

Search Engine Optimization (SEO) is the activity of optimizing web pages or whole sites in order to make them search engine friendly, thus getting higher positions in search results.

This tutorial explains simple SEO techniques to improve the visibility of your web pages for different search engines, especially for Google, Yahoo, and Bing.

#### Audience

This tutorial has been prepared for beginners to help them understand the simple but effective SEO characteristics.

#### Prerequisites

We assume you are aware of simple web technologies such as HTML, XHTML, Style Sheet, etc. If you already have developed any website, then it is an added advantage and it will help you understand the concepts of SEO explained in this tutorial.

SEO stands for Search Engine Optimization. SEO is all about optimizing a website for search engines. SEO is a technique for:

designing and developing a website to rank well in search engine results.

improving the volume and quality of traffic to a website from search engines.

marketing by understanding how search algorithms work, and what human visitors might search.

SEO is a subset of search engine marketing. SEO is also referred as SEO copywriting, because most of the techniques that are used to promote sites in search engines, deal with text.

If you plan to do some basic SEO, it is essential that you understand how search engines work.

#### How Search Engine Works?

Search engines perform several activities in order to deliver search results.

**Crawling** - Process of fetching all the web pages linked to a website. This task is performed by a software, called a crawler or a spider (or Googlebot, in case of Google).

**Indexing** - Process of creating index for all the fetched web pages and keeping them into a giant database from where it can later be retrieved. Essentially, the process of indexing is identifying the words and expressions that best describe the page and assigning the page to particular keywords.

**Processing** - When a search request comes, the search engine processes it, i.e. it compares the search string in the search request with the indexed pages in the database.

**Calculating Relevancy** - It is likely that more than one page contains the search string, so the

search engine starts calculating the relevancy of each of the pages in its index to the search string.

Retrieving Results - The last step in search engine activities is retrieving the best matched results. Basically, it is nothing more than simply displaying them in the browser.

Search engines such as Google and Yahoo! often update their relevancy algorithm dozens of times per month. When you see changes in your rankings it is due to an algorithmic shift or something else outside of your control.

Although the basic principle of operation of all search engines is the same, the minor differences between their relevancy algorithms lead to major changes in results relevancy.

What is SEO Copywriting?

SEO Copywriting is the technique of writing viewable text on a web page in such a way that it reads well for the surfer, and also targets specific search terms. Its purpose is to rank highly in the search engines for the targeted search terms.

Along with viewable text, SEO copywriting usually optimizes other on-page elements for the targeted search terms. These include the Title, Description, Keywords tags, headings, and alternative text.

The idea behind SEO copywriting is that search engines want genuine content pages and not additional pages often called "doorway pages" that are created for the sole purpose of achieving high rankings.

What is Search Engine Rank?

When you search any keyword using a search engine, it displays thousands of results found in its database. A page ranking is measured by the position of web pages displayed in the search engine results. If a search engine is putting your web page on the first position, then your web page rank will be number 1 and it will be assumed as the page with the highest rank.

SEO is the process of designing and developing a website to attain a high rank in search engine results.

What is On-Page and Off-page SEO?

Conceptually, there are two ways of optimization:

On-Page SEO - It includes providing good content, good keywords selection, putting keywords on correct places, giving appropriate title to every page, etc.

Off-Page SEO - It includes link building, increasing link popularity by submitting open directories, search engines, link exchange, etc.

SEO techniques are classified into two broad categories:

White Hat SEO - Techniques that search engines recommend as part of a good design.

Black Hat SEO - Techniques that search engines do not approve and attempt to minimize the effect of. These techniques are also known as spamdexing.

#### White Hat SEO

An SEO tactic is considered as White Hat if it has the following features:

It conforms to the search engine's guidelines.

It does not involve in any deception.

It ensures that the content a search engine indexes, and subsequently ranks, is the same content a user will see.

It ensures that a web page content should have been created for the users and not just for the search engines.

It ensures good quality of the web pages.

It ensures availability of useful content on the web pages.

