

# SEO AND CONTENT MANAGEMENT SYSTEM

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**Abstract-** In the current scenario Web users wants to highlight themselves on the net, they should know the importance of web marketing and at that time Search Engine Optimization (SEO) comes in picture. Usually if your business is well affected by web then you must have to be on top in search engines. And for that you have hire a good web developer for your company or you can use CMS if you not aware with web development. CMS generally used to make easy web hosting process so that any non technical person can easily operate its' site and routine work. All CMS are promising that they are SEO friendly so we want to check that how CMS and SEO connected. We also want to enhance techniques, methods and some guidelines to get best SEO for your site.

**Key Words:** Content management system, Open Source, SEO

## I. Introduction

SEO means Search Engine Optimization. Basic SEO is how search engines such as Google, Bing and Yahoo! create the list of sites that you see when someone types a words or phrase into the search bar. Although SEO helps to increase the traffic to one's site, SEO can be a temporary or a permanent activity. Sometimes it is enough to do some standard SEO in order to get higher page rank in search engines. let's take an example if you are using infrequent keywords, then you do not have a much to do in order to get decent page rank. But in most cases, if you really want on top, you need to pay special attention to SEO and devote significant amounts of time and effort to it [2]. In this paper we want to highlight importance, working methodology and tools & techniques of SEO and how SEO is connected with CMS.

## II. HOW SEARCH ENGINE WORKS?

Search engines are very hard to understand. They include extremely detailed processes and methodologies, and are constantly updated all the time. Nobody can know the method how search engine works to retrieve the search result. All search engines follow basic process when conducting search processes, but as they are using different methods it shows different result. When user types a keyword or query into a search engine search engine do following tasks.

1. Search engine software quickly sorts through literally millions of pages in its database to find matches to this query.
2. The search engine's results are ranked in order of relevancy.

More precisely we can say that when any request comes from the user, the search engine processes it. It compares the search string with the indexed pages in the database. Since normally there are lots of page contains the search string, the search engine now starts calculating the relevancy of search string in each of the page retrieved. There are various algorithms to calculate relevancy. Each algorithms give different weight to factors like keyword density, links, or metatags. That is why different search engines not show the same result page for the same search string. What is more, it is a known fact that all major search engines, like Yahoo!, Google, MSN, etc. periodically change their algorithms and if you want to be at the top, you also need to change your pages accordingly. This is one reason to give permanent efforts to SEO, if you want to be at the top. [2]

## III. IMPORTANCE OF SEO

Search engines take almost 90 per cent of all web traffic. Most of the search queries retrieve thousand and millions of results to choose from. So if your web site comes after first page on search engines for keywords relevant to your website, then you may miss out a large number of visitors because many visitors doesn't go for the second page.

So if you want to increase your website ranking in most of the popular search engine you have to use a combination of correct keywords, inbound linkage, effective content and last but not the least the META tags. [3]

Here are some of the statistics to show the importance of SEO.

- 91% of Internet users use search engines to navigate the web.
- 9 out of 10 searches are done from the top 20 search engines
- 8 of 10 searches are done from Google, Yahoo and Bing
- 85% of search engine users do not look past the first 40 results.
- 77% of Internet users use search engines more frequently than any other online media to search web sites, surpassing banner ads, web links, e-mail links, etc.
- Search volume presently exceeds 300 billion per month worldwide [4]

#### IV. SEO TECHNIQUES

The main purpose of SEO is to make a website search engine friendly. It's very easy. SEO doesn't require knowledge of algorithms or any programming languages but requires a basic understanding of how search engines work. Before starting SEO you have to consider two things. The first is how spiders work. The second is how search engines find out pages related to particular search key terms.

