To **Optimize Optimize** the
A Commentary

If one mentions the phrase "search engine optimization" (aka SEO) to librarians or professional information scientists, the frame of reference is inevitably Google or some other commercial web search engine. These search engines attract a large number of internet users and continue to rank as some of the most visited sites in the market in terms of number of visitors (Alexa Internet Inc., 2015).

by Shari Thurow

Search engine optimization is often described as a group of strategies and techniques used to increase the number of visitors to a website by obtaining high-ranking placement in the unpaid listings on the search engine results pages (SERPs) of the most commonly used commercial web search engines. "Unpaid" means that the website owner did not pay the commercial web search engine for visibility and rankings in search results.

Though this interpretation of SEO is widespread, the interpretation is also ironic. The search optimization process certainly helps to ensure that web documents are accessible to search engines. SEO also helps search engines more accurately interpret the "aboutness" (Hutchins, 1977) of web documents. SEO can improve the chances that web documents will appear in unpaid search listings. Additionally, website owners also have some control over the appearance of search listings. Web search results pages have evolved to include different types of search listings such as:

local listings, news, direct answers, images, video listings, and Knowledge Graph (Singhal, 2012). As a result, SEO has evolved to include strategies and tactics for each type of search listing.

Many information professionals misinterpret SEO as a group of strategies and techniques used for the benefit of search engines only. In reality, search engine optimization is optimizing a website, individual web documents, or even a database for *people who use search engines*—site search engines as well as web search engines. In other words, the beneficiary and target of SEO techniques are not only search engines. The ultimate target and beneficiary are searchers.

Though SEO methodologies seem only to apply to web search engines, search engine marketers have created and refined optimization techniques for site search engines. For example, YouTube is a video-sharing website. Video optimization techniques such as keyword research and tagging, video microdata, transcripts, and XML site maps are

Search, Searcher

designed to increase visibility in YouTube's search engine. Keyword research, hashtags, and scheduled tweets are some ways to increase visibility and social sharing on Twitter. Users can locate and discover content via a site search engine on individual websites that have implemented a site search function or by using the `site:` command on Google, Bing, and other web search engines.

Asking one's social network is another way that people locate and discover desirable content. According to Peter Morville, co-author of *Information Architecture for the World Wide Web* and author of *Ambient Findability*, people locate and discover desirable content via multiple means online: browsing (clicking on a hypertext link from one web document to another web document), asking (both online and offline), and searching (information retrieval). Since SEO techniques help to communicate document aboutness as well as clear information scent (Chi et al., 2001) to that content, SEO can enable successful information retrieval.

FIGHTING THE NEGATIVES

Though SEO can help searchers succeed, we should also acknowledge the negative aspects of search engine optimization: web spam and "Google Gullibility."

The main objective of a search engine is to provide high-quality search results by correctly identifying all documents relevant to a specific query and presenting the searcher with some of the most important of those relevant documents. Web spamming refers to actions intended to mislead search engines into ranking some web documents higher than they deserve (Gyongi and Garcia-Molina, 2005).

Google Gullibility is a term coined by usability guru Jakob Nielsen. According to Nielsen, web searchers have a hard time finding information via Google, especially if their first effort fails. Web searchers are at the search engine's mercy and mainly click the top links even though the documents that might fulfill their information needs are further down the page, or, even worse, not on the first page of search results (Nielsen, 2008). Nielsen uses "Google" in labeling the behavior only because of the ubiquity and current popularity of Google. People using other search engines have the same problems.

As information professionals, we do not control the ebb and flow of web spam. It is a web search engine's job to filter out irrelevant web documents. However, it is our job to optimize documents for findability. SEO responsibilities should fall in the hands of people who have optimized documents for findability for many, many centuries: librarians.

Unfortunately, the negative SEO stereotype exists in the information sciences industry as well as society in general. Librarians and other information scientists have much to learn from commercial search engine optimizers. Once educated and trained, they can apply and refine these techniques and tactics to benefit multiple aspects of document retrieval.