Always follow a White Hat SEO tactic and do not try to fool your site visitors. Be honest and you will definitely get something more.

#### Black Hat or Spamdexing

An SEO tactic, is considered as Black Hat or Spamdexing if it has the following features:

Attempting ranking improvements that are disapproved by the search engines and/or involve deception.

Redirecting users from a page that is built for search engines to one that is more human friendly.

Redirecting users to a page that was different from the page the search engine ranked.

Serving one version of a page to search engine spiders/bots and another version to human visitors. This is called Cloaking SEO tactic.

Using hidden or invisible text or with the page background color, using a tiny font size or hiding them within the HTML code such as "no frame" sections.

Repeating keywords in the metatags, and using keywords that are unrelated to the website content. This is called metatag stuffing.

Calculated placement of keywords within a page to raise the keyword count, variety, and

density of the page. This is called keyword stuffing.

Creating low-quality web pages that contain very little content but are instead stuffed with very similar keywords and phrases. These pages are called Doorway or Gateway Pages.

Mirror websites by hosting multiple websites - all with conceptually similar content but using different URLs.

Creating a rogue copy of a popular website which shows contents similar to the original to a web crawler, but redirects web surfers to unrelated or malicious websites. This is called page hijacking.

Always stay away from any of the above Black Hat tactics to improve the rank of your site. Search engines are smart enough to identify all the above properties of your site and ultimately you are not going to get anything.

Google

Google from 1998.

Early Years

Google's corporate history page has a pretty strong background on Google, starting from when Larry met Sergey at Stanford right up to present day. In 1995 Larry Page met Sergey Brin at Stanford.

By January of 1996, Larry and Sergey had begun collaboration on a search engine called BackRub, named for its unique ability to analyze the "back links" pointing to a given website. Larry, who had always enjoyed tinkering with machinery and had gained some notoriety for building a working printer out of Lego™ bricks, took on the task of creating a new kind of server environment that used low-end PCs instead of big expensive machines. Afflicted by the perennial shortage of cash common to graduate students everywhere, the pair took to haunting the department's loading docks in hopes of tracking down newly arrived computers that they could borrow for their network.

A year later, their unique approach to link analysis was earning BackRub a growing reputation among those who had seen it. Buzz about the new search technology began to build as word spread around campus.

BackRub ranked pages using citation notation, a concept which is popular in academic circles. If someone cites a source they usually think it is important. On the web, links act as citations. In the PageRank algorithm links count as votes, but some votes count more than others. Your ability to rank and the strength of your ability to vote for others depends upon your authority: how many people link to you and how trustworthy those links are.

In 1998, Google was launched. Sergey tried to shop their PageRank technology, but nobody was interested in buying or licensing their search technology at that time.

### Winning the Search War

Later that year Andy Bechtolsheim gave them \$100,000 seed funding, and Google received \$25 million Sequoia Capital and Kleiner Perkins Caufield & Byers the following year. In 1999 AOL selected Google as a search partner, and Yahoo! followed suit a year later. In 2000 Google also launched their popular Google Toolbar. Google gained search market share year over year ever since.

In 2000 Google relaunched their AdWords program to sell ads on a CPM basis. In 2002 they retooled the service, selling ads in an auction which would factor in bid price and ad clickthrough rate. On May 1, 2002, AOL announced they would use Google to deliver their search related ads, which was a strong turning point in Google's battle against Overture.

In 2003 Google also launched their AdSense program, which allowed them to expand their ad network by selling targeted ads on other websites.

### Going Public

Google used a two class stock structure, decided not to give earnings guidance, and offered shares of their stock in a Dutch auction. They received virtually limitless negative press for the perceived hubris they expressed in their "AN OWNER'S MANUAL" FOR GOOGLE'S SHAREHOLDERS. After some controversy surrounding an interview in Playboy, Google dropped their IPO offer range from \$85 to \$95 per share from \$108 to \$135. Google went public at \$85 a share on August 19, 2004 and its first trade was at 11:56 am ET at \$100.01.

