

Search Engine Optimization (SEO)

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Abstract

Search engine optimization is often about making small modifications to parts of your website. When viewed individually, these changes might seem like incremental improvements, but when combined with other optimizations, they could have a noticeable impact on your site's user experience and performance in organic search results. You're likely already familiar with many of the topics in this guide, because they're essential ingredients for any web page, but you may not be making the most out of them.

1. Introduction

Search engine optimization (SEO) is the process of improving the visibility of a website or a webpage in a search engines results page. Businesses operating in an online environment typically strive to promote their products and services on search engines. 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.

2. Search Engine

An internet-based tool that searches an index of documents for a particular term, phrase or text specified by the user. Commonly used to refer to large web-based search engines that search through billions of pages on the internet. A web search engine is a software system that is designed to search for information on the World Wide Web. The search results are generally presented in a line of results often referred to as search engine results pages (SERPs). Some search engines also mine data available in databases or open directories. Unlike web directories, which are maintained only by human editors, search engines also maintain real-time information by running an algorithm on a web crawler.



Fig. 1 Popular Search Engines.

2.1 How Do Search Engines Work?

Spider "crawls" the web to find new documents (web pages, other documents) typically by following hyperlinks from websites already in their database. Search engines indexes the content (text, code) in these documents by adding it to their databases and then periodically updates this content. It searches their own databases when a user enters in a search to find related documents (not searching web pages in real-time). It also ranks the resulting documents using an algorithm by assigning various weights and ranking factors.

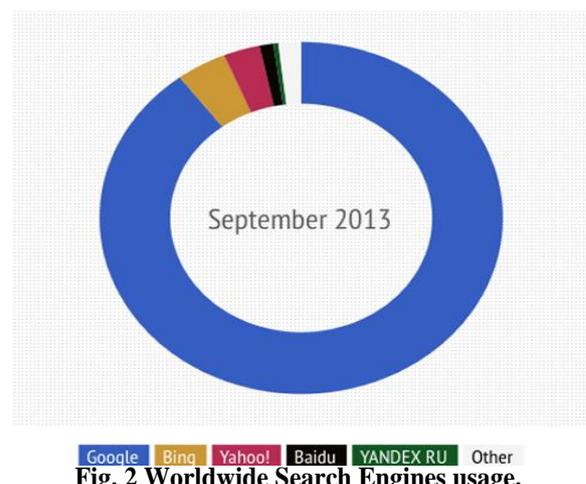


Fig. 2 Worldwide Search Engines usage.

3. Search Engine Optimization

It refers to the process of “optimizing” both the on-page and off-page ranking factors in order to achieve high search engine rankings for targeted search terms. It refers to the “industry” that has been created regarding using keyword searching as a means of increasing relevant traffic to a website.

3.1 SEO Algorithm

It’s a company’s secret. Only select employees of a search engines company *know* for certain about the algorithm. Reverse engineering, research and experiments gives SEOs professionals a “pretty good” idea of the major factors and approximate weight assignments. The SEO algorithm is constantly changed, tweaked & updated. Websites and documents being searched are also constantly changing. It varies by Search Engine – some give more weight to on-page factors, some to link popularity.

3.2 Basic Tips & Optimization Techniques

- Research keywords related to your business.
- Identify competitors, utilize benchmarking techniques and identify level of competition.
- Utilize descriptive title tags for each page.
- Ensure that your text is HTML-text and not image text.
- Use text links whenever possible.
- Use appropriate keywords in your content and internal hyperlinks (don’t overdo!).
- Obtain inbound links from related websites.
- Monitor your search engine rankings and more importantly your website traffic statistics and sales/leads produced.
- Educate yourself about search engine marketing.

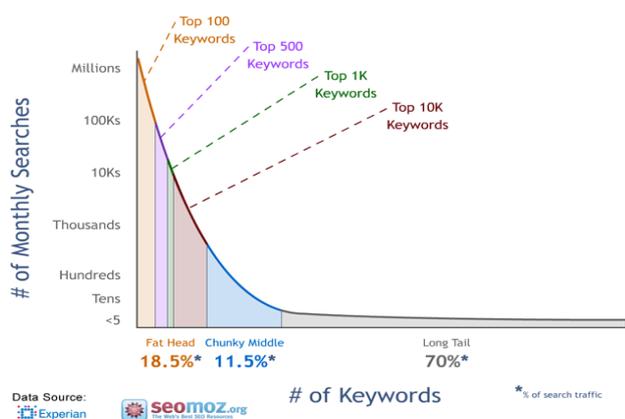


Fig. 3 SEO demand curve.

