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Barbara S. Chaparro, Editor

Fortune 500 Revisited: Current Trends in Sitemap Design

By Mark C. Russell

In our first issue of Usability News, we reported a study that surveyed the top Fortune 500 companies' web sites for the use of sitemaps (Bernard, 1999a). This study found that nearly half (46%) of the web sites did not have a sitemap of any kind. Of the half that did have a sitemap, 89% used a hierarchical textual representation and 11% displayed a graphical depiction of the site. Now that a few years have passed, we thought it might be interesting to review those sites again (or rather the current list of Fortune 500 companies) and see how things have changed.

We wondered, for instance, what the current trends are for sitemap design. Are most sitemaps just categorical lists or are they arranged hierarchically according to topic in an attempt to give the user some type of structural model of the site? Or could they actually be getting more graphical in nature, something akin to an actual map? Nielsen (2002) reported that less than 50% of the sites he surveyed actually had sitemaps, so it was also equally possible that web designers are beginning to move away from providing this option on their site.

What might the rationale be for doing away with sitemaps? Researchers propose that an explicit map of a site's structure should allow visitors to navigate more efficiently through a site (Kim and Hirtle, 1995;Billingsly, 1982; McDonald and Stevenson, 1998). However, there are findings to the contrary, such as Farris, Jones, and Elgin (2001), who caution that a sitemap's utility is lessened if it does not reflect the user's (or domain's) conceptual structure or mental model (see also: Dias, and Sousa, 1997; Stanton, Taylor, & Tweedie, L. A., 1992).

Setting the actual merits of providing sitemaps aside for the moment, we reviewed the 2002 list of Fortune 500 companies and categorized what we found. One problem we initially encountered was in the categorization process itself. There is little conformity with regard to the design of sitemaps and so we sought to capture the differences between designs. Table 1 shows the operational definitions we used for the sitemap categories.

Table 1: Operational definitions for sitemap categories

	Category	Definition
Click on thumbnails for larger version	None	No labeled or identifiable map
	Categorical	Simple list of topics with category titles

	Extended Categorical	List of topics 3 or more levels "deep"
	Hierarchical	Categorical lists with lines or boxes showing some navigational relationship between groupings
	Graphical	More formal uses of shapes and lines, such as in an organizational chart, usually less text
	Alphabetical Index	Simple A-Z listing of topics

METHOD

Five hundred web sites from the Fortune 500 web site (www.fortune.com) were examined. Most sitemaps were found: (1) above or in close proximity to the navigation bar; (2) at the bottom of the page with a collection of other links; or (3) listed somewhere in the navigation bar options.

One aspect of sitemap design that was not accounted for in our "taxonomy" of map types was the implementation of restricted or expanding menus. Some sitemaps are presented such that additional information about that area of the site is available by a click or a mouse-over on that category, link, or area of the map (for more see: Bernard, 1999b). However, we did keep track of this aspect of the map design separate of the categorization, as well as noting what the sitemap was called (e.g. map, index, guide, directory, etc.).

In addition, we tracked other features, such as: (1) whether there was a search engine available on the site; (2) how the search engine was available from the sitemap; and (3) whether the sitemap was a "stand-alone" item, or displayed along with the site's navigation bar.

RESULTS

Types of Sitemaps

Out of the 500 websites, 497 were searchable for a sitemap. Of the three non-represented companies, one had no web site, one had a site that would not load on any one of multiple occasions, and one was 'dismantling' due to bankruptcy. Of those 497 sites, 295 (59%) of them had some form of sitemap. This represents an increase from our survey three years ago (54%). Table 2 shows the breakdown of sitemap types.

Table 2: Types of Sitemaps

Type	Frequency	Percentage
categorical (2 levels only)	133	45.1
categorical (3+ levels)	145	49.2
hierarchical	8	2.7
graphical	6	2.0

alphabetical index	3	1.0
Total	**295**	**100**

Clearly the categorical style was the most popular. The hierarchical and graphical method of designing of a sitemap were found less frequently (less than 5% of the time). Interestingly, there were no graphical sitemaps found that used anything more elaborate than basic shapes. For example, we thought some sites might make use of symbols, cartoons or pictures to represent the site content. The closest thing we found to these possibilities were actually home pages with animated graphics and link labels (see both (www.merckshарpdohme.com/disease/asthma/home.html and www.disney.com). Surprisingly, both of these sites used categorical listings for their actual sitemap pages.

Names of Sitemaps

The term "sitemap" has become a generic term among web designers and researchers, but was not found to be the only title given to these navigational tools. Table 3 shows a breakdown of the number of titles used:

Table 3: "Names" of Sitemaps

Name	Frequency	Percentage
site map	246	83.4
site index	33	11.2
index	2	0.7
site guide	4	1.4
A-Z index	1	0.3
site directory	6	2.0
other	3	1.0
Total	**295**	**100**

Restricted / expanding menus

Only a small number of sites (2%) utilized restrictive or expanding menus in their sitemaps. One thing to note, however, is that in most cases the restricted or expanding nature of the menu was not always immediately apparent, and users may discovery this aspect with a mouse-over or be required to activate the next level of the sitemap menu by clicking on the topic. In rare instances, the visitor might even be taken to a subsequent page of the map, which could potentially be disorientating.

