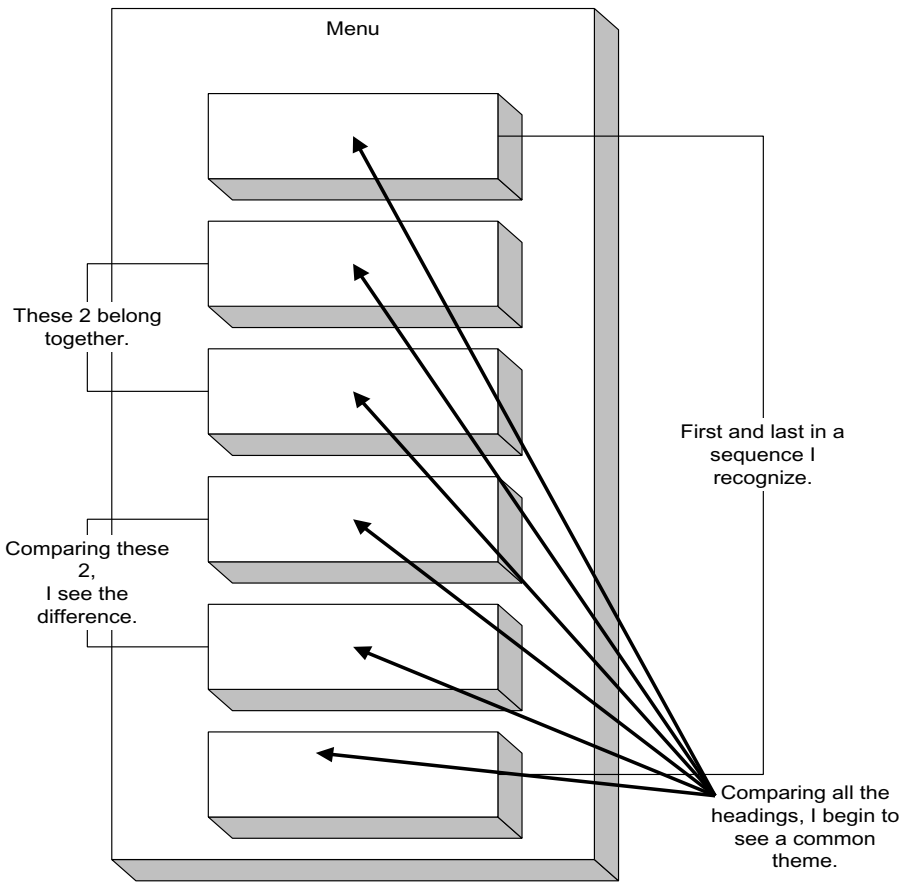
Write Each Menu So It Offers a Meaningful Structure



BACKGROUND |

People learn by discovering structure

Guests rarely try consciously to figure out the way you have organized your site. But as they look through a menu, trying to understand just enough of the structure to be able to carry out their tasks, people do ask some questions, implicitly, under their breath:

- Why are all of these topics put together in a single menu?
- What do these topics have in common?

It must be possible somehow to read the structure to find good paths.

—Furnas,
Effective View Navigation

- Would the topic I am looking for belong in this menu?
- What information lies behind this item, or that one?
- How are these two topics different?
- Why are these topics grouped together?
- Why do the topics appear in this particular sequence?
- Does this menu really contain everything about the topic I think it describes?
- Which item might contain the information I am after?

As your menu items respond to these questions, in unspoken dialogue, guests begin to form a fuzzy mental model of the menu's structure.

And, visiting several menus, guests begin to sense the structure of the site as a whole. Learning is, in part, a process of uncovering patterns in the material. Menus make those patterns visible—if you write the items well.

> Humans are driven to seek out structure and pattern. By implication, readers will learn the "flow" of your site—but only if you let them. (Sullivan, 1998)

You will understand your material better if you try out various methods of organizing the items on a menu, to uncover new and deeper meanings. Consider several alternate structures before freezing your structure, using some or all of these tactics:

- **Move** topics around considering whether the new structure reveals more about the individual objects and their relationship. (Maybe these items should appear down here.)
- **Eliminate duplicate** or redundant topics. (Oh, this is the same as that!)
- **Annotate** topics, writing preliminary drafts and notes. (Oh, this is what lies behind this phrase. This is what the link leads to.)
- **Add** a topic that was missing or **delete** one that is unnecessary or irrelevant. (Oh, now I see that if we cover x, we must also cover y).