Likewise, many document creators should consider aboutness and findability as a normal part of creating and defining a document.

Acknowledging and overcoming a negative stereotype is not always easy to do. Some commercial search optimizers now have more than 20 years of experience, training, and expertise in the optimization process. Further, SEO is ongoing, as search engine technology evolves and search interfaces change. A commitment to learning and understanding search engine optimization is sorely needed in the library and information sciences disciplines.

The solution to successful document retrieval does not only lie with information professionals. It also lies with searchers. Not only should there be a greater commitment to learning and understanding SEO, there should also be a greater commitment to educating searchers from grade school through university.

OPTIMIZE THE SEARCHERS

Many people erroneously assume that the more frequently a site listing appears in web search results, the more visitors the site will receive from the search engine's users. People assume that a top web-search listing also generates thousands or millions of dollars in income. Websites can have a No. 1 listing in a search engine and get no income from that search listing. And websites that do not have first-page search listings can be profitable. Profit and popularity seem to be the benchmarks of credible search listings in the business world. Likewise, a top search listing does not mean that the content in a website is factual or credible. The assumptions about web-search listings seem limitless.

To minimize the impact of Google Gullibility, educators should teach students a) how to search online and b) how to critically evaluate search listings. Educators should also teach children and teenagers how to properly cite online and offline resources and not plagiarize. No matter the need, if one reviewed curricula from grade schools through graduate-level universities, one would see there are no required library science courses, including those on search.

A SEARCH STORY—HIGH SCHOOL

Years ago, one of my teenage relatives used my computer to type, print, and send a report to his high school science teacher. I quietly observed my relative researching and writing his science report. I was surprised to observe that he took images resulting from multiple web searches and included those in his report. When I asked him how he was citing the source of these graphic images, he told me that his science teacher did not require students to cite graphic images taken from places on the web.

My opinion about these circumstances is that the science teacher missed the opportunity to teach proper online search and citations. She could have provided an acceptable list of websites where students could learn more about their chosen report topics. She could have shown them how to properly cite online as well as offline sources. She could have shown examples of proper citation as well as improper citation. She could have shown examples of good search results as well as poor search results.

Learn How to Optimize Documents

Information professionals can learn how to optimize digital documents for both web and site search visibility by following some of these simple steps:

1. **Keyword research.** Before optimizing any digital document, understand the language and mental models of your target audience. Try to use their verbiage when labeling your documents.

2. **Document titles.** When appropriate, begin document titles with the most important words. Document titles should be clear, concise, and unique.

3. **Content headings and subheadings.** When appropriate, use important words in content headings and subheadings. The primary page heading is important to both users and technology. The primary heading should reinforce, but not exactly match, the document title.

4. **Use natural language.** Don't try to stuff content labels, document labels, and document content with lists of keywords. "Aboutness" can be communicated to users without overdoing keyword usage.

5. **Communicate content aboutness at the top of each page.** Users should be able to know the topic or subject of each digital document by quickly scanning the top of the document. If they cannot determine aboutness, then rewrite some content. For example, a primary heading might not contain any keywords, but the first paragraph can.

6. **Remember that every digital document can be a point of entry into a website.** When people arrive on a site via a web search engine, they don't begin on the site's homepage. Optimize documents as if they are a point of entry. For example, if using an acronym or abbreviation, spell out the abbreviation the first time it is encountered on a document.

7. **Accessibility.** Search engines cannot analyze content aboutness unless they can access that content. Keep URLs short and descriptive. Minimize the use of the following characters in the URL structure: ?, =, &, %, and _ (underscores).

8. **Clear information architecture and site navigation.** Architecture should precede site design and development. Make sure the information architecture makes sense to users and implements a clear labeling system.

9. **Validation.** Users want their mental models validated. They want to know that content in digital documents is credible. Search engines want your content to be credible. Therefore, search engines continually verify that what is said in digital documents is trustworthy. Link earning is one way web search engines validate content. Don't be afraid to cite credible sources on your own site.