First, search engines send its' spider to collect data about a unique website and copy its content in the search engine's database. If you come to know how spider works and how they read information on a site, is technical end of SEO. As spiders follow links and record everything in their paths, one can safely assume that if a link to a site exists, a spider will find that site. There is no need to manually or electronically submit your site to the major search engines. You should provide clear path of your website from point A to point Z to spider to follow. Sitemap tells spider regarding all the pages on website that might be left when spider retrieves the page information and can be a cause of loss of information. The duty of search engine is to provide list of pages for the search term provided by the user. In order to do this, the search engine needs to know your site relates to those words.

At starting phase, a search engine looks at URL of site, site title. It also examines the Meta tag. Titles should be written using the strongest keyword targets as the foundation. It is a human mentality to judge the content of page on the basis of keyword. So it is necessary to use good keywords in the title tag. Don't write too much keyword or phrase in the title use only strongest keywords that best describe the title. The meta tag is also important. Search engines use it to gather information about the text of the page. Good content is the most important aspect of search engine optimization. The content itself should be cleared and focused. In other words, keep it simple. Sometimes spider confused as it gets multiple topic on the page. The basic SEO rule here is if you want to express more topics on the page, you need more pages. Creating new pages with unique content is one of the most basic SEO techniques to make a site simpler for both website user and spiders. Spider examines another important element anchor text in internal links for SEO. From the search engine's perception to show the relation between pages and words used in the link, anchor text used with keywords.[10]

There are lots of techniques and points to remember for getting top positions in major search engines, out of so many here we have listed some of them.

1. Place keywords in the tag of a title.
2. Anchor the text in links.
3. Maintaining the quality of inbound and outbound links
4. Making sure that the first paragraph of any article is filled with top keywords.[9]

There are also several other tips for getting better SEO but above mention tips are working fine to get good SEO. Some other factors that are affecting SEO are listed below.

- Title Tag
- Meta Tags

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- Proper Use of Heading Tags
- Alt Attributes on Images
- Title Attributes on Links
- XML Sitemap
- Relevant Content
- Link Building
- Social Media[6]

### V. SEO TOOLS

There are lots of SEO tools available that you can instantly find online. In fact, by just typing the word “SEO tools” on Google will give you over a million search results. This could be a good thing because your options are not limited. All you have to do is to choose which can effectively enhance website traffic and revenue. But on the other hand, you might confuse as there are endless SEO tools in the market and not all tools are a good, so to choose right one is bit tough. There are four major types of SEO tools.



Figure 1. SEO Tools [7]

#### 1. Keyword Research Tools

Keyword research and analysis is the initial step of search engine optimization. It is crucial to select targeted keywords that will help to get good traffic for your website. In the current scenario Google comes on the first place in terms of search market share. However, in order to keep going, select such a keyword tools that will provide you with ample data for the 3 major search engines: Google, Yahoo and Bing.

#### 2. Meta Tags Analyzer Tools

This tool inspects the Meta tags of your web page to ensure search engine compatibility. Meta tags check your web page for sticking to the basic search engine guidelines. Take for example if the title tag of a web page is more than 65 characters, then the tool will issue a warning. You don't have to do anything just Enter your website link in the URL box and this tool will give you results in just a few seconds.

#### 3. Backlinks Checker Tools

This is often called, link popularity tools. Actually, SEO is not just limited to Meta tags and a good content, but also about utilizing high quality backlinks. The basic idea here is simple. If there are several websites that are pointing back to your website or articles, then your site will receive more traffic. This will eventually make your website popular and rank high on major search engines. *Backlink Checker tools* will help you get detailed information about the backlinks including link authority, PR, follow, no follow, and more.

#### 4. Web Analytics Tools.

It is a software program which analyzes the importance of your inbound links by pointing the source. It also helps in determining the geographical location of your traffic so that you can understand the origin of your market. [1]

## VI. REASONS TO LOSS A TRAFFIC

When anyone loss traffic of website, it is first to find out the reasons of loss. Here we describe some of the step to follow to find out the reasons.

1st Step – Is there any major modification in the website?