- **Replace** a topic with its components. (Now I see that that term really covered three different subjects, each of which belongs at this level).
- **Divide** a topic into components, putting them on a submenu. (Oh, so these are the pieces of that.)
- **Create** a new topic to serve as a menu item leading to a group of subtopics. (Yes, these all go together somehow, and I think this new menu item is the name of their group.)
- **Disassemble** a set of subtopics. (Now I see that these really are not related, and should be parceled out among other topics).
- **Promote** a subtopic or **demote** a topic. (Oh, this is less important than I thought, but this subtopic is actually just as important as other topics on the main menu, and ought to go there).
- **Group** related topics. (Now I see these do belong together).
- **Sequence** activities that take place one after the other. (Oh, these should be in order!)
- **Extend a range** to include items that don't have a natural sequence or grouping. (Oh, this is a lot more common than that, and both are more common than this other thing).
- **Rewrite** to emphasize similarity and difference. (Yes, these items all have to do with the same subject, so the language ought to indicate that.)
- **Verify** that similar topics have similar subtopics. (Well, if Topic A has three subtopics, shouldn't its mate, Topic B, too?)
- **Confirm completeness**. (I'm pretty sure now that I have not left anything out.)

Without knowing the force of words, it is impossible to know human beings.

—Confucius

Building a menu is a process of constant reorganizing. Of course, the effort is like making an outline, which most people fear and hate. But making an outline electronically, as a tool for others to use to understand and navigate your structure, makes sense. Remember, the guest chews your structure to taste your meaning, so you must chop, cook, and serve your material with full attention.

Help people find their way

"Wayfinding" involves picking up cues about your location, putting those together with information you already have, and building up a conceptual model of the structure you are moving through, so you can choose the right path to take next. Menus can either help or hinder this process.

> Situational awareness ...[is the] continuous extraction of environmental information, integration of this information with previous knowledge to form a coherent mental picture, and the use of that picture in directing further perception and anticipating future events. (Whitaker, 1998)

Moving through physical space, we take an egocentric point of view ("I am moving"), and take one step after another ("I go forward, then turn left"). As we go, we build an internal map, using our understanding of our current location, the distance we have traveled, the directions we have turned, the amount of time that has passed during our trip, the relationship between the places we see along the way, and a sense of the unrolling sequence of scenes—navigation takes quite a bit of thinking, all by itself. The clearer this evolving conceptual map becomes, the better it serves to orient and help us as we collect and organize information that we pick up along the way.

Like a physical map, a menu helps guide a guest through your site. The guest has a more-or-less conscious destination in mind, and uses one menu to select a path, then follows that path to another menu, and so on—through a structure that is hard to visualize, often inconsistent, fragmented, and unpredictable.

> Knowing an environment is a dynamic process in which the current state of information is constantly being updated, supplemented, and reassigned salience depending on the short- and long-run purposes that activate a person's thoughts and actions. (Golledge, 1999a)

In completing one discovery we never fail to get an imperfect knowledge of others of which we could have no idea before, so that we cannot solve one doubt without creating several new ones.

—Joseph Priestley,
Experiments and Observations on Different Kinds of Air

In an unfamiliar territory like your site, a newly arrived guest will often take the first path that looks promising, following a zigzag route through your material without bothering to analyze the structure you have built.

When stumped or curious, the guest may ponder your menus a little more thoughtfully. The menus offer a bird's eye view of the content, somewhat like a physical map, but unfortunately Web menus are usually expressed in text, rather than a two-dimensional image with representations of landmarks, routes, neighborhoods, and boundaries.

Because users are in virtual space, aided only by verbal lists, finding their way around an unfamiliar Web site can be more challenging than exploring a strange city at night. If you want to help these visitors, you must think of each menu as a set of well-lit street signs. The challenge is to organize and write those signs so that visitors can find their way while moving at high speed.

Menus add value

Menus, like tables of contents, site maps, and even indexes, can provide a meaningful structure of objects—a value beyond the simple offer of choices. Write headings to reveal the meaning you see in that structure.

> Help viewers understand the nature of the relationships you use, e.g., use hierarchies or heterarchies of information that embody clear, logical structures. Because viewers become easily bored, disinterested, or irritated with lists of unordered items or links, and have difficulty finding specific information in random lists, create useful organizational structures to support scanning and locating information. (Ameritech, 1998)

Search results and see-also lists do not show any particular structure, because they are assembled "out of order." Your menu reveals more, because you have actually worked on the structure. Let each heading show some of your reasoning about its relationship to the

other items on the menu.

You have organized your menu items in an order that adds meaning and value to the individual sections whose headings appear at the same level in a menu. Write individual headings so that:

- One heading bounces off another, illuminating both.
- Users begin to perceive why certain headings are grouped together.
- Users sense a certain sequence, from the early headings to the last.
- Users begin to get a sense of what this whole section is about.
- Users get a hunch about where the information they want may lie.
- Users form a mental map of the order of topics, a map they will use when they begin navigating the material.