### Verticals Galore!

In addition to running the world's most popular search service, Google also runs a large number of vertical search services, including:

**Google News:** Google News launched in beta in September 2002. On September 6, 2006, Google announced an expanded Google News Archive Search that goes back over 200 years.

**Google Book Search:** On October 6, 2004, Google launched Google Book Search.

**Google Scholar:** On November 18, 2004, Google launched Google Scholar, an academic search program.

**Google Blog Search:** On September 14, 2005, Google announced Google Blog Search.

**Google Base:** On November 15, 2005, Google announced the launch of Google Base, a database of uploaded information describing online or offline content, products, or services.

**Google Video:** On January 6, 2006, Google announced Google Video.

**Google Universal Search:** On May 16, 2007 Google began mixing many of their vertical results into their organic search results.

**Just Search, We Promise!**

Google's corporate mission statement is:

Google's mission is to organize the world's information and make it universally accessible and useful.

However that statement includes many things outside of the traditional mindset of search, and Google maintains that ads are a type of information. This other information includes:

Email: Google launched Gmail on March 31, 2004, offering search email search and gigabytes of storage space.

Maps: On October 27, 2004, Google bought Keyhole. On February 8, 2005, Google launched Google Maps.

Analytics: On March 29, 2005, Google bought Urchin, a website traffic analytics company. Google renamed the service Google Analytics.

Radio ads: Google bought dMarc Broadcasting on January 17, 2006 .

Ads in other formats: Google tested magazine ads and newspaper ads.

Office productivity software: on March 9, 2006, Google bought Writely, an online collaborative document creating and editing software product.

Calendar: on April 14, 2006, Google launched Google Calendar, which allows you to share calendars with multiple editors and include calendars in web pages.

Checkout: On June 29, 2006, Google launched Google Checkout, a way to store your personal transaction related information online.

Paying for Distribution

In addition to having strong technology and a strong brand Google also pays for a significant portion of their search market share.

On December 20, 2005 Google invested \$1 billion in AOL to continue their partnership and buy a 5% stake in AOL. In February 2006 Google agreed to pay Dell up to \$1 billion for 3 years of toolbar distribution. On August 7, 2006, Google signed a 3 year deal to provide search on MySpace for \$900 million. On October 9, 2006 Google bought YouTube, a leading video site, for \$1.65 billion in stock.

Google also pays Mozilla and Opera hundreds of millions of dollars to be the default search provider in their browsers, bundles their Google Toolbar with software from Adobe and Sun Microsystems, and pays AdSense ad publishers \$1 for Firefox + Google Toolbar installs, or up to \$2 for Google Pack installs.

Google also builds brand exposure by placing Ads by Google on their AdSense ads and providing Google Checkout to commercial websites.

Google Pack is a package of useful software including a Google Toolbar and software from many other companies. At the same time Google helps ensure its toolbar is considered good and its competitors don't use sleazy distribution techniques by sponsoring StopBadware.org.

Google's distribution, vertical search products, and other portal elements give it a key advantage in best understanding our needs and wants by giving them the largest Database of Intentions.

Editorial Partnerships

They have moved away from a pure algorithmic approach to a hybrid editorial approach. In April of 2007, Google started mixing recent news results in their organic search results. After Google bought YouTube they started mixing videos directly in Google search results.

## Webmaster Communication

Since the Florida update in 2003 Google has looked much deeper into linguistics and link filtering. Google's search results are generally the hardest search results for the average webmaster to manipulate.

Matt Cutts, Google's lead engineer in charge of search quality, regularly blogs about SEO and search. Google also has an official blog and has blogs specific to many of their vertical search products.

On November 10, 2004, Google opened up their Google Advertising Professional program.

Google also helps webmasters understand how Google is indexing their site via Google Webmaster Central. Google continues to add features and data to their webmaster console for registered webmasters while obfuscating publicly available data.

For an informal look at what working at Google looked like from the inside from 1999 to 2005 you might want to try Xooglers, a blog by former Google brand manager Doug Edwards.