Sometime due to modification in the current site you might loss traffic. So find out that is there any change in the site.

2nd step – Find out the type of traffic loss

Many people think that ranking is only the only cause of for loss of traffic. But its' not true always. Sudden loss of direct traffic is almost always related to problems with the website there are several reasons like your website is down or the redirection has not placed properly, maybe the tracking code is not in place. Another reason is loss of referring website - means a website which was sending you traffic is isn't anymore.

3th step – Compare different parameters

If your business is seasonal that may be a case that in particular month you got more traffic compare to others. For an example, before summer vacation or in Diwali you got more traffic compare to February and March for an e-commerce website. If you have two to three year data you should compare these data with one another.

4th step - Filter keywords from the traffic

Most of the website gets their traffic from Google and other search engine. You can check that from which search term you got more traffic and according to that you can make changes to increase the site visitors.

5th step – Check your landing page

Check out the page which loss more traffic. Is there any page which is no longer exists? Is there any page with frequent changes in a year? Is there any duplicate content on the site?

6th step – Make analysis

From the above step make an analysis that what are the exact reasons to have loss of traffic. Find out the reasons and try to solve it out by taking proper decision.[14]

There are several reasons to have sudden fall in traffic, but one is after website redesign. When anyone redesigns its website without using proper SEO techniques then they might have to face problem in search engine rankings or loss of traffic.

The main problems with website redesign start from changing a website's structure, file paths, and filenames, or from deleting old pages. Sometime it is necessary to change website structure to have better file organization on the server. But often we find problem like

- 404 (Page not found) errors.

This is going to be an issue if you will shuffle content in your website structure or changing the filenames for your pages.

For example, if your site has static HTML pages (ex. content.html) and you're changing over to dynamic pages (ex. content.php), any links to the old pages will be broken and will result in 404 errors.

Another example of dropped pages would be pages on the old website that you no longer need for the new website. If you simply delete these pages, and don't include them in your website redesign, anybody who tried to access these pages will get the "page not found" 404 error.

- Lost search engine rankings.

If your current website's pages are already ranking well for various keywords, changing the locations or filenames of your pages or deleting them entirely can result in a huge drop in your search engine traffic and rankings.

- Lost back links to your site.

If other websites are linking to individual pages on your site, you will lose that traffic as well as the SEO benefits of those links as back links to your website is an integral part of search engine optimization.

All of these issues will result in a traffic drop for your new website. The solution to this problem is redirection

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Redirection: through redirection we ensure that you don't lose valuable visits. If anybody tries to access the old page location, they will automatically be redirected to the new file. These redirects also tell the search engines that your pages have moved, and point them to the locations of the new pages. Redirection can also be used for deleted pages. This way, you won't lose any traffic.[5]

