

# Significance of Search Engine Optimization

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**Abstract:** *As the Internet grows in popularity, hundreds of thousands of people use search engines such as Google and Yahoo to search for information. However, search engine users are most interested in some result pages. Therefore, selling a website with search engine results is an important task in website development. Search engine optimization (SEO) needs to complete this task. However, from time to time, the black hat SEO strategy behind search engines is used, and the page rank of search engine results is higher than it deserves. This research paper implies a new methodology for search engine optimization (SEO) without sandboxing via serps such as Google and Bing. Previously, rulebooks were based solely on the number of backlinks on a page. This technique employs a secure link building technique where link speed is key, without sacrificing website optimization. Today's algorithm updates are considered. This white paper describes the characteristics of search engine PageRank algorithms, SEO techniques, and strategies for ranking keywords.*

**Keywords:** SEO, search engine, search engine results page, google, ranking, keywords.

## I. INTRODUCTION

SEO is a component of a wide range of program marketing (SEM) topics and is a general term for all search marketing strategies. SEM includes both organic and paid searches. Paid search pays you to list your site on search engines so that it appears when you enter a specific keyword or phrase. Both organic and paid lists appear in the program, but they appear in multiple places on the page. Search engine optimization (SEO) is the process that influences the vision of an internet website or web page during search engine "natural" or unpaid ("organic") search result.

Few people in this era use traditional media such as newspapers, magazines, television and FM. When we were young, we used newspapers as a source of employment and went to unemployment offices for work. Traditional media was the only connection to the service. Today, most users are looking to search engines instead of traditional media. They can easily find a solution to their problem with search engines, and also the previous article that it is easier for businesses to grow if the website is on the first page of Google search engines. Was stated in.

Search engines have the complex task of sorting billions of pages to show only the pages that are relevant to the search data submitted. Google has become an essential link for searching for information online. For this reason, SEO needs to actively learn techniques to drive traffic to their website. Searching the Internet has become a part of everyday life for most people. Whether you are looking for information related to your daily life, most people make search engines a part of their daily life. Because with the help of search engines, it is "a prominent position in the online world."

Search engine optimization techniques that help you improve your website's rankings, attract more visitors, and increase your website's visibility. The Most Searched Techniques Related to SEO and the Importance of Each Technique.

### 1.1 Purpose



In today's situation, online search has become the everyday life of almost everyone with the latest information on cars, bicycles and everything else. Most people have a part of their daily life in search engines. For this reason, search engines occupy an important position in today's world.

### **1.2 How Search Engine Working or Operate?**

A search engine is a software program designed to search for results on the Internet. Google Search Engine is the most used search engine like Google and is one of all search engines like Google on the internet.

Among other things are sports search engines that are monitored through crawlers and indexing.

1. **Crawl:** Also known as a spider. This includes scanning websites and collecting information about all pages, including IDs, images, keywords, and other linked pages. Google's Spider crawls hundreds of pages per second. And now it's a thousand days.
2. **Indexing:** The method saved the listed web page in the database.
3. **Processing:** During processing, the search engine compares the search string to the listed pages in the database.
4. **Retrieve or Get :** Retrieve or Get was able to easily display the functionality of the browser.

### **1.3 Types of SEO**

1. White Hat SEO
  2. Black Hat SEO
  3. Gray Hat SEO
- White Hat SEO: It absolutely follows search engines. Great for ranks.
  - Black Hat SEO: Don't follow search engine guidelines for keyword abuse, hyperlink spam, and hidden text. The rank will be shorter, but it will be faster.
  - Gray Hat SEO: Combines search engine optimization for both White Hat and Black Hat.

## **II. TECHNIQUES OF SEARCH ENGINE OPTIMIZATION (SEO)**

SEO technology can be broadly divided into two categories. These techniques are more effective at improving your website's ranking in the context of Google search engines.

1. On Page Optimization
2. Off Page Optimization

### **2.1 On Page Optimization**

All of these techniques can be used on your website. OnPage optimizations include:

#### **Page Title:**

Page title tags <title></title> inform both users and search engines of the content of the page. The name appears in the recognition bar of your internet browser and in the header of the final result of the search engine. This is the main detail that the crawler looks at as it crawls the record. Identification is the ultimate accuracy of what a web page is, and therefore has Google's highest weighting.