Group and sequence menu items

When experimenters show people a random assortment of objects on a tray and then hide the tray, most people have difficulty remembering more than nine objects. But when the experimenters put the objects into groups, people remember them much more accurately.

If you throw a handful of marbles on the floor, you will find it difficult to view at once more than six, or seven at most, without confusion.

—Sir William Hamilton

Grouping helps people spot the organization of your menu, find what they want, and recall the organization more accurately later.

> The screen layout and organization of menus allow users to assign meanings to the groupings and make both the menus and the individual choices more memorable. (Mandel, 1997)

Group sets of headings that serve the same purpose (five how-to's), describe the same kind of object (seven types of music) or answer the same kind of question (troubleshooting your printer). If the subject matter has common or standard categories, use those to group headings. Doing so reduces the amount of thinking people have to do as they use your menu, because they quickly grok the rationale behind each group, reducing even a long menu to a few groups.

Break up groups visually, too. Then the menu is easier to read.

> Don't let menus just run on with a dozen submenu items without offering the eye and the brain some grouping clues. (Minasi, 1994)

Then order items within each group and create a recognizable order out of the groups. One way to organize items or groups is to create a range from familiar to unfamiliar, from general to specific, from most commonly used to least, from first to last. Only use alphabetic or numeric order when you have a very long list of items that have no other obvious organizing feature. According to Don Norman's research (1991), these orderings are only slightly more helpful than purely random order. Of course, to hint at your order, you may need to tinker with some of the headings again—more rewriting.

Watch your hierarchy

Grouping headings into menus, submenus, and sub-submenus creates a hierarchy. In general a hierarchy helps people store incoming information and remember it, because people organize the information in their long-term memories (LTM) in hierarchies.

> Chunking or grouping information items facilitates the reader in building these LTM frameworks and decreases attentional demands because readers can perceive the text structure more easily. (Spyridakis, 2000)

Experience is a good teacher, but she sends in terrific bills.

—Minna Antrim,
Naked Truth and Veiled

So, when you group information items at various levels and provide cues in your writing as to why you organized the items in this way, people begin to understand the underlying information structure.

But remember, not too deep. In any area, two or three levels work best, with four to eight choices on each level. According to Don Norman's research, this menu structure results in faster, more accurate performance, compared with more levels containing fewer items at each level. Alan Cooper, who started life as a computer jock,

points out that computer geeks tend to find hierarchies logical and familiar, but most users do not. So, write each heading to indicate why you are putting it together with its neighbors.

Of course, the tradeoff between depth and breadth may be a distraction from the main challenge, which is revealing the menu organization to your users, while reducing the number of pages they have to go through and the number of choices they have to make.

Think of each menu as a jungle gym that users are climbing over. Build it, sand it, and open it up so they can climb quickly, and surely. If you get lazy, your guests will skin their knees.

EXAMPLES

Before

Setup Procedures

- Powering on the monitor
- Powering on the hard disk drive
- Powering on the computer
- Powering on the CD-ROM drive
- Making the connection with the local network
- Attaching cables to computer
- Locating the power cable
- Attaching the power cable
- Finding the right spot to place the computer
- Using an extension cord, power bar, and surge suppressor

After

Setup Procedures

Before you Start

- Finding the right spot to place the computer
- Using an extension cord, power bar, and surge suppressor

Hooking Things Up

- Attaching cables to computer
- Locating the power cable
- Attaching the power cable

Turning on the Power

1. Powering on the monitor
2. Powering on the hard disk drive
3. Powering on the CD-ROM drive
4. Powering on the computer

Getting on Your Network

- Making the connection with the local network

AUDIENCE FIT

If visitors want this...	How well does this guideline apply?
TO HAVE FUN	Only game players like confusing, long menus, because of the challenge.
TO LEARN	Hey, grouping and hierarchies foster long-term memory. Enough said.
TO ACT	Organizing menus in a meaningful way speeds people on their way.
TO BE AWARE	Why not be aware of your guests' needs?
TO GET CLOSE TO PEOPLE	The more time you spend sanding your menu items, the smoother the ride.

See: Abeleto (1999), Ameritech (1998), Apple (1987), Cooper (1995, 1999), Farkas and Farkas (2000), Golledge (1999a), Gregory (1987), Hix & Hartson (1993), Keeker (1997), Krug (2000), Larson & Czerwinski (1998), Lynch (1960), Lynch (2000), MacEachren (1992), Mandel (1994, 1997), McKoon (1977), Miller (1956), Minasi (1994), Norman (1991), Price (1999), Spyridakis (2000), Sullivan (1998), Thinus-Blanc and Gaunet (1999), Whitaker (1998).

For your review only.

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