### VII. FEATURES OF SEO FRIENDLY CMS

- Custom HTML Title Tags**  
 The HTML Title Tag appears on the very top, left bar of your browser window. In any web page HTML title tag contains most weight in SEO. It is crucial that you are able to autonomously edit the HTML Title Tag for any page on your site. It means that your CMS should provide different facilities to provide HTML Title Tag, Page Heading, and URL.
- Keyword-Rich Custom URLs**  
 The URL is the web address for a web page, such as <http://www.mydomain.com/products/>. If you use keyword within URL, page will help you in search ranking. Just like the HTML Title Tag, a SEO friendly CMS will let you independently customize your URLs.
- Customizable Page Headings**  
 Page Headings are used to provide information of what page is all about. It is essentially the title of the article or page content. These headings help in Search Engines as they define the page topic. So it is good for you if you add keyword in your Page Heading, and you should be able to independently define the Page Heading of each page.
- Static URLs**  
 A static URL would look something like <http://www.savanpatel.in/material/> whereas a dynamic URL would look something like <http://www.savanpatel.in/default.html?city=11&type=5>. Static URLs make it easier for Search Engines to make understand what is inside the page. A dynamic URL might show something like </?sortby=city>, or </?sortby=state>. A Search Engine takes it as two completely different URLs. But the page has the exact same content, it's just sorted differently. SEO should provide facilities to have Static URL.
- Customize Link Text**  
 In some CMS platforms if you link to another page on your site already, the CMS determines the link text for you. Sometimes that might be fine, but not if you try to directly link juice for a specified period to a page. Each link that allows you to size, gives you the flexibility to determine which text to use.
- Site Architecture**  
 A page located at the root directory has more importance than the nested sub directory. The nesting of your site architecture can affect SEO. SEO believes that page closer to root directory has higher importance. Site Architecture should be trivial - the best being a single folder level, such as </products-building-wood-2x4/> where you can still use any necessary keywords.
- Custom META Tags**  
 The two most important META tags you should be able to fit on a page by page basis, description and keywords tags. The description tag will not help your rankings, but it can be used to display search results. So what you say in your Description Tag will certainly affect whether someone clicks the link to your page. The Keywords tag is somewhat controversial because some say it is not absolutely necessary, while others say it is still some benefit on some engines. But it certainly does not hurt your rankings if you somehow use the META Keywords Tag. A CMS should not limit or you can edit your META Keywords.

- **Geolocation Tags**  
There are META Tags for geolocation information that can help with local search results. If the search from a mobile device, the search engine can determine your location, and show the results based on what is closest to you. If your site contains no geolocation information, you cannot score well in these results.
- **Canonical Links**  
Duplicate content can have a double negative effect. For example, look at the following URLs:  
<http://mydomain.com/>  
<http://www.mydomain.com/>  
<http://mydomain.com/index.html>  
<http://www.mydomain.com/index.html>

In reality, those are all exact the same page. But to a search engine, treat as four different pages because they are four different URLs. Multiple URLs for the same page resulting in duplicate content is a problem for any website. There are many methods for dealing with duplicate content, and one of the all around best is the Canonical Link. It is simply a tag in the <head> section of your HTML. A CMS should build Canonical Links into each page automatically.

- **Image ALT Tags**  
An image ALT tag sets the text that will display if an image doesn't load, or is read if a screen reader is used. Search Engines use this text as a helpful indication of page content. Therefore weight is given to the text within the ALT tag. You should be able to customize the ALT tag for any image you upload.
- **XML Sitemap**  
Search engines find all pages on your site by crawling but there is no guarantee that Search Engines find all pages. An XML Sitemap file is a single file that lists all pages on your site you'd like a Search Engine to index. This makes it much easier (and faster) for a Search Engine to find your content and get it indexed. Many site uses XML-Sitemaps.com to generate XML Sitemap manually. You need to update that file regularly as you insert or delete any file. Your CMS should be able to manage your XML Sitemap automatically so you never have to manually generate and upload the file. This ensures it is up to date and accurate at all times.
- **HTML5**  
As of this writing, HTML5 does not know SEO advantage. At least Google has said it does not affect your rankings. However, once HTML5 is clearly more used and new semantic tags are more scattered on websites, it would be one way that search engines can be a better description of the content. Thus, the text in a tag <article> probably more related to the total page content than it would in the text or <footer> <aside> tag. This can help focus the search for better text is the actual page content (rather than peripheral information). Because it's made with HTML5 will mean the content is already determined by that search engines tags once it starts using it [8]

## VIII. CONCLUSION

Search Engine Optimization (SEO) is highly dynamic in nature. The trends of search engine are changed year by year. Various search engines, such as Google, Yahoo!, and MSN Messenger, adopt unique techniques to identify the valuable contents through the web. Through this paper we conclude here tools and techniques of SEO, some criteria to consider not to loss traffic and several criteria for selection of any CMS in the respect of SEO. SEO is not a onetime activity but its continuous process. To be on top you can do one thing whether you hire any good web developer or use good SEO friendly CMS.

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