4. Implementation and Discussion

4.1 Search Engine Rank

Whenever a user types a keyword or a keyword combination in the search box of a search engine like Google, several web pages appear in the search results based on their page ranking. A search engine ranks a web page based on its search algorithms and stores the WebPages according to their ranks. So, if your webpage appears first in the search results for a certain set of keywords, page rank of your webpage is 1.

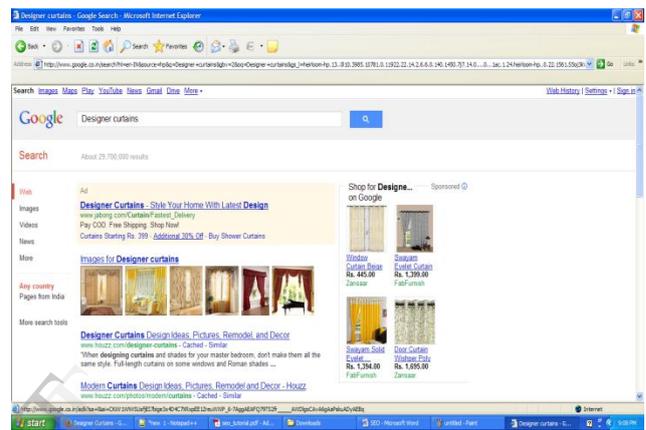


Fig. 4 Search Engine Rank.

Hence, SEO tools and techniques are used to achieve a higher ranking in the search results.

Following is a flowchart procedure that we developed after detailed study about how to implement SEO. This procedure can be helpful to achieve better SEO and higher page ranks.

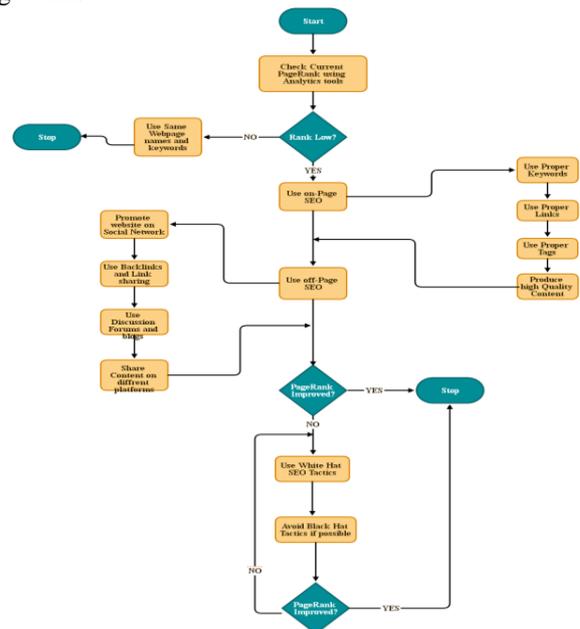


Fig 5. SEO Flowchart

4.2 SEO tools and techniques

Generally, there are two basic ways of implementing SEO for your webpage or website viz. On-page and Off-page SEO. In addition to these, White Hat and Black Hat SEO techniques are also widely used.

4.2.1 On-page SEO

This includes providing good content, good keywords selection, putting keywords on correct places, giving appropriate title to every page etc.

4.2.1.1 Keyword Selection

Use Specific, unique keywords that will describe the purpose, content and niche of your website or webpage in a precise way. Having at least one keyword on each webpage of your website unique and descriptive, might help improve your page rank.

4.2.1.2 Use of Proper links

Always provide descriptive link URL for each webpage. For e.g. If your webpage is a Contact form, the URL should ideally be somewebsite.com/contactform.php rather than just contactform.php.

4.2.1.3 Use proper tags

Title tag is a very important tag to provide good on-page SEO. Giving relevant and suitable title to each page is very useful and important. Also, giving proper page description using Meta tags can help improve web-page rank significantly, as the search engine bots always look for page descriptions given under Meta tags for showing results quickly.

4.2.1.4 High Quality Content

The most important thing in assisting SEO is the content quality. Write high quality, grammatically rich and web suitable content is necessary and helpful. Also giving suitable and descriptive headings to each paragraph in the content ease the process and gives good search flexibility for the users.

4.2.2 Off-page SEO

This includes link building, increasing link popularity by submitting in open directories, search engines, link exchange etc.

4.2.2.1 Use the Social network

Using popular social networking sites like Facebook, Twitter, and MySpace etc. for promoting your website can help achieve more number of users. One can link their website to these social networks by creating accounts, pages, support groups or just post links to your websites by your personal account.

4.2.2.2 Back links

Another common and cheap way of off-page SEO is providing or sharing links to your website with another websites having similar content or a large customer base. Whenever users visit their website they might click on the links to your website. Link exchange is basically, users visit your websites clicking on the links on other's websites and vice versa.

