

# Website Optimization on Search Engines to Achieve High Page Ranking and Traffic

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**Abstract:** A search engine is an online tool on the internet which is designed to search information on the World Wide Web. But now search engines have become the most important tool which is used for business promotion and marketing. Search engine optimization is the technique by which any business website could be displayed on top most pages of search engines like Google, Yahoo, Bing. This paper focuses on the two types of techniques On-page website optimization and Off-page website optimization. These techniques include different factors which need to be updated according to the Google algorithm's update released year by year. Thus, affect the Alexa ranking which leads to the traffic on a website and as a result website may be displayed on the top pages of Google Search Engine.

**Keywords:** Search Engine Optimization, On-page SEO, Off Page SEO, White Hat-SEO, Black Hat SEO, Alexa Rank, Bounce Rate, Organic traffic.

## I. INTRODUCTION

Search engines are the web browser friendly online internet searching tool that is used to find any information on World Wide Web. Many business-oriented websites are made to grow the physical business via the internet. People search information about restaurants, hotels, city guide etc on the internet with the help of search engines. These search engines like Yahoo, Google, Bing manages unstructured indexed data of different websites. Web site indexing is done by the web crawler. A web crawler is a tool, analyzes the website on the basis of different guidelines and algorithms of search engine optimization.

*A. Different Google's Search Engine Algorithms for Optimization:*

*Panda Update:* Google's basic algorithms were started from the year 2000 but major update launched in the year 2011 Feb named as Panda Update which has affected many websites. Google's this algorithm focused on content quality of the website. The main aim of the algorithm was to remove duplicate, copied and poor quality content. Later on, Google releases many panda updates, concern was to build high-quality website back links.

*Penguin Update:* Penguin update was introduced in the year 2012 April named as Penguin update. This update also affected many websites. The main purpose was to

penalize bad quality back links, keywords stuffing, repeated keywords.

*Hummingbird Update:* Hummingbird is released around August 2013, is a new search algorithm that Google developed with a focus on Semantic Search. The main goal was to provide more specific results based on online behavior, location etc.

*B. Google Mobile-Friendly Mobile Geddo Update:* Mobile friendly update released on year April 2015. This update released because many users have smart phones. They used to search information on mobile phones instead of laptop or desktop. The main objective was to judge responsiveness of website. According to the guideline of this algorithm, every website should be independent of screen resolution.

*C. Google Fred Update*

Google Fred update is released on year March 2017. According to this update, Google is punishing the web site which has too much advertising content it. With the facility of Google Ad words and Ad sense many business owners trying to make money with advertising, Ads display on the website called Pay per Click. Website's actual content and information get hide because of ads on the website which disturbs users accessing the website.

## II. LITERATURE REVIEW

A. According to the research done by M. Usha, Dr. N. Nagadeepa on paper entitled "On Page and Off Page Optimization Techniques for Search Engine Results Page (SERP)" published in Ijarcse Journal, SEO has very important role in results display on top pages of search engine. This paper has explained about On Page and Off Page optimization guidelines.

B. Research conducted by J. Prethi Sagana Poongkode V. Nirosha, in paper named "A Study on Various Search Engine Optimization Techniques" published in IJRCCE Journal, describe about the techniques to increase visibility of a website on Google's top indexing and importance of SEO in data searching. This paper described black hat SEO and white hat SEO techniques.

C. In research, conducted by Sandhya Dahake Dr. V.M. Thakare , Dr. Pradeep Butey, on “SEO Techniques for various Application -A Comparative Analyses and Evaluation” in National Conference on Recent Trends in Computer Science and Information Technology published in NCRTCSIT- 2016, authors had described various SEO techniques like black-hat seo and white hat seo and their comparative study for increasing the pagerank of undeserving websites.

