

Analysis of Search Engine Optimization (SEO) Techniques

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Abstract— website improvement is a deliberately procedure to take a web archive in top indexed lists of an internet searcher. Search engine optimisation (SEO) is a procedure of enhancing the conspicuousness of a site. This work depicts the changes of taking the page on top position in Google by expanding the Page rank which may bring about the enhanced perceivability and productive arrangement for an association. Google is most easy to use internet searcher demonstrated for the Indian clients which give client arranged outcomes more-over, the majority of other web indexes utilize Google look designs so we have focused on it. Along these lines, if a page is improved in Google it is streamlined for the greater part of the web search tools.

Keywords— Search engine optimisation, SEO, Google optimisation, On page optimisation, Off page optimisation, Image optimisation, URL structure optimisation, Web Security, Web Application.

I. INTRODUCTION

Customers use web lists for by far most of their request yet they simply slant toward the results available on first page and 2-3% of customers go on also pages (except for Researchers), Now imagine if the page of an affiliation is on 2-3 or 4 th page then the business which can be made from that page has a less change to return and customer will support the page proceeding the 1 st page. Trillions of site pages are documented each day in a web searcher.

The genuine troubles for significant scale SEO is making sense of which watchwords to use. A data show using the ordered records, back association data, and watchword data, and Google examination data. With this data show we could pinpoint the catchphrases and pages that had most potential for the SEO system. Tremendous data SEO isn't just about sufficiency, which implies impacting things to brisk what's more, remedy. Isolating the information by financial matters, lead, and business advantage.

There are a substantial number of interest each day. Most of the visitor's visit the website by hitting the associations available in web seek instruments and assume that associations found on the best results are the best rand in their thing organization and grouping. These insights influence it to clear that if an affiliation needs to go on top in their business then they should pack in getting their page extensively available in the web files. For example, if some person needs to use taxi organizations and darken to where he is at present, customarily if he/she is a geek look of for

cab organizations with the name of city and hit the fundamental 10 associations and use their organizations. There are such enormous quantities of business of electronic booking game plan of tickets are growing these days and getting a respectable response in constrained ability to center time; in this particular case its critical to be on top delayed consequences of a web crawler so the customers can without quite a bit of an extend be brought.

Google continues improving its web file figurings through AI and delegates for the web seek apparatus have continually confirmed that its will most likely "get it" content in association with customer experience, back associations, and customer direct outlines. Instead of situating for one essential factor, the destiny of SEO should think about all components. This is, everything viewed as, the target for AI and web look apparatus optimization[1].In this paper, fragment II depicts the SEO examination factors.

II. RELATED WORK

Study conducted by Zhu (2011) used a reverse engineering method to "study and analyze the key factors that influence the search process on the Web." With this methodology, researchers identified five main factors for SEO. Researchers developed a system that crawl all site factors (e.g., HTML structure, the length of URL, etc ...) for 200000 web pages with 10000 key search words as a whole sample. Moreover, the keywords in the set of samples were divided into the following three segments according to their Google search

volume in the last three months: Hot "high search volume", Middle "medium search volume", and Cold "low search volume"

Another study by Su (2010) focused on the Google ranking algorithm, researchers systematically tried to "validate assumptions others have done about this Top ranking algorithm" and identify what page factors or any other criteria, had the greatest influence on their ranking algorithm. They designed and developed a ranking system to determine the most important factors that Google uses to rank pages.

Study conducted by Fuxue (2011) is based on the use of Chinese search engine Baidu, Google's Page Rank algorithm is not considered. They picked up data from 116 web sites, the researchers tried to "analyzing the impact of SEO techniques" and determine "what technique is most effective strategy". The authors determined a candidate metric, Interest page, and then investigated the effect of various SEO techniques in this metric. Interest page, you can see that if a large number of page views, an increase of time spent in the website and a low bounce rate, there will be a high interest page. The results of their study indicate that the page size, Customizing 404 pages and global links are important factors in the effectiveness of SEO.

III. METHODOLOGY

1. On Page Optimisation

1.1 Title optimisation: It is a bit of HTML catchphrase which depicts what is site going to the web search tool and clients, it is the most vital piece of a site which is utilized via web indexes to discover the pertinence of a site. This is the structure what it would seem that connection in coding part. It is encouraged to utilize the most significant catchphrases in the title label which portrays the site.

```
<head>
<title>SEO India - search engine optimization India, seo
services, seo company India, affordable seo India Jaipur
</title>
</head>
```

1.2 Body text

Substance are the achievement enter for positioning in web indexes, so it's essential to focus on the substance of the site which help substance to be considered by the web crawler crawlers at the season of appointing the rankings. Following tweaks have been implemented on our project: - Use of heading tags.

1) Word frequency: -On an average we had provided 500 to maximum of 800 of words on each page.