Integrated vs. separate

Sitemaps are often a valuable resource, but there is a perception among users that visitors will only use such a tool as a last resort. A small number of sites (2%) provided a sitemap but presented it as a separate item, essentially isolated from the rest of the site. However, the majority of site designers recognize that there is value to integrating the sitemap into the rest of the site and making other navigation tools accessible from that page as well. Nearly 94% of the sites surveyed had some version of the site's navigation bar on the sitemap page itself. Many sites had search engines available (approximately 75%), but sites differed on how easy it was to access it from the sitemap page (see Table 4).

Table 4: Search engine availability

Availability from Sitemap	Frequency	Percentage

Search engine on page	96	32.5
Search engine through link	141	47.8
Search engine not accessible	58	19.7

CONCLUSION

The list of Fortune 500 web sites was chosen as a convenience sample and the very nature of the list theoretically restricts the generalizability of this survey to the entirety of all web sites. However, there is no reason to believe that these corporate business sites deviate in any significant manner from the average web site in terms of design—in many ways, these companies have the money and resources to devote to the development of some of the more innovative and cutting-edge sites on the web. Given that, the overall trend of sitemap design seems to be a textual categorical listing of topics.

In addition, site designers seem to generally agree that having some form of the navigation bar and access to the search engine on all pages, including the sitemap, is important. Only a few sites kept the sitemap separate from the rest of the site by displaying it in a pop-up window. Pop-up windows have a reputation for being disliked by users since they are used mainly for advertisements. However, there may be advantages to the fact that the map does not entirely obscure the current view and can be later accessed without the necessity of backtracking.

Not surprisingly, "sitemap" was the most popular name, with "site index" a distant second. Considering the observed trends, however, "index" might indeed be more fitting. Certainly it is now easy to see why there is controversy over the usefulness of sitemaps as we know them. Do simple collections of topics give users a "cognitive map" of the site? Is that necessarily a requirement for a good sitemap and for good site usability? Certainly the fundamental purpose of the sitemap is to help visitors find the information they are looking for on the site. Whether that is best accomplished by assisting the user to form a mental representation of the site's structure or by presenting a detailed, organized accounting of site content remains to be shown.

Additional research needs to be done to demonstrate the true benefit of sitemaps. It is plausible that a well-organized home page may serve the same purpose of providing an overview of a site's structure. There also may be better ways to represent web site structures for users, better than a "traditional" map more suited to a physical environment, and better than a simple list of hypermedia destinations. The current trends in sitemap design are, therefore, not necessarily an indication that a textual categorical index is the best way to aid users in navigating websites -- it is simply the most popular with web designers. The potential still exists to find the most efficient means of representing hypermedia and getting the word out to designers before both they become too entrenched in a "tradition" of categorical sitemaps.

REFERENCES

Bernard, M. (1999a). Using a sitemap as a navigational tool. Usability News, 1.1. http://psychology.wichita.edu/surl/usabilitynews/11/Sitemaps.asp

Bernard, M. (1999b). Sitemap design- alphabetical or categorical? Usability News, 1.2 http://psychology.wichita.edu/surl/usabilitynews/12/Sitemap.asp

Billingsley, P.A. (1982). Navigation through hierarchical menu structures: does it help to have a map? Proceedings of the Human Factors and Ergonomics Society 26th Annual Meeting, 103-107.

Dias, P., & Sousa, P. (1997). Understanding navigation and disorientation in hypermedia learning environments. Journal of Educational Multimedia and Hypermedia, 6, 173-185.

Farris, J. S., Jones, K. S., and Elgin, P. D. (2001). Mental representations of hypermedia: An evaluation of the spatial assumption. Proceedings of the Human Factors and Ergonomics Society 45th Annual Meeting, 1156-1160.

Kim, H., & Hirtle, S. C., (1995). Spatial metaphors and orientation in hypertext browsing. Behaviour

and Information Technology, 14, 239-250.

McDonald, S., & Stevenson, R. J. (1998). Navigation in hyperspace: An evaluation of the effects of navigational tools and subject matter expertise on browsing and Information retrieval in hypertext. Interacting with Computers, 10, 129-142.

Nielsen, J. (2002). Site map usability. Alertbox Column, January
Retrieved 7/13/02: www.useit.com/alertbox/20020106.html

Stanton, N. A., Taylor, R. G., & Tweedie, L. A. (1992). Maps as navigational aids in hypertext environments: An empirical evaluation. Journal of Educational Multimedia and Hypermedia, 1, 431-444.