Example: Title: Shopping Mania Use this title tag to increase your chances of being ranked high on all Google shopping websites.

#### **Meta Description:**

The meta description is the area where you place a brief description of your website. The meta tag for a web page description can be a sentence or paragraph.

Example:

```
<meta name="description" content="This is a shopping website where you can buy clothes and shoes."/>
```

When Google creates a search engine results page, you may see a descriptive tag under the title of the result.

#### **Meta Keyword:**

Metakeywords provide search engines with information about the content of your website.

Example:

```
<meta name="keyword" Content="men, kids"/>
```

This will search for all keywords on the site, such as men's shirts and children's shirts.

#### **Heading Tag:**

Heading tags are the second most important SEO element after title tags. It can also be processed with CSS. HTML supports up to 6 levels of heading tags.

Example:

```
<h1>This is your first heading i.e. h1 in your webpage. </h1>
```

#### **Image alt Attribute:**

Images have specific filenames, file sizes, and ALT attributes. Manage the entire traffic image index and easily describe the size in the alt attribute.

#### **Include a sitemap page:**

Sitemaps provide the possibility to notify search engines immediately about changes to your website. Changes throughout the site are indexed faster. Site maps also help you categorize the content of your website.

#### **2.2 Off Page Optimization:**

Off-page optimization is a program optimization strategy that runs off-page or is indirectly related to page content. These are typically designed to maximize the performance of the target keywords associated with the page content.

Offpage Optimization includes :

#### **Link Building:**

Link building is the process or technique of building or creating links to improve the ranking of website.it, including social bookmarks, articles, and anchor tags that contain links to pages.

#### **Google Keyword:**

Google has Google Adwords, so it's used for advertising platforms.

Example: Ad/www.sitename.com

#### **2.3 Search Engine Algorithm**

PageRank (PR): PageRank is an algorithm that assigns numerical weights to web pages that reflect their relative importance. Use the incoming link information to assign a global importance score to all or any page on the web. The number of inbound links from a quality site measures your site's perception. Supports the quantity and quality of inbound and outbound links. High-priority pages are the most important and may appear in the top results list of search engines. The PageRank value is divided into levels 110, 10 of which represent higher PR values. This means that the page is more popular, and a PageRank value of 1 means that the page is unpopular. If your online site is ranked in the first 25 top results, your PR score must be 6 or 6 or higher.

Assuming that t1 and t2..tn are pages linked to page A, the PR value for page A is:

$$PR(A) = (1-d) + d \{PR(t1) / C(t1) + PR(t2) / C(t2) + \dots + PR(tn) / C(tn)\}$$
 (1) Here And d is the damping factor, usually its value is 0.85. PR (t1) ... PR (tn) is the PageRank value from page t1 to tn. C (ti) means the number of outgoing links on page ti. PR (ti) / C (ti) means the contribution of side ti to the PR value 2 of side A.

#### **A. HillTop Algorithm**

When a question is asked, HillTop first calculates a list of experts most relevant to the topic of the question. Then identify the relevant links within the selected expert group and follow them to find the landing page. Landing pages are ranked at that point according to the number and relevance of unconnected experts. Therefore, the landing page scores reflect the simplest collective opinion of independent experts on query topics. Without expert opinion, Hilltop will not provide

results. Therefore, Hilltop is tuned for the accuracy of the results, not the query coverage. Hilltops are theme sensitive. Generates a list of trusted pages for the subject of the query. Each side is weighted on a binary scale. A value of "1" indicates the appropriate page for the topic, and a value of "0" indicates irrelevant or missing. Therefore, HillTop is aimed at the accuracy of the results, not the scope of the query.

Therefore, calculate the expert score. Let  $k$  be the number of terms  $q$  in the input query. The  $S_i$  component of the score is calculated considering only key phrases that exactly contain the query term  $k-i$ .

$S_i = \text{SUM} \{ \text{key phrases } p \text{ and } k_i \text{ query terms} \} \text{LevelScore}(p) * \text{Curve factor}(p, q)$  (2) LevelScore ( $p$ ) can be a score assigned to a phrase based on the nature of the phrase. increase. FullnessFactor ( $p, q$ ) is a measure of the amount of  $p$  term covered by  $q$  term. The score for each expert is converted to a scalar by the weighted sum of the three components 7:  $\text{Expert\_Score} = 232 * S_0 + 216 * S_1 + S_2$ . #) New algorithm (combination of PR and HillTop): To provide more accurate results in a scientific and rational way, Google combines the features of PR and HillTop to calculate rankings of website.