10. **Accommodate known searcher behaviors.** The majority of web searches are informational queries, where searchers want to locate and discover information. All websites should provide high-quality informational content. Common Q&As; how-to videos, slideshows, or articles; and tools (such as location finders and calculators) are great ways to accommodate informational queries.

Search engine optimization has a technical aspect as well as a human aspect. Therefore, I highly recommend that optimizers know basic HTML. I learned HTML from author Elizabeth Castro's book, at the time, titled, *HTML for the World Wide Web*. There are now more recent editions of this book.

Though there are many SEO books on the market, few focus on the fundamental building blocks really well. My books, *Search Engine Visibility* and *When Search Meets Web Usability*, focus on the four SEO building blocks that all digital documents should have. The screenshots might be old, but the principles are not. *The Art of SEO* is also a very good book.

Don't be afraid to get training. If you only have one day, I highly recommend Search Marketing Bootcamp from Third Door Media, which produces the Search Marketing Expo conferences worldwide. Trainers in this bootcamp have been industry professionals for almost 20 years. WebSearch University (websearchu.com) also has outstanding instructors and classes. In fact,

And if a student learned of a potentially trustworthy, credible source of information, the student should be able to present that source of information to the teacher. Educators should encourage students to explore new sources of information. Teachers should also require a bibliography that includes online as well as offline resources.

The science teacher could have also worked with a school or a public librarian to teach these skills. These skills are not only applicable to science reports. They are also applicable for reports for literature, composition, and history classes.

This science teacher missed the opportunity to help my teenage relative learn. Fortunately, my background in library and information science enabled me to teach my teenage relative how to properly cite credible online resources.

A SEARCH STORY—UNIVERSITY

My undergraduate degree is in genetics and developmental biology. My master's is in Asian studies (Japanese), and my doctoral work spans multiple disciplines including human/computer interaction, Japanese literature and culture, and LIS. I itemize my degree work to explain why, during my initial graduate studies at University of Illinois–Urbana-Champaign, I was required to take two library science classes: one in my native language (American English) and one in Japanese. At the time, I did not know if my professors realized the impact it would have on my career in the search industry.

The purpose of these two courses was to teach us how to properly research and cite Western (English, French, Spanish, etc.) and Eastern (in my case, Japanese and Chinese) resources. After completing the classes, I wondered why all undergraduate freshmen were not required to take a library science course. Many freshmen are required to take freshman English in the United States. Why not require them to take a library science course?

If the students were thoroughly knowledgeable about proper research and citation, they could test out of the course, as many students do for calculus and freshmen English. However, being at a new university or college provides students with new resources and new opportunities for research and study. Even if the courses were part of a 2-week program, they would still be of great benefit to both students and professors.

A TASK FOR US ALL

Now, I am an information scientist who optimizes web documents for a living. I teach others how to optimize web documents. I teach how to conduct web searches and database searches. I teach how to properly cite sources of information. I teach at a graduate student level. I teach at an undergraduate level. And I continue to help my young relatives whenever I can.

I had the fortunate circumstances of having librarians as educators from grade school through university. I do not know if my alma mater still requires library science classes for a degree in Asian studies or some other academic discipline. I certainly hope these are still required courses.

I believe the solution to successful information retrieval lies in education. Educators at all levels should make a commitment to teaching online search and proper citations. I had a parent who was a teacher. My family now has me if they want help with their online searcher goals. Two people are not enough to build a worldwide community of search-savvy users.

I urge search professionals, librarians, and information scientists to consider where their skills and expertise can contribute to a more educated online population. It might begin with acknowledging a negative stereotype. Not all search engine optimizers are web spammers. Not all search engine optimizers exploit searchers or search engines.

If we can work together, we can provide a supportive, continuous learning environment from kindergarten to the highest levels of education.

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SEARCHER'S VOICE

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