

# The 21st Century Searcher: How the Growth of Search Engines Affected the Redesign of EBSCOhost

by **Michael Gorrell** (Senior Vice President and Chief Information Officer, EBSCO Publishing)

## What it Means to Be Usable

The Internet has changed our lives. The online world continues to grow and have a larger and larger impact on its users. In an interesting self-prophesizing cycle, the state, developments and usage of Internet sites change future states, developments and usage. As more people use the most popular Internet sites, they become used to the way the sites operate, and the users' expectations become set. As technology progresses and sites add functionality that is popular and useful, other sites follow and add similar functionality. Common users develop an expectation that all sites will obey the same rules, logic, and work the same way.

According to *Alexa.com*,<sup>1</sup> a site designed to track Website traffic; these are the most heavily trafficked sites globally:

- |                          |                     |
|--------------------------|---------------------|
| 1. <b>Yahoo</b>          | 6. <b>MySpace</b>   |
| 2. <b>Google</b>         | 7. <b>Facebook</b>  |
| 3. <b>YouTube</b>        | 8. <b>Hi5</b>       |
| 4. <b>Microsoft Live</b> | 9. <b>Wikipedia</b> |
| 5. <b>MSN</b>            | 10. <b>Orkut</b>    |

If you take a look at a few of these sites, you'll begin to see some similarities. These similarities allow the interface designs and features to feel familiar to its users. Simple search boxes, the layout of the pages, the ability for the user to easily predict the site flow and identify where key functionality will appear; these pages are designed with the user in mind. They were also designed with the knowledge of what has worked on other sites — with what users have come to expect.

It is hard to believe that Websites have been around for fewer than 15 years. If you look back it is easy to see that usability was not always the driving force behind those early sites. They were created by engineers (often for engineers). How things have changed. The Web is central to modern society, and perhaps more importantly, a major driver for commerce. A successful Website is a necessity for most businesses, from bricks and mortar companies to online search and advertising companies built "on the Web." A result of this is that usability has become an essential element of Web design, and therefore successful business.

### Jakob Nielsen, usability expert, says:

Usability is defined by five quality components:<sup>2</sup>

**Learnability:** How easy is it for users to accomplish basic tasks the first time they encounter the design?

**Efficiency:** Once users have learned the design, how quickly can they perform tasks?

**Memorability:** When users return to the design after a period of not using it, how easily can they reestablish proficiency?

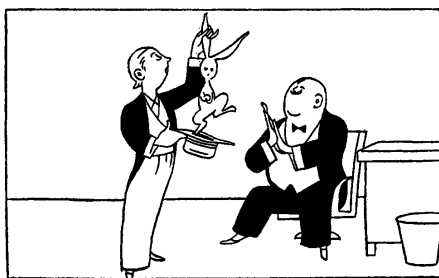
**Errors:** How many errors do users make, how severe are these errors, and how easily can they recover from the errors?

**Satisfaction:** How pleasant is it to use the design?

To a large extent, familiarity is the key to Website usability. First and foremost a Website must be easy — and for the first-time user, the Website must be easy to learn.

## When Being the Best isn't Better

Convenience is an important factor for humans. Sometimes it's the most important factor. **Michael Jensen** and the late **William Meck-**



**ling**, economists who wrote about human behavior in *The Nature of Man*, describe humans as "Resourceful Evaluative Maximizers."<sup>3</sup> If applied to users conducting information research, this model would suggest that users would be quick to evaluate how well a

site meets their immediate needs, and make a decision based on the maximum benefit whether to continue on or to stop and explore a different site. Translation: if the site is overly complex, foreign or "clunky," users will move on to something that's easier, even if it doesn't have the "best" material.

Typical search engines are often criticized for providing results without necessarily providing answers. However, because they are so easy to use, a searcher is more inclined to return again and again. They are maximizing convenience but not necessarily quality.

## Usability of Search

People often think of Searching as a specific activity. Certainly in traditional research and library settings "searching" is thought of as a skill that can be learned with different techniques that can be applied. While this may be true, for most mainstream users, Searching has become intertwined with general Web browsing. People find the sites they want to browse via searching their favorite Internet Search Engine. What that means is that the search experience that is most usable and familiar, with the widest set of users, is the one they get from **Google, Yahoo** and **MSN**. *Alexa.com* data shows that these — **Google, Yahoo**, and **MSN** — are the most common Search Engines for users worldwide. These sites share some common attributes and provide instant feedback for the user by:

- **Being fast.** Response times are sub-second.
- **Being relevant.** Results are returned in order of relevance.
- **Providing evidence and context.** Each result includes a snippet of text that provides an opportunity for the user to validate relevance and to preview what they will get if the result is selected.
- **Providing a similar layout.** These search sites share a general layout; results in one column, and sponsored ads in a second column.

Therefore, it can be argued in order to be perceived as a usable Search Engine, a service needs to have similar attributes of the "big 3" search engines.

## How Research Databases Differ

The workflow step that commercial search engines provide in a research process is the first one — the initial search. If successful, the user will be taken away from the search engine on the second click. The first click is "search" and the second click is the link to the result's site.

Research databases have a wider role in the research process. Most times these sites will provide that first step for the user — the initial search. However, many databases need to provide the user with a full experience from search, to retrieval, viewing, exporting/emailing, etc... These additional workflow steps introduce extra challenges that the commercial Search Engines don't have, and they introduce new usability issues that sites need to consider. These may include: What are the most familiar ways to allow users to narrow their search? How do sites allow users to "collect" articles of information? What are the typical ways that a user would deliver a collection of articles to themselves? What type of vocabulary should be used on the interface? How do sites allow users to discover an array of different but related content?