III. CONCEPT OF RANKING & TRAFFIC

A. Pagerank

Every website is submitted to the search web crawler for indexing of website. Web crawler check website and assign Page rank from 1 to 10 to every website. If any website has rank 10 it is highly assigned Page rank and 1 will be the lowest one. Some of the websites may have NA Page Rank. The page rank concept depends on the content of the website, formatting of the website according to the template of Search engine algorithms. If website containing poor quality content may have low PR. Organic traffic is the actual traffic coming from the search engine to any website. Users search any question or search keywords in search engine then SE display results from top index pages. An example of Twitter.com for Page Rank is shown below. Twitter is a social media website highly used on the internet has the highest PageRank and traffic ratio. Shown in Fig 2.1

Check PAGE RANK of Web site pages Instantly

In order to check pagerank of a single web site, web page or domain name, please submit the URL of that web site, web page or domain name to the form below and click "Check PR" button.



Figure .1:- An example of Pagerank Twitter Website

B. Alexa Rank:

Alexa rank depends on the traffic ratio of the users. Traffic is based on the number of users reaches on the website and page views. According to the research, it may consider that Alexa rank is inversely proportional to the traffic. Less will be the Alexa rank, more will be the traffic ratio. If users found the interesting content of website then more clicks would be generated, users would stay for more time on the website, it will increase traffic ratio. The example of Twitter.com for Alexa Rank is shown below in Fig. 2.2



Figure 2:- An example of Alexa Rank Twitter Website

Here alexa rank of twitter is 11 Globally. And rank in different counties is also shown below in Fig. 2.3

Country	Percent of Visitors	Rank in Country
United States	30.1%	8
Japan	15.8%	6
United Kingdom	6.6%	10
France	3.4%	11
Spain	3.2%	6

Figure 2.3 Example of Alexa Rank in Countries

IV. SEARCH ENGINE OPTIMIZATION ENGINE TECHNIQUES

To optimize any website on different search engines, various guidelines are provided according to the search engine algorithms. A website should follow each factor to achieve high Page Rank and traffic on a website. Basically, all search engines like Yahoo, Google, Bing have two techniques of optimization.

1. On-page SEO
2. Off-page SEO

A. On-Page SEO:

On-page SEO is the technique of optimizing separate web pages of any website in order to rank higher and earn more relevant traffic from search engines on the website. On-page SEO contains different factors which need to be check and correct. On-page refers to both the content and HTML source code of a page that can be optimized, as opposed to off-page SEO which refers to link Building. This technique has major factors described below.

B. Title Meta Tags:

Every Website should have title meta tags. These are the HTML tags of web Pages. The homepage of the website should compulsorily have meta tags and for sub-pages it is optional to upload. Tags had the limit of 50 to 60

characters so thus should not exceed 60 characters. If it is extended then crawler will discard the words and will not read.

### C. Sitemap

A sitemap is a file which contains list the web pages of a website to inform Google and other search engines about the organization of your site content. Search engine's web crawlers like Googlebot read this file to read web pages content and pages counting. There are two types of sitemap one is for a user and one is for a crawler. Sitemap.XML file with the XML extension is for the crawler which displays the list of all the web page of the website in a single page. Sitemap.html file with the HTML extension is for the user which displays the list of all the web pages in a website.

### D. Robots File

Robots.txt is a text file created by webmasters to instruct web robots (typically search engine robots) how to crawl pages on their website. Basically, robots file is also used to hide some confidential details or admin detail from search crawler.

### E. Image ALT Text

Images uploaded on the website should have alternative text because web crawler cannot read images it only reads the alternate text of the image.

### F. HTML Heading Tags

Website should have proper HTML heading tags because crawler first read title meta tags and then H1, H2..H6 heading and display the result on search engine according to Keywords or search query of the users.

### G. Social Media Presence

According to the recent market trends and E-commerce techniques, the website should have the social presence. Business owners who have their business website try to get 50% of the traffic ratio from the social media. A website has social official website of Google Plus, Twitter, Facebook, Pinterest.

### H. Mobile Friendliness or Responsiveness

According to the Google's search engine algorithm released in 2015, marketers need to convert or build a website with mobile friendliness. A website must be responsive for the mobile users.

