Importance of Search Engine and Search Engine Optimization

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ABSTRACT

Information technology is being drastically developed in recent years, using search engines to search information has become an evident part of one's everyday life. The positioning of a web site in the first place in the search results of a search engine is a tedious job, to make this easy we use various search engine optimization techniques. These techniques help us to increase the ranking of our web site and make it visible to the search engine. Based on the rankings our web site will be positioned in the search results. Our aim is to make our web site be visible in the first ten positions of the search result. In order to improve their visibility quantity of a website, SEO make use of better ranking in the search result using the keyword selection and usage, high quality back links, rational website constitution, meta tags and rich content. In this paper we discuss many optimization tactics used for the development of a website. The techniques studied in this paper are ON Page SEO, OFF Page SEO, Black Hat, White Hat and Grey hat techniques.

Keywords: Crawler, Search Engine, SEO, Website.

ARTICLE INFO

1. INTRODUCTION

Search engine is a web software program or web based script available over the Internet that searches documents and files for keywords and returns the list of results containing those keywords. Today, there are numbers of different search engines available on the Internet, each with their own techniques and specialties. Search Engine Optimization is a technique to improve visibility of a website in search engine. A web search engine is a software system that is designed to search for information on the World Wide Web. The search results are generally presented in a line of results often referred to as search engine results pages (SERPs). The information may be a mix of web pages, images, and other types of files. Some search engines also mine data available in databases or open directories. Unlike web directories, which are maintained only by human editors, search engines also maintain real-time information by running an algorithm on a web crawler.

1.1 What is Search Engine Optimization?

In a layman language about Search Engine Optimization, whenever we enter a query in a search engine and press enter key we get a list of web pages as a results that contain that putted query term. Users normally visit those websites or web pages that are at the top of this list as they identify those to be more appropriate to the query applied. If we have ever wondered why some of these websites rank better than the others then we must know that it is because of a great web marketing technique called Search Engine Optimization (SEO).Search engine optimization is a best practice that includes right strategies, powerful techniques and right tactics used to enhance the amount of users to a website by obtaining a high ranking placement in the search results page of a search engine (SERP) -- including top search engines like Google, Bing, Yahoo and others[3][5].

Figure 1: Search Engine Optimization

Search engine optimization (SEO) is the process of affecting the visibility of a website or a web page in a search engine's "natural" or un-paid ("organic") search results. In general, the earlier (or higher ranked on the search results page), and more frequently a site appears in the search results list, the more visitors it will receive from the search engine's users. SEO may target different kinds of search, including image search, local search, video search, academic search,[1] news Search and industry-specific vertical search engines. As an Internet marketing strategy, SEO considers how search engines work, what people search for, the actual search terms or keywords typed into search engines and which search engines are preferred by their targeted audience.

2. BACKGROUND

In search engine industry Archie was the first search engine, which was used to search for FTP (File Transfer Protocol) files and in the other side the first text based search engine is known as Veronica. Because large search engines contain millions and sometimes billions of pages, many search engines are not only just searching the pages but also display the results depending upon their importance. This importance is commonly determined by using various algorithms. There are currently different types of search engines available like Google, Yahoo, Ask.com, Bing, Alta vista etc. these are displayed in Figure 1.

Figure 2: Different Types of Search Engines

In the diagram below, there is a detailed example that, how a search engine works. The working of search engine is divided into two parts first one is crawling and second one is indexing. A Crawler is a program that retrieves web pages, commonly for use by search engines. In Crawling process, spider or crawler visits the pages that will be included in the search and grabs the contents of each of those pages. After the crawling process indexing process is started in database. In short, the working of search engine is basically divided into two parts, first one is crawling and second one is indexing. Often this involves stripping out stop words, grabbing the location of each of the words in the page, the relevancy they occur, back links to other pages, images and so on. This data is used to rank the page and is the primary method of a search engine uses to determine if a page should be shown and in what order. Finally, once the data has been processed it is often broken up into one or more files, moved to different computers or servers, or loaded into

memory where it can be accessed when users perform a search[1].

Figure 3: Working of Google Block Diagram

SEO helps a webmaster or a website owner to ensure that a site is reachable to a search engine and develops the chances that the website will be found by the search engine.

It is a best practice for web users to not click through pages and pages of search results, so where a site ranks in a search is essential for directing more and more user traffic toward the website. If a website naturally ranks in organic results of a search, the chance to visit that site will be increased.

SEO is the method of improving the visibility of a website or a web page in a search results. In common, the earlier (or higher ranked on the search results page), and more frequently a site appears in the search results list, the more visitors it will receive from the search engine's users. SEO may target different kinds of search, including image search, local search, video search, academic search, news search and industry-specific vertical search engines. As a great Web Marketing Strategy, SEO considers how search engines work, what people search for, the actual search terms or keywords typed into search engines and which search engines are preferred by their targeted audience. Optimizing a website may involve editing its content, HTML and associated coding to increase its relevance to specific keywords and to remove barriers to the indexing activities of search engines.

