

Search Engine Optimization a Technique

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Abstract---Internet is the term which is known by everyone in this world. It is the fastest growing sector. All of us are consumer of it either as commerce, industry & individual. Search engine optimization is a technique which is used in the internet. We can say that it is a process of finding our desired result. Google is one of the known search engine. All of us use it in our daily life without the knowledge of how it works. In this paper we study how search engine optimization works and on which algorithms it is based. Keywords- search engine, algorithms.

I. INTRODUCTION

Search engine optimization (SEO) is a process which is used for filtering our search or we can say that a process of improving the visibility of a website or webpage in result page of search engine. The world of search engine is getting more and more complicated and harder. The days are gone when it was easy to rank via “keyword shifting” and other different quick fix SEO techniques. Now a day’s SEO have more sophisticated algorithms and also webmaster and search marketers are getting more sophisticated. Search engine optimization puts millions of potential customers who use search engine like “Google” everyday within their search, and it offers number of benefits to them like, Greater brand exposure and awareness Inexpensive, scalable advertising, an avenue for sales and qualified leads.

To gain more lead generation and ultimately customer’s ongoing effort to improve a domain name, page rank and search engine performance is required. The key aim of a company’s SEO effort is to increase traffic to their website. The following are 9 key topics in detail, outlining how organizations can gain competitive advantage regardless of their industry or competitive environment. The key topics will be ordered as follows:

1. SEO for mobiles
2. Impact of social media
3. Tools for SEO campaigns
4. Page Rank
5. Best practice techniques in 2013
6. Process audit recommendations
7. Search engine market analysis
8. Understanding the impact of Project Panda
9. Understanding the impact of Project Caffeine

Search Engines (SEs) are the tools used to find this content, and they can be classified into three groups:

- *General*: e.g. Google, Yahoo, Bing(formerly Live Search, Windows Live Search, and MSN Search), and ask(formerly AskJeeves.com);
- *Vertical Search*: specialist SEs that focus on specific resources reducing the number of irrelevant hits, e.g. Travelocity and Expedia;

- *Location Based SEs*: these use geographical information (such as zip codes or IP addresses) about the users to provide more relevant results.

Today most of the search engine search for Web pages utilizes a user supplied text say sample (a keyword or phrase). The search engine returns a list of “hits” or Web references that match the text or sample then results are displayed on the Search Engine Results Page (SERP), listed and sorted by relevance. The gathered information is not limited to the text, and can include images, PDF files and other types of content also. Search engine may rank hits differently; a hit ranked high by one could be ranked low by another. What is found and how it is ranked, is determined by the search engine algorithms, as well as the way keywords are presented to the SEs, and the way Web pages are designed to expose keywords to search processes.

II. BASICS OF SEO

The concept of SEO is initially proposed by Danny Sullivan, an industry analysis in 1997 and since then it regularly is noticed by network operators and researchers in the search field. In 1998, Stanford University Sergey Brin and Lawrence Page proposed Page Rank algorithm, and at the same year, J. Kleinberg HITS algorithm is proposed while other scholars have proposed other link investigation algorithms, such as SALSA, PHITS, Bayesian and other algorithms. Some of these algorithms have been implemented and used in the real search engine optimization System, and also we collect good results. Technically, SEO can be separated into White Hat

SEO and Black Hat SEO. White Hat SEO adopts the standard optimizing technology by Search engine to have the regular and balanced operation; Black Hat SEO adopt malicious Website ranking optimization techniques which violate the search engine optimization policy.

Some of the methods are as follow:-

A. Doorway Pages

We use software to produce automatically a large number of pages with key words and then automatically revolve these pages to the home page and the reason is that these Doorway Pages with special key words find good search engine rankings.

B. Keyword Stuffing

Filling large quantity of keywords in the page, with adding the keyword density, we can enhance page significance for keywords.

C. Hidden Text

The keywords are placing into the HTML files. But, these words cannot be seen by users, and Search engine can only distinguish.

D. Hidden Link

Place the key words into the link, and this link is indistinguishable to the user.

E. Cloaked Page

Programs or scripts are used to distinguish whether the access is the search engine or a normal user. If it is search engine, there will go back optimized web pages. If it is the regular people, the return will be another version.

III. DIFFERENCES IN COMPUTER SEO AND MOBILE SEO

It is important for one to know that the searching is different for a user using a computer or a user using mobile. So, it is necessary for a business to create and implement a mobile specific SEO strategy, as SEO on a PC differs from mobile devices. The reasons include:

- “Search requirement on mobile is different than that on the computer.
- Web usage on a mobile device is significantly different than that on a PC.
- People interact with mobile differently than they do with a PC.
- Websites for mobile are different than those made for “PC only” access.
- Difference in nature and dimension of the device, mobile requires different kinds of websites and content”.