2) Keyword density: -Frequency of keyword to be optimised was kept 3%-5% on the pages with 500- 700 words & 8%-10% on the pages with 700+ keywords.

3) Relevant keywords: -Most important keywords of the users query were used carefully specially on the top of page. In general the keywords appearing on the top of a page or top area are most prominent for indexing by the crawler.

1.3 Hyperlinks

A hyperlink is a navigation element or reference of a document in the other part of the same document, or a specified section of another document, that automatically brings the referred information to the user when the navigation element is selected by the user. The search engines basically predict that if we are linking something from our page is closely related to our page; In brief it makes the contents user-friendly if seen from the search engine point of view. Snapshot of a hyperlink is shown below.

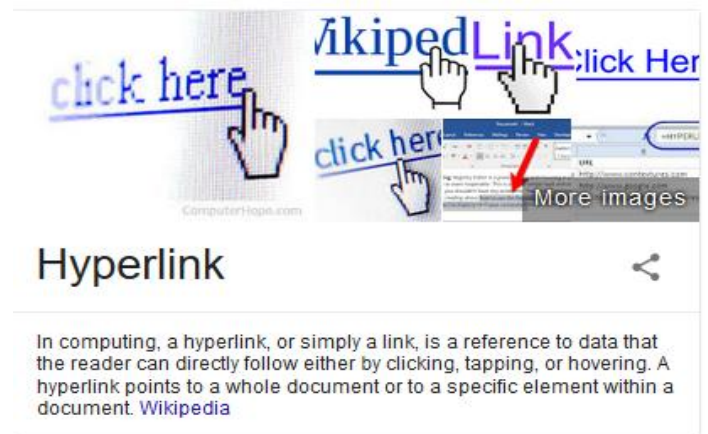


Figure 1: Figure showing hyperlinks

All the words more.. are hyperlinks to get detailed information about the respective section.

1.4 URL

We should improve the structure of url's by using words as simple to understand URL'S will convey content information easily. If our URL'S contain relevant keywords, it provides users and search engine with more information about the page than an ID or oddly named parameter would as the URL to a document is displayed in the search results after the title.

1.5 Quality and easy to understand contents

Creating and using useful contents increase the influence of a page more than all the tweaks. This tweak is very important in the sense that if a user likes the content then he/she shares it happily via blog, email, forums or other means. We should think from user point of view whether what he searches out to find his contents in a search engine, in addition to it we should create a new and fresh contents ,useful service that no

other site offers. Content should be written in a manner that user enjoys the content and it is easy to follow and it should be created in view of users not search engines.

1.6 Meta Tags optimisation

Meta tags are very useful in providing the search engine about the proper information of a website. Below a complete meta tag used by us is shown. Out of all meta tags description tag is most important as it is a part of search results and if the optimisation keywords are provided here properly results with very nice result.

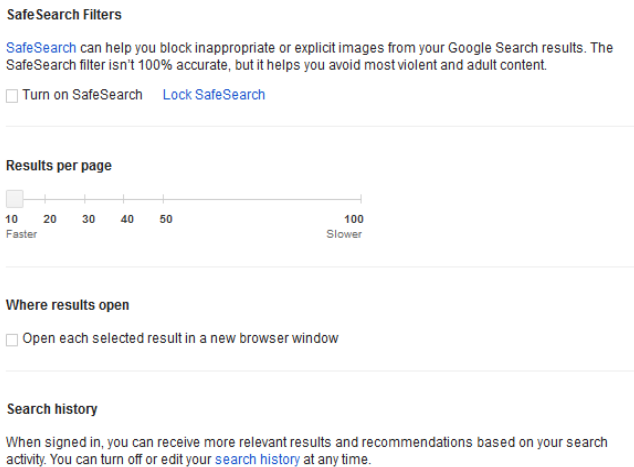


Fig 2: Figure showing Meta tag optimisation

1.7 Newsletters

Many a times when a user visits a website and wants to be updated with updated of the company to which the website belong ,In this case newsletter are the best options ;In this the users provides his/her email-id over there & if there any update comes over the page it is sent automatically sent to the users inbox.

1.8 Robots.txt

This file is used on the files of our website whom we want should not be accessed by the crawler; it is kept in the root directory of the website. If we have some sub-domain of our website and want its access to be limited by the web crawler then by creating a robots.txt file for this we may prevent its access to the crawler.

1.9 Sitemaps

This is a simple page in our website containing the listing of the pages on our site, which displays the structure of our website in a hierarchical way. We should always make two sitemaps, one for users and other for search engines and make the sites easier to navigate. Sitemaps designed for visitors help visitors if they have problems finding the pages on a site & the sitemaps designed for search engines makes it easier for search engines to discover the pages of a site.