3. TYPES OF SEARCH ENGINE OPTIMIZATION

We can divide the search engine optimization techniques into two parts. First one is On Page SEO and another is Off Page SEO. The search engine optimization techniques divided into two parts:

On Page SEO: in this technique, the optimization part would be done in the coding of website.

3.1 On Page Optimization:

It is the first step which every webmaster should concentrate, this deals with the changes we do in our page in order to improve visibility and rank. On Page Optimization is optimizing your website in a way that it can rank better in search engines and improve visitor satisfaction. This optimization technique depends on nature and business of our website. It is advisable to update the contents of our website and optimize the content each time as these factors are directly related to the content and structure of the website. Modifying Title, Body text, Hyperlinks, URL, Quality and easy to understand contents, increasing the frequency of keyword, robots.txt, sitemaps, Image optimization etc which requires extensive research with the competitor webpages. If proper Onpage optimization is done, results in drastic increase in the rank and readability of the website[5].

3.2 On Page SEO Elements:

3.2.1 Title Tag: the title tag is the really important for good search engine ranking. Search engine crawl the content of this tag on the priority basis. A page title is the first thing, a search engine will look.

3.2.2 Meta Tag: there are two primary Meta tags used in Search Engine Optimization, that is keyword and description tag.

3.2.3 Alt Attribute: Search engine only reads the alt attribute of the image tag.

3.2.4 Header tags (H1, H2 and H3): HTML Heading Tags are equally important for search engine pointof view.

3.2.5 Permalinks of Web Pages: The Meaning of Permalink is URL (uniform resource locator) of a webpage. It should be keyword oriented and SEO friendly.

3.2.6 Internal Linking: Internal Links are hyperlinks that point to the same domain. This factor is also important for search engine point of view.

3.2.7 Keyword Density: Keyword Density is the percentage of times a keyword or phrase appears on the web page compared to the total number of words on the page. Keyword Density is really important in terms of SEO.

3.2.8 Sitemap: In Sitemap, all important website links are available with date and updated information of page. Search Engine will crawl the sitemap links on the priority basis [4].

3.3 Off Page SEO:

This is the technique for making back links. Back links are normally termed as link back from other website to our website. Back links are important for SEO because search engine algorithms give credit, if any website has large number of back links. As well as back links increase, website popularity will increase.

3.3.1 Finding the domain history: The website that you are going to include in your website, firstly check for its history information as it gives better idea about that

websites reputation in search engines. For his purpose, websites containing similar purpose, websites containing similar contents are searched first.

3.3.2 Link building: The website must contain links of high PR value as it helps to improve the website ranking. Back links are obtained using guest posts, press release submission, submitting websites to directories and many others.

3.3.3 Directory submission of website: Directory submission is used to gain back-links from top ranked web directories. There are paid as well as free directories available, so it will be better to send your website to free directories and it takes time to include but is for permanent listing [4].

3.3.4 Article submission of website: Article submission is done manually like directory submission. By doing so, it increases the chance of getting indexed by search engines [4].

3.3.5 Use email to expand business: With the use of business email, send emails to other contacts containing information about your products or services, and this helps to expand the business world-wide.

4. SEARCH ENGINE OPTIMIZATION BENEFITS

4.1 POPULARITY: By this technique popularity will increase.

4.2 Increase Visibility: Once a website has been optimized, it will increase the visibility of website in search engine. More people will visit website.

4.3 Targeted Traffic: Search Engine Optimization can increase the number of visitors to the website for the targeted keywords.

4.4 High ROI (Return of Investments): An effective SEO campaign can bring a high return of investment than any other marketing. it will increase the volume of sales.

4.5 Online Marketing And Promotion: best strategy for promotion [6].

5. CONCLUSION

Search Engine is really useful tool in present era of web. There are many of search engines available in market, but most popular search engine is Google. So for getting topmost results in web, we have to use search engine optimization technique. Both on page and off page search engine optimization techniques are important for better search result. In the three flavors of SEO, White Hat SEO technique is the best and long term as well.

6. REFERENCES

[1] Sergey Brin and Lawrence Page, "The Anatomy of a Large-Scale Hypertextual Web Search Engine,". [Online].Available:http://infolab.stanford.edu/~backrub/google.html.

[2] Meng Cui, Songyun Hu, "Search Engine Optimization Research For Website Promotion, Transport Management College, Dalian Maritime University, Dalian, 116026,China".[Online].Available:http://www.ftsm.ukm.m y:8080/kt/attachme nts/article/69/06113701.pdf

[3] Joeran Beel, Bela Gipp, Erik Wilde. UC Berkeley School of Information." Academic Search Engine Optimization(ASEO):   Optimizing Scholarly Literature for Google Scholar & Co." [Online]. Available: http://www.beel.org/   files/papers/2010-ASEO--preprint.pdf.

[4] "10 SEO Techniques All Top Web Sites Should Use".[Online].Available:http://freelancefolder.com/10-top-seo-techniques/.

[5]"Search Engine Optimization". [Online]. Available: http://en.wikipedia.org/wiki/Search_engine_optimizat   ion. "Ultimate   Benefits   of   SEO".[Online].   Available: http://www.nextsbd.com/seo/benefits-of-seo.php.