Implementing effective SEO for mobiles begins with website creation. Due to the screen size and potentially slower data download rate of a mobile device, it is essential that companies make a lighter version of their website for a mobile device. When coding a webpage, XHTML basic or XHTML Mobile can be utilized. It is important that nothing too ‘fancy’ is implemented, as most of the mobile browsers are still in the infancy of their roadmaps. JavaScript and Flash should be avoided as these technologies may conflict with the device and not work as expected. The selection of keywords used to optimize for a PC compliant website may be different for a mobile platform. This is due to the fact that the usage pattern of mobile search differs dramatically to that on PC’s. Additionally, the competition level on a mobile platform is lower than it is for the PC platform. Consequently, businesses should construct a separate keyword strategy for mobile.

IV. WORKING OF SEO

When we search something on the search engine then the corresponding result is displayed but how the result came how they rank the result. For example, if we search for INDIA then the result show Wikipedia, then images, then map and so on. But how did it come? A number of websites rank good in the search engine, though several websites can’t be found by the search engine, why? How to create the website has a high rank? Firstly we must to know the basic optimization strategy.

A. Page Title

Due to its maximum exposure in the page of search engine results, the page title is the main priority in the search engines, which is frequently taken as the first line of search results.

Concerning the website click rate, the page title must be brief, eye-catching, and in order to attain the finest

transformation, the page title should also be correctly summed up the contents of the page. There are numerous attentions when set the page title:

- It’s better to build a concise introduction for the contents of the current page, and sequentially to allow the news expressed as clearly as possible, we should place significant keywords on the starting of the title.
- Target keywords must be integrated in the html page title which is essential factor in the rank algorithm. Though too much repetition of keywords in the title is consider as awful strategy.
- Set special title for all page from the particular visual angle.
- Do not duplicate website navigation information in the title

B. Improve Link Popularity

Page Rank (PR) value is important for Google to judge the importance of website. If the linked page has a higher PR value, then the page has a higher PR value. Raising the value of PR can efficiently improve the website rank in search engine. Search engine calculate PR value through external website links quantities and the quality of links to Web sites, that is, it wants to improve the extensive degree of site’s Link. This purpose can be achieved by exchanging links (between sites by adding links to each other). But it does not mean that can be to exchange links with any website randomly. It’s better to prefer the PR value which is more than four.

C. Keywords Optimization

Suitable keywords are the primary step to make a high-rank website. The higher the compactness of keywords in webpage, the closer significance between the webpage and the keywords, and the more forward place the page ranked in the search results. Keywords compactness is the ratio between keywords number and webpage words number, which are the mainly vital factors in optimization Strategy. In order to build website rank top in search engines, webpage must contain keywords as much as possible, but once keywords are extreme, it might face the possibility of registration cancellation. The prettiest compactness can be established with the help of first numerous highest rank websites in search results, for now keywords analysis tools must be used to analyze the position of keywords in search results for modification in time.

D. Internal Links of Website

Internal links of website pass on to the one another links between the different pages of website. Sensible links can build the web pages more visual, help visitors focus on the topic of website and make the topic key words more sensitive to the search engine. In addition, internal links of website can also increase speed the rate of the spider crawling.

E. Improve the Click Popularity

Click popularity is a very significant factor for website rank in search engines. The popularity of the page frequently Clicked will be high. When a visitor clicks website from the search results, search engine will provide some certain value. But do not try to replicate clicking on

your own website, because the clicks from a single IP will be considered only once.

V. SEARCHING ALGORITHMS

A. Page Rank Algorithm

Page Rank Algorithm, originate from Google's founder, Larry Page, is used to recognize the significance of webpages separated in levels of 1-10 of which 10 represents full score, the higher PR value (Page Rank value), the more accepted the pages as in (1): when the PR value of a website has its score as 1, it means that this website has not popularity while the PR value of 7-10 shows that such website is very popular (or very important). In assumption Page-A has its page-t1, t2, and... tn linked to it, then Page-A has its PR value algorithm as follows:

$$PR(A)=(1-d)+d\{PR(t1)/C(t1) \dots PR(tn)/C(tn)\}$$

B. Hill Top Algorithm

There exists an essential fault for Page Rank Algorithm since a complete "importance value" is assigned to a webpage based on its linked quantity and quality. However, the "Page Rank value" is not an expression for a query, so even when a webpage just infrequently mentions key word departing from a thematic query in the content, the page can also get a higher ranking because of its high level of "Page Rank value". The Hilltop Algorithm is a speedy positioning method subject to classification of "experts" proposed by Krishna Bharat and George A. Mihaila, which has been applied by Google to the front-end of Page Rank. That is, the request is treated initially when it reaches using Hilltop Algorithm and given weight.

Secondly, when nothing is searched out, it returns to "0" after which the Page Rank Algorithm is used for calculations. Finally, related ranking is conducted according to the result ahead the weighing of two algorithms.

C. New Algorithm for Search Engines

Currently, in order to provide users the correct results searched in a more scientific and balanced way, Google uses its sequencing technology combining Page Rank and Hill Top to establish the ranking of a webpage. Such a new algorithm has its formula as follows:

$$\{(1-d)+a(RS)\}*\{(1-e)+b(PR*fb)\}*\{(1-f)+c(LS)\}$$

Of which, a, b and c are the regulation controls of weight and d, e, f are the damping controls while fb is the factor base. The new algorithm consists of three parts, the RS Correlation

Scores, PR Page Rank Scores and the LS Industry.

