds 2001
- Research Fact Sheets
- Science Education
- Reports of the Surgeon General
- Welcome
- News & Events
- Clinical Trials
- Funding Opportunities
- For the Public
- For Practitioners
- For Researchers
- Intramural Research
- For NIH Staff
- Contact Us

Paranasal Sinus and Nasal Cavity Cancer (PDQ®): Treatment

Printable Version

Two versions of this document are available. Select a tab below to switch between versions.
Date Last Modified: 08/23/2002

patient health professional

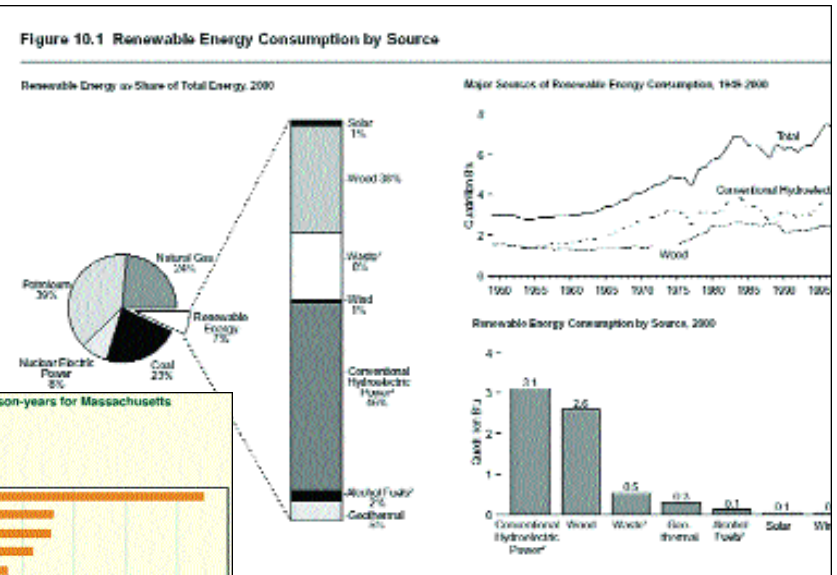
16:8 Design Quantitative Content for Quick Understanding

Guideline: Design quantitative information to reduce the time required to understand it.

Comments: Make appropriate use of tables, graphics, and visualization techniques to hasten the understanding of information. Presenting quantitative information in a table (rather than a graph) generally elicits the best performance; however, there are situations where visualizations will elicit even better performance. Usability testing can help to determine when users will benefit from using tabular data, graphics, tables, or visualizations.

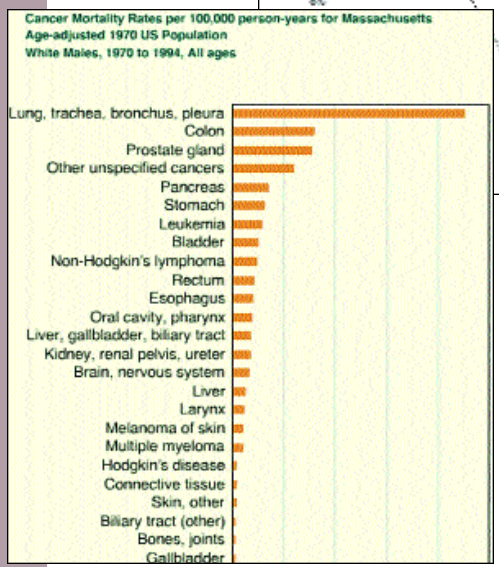
Sources: Galitz, 2002; Gerhardt-Powals, 1996; Kosslyn, 1994; Meyer, 1997; Meyer, Shamo and Gopher, 1999; Meyer, Shinar and Leiser, 1997; Tufte, 1983.

Example:



This is a case where displaying information using graphs and bars allows users to discern the importance of data much more quickly than when it is presented in a table format.

Presenting numerical data as bar charts may speed up the user's understanding of data.



See page xxi for detailed descriptions of the rating scales
12340

16:9 Use Color for Grouping

Guideline: Use color to help users understand what does and does not go together.

Comments: Color coding permits users to rapidly scan and quickly perceive patterns and relationships among items. Items that share the same color will be considered as being related to each other, while items with prominent color differences will seem to be different.

People can distinguish up to ten different colors that are assigned to different categories, but it may be safer to use no more than five different colors for category coding. If more than ten different colors are used, the effects of any particular relationship will be lost.

Do not use color alone to convey information.

Sources: Carter, 1982; Christ, 1975; Engel and Granda, 1975; Haubner and Neumann, 1986; Murch, 1985; Nygren and Allard, 1996; Smith, 1962; Smith, 1963; Smith, Farquhar and Thomas, 1965.

Example:

Color Coded Service Map
Sioux City, IA

Service Standards

- Next Day
- 2nd Day
- 3rd Day
- 5th Day
- 6th Day
- 7th Day

FedEx Freight East Service Center
2225 Murray Street
Sioux City, IA 51111
Local, 712-258-3236

Inside WETA

- WETA News Production Svcs.
- Our History
- Work With Us!
- Volunteer
- Internships
- Careers at WETA
- Officers & Board
- Directions

WETA Digital

- Search Listings
- WETA Cooks
- WETA Kids
- WETA Digital
- Schedule
- About DTV
- FAQ
- Glossary
- Productions
- Around Town
- Hometown Heroes
- Washington Week

Music Listings

- Classical Music
- News/Talk
- Variety
- Listen Live
- Who's Who
- Online Features
- Desert Island Picks
- Audio Archives
- Staff Articles
- Contextx
- Virtual Studio Tour

LD OnLine

- Teacher Resources
- Local Events
- Projects
- Overview
- Heroes
- Voices
- Potomac
- MediaSmart
- Cap Access

Support Levels

- Special Offers
- Leadership Circle
- LC Benefits
- Lending Library
- Special Events
- Inside LC
- Join LC
- Contact LC
- Planned Giving
- Member Events
- Volunteer
- Opportunities

Relative Importance:
12000
Strength of Evidence:
12345