## One Service's Redesign Efforts

There were many tactical goals for **EBSCOhost 2.0**, but the overarching theme was to improve the site's overall usability. Balancing user expectations with the powerful (and sometimes unique) features was the challenge. From creating a simplified basic search screen, to making features available to users as they made sense, to anticipating

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the need for the next click, to taking advantage of the latest Web technology; the focus was on creating a search experience that was familiar and useful. As a result, **EBSCOhost** has undergone a major user interface redesign. With input from dozens of focus groups, usability studies, and by working with gaming professionals, **EBSCO Publishing (EBSCO)** has introduced a new interface which combines the need for a simplified search experience with in-depth functions.

Web 2.0 — a label for recent advances in technology (AJAX, etc...) that provide a richer experience for the user, as well as a shift in the way modern Websites approach the user experience — putting the user at the center of the experience, has had a profound effect on user expectations. While the term Web 2.0 may mean different things to different people, it is clear that Websites today are using technology that make pages seem more powerful and ‘fuller’ than they’d been in the past. For example, the hovers that **NetFlix** or **Google Maps** show over a movie image or street address have become familiar — users put their mouse over an image or icon and wait for the screen to react — showing a ‘bubble’ of additional information right there on the page — no delay with clear cause and effect — completely logical and helpful.

Similarly, it has become extremely common for sites that rely on users finding information on their site (**Amazon.com**, **Walmart**, **Land’s End**) to allow users to narrow results by clicking on categories on the left bar. Likewise, many sites use a multi-column layout, putting related but less central information in the far right column. Examples of this include *cnn.com*, *nytimes.com*, and *facebook.com*. Many sites have developed useful tools to help users accomplish specific tasks, for example, *kayak.com* uses sliders to adjust flight times.

Reviewing these sites and features expanded the designers’ notions of what could be possible. Web 2.0 has raised the bar.

Working with **The School of Library and Information Science’s (SLIS) ScanPath Usability Lab** at **Kent State University**, **EBSCO** began to investigate how **EBSCOhost** functioned from a user perspective. At each step in the research process analysis was performed to determine what worked well and what didn’t. Eye tracking tests showed that important functions were being overlooked or were not located where users wanted to find them. Language and terminology was tested. Other tests at other universities and public libraries were also used to validate assumptions and to vet new design ideas. Goal-oriented analysis helped the team focus its analysis and designs. At each step the desire was to make sure that users’ actions would feel natural, familiar and logical.

One of the user behaviors that had been noticed in testing was “Find Box fixation.” If

## against the grain people profile

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**BORN & LIVED:** I was born in Texas, and lived in Oklahoma, Massachusetts, Tennessee, and New Hampshire.

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**IN MY SPARE TIME:** I have none ;-) 🌲

users were given a search task, once they saw a Find Box on the screen, virtually all else was ignored. They typed words in the find box and then clicked enter. Participants explained that it was quickest to enter the search term and then refine within the results screen.

With this data in mind, the team set out to provide logical ways to provide the user with a full array of meaningful and logical options to refine, narrow and explore the results in a way that was intuitive.

The design team felt that using these approaches for presenting and organizing information for users on a research Website could add to its usability and appeal, so they looked for opportunities to use these Web 2.0 approaches, focusing on the **EBSCOhost** result list.

Key features were added, such as including a snippet of the abstract in line with results, a dynamic date slider to narrow in on a specific date range, article preview hovers, expandable/collapsible sections for subject, author, publication clusters, and related information panels. One of the most commonly sought after features, limiting to full-text articles, was also made available in a prominent spot on the result list — when the user is thinking about full-text results.

Additional functionality is available in advanced search, including the ability to choose subjects, preferences, databases, limiters and thesaurus terms. For instance, limiters are now presented in two columns which means users no longer need to scroll down a long page of options. Users can also mouse over preview options providing them with detailed descriptions of databases from the Choose Databases dialog.

While users can choose session-based preferences for such features as number of results and the type of abstract displayed, the library

has ultimate control. **EBSCOadmin** (the administrative application that accompanies **EBSCOhost** access) remains the key, allowing library administrators to tailor-make the way **EBSCOhost** operates in a given library. In **EBSCOadmin**, defaults can be set to control a variety of features including default screens, branding, local holding information, and linking capabilities.

### Making Finding as Easy as Searching

Today, searching is easy. Most browsers have a search box built into the browser itself. The challenge for traditional research databases like **EBSCOhost** is to make finding premium high-quality content just as easy. This means creating a usable and familiar experience for researchers that will invite them to explore the research databases comfortably, leveraging their other Web experiences to make them more effective. Changing with the times and keeping the 21st Century Searcher in mind allows database providers to ensure that the best content can be found easily. 🌲

### Endnotes

1. **Alexa** is a Website ranking site. This sequence was retrieved on February 4th from this URL: [http://www.alexa.com/site/ds/top\\_sites?ts\\_mode=global&lang=none](http://www.alexa.com/site/ds/top_sites?ts_mode=global&lang=none).
2. **Jakob Nielsen** is a renowned usability expert, and this text was copied from his “Usability 101” article at this URL: <http://www.useit.com/alertbox/20030825.html>.
3. **Michael Jensen** and **William Meckling** published “The Nature of Man” in 1994, where they discuss the “Resourceful, Evaluative, Maximizers Model.” [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=5471](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=5471).