## Information Retrieval as a Game of Mind Control

In October of 2007 Google attempted to manipulate the public perception of people buying and selling links by announcing that they were going to penalize known link sellers, and then manually editing the toolbar PageRank scores of some well known blogs and other large sites. These PageRank edits did not change search engine rankings or traffic flows, as the PageRank update was entirely aesthetic.

## Increasing The Rate of Algorithmic Change

In 2009 Google did an update named the "Vince" update, which placed weight on search query chains, and had the net effect of promoting larger branded websites.

In 2011 Google rolled out their Panda algorithm in an attempt to make it harder to pour low quality content into well linked sites, by allowing the weaker pages to pull down the sites as a whole.

In 2012 Google announced the Penguin update aimed at making search spamming harder. In 2012 they also rolled out tigher anchor text filters, an algorithm to penalize ad heavy sites, and launched a ranking factor based on how many valid DMCA requests there are against a site.

The net effect of these new algorithms & other forms of obfuscation Google has introduced has been to make it much harder to rank independent websites owned by small companies, while making SEO easier for large companies that have significant usage signals associated with their websites. This has caused many SEO professionals to chase after servicing large corporate clients, as talent tends to follow the money.

## Yahoo!

1995 Yahoo! Directory.

Getting Into Search

Yahoo! was founded in 1994 by David Filo and Jerry Yang as a directory of websites. For

many years they outsourced their search service to other providers, considering it secondary to their directory and other content features, but by the end of 2002 they realized the importance and value of search and started aggressively acquiring search companies.

Overture purchased AllTheWeb and AltaVista in 2003. Yahoo! purchased Inktomi in December, 2002, and then consumed Overture in July, 2003, and combined the technologies from the various search companies they bought to make a new search engine. Yahoo! dumped Google in favor of their own in house technology on February 17, 2004.

### Getting Social

In addition to building out their core algorithmic search product, Yahoo! has largely favored the concept of social search.

On March 20, 2005 Yahoo! purchased Flickr, a popular photo sharing site. On December 9, 2005, Yahoo! purchased Del.icio.us, a social bookmarking site. Yahoo! has also made a strong push to promote Yahoo! Answers, a popular free community driven question answering service.

Yahoo! has a cool Netrospective of their first 10 years, a brief overview of their corporate history here, and Bill Slawski posted a list of many of the companies Yahoo! consumed since Overture.

On July 2, 2007, Yahoo! launched their behaviorally targeted SmartAds product.

On July 29, 2009, Yahoo! decided to give up on search and signed a 10 year deal to syndicate Bing ads and algorithmic results on their website.

Yahoo! shut down their directory service in December of 2014.

In 2014 Yahoo! signed a deal to be the default search provider in Mozilla Firefox inside the United States. They also did a distribution deal with Oracle, however those revenue gains were short lived & Yahoo kept losing share in online advertising & web search.

Over the years Yahoo! not only exited the search business, but they also exited most of their other vertical businesses. The role of the general purpose web portal was relegated to irrelevancy through the combination of:

general purpose search engines like Google adding interactive features & rich answers directly to their search results

people spending a greater share of their idle web time on social networks like Facebook which offer a highly personalized news feed

the rise of ad blockers & declining CPM rates for display ads

thin outsourced vertical offerings being inferior to the third party data sources & brands which powered them

Verizon announced they were acquiring the Yahoo! operating business in July of 2016 for \$4.83 billion.

Microsoft

In 1998 MSN Search was launched, but Microsoft did not get serious about search until after Google proved the business model. Until Microsoft saw the light they primarily relied on partners like Overture, Looksmart, and Inktomi to power their search service.

They launched their technology preview of their search engine around July 1st of 2004. They formally switched from Yahoo! organic search results to their own in house technology on January 31st, 2005. MSN announced they dumped Yahoo!'s search ad program on May 4th, 2006.

Live Search.

On September 11, 2006, Microsoft announced they were launching their Live Search product.

Bing.