### I. WWW redirection Error:

Website URL may be formed with two types of structure example `www.mywebsite.com` or `http://www.mywebsite.com`. If any user requests website URL either with HTTP or without HTTP in search browser, the same website should be open with similar structure. This is called www redirect error because web

crawler considers it two different websites. So to avoid this error, a website should be free from www redirection error. This error is also called 302 or 301 redirection error in SEO. 301,302 are the HTTP protocol's status codes.

### J. 404 Page Not Found Error:

The HTTP 404 Not Found Error means that the web page for which user is requesting is not available on the server. It is an error of Client-side which means that the page has been removed from the server or URL may be changed or user typed URL wrong. If any website has some web pages incomplete after launching a website so the solution is to redirect the incomplete page to other home page or informative page.

### K. Internal Links

Website has main home page URL as well as other subpages links. Some links redirect to the other website called external links and some redirects to the website itself called internal links. A website must have internal links.

### L. Favicon:

Website should have a favicon. It is a type of logo displayed on web browser whenever a web page is requested.

### M. Loading Time:

When a user requests to access a website with the help of web browser, the website should be compatible with all browser and loading speed time should be fast. This can be done by not including too much heavy code, scripts on web pages.

### N. URL Structure:

Every website should have clean URL link because notation like `'_'`, `'%$#'` is not allowed according to search algorithms. The crawler may read website content but it gives some negative impact on the website.

### O. Off-Page SEO:

Off-page SEO simply means to create quality backlinks by local citation, classified Ads posting, Social Bookmarking, Content sharing like blogs articles, press release. Off page SEO factors are described below in detail.

## V. SEARCH ENGINE SUBMISSION AND PING SUBMISSION

If any website is launched on world wide web then it needs to submit for indexing of search engines. Search engine submission means submitting website URL to the Meta search engines for indexing. Ping submission is done to inform web crawler about any content update on website like blog, article.

### A. Classified Ads Posting:

This is one of the ways of online ad posting in any specified category. Many websites are available which allow posting website's detailed ad in category. It may contain offers, deals etc.

#### *B. Local Listing:*

Local listing is also a type of link building for website. Business owner can promote their business by online local listing of their business. It includes phone number, address, Title, Description of website and other important details.

#### *C. Social Bookmarking:*

Social bookmarking is an online service which allows users to bookmark detail for their website on another website. Bookmarking means to add the detail of website like the purpose of the website, what type of services website is facilitating. Many online bookmark websites have been launched for the promotion service like Delicious, founded in 2003, Reddit etc. These websites allow adding tags, keywords.

#### *D. Social Media Submission:*

For back linking and to get quality organic traffic on website, social platform is the best way to attract users. Social media website like Twitter, Facebook, Stumbleupon etc.

#### *E. Forum Posting/QA:*

This is different way of link building in which users post their queries on question answer (QA) websites or Forum websites related with the services, products for example: 'Which Products is best to Buy between X & Y?' or 'Which Brand is better in between X & Y'. Link builder can answer the questions of users and create backlink with 'href' or 'anchor tag'.

#### *F. Blog/Article Promotion:*

Google is a search engine used in large scale in all over the world and its algorithm follow the rule of original content. Website should not have duplicate content. So blogs and articles of website also have original content. Articles and Blogs can be promoted on other high PR websites like Wordpress, Blogspot, Elsevier, LinkedIn etc.

#### *G. Video Promotion:*

Video can be create with the help of any online tool or desktop video creator on website service, features, benefits some live demos and can be promoted over video promotion website like Youtube, Vimeo etc.

### VI CONCLUSION

This paper concludes that both technique Off-page and On-page SEO is equally responsible for achieving high page rank and traffic on a website. But the effect of Off-page SEO will negligible if On-page is not completed. If a website has high Alexa rank it means traffic is decreasing,

if Alexa is decreasing means traffic is increasing on a website. Once the website has high-quality backlinks and good indexing ratio then the website can achieve high PR with the organic traffic.

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