VI. LATEST TECHNIQUE USED IN SEO

The best SEO techniques have only changed minimally, as the most significant ranking factors practically remained unchanged. Though, there are many entrepreneurs and business owners who stay curious about the latest SEO techniques.

- Content remains Emperor: In 2013, businesses are ought to have a balance of 'human friendly' content and 'search engine' friendly content. The potential customers/current contacts are purchasing these products or services, therefore if the business's desire is to become noticed in the search engines, having quality

content will be the key to their online success in 2013. Webpage titles are the backbone of the entire website traffic. A webpage title is the primary item that appears on Search results page, followed by post URL and finally a snippet from the webpage. The choice of keywords, word limit and use of characters is vital to becoming noticed.

- Page Speed/Load Time: Readers often become irritated with a slow load time of websites. Search engines aim to provide its users with a great search experience. To achieve this outcome, Google values load time and directs its users to websites that load faster. Organizations need to be aware that not all browsers use a fast broadband connection. Internet speed on smart phones is also moderately slower, so it is vital businesses try to maximize page speed as much as possible. Several actions to achieve this technique include: Save all images in GIF or PNG format, Give proper dimensions to images, Use limited advertisements, Summarize your posts using the Read More link, Show only four-five posts at home page.
- Original Photos & Videos: To make a website further interactive, businesses are required to consider adding original photos and appealing videos to the website. While search engines such as Google 'crawls' web pages, it searches for content that is varied. Optimizing the videos and photos for SEO purposes is additionally important. Following the introduction of image search technology, traffic through images cannot simply be avoided. Each image on a website is a great source for quality traffic, if they are tagged correctly. With tags, images have no value unless it is declared by adding its description inside the alt text attribute.
- Web Content for Mobile Users: In 2013, a high percentage of web users will be browsing from their iPads and mobile devices. If the websites posted content that takes too long to satisfy needs, users will lose patience and move onto the next competitor's website. It is important that businesses include a clear 'Call to Action' on each page of their website. It is strongly recommended to consider hiring a superior SEO copywriter to produce fresh content for the website/blog/social media sites. This assists the business in converting browsers into paying clients.
- Sharing Web Content: One affective solution to generate more traffic in 2013 is to share business content with social media networks such as Facebook, Twitter & Google+. Optimizing the web pages for social sharing will assist to draw additional traffic. For example, Facebook allows the ability to create pages extra social media friendly. This is achieved by optimizing the titles and Meta tags by using Facebook Open Graph. When users start sharing one of the web pages, it will automatically improve the conversion rate of the website. Finally, when sharing content throughout social media, it is significant that businesses comprise a back link to their website. Social media offers an outstanding opportunity to connect with people who 'like' or 'follow' the business online.
- Link Juice: "Link Juice is very important aspect taken into consideration by Google for ranking a website. The more inbound links a site has, more it receives Link

Juice. Strong inbound links help a website in getting on the top of a Search Engine Result Page (SERP). Only quality inbound links help in creating good quality Link Juice that is beneficial for your site and help in achieving high Page Rank” (Search Engine Experts, 2012). Articles and blogs are recommendations to increase good quality Link Juice to a website. Link Juice can be achieved in a short amount of time - it is suggested to obtain more links through content, and acquire quality Link Juice.

VII. PROJECT PANDA

Google Panda (also referred to as Farmer Algo), is a follow-up of Google Caffeine released in

February 2011. The new algorithm affects those websites that are creating content farms with mass number of worthless posts and old content. Project Caffeine allowed Google to notice the improved ranking of valuable content, although additionally the websites with poor quality and auto blogs ranking too enhanced. Project Panda was the resolution to this problem and affected 12% of total search results.

It allows quality optimized sites with suitable back links, to top the search engine rankings and lower the less significant websites. Through the Panda algorithm, the Google search engine will base a website/article/blog page ranking by the overall quality of the site. This overall quality comprises of accurate keyword optimization, no duplicate content, no copy/paste, no poor quality content and back link quality. Additionally, Google launched the ‘Chrome Block list Extension’ allowing searchers to block websites from their personal Google results.

VIII. CONCLUSION

SEO strategy—and using the right tools to help you along the way—is crucial to your success in search. Equally important is ensuring a proprietary advantage that your competitors will be hard-pressed to duplicate. We outlined a long-term strategy for creating a powerful SEO roadmap specifically tailored to you and your business. Search Engine Optimization is constantly changing as new aspects come into play, and others go. Fundamentally, businesses need to recognize the two crucial fundamentals for high-quality SEO, on-page and off-page. On-page SEO refers to what a publisher can control directly, whereas off-page SEO basically relies on user behavior, social engagements, visitors, and other publishers. Organizations must recognize - to have the top spots in the search engine results page, recognition, support and the backing of others is required.

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