

# Understanding Search Engine Optimization

At Google, search engineers talk about “80-20” problems. They are describing situations where the last 20 percent of the problem is 80 percent of the work. Learning SEO is one of these problems. Eighty percent of the knowledge SEOs need is available online for free. Unfortunately, the remaining 20 percent takes the majority of the time and energy to find and understand. My goal with this training is to solve this problem by making the last 20 percent as easy to get as the first 80 percent.

Search engine optimization (SEO) is such a broad term. It can be quite overwhelming if you try to take the whole of it in a single bite. There are so many facets of search engine optimization, from how search engines work (and they all work a little differently) to how a web page is designed. There are enough elements to worry about that you could spend far more time than you can afford to invest in trying to achieve the SEO you have in mind. However, search engine optimization doesn't have to be such an onerous task that it can't be accomplished — not if you understand what it is and how it works.

The major search engines that you're probably familiar with today were created:

- Excite—1993
- Yahoo!—1994
- Web Crawler —1994
- Lycos —1994
- Infoseek— 1995
- AltaVista — 1995
- Inktomi—1996
- Ask Jeeves — 1997
- Google —1997
- MSN Search—1998

Today, search engines are sophisticated programs, many of which enable you to search all manner of files and documents using the same words and phrases you would use in everyday conversations. It's hard to believe that the concept of a search engine is just over 15 years old — especially considering what you can use one to find these days!

## **What Is a Search Engine?**

Okay, so you know the basic concept of a search engine. Type a word or phrase into a search box and click a button. Wait a few seconds, and references to thousands (or hundreds of thousands) of pages will appear.

It's a little complicated. On the back end, a search engine is a piece of software that uses algorithms to find and collect information about web pages. The information collected is usually keywords or phrases that are possible indicators of what is contained on the web page as a whole, the URL of

the page, the code that makes up the page, and links into and out of the page. That information is then indexed and stored in a database.

The process of collecting information about web pages is performed by an agent called a *crawler, spider, or robot*. The crawler literally looks at every URL on the Web that's not blocked from it and collects key words and phrases on each page, which are then included in the database that powers a search engine. Considering that the number of sites on the Web exceeded 100 million some time ago and is increasing by more than 1.5 million sites each month, that's like your brain cataloging every single word you read, so that when you need to know something, you think of that word and every reference to it comes to mind.

These little creatures are programs that literally crawl around the Web, cataloging data so that it can be searched. In the most basic sense, all three programs — crawlers, spiders, and robots — are essentially the same. They all *collect* information about each and every web URL.