On June 1, 2009, Microsoft launched Bing, a new search service which changed the search landscape by placing inline search suggestions for related searches directly in the result set. For instance, when you search for credit cards they will suggest related phrases like

credit card types

apply for credit cards

credit cards for bad credit

advice on credit cards

Microsoft released a Bing SEO guide for Webmasters [PDF] which claimed that the additional keyword suggestions helped pull down search demand to lower listed results when compared against the old results 6 through 10 when using a single linear search result set. Conversely, the Google format tends to concentrate attention on the top few search listings. After extensive eye tracking Gord Hotchkiss named this pattern Google's Golden Triangle.

Eye Tracking Studies.

While Yahoo! has lost much of their relevance, Bing has built a formidable Google search competitor. They have narrowed the revenue gap against Google & have built a profitable search business.

Bing is strongest in the US market, while having a lower share outside of the US, in part due to Google driving aggressive installs of Google Chrome from Flash security updates & promoting Chrome across Google properties & the AdSense ad network.

Google is more dominant in mobile search than they are in desktop due to

requiring Android phone manufacturers to set Google as the default search provider signing a deal with Apple to be the default web search service in Safari on iPhones, iPads & Mac computers.

#### Other Engines

One would be foolish to think that there is not a better way to index the web, and a new creative idea is probably just under our noses. The fact that Microsoft is making a large investment into developing a new search technology should be some cause for concern for other major search engines.

Through this course of history many smaller search engines have come and went, as the search industry has struggled to find a balance between profitability and relevancy. Some of the newer search engine concepts are web site clustering, semantics, and having industry specific smaller search engines / portals, but search may get attacked from entirely different angles.

On October 5, 2004 Bill Gross ( the founder of Overture and pioneer of paid search) relaunched Snap as a search engine with a completely transparent business model (showing search volumes, revenues, and advertisers). Snap has many advanced sorting features but it may be a bit more than what most searchers were looking for. People tend to like search for the perceived simplicity, even if the behind the scenes process is quite complex.

Outside of technology there are four other frontiers search is being attacked / commoditized from

**Browser & Software Distribution:** Search companies are paying computer manufacturers or software companies an aggregated value of hundreds of millions or billions of dollars each year to bundle their search toolbar with their products.

**Social Search:** Large social networks have significant reach and a ton of page views. Many years ago Yahoo! was rumored to express interest in buying social network Facebook nearly a billion dollars. Yahoo! has already bought social picture site Flickr and social bookmarking site Del.icio.us. In August of 2006 Google signed a 3 year \$900 million contract to provide search and advertising on MySpace.

In addition some companies, like Eurekster, are trying to create products which allow groups of webmasters to make topic or community specific search services.

**Content Providers:** Some content providers are trying to publish content on their own domains and build off their brand. Some are refusing to be included in search indexes. Some are requiring a kickback to be indexed. Some are unsure of what they want and are choosing to sue search engines, either for further brand exposure, or to gain further negotiation leverage.

**Content Aggregators:** Search is just one way of finding information. Via RSS feeds and various other technologies many sites are offering what some people consider persistent search, or a way to access any information about a specific topic as it becomes available. Google also bought YouTube for \$1.65 in stock. YouTube consists largely of pirated content which Google can organize and publish ads against based on usage data and other forms of

ad targeting.

Some early search pioneers have tried to reboot search, but most these efforts have failed to gain a sustainable marketshare.

Cuil was heavily hyped but quickly bust. Blekko launched with less hype & lasted longer, but ultimately sold to IBM. Gigablast was founded in 2000 by Matt Wells. They are an open source search engine which has quietly existed for nearly 2 decades. Gabriel Weinberg founded DuckDuckGo in 2008. It leverages the core Bing index but differentiates through the search interface & result features. They have done a great job of consistently growing off a small base & is popular with many web developers in part for their search privacy features & lack of result personalization.

Some foreign markets have dominant local search services. Yandex is big in Russia. Baidu leads China. Naver is popular in South Korea.