This algorithm has formula as:

$$\{(1d) a (RS)\} * \{(1e) + b (PR * fb)\} * \{(1f) + c (LS)\} (4).$$

Where  $a, b, c$  are weight controls and  $d, e, f$  are damping controls.  $RS$  = relevance score. It's a translation of all SEO factors. (Score supported keywords displayed in title tags, meta tags, headlines, body text, URL tags, alt text, anchor text, etc.)  $PR$  = PageRank score.  $LS$  = local score. A translation of a link from an expert document.

### III. BENEFITS AND DISADVANTAGES OF SEO

These are just some of the benefits of SEO

The main advantage of SEO is that it ranks in the top 10.

SEO helps increase website traffic and increase business sales.

The higher your website is ranked, the more free traffic you get to your website and the higher your return on investment.

SEO is an inexpensive way to sell.

Search engines have no predefined standards. Almost all search engines use different approaches to program optimization.

Another drawback of SEO is that you need to constantly update your knowledge.

#### 3.1 Tips for improving your website's Google Ranking

Google seems to focus on the title tags of web pages. Use this title depending on your site. If your site is a shopping site, use the shopping title.

Always use words and keywords that people check out.

Content is more important for improving your website's ranking on Google. Your content should be useful forever, not fashionable or disposable.

Blogs love fresh content and are great for building links and boosting your website's ranking on Google, so start posting to your blog or social site.

Update your website more often. When you publish content to your blog, Google begins to recognize you as a good data source. On every blog, you have another opportunity to improve your website's ranking.

Links are also very important. Google especially loves links from other related websites. Connect with a backlink to your website and submit your website to the relevant directory to improve your ranking.

Because Google and other search engines index older websites more often, already-lived or online websites go one step further than uploading alternative websites to the web and contribute to faster crawls increase. Therefore, SEO technology needs to be implemented to improve the ranking of websites.

#### 3.2 What is the Impact of SEO on Mobile Devices?

Smartphones have triggered a communications revolution, and research shows that smartphone adoption is increasing significantly. The use of mobile phones to access the Internet is increasing among users and is expected to quickly exceed web access via PCs. It's important for businesses to understand where their customers are and what devices they are using to access the digital ecosystem. If mobile usage explodes on your website, there are risks, but the resulting mobile view of your website is not available on your mobile or tablet device.

Mobile SEO considerations are becoming more and more important. By ranking on mobile devices by keywords in a particular industry, businesses can take control of users who are constantly searching on the go. It's also clear that people searching on mobile are influenced by offline media. Consume news via TV, radio, billboards, printed advertisements and more.

### **3.3 How Does Social Media Affect SEO Results?**

Social media activities have a big impact on SEO rankings. Website SEO scores are based on relevance and authority. To build this relationship, you need to continually create original content so that you can create a community to find and share your content. The more relevant and credible your website content is, the higher your search engine ranks for a particular matching keyword.

Adding a social media sharing button to your website is an easy way to increase your chances of sharing great content. Whenever content is shared, it gets another inbound link to your site. This is often great for SEO and also increases your chances of getting your product or service in front of the latest users.

With the release of Google+ and Search Plus Your World, social messaging is becoming more and more influential in user search results. Google collects all social data (tweets, comments, likes, +) and, as a result, monitors the current trends of what people want and thereby displays relevant search results.

We encourage businesses to create a Google+ profile to keep their website up-to-date with these new realities. "Given that the new Google Search Plus Your World doesn't include Twitter or Facebook, if you want Google to consider it, you need to set one. At the same time, it will be included in some of the influential ones. The circle you are in. "I'm doing it" (Kandola, 2012). The impact of social media on SEO is only increasing.

Achieving the best spots on the program results page requires awareness, support, and therefore the support of others.

## **IV. CONCLUSION**

These dissertation studies are largely based entirely on reviews of search engine optimization strategies. The Onweb-Page and Off web-as-Page strategies help you optimize your website type and make your website's search engine easier to use. These strategies, when used correctly, can help improve your website's reputation. In today's world, website rankings are a very important factor in getting more users.

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