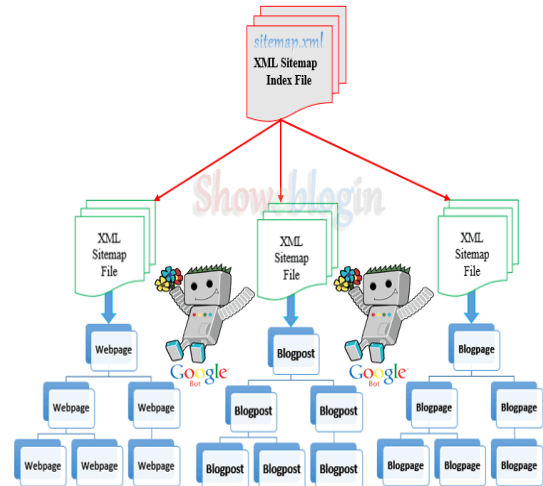


Figure 3: General purpose sitemap

Figure 3: Examples of an HTML site map & XML sitemap. An HTML site map helps users easily find content which they are looking for, and an XML site map helps search engines in finding pages on our site.

1.10 Hidden target keywords

In this technique we wrote the keywords on the pages by using hyperlinks with other pages full of keywords. Which were being optimised? Keywords which matching colours of the page so that it seems to be invisible to the users were used, These keywords remained from users but it worked a lot as it was accessed by the crawlers.

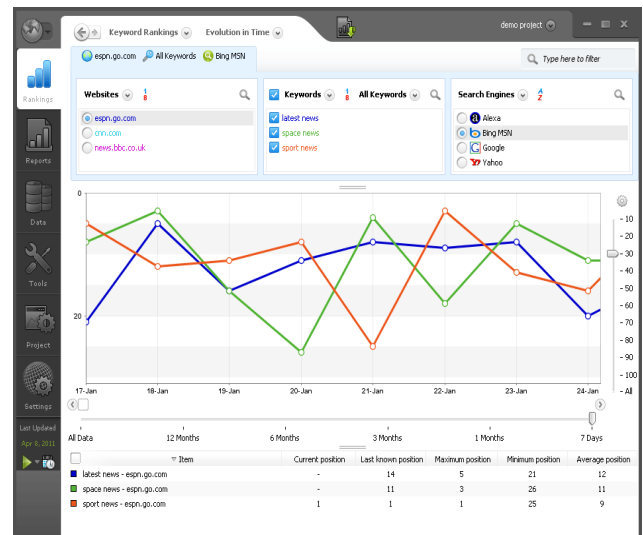


Figure 4: Keywords of ranking

1.11 Image optimization

In this technique when optimising a page with targeted keywords we should name the image with the targeted keyword name, it has also a good impact in optimisation. Image search optimization techniques can be viewed as a

subset of search engine optimization techniques that focuses on gaining high ranks on image search engine results.

2. Off Page optimisation

2.1 Backlinks generation

In this process we tend to increase the link of our website on other websites. According to search engines if a page has more and more number of backlinks means there is something relevant in a page because of which other pages are providing links to it, Backlinks are the best way to increase the rank of a page/website and the best way to increase backlinks is link exchange or submitting the URL while doing online advertisements[9].

2.2 Blog posting

It is always a good practice to be on a blog like Blogspot, wordpress, thoughts ,linkorbits etc.According to a survey it has been found that companies having blogs are 55% more visitors,97% more inbound links,434% more indexed pages[10].

2.3 Social networking

It is the latest technique to have better brand visibility. It is a process sharing information on sites that facilitates content sharing, data exchange, adding unique content etc.Different social media tools includes blogs, podcasts and community based web portals such as Facebook, MySpace, LinkedIn, Twitter, Digg, Reddit etc. These social media tools come with different features like text, images, audio & video sharing among users contents.

Following are the benefits of social networking sites: -

- 1) It generates free website traffic
- 2) It boosts up the brand visibility
- 3) It generates inbound links

2.4 Press release Optimizing: a press release provides some additional lift to a web site when that press release is distributed and syndicated through other relevant industry or news sites. We shouldn't miss the opportunity to generate valuable backlinks back to our site, driving up our rank and increasing the authority of our site with search engines[5].

2.5 Video submission: Videos can be used in several ways to enhance search engine optimisation only the thing is that the videos are relevant, informative and full of information. Step by step videos which concentrate on the procedures are best considered. Some of the tricks for video optimisation is given below: -

- 1) Give the video a good title that uses a related key phrase relevant to your product, service or brand.
- 2) Use Video as a pathway to content on your site. Upload videos to YouTube and provide links back to your site.
- 3) Optimize the video for important key phrases using Tags with these terms including even the name of your video.

4) Use classic content on the page around your videos with can be indexed by the search engines.

5) Keep the videos preferably under 5 minutes but shorter is even better.

6) Use a video sitemap with the keywords in the anchor text links so that users and the search engine can find it.

7) Tag the videos with key phrases that are relevant to your content.

8) Make sure about logo in the video as it will generate brand awareness with your viewers.

9) Use the 'Embed Option' when uploading the videos as it allows other users to post the video on their sites/blogs.

10) Use descriptive Meta data with relevant keywords and include a keyword rich description of the video.

11) Let users rate the video as those with higher ratings tend to be bookmarked and also sent to friends more

12) Submit the video using RSS :There are several ways you can now use your videos to enhance your SEO. You need to make sure videos are relevant and informative, providing useful information. Videos that show step by step procedures are excellent as are videos that provide an opinion about a specific topic

2.6 Article submission

Article submission has same impact as of Blog promotion and press release submission.

2.7 Reputation management



Fig 5: Reputation management in search engine optimisation
Search engine reputation management helps to move out of the first result pages those negative posts. It can help to bring back the good name, it helps in keeping business reputation preserved and protected. Each and every corner of the website is monitors and effective measures to protect a good reputation are taken. In brief this service takes effective measures to protect a good reputation and prevents other to damage the reputation.

3. Tools Used

3.1 Google webmaster tool :Google Webmaster Tools is a no-charge web service

by Google for webmasters. It allows webmasters to check indexing status and optimize visibility of their websites. It has tools that let the webmasters:

- 1) Submit and check a sitemap
- 2) Check and set the crawl rate, and view statistics about how Googlebot accesses a particular site
- 3) Generate and check a robots.txt file. It also helps to discover pages that are blocked in robots.txt by chance.
- 4) List internal and external pages that link to the site
- 5) See what keyword searches on Google led to the site being listed in the SERPs, and the click through rates of such listings
- 6) View statistics about how Google indexes the site, and if it found any errors while doing it
- 7) Set a preferred domain (e.g. prefer example.com over www .example.com or vice versa), which determines how the site URL is displayed in SERPs.

3.2 Meta Tag analyser tool

Following are the uses of Meta Tag analyser tool

- 1) See how search engine robots analyze your or your competitors web site
- 2) Receive tips on how to improve your Meta Tags
- 3) Check the keywords used on the page and find the
- 4) Check web server operating system where site is hosted
- 5) Check website load time
- 6) Check website file size
- 7) Check URLs and links found on the page

3.3 Link popularity check tool

Popularity of a website is checked using this tool. This tool shows how many other sites are linking to the site. Most search engines use this data to calculate how popular your website is. The more links to our site, the better the search engine rankings will be. We can even provide some competitors' URLs to compare our site to theirs.

3.4 Sitemap submission tool :This tool is helpful in submitting sitemap to various search engines.

3.5 Keyword suggestion tool :This tool suggests keywords related to our keyword which can be used while doing optimisation.

3.6 Keyword Traffic estimator: This tool shows us approximately how many daily searches our keywords would get. This tool is used to research the best keywords for our website.

3.7 SEO dictionary : It is the list of SEO related keywords with their definitions.

3.8 Page rank checker : This tool is used to check the rank of the page so that further actions can be taken to improve the rank of a page.

3.9 Page snooper : This tool is used to see the source code of any online site to see the exact structure of the website.

3.10 Broken link checker : This tool checks the outgoing links on the page to see if they are broken.

3.11 Link counter : This tool counts the number of outgoing links or URL's on a given page and display results. This tool could be useful for link exchange purposes, as we should not trade links with pages with too many outgoing links. It is recommended not to trade links with pages that have over 50 links.

3.12 Reciprocal link counter : This tool checks if any given list of sites are linking to your website. It is a great tool to keep track of the reciprocal links to make sure your partner has not removed the link, without visiting their page. You can put up to 100 URL's of sites that you would like to check.

IV. RESULTS AND DISCUSSION

Web applications have been advancing exceptionally quickly with new programming models and innovations rising, bringing about a consistently changing scene for web application security with new difficulties, which requires significant and maintained endeavours from security specialists. We plot a few advancing patterns and call attention to a few spearheading fills in as takes after. Initial, an expanding measure of use code and rationale is moving to the customer side, which brings new security challenges. Since the customer side code is uncovered, the aggressor can acquire information about the application, along these lines more prone to trade off the server-side application state.

V. CONCLUSION

This paper we have proposed efficient methods of integrating Google Analytics and use Web Master to improve in terms of Search Engine Optimization.

The proposed mechanism is integrated with an online website to gather the required data and analyze it on practical basis. Consequently, it will be beneficial to use these tools easily and develop new methodology that would improve the existence and use of websites.

We additionally brought up a few open issues that still should be tended.

VI. FUTURE SCOPE

These tools are very much efficient in terms of management of websites. Further integration of such tools and developing new methods to utilize these tools will help the companies to

elaborate their online business and to hold a good position in the search results of various search engines.

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