4.2.2.3 Forums and blogs

Creating and maintaining blogs about your website and then updating your blogs, help achieve higher rank. Search Engines have to constantly crawl to update your latest blog posts and ultimately provides better ranking for your website. Also discussing about your website and its uses in a popular discussion forum or creating your own discussion forum for the same, is another effective way for achieving better traffic and thus better rank.

4.2.2.4 Sharing Content

Sharing a photo or video that is unique and created by your as part of website, with popular content sharing platforms like Flickr, Picasa, YouTube, Vimeo, Instagram etc. and providing link to your website might drive hundreds and thousands of visitors to you quickly.



Fig 6. SEO Pyramid

4.2.3 White Hat SEO

Techniques that search engines recommend as part of good design referred to as White Hat SEO.

An SEO tactic, technique or method is considered as White Hat if:

- If it conforms to the search engine's guidelines.
- If it does not involve any deception.
- It ensures that the content a search engine indexes and subsequently ranks is the same content a user will see.
- It ensures that Web Page content should have been created for the users and not just for the search engines.
- It ensures the good quality of the web pages.

4.2.4 Black Hat or Spamdexing

Techniques that search engines do not approve and attempt to minimize the effect of referred to as Black Hat or spamdexing.

An SEO tactic, technique or method is considered as Black Hat or Spamdexing if:

- Try to improve rankings that are disapproved of by the search engines and/or involve deception.
- Redirecting users from a page that is built for search engines to one that is more human friendly.
- Redirecting users to a page that was different from the page the Search Engine ranked.
- Serving one version of a page to search engine spiders/bots and another version to human visitors. This is called **Cloaking SEO** tactic.
- Using Hidden or invisible text or with the page background color, using a tiny font size or hiding them within the HTML code such as "no frame" sections.
- Repeating keywords in the Meta tags, and using keywords that are unrelated to the site's content. This is called **Meta tag stuffing**.
- Calculated placement of keywords within a page to raise the keyword count, variety, and density of the page. This is called **Keyword stuffing**.
- Creating low-quality web pages that contain very little content but are instead stuffed with very similar key words and phrases. These pages are called **Doorway or Gateway Pages**.
- Creating a rogue copy of a popular web site which shows contents similar to the original to a web crawler, but redirects web surfers to unrelated or malicious web sites. This is called **Page hijacking**.

- One should avoid Black Hat SEO and encourage White Hat SEO since Black Hat techniques are often a threat to web safety, user privacy, ease of internet usage and clean surfing.

5. Mobile SEO

Users are progressively increasing their use of mobiles to access the web and it is expected to soon outpace web access through personal computers. It is essential for businesses to know where their customers are and which device they are using to access their digital ecosystems. Mobile SEO considerations are becoming very significant. Ranking for the key terms in a specific industry on mobile devices, allows a business to take control of users who are continuously searching on the go.

Statistics show, that less than 20% of major US retailers have websites optimized for mobile and m tablet devices. To develop a mobile site, companies should focus on prioritizing content, using features that are unique to the mobile environment, design an interface as such and create a straightforward layout and navigation of the site.

Mobile search is the future of SEO and organizations need to catch up with this. Google is already paying an increasing level of attention to websites that are 'mobile friendly'.

6. Why to Use SEO?

a. The Results are Low Cost

Unlike ads and PPC, Organic listings are essentially free. With a little bit of efforts you can watch your website get consistent traffic.

b. Definite Increase in Traffic

SEO will give you results as soon as you start. You clearly notice more people visiting your site and sales going through the roof.

c. Higher Brand Credibility

People trust that the first listing in the result page is a reputable company. By doing SEO, your website becomes THE Brand. The further back you are in rankings the more people are skeptical about your website.

d. Stand Out From Others

There are well over 250 million websites on the web. It is pretty hard to make a name for yourself, especially in a competitive market. SEO does this for you, it makes you stand out.

e. 60% of Clicks Go to the First Result

60% of clicks go to the first result, which means that only 40% are left for others. Securing that top spot is a sure way to gain thousands upon thousands of visitors.

f. Long term Benefits

One of the main benefits of SEO is that it is a gift that keeps on giving. Unlike advertisements, the effects of SEO linger for a long time. They don't suddenly stop if you stop paying for them.

7. Disadvantages**a. SEO Takes A Lot Of Time**

SEO is no longer peppering keywords. Excellent content creation, the basis of strong SEO is a disadvantage of some because consistently creating top-notch content takes a lot of time.

b. You Still Need To Invest

Although, quality content creation is a strong SEO technique, it won't get you to the top. You still need to invest in a technical SEO service.

c. Not Just A Single Search Engine

There are search engines other than Google! Each comes with their own algorithms and set of rules, making a truly comprehensive SEO strategy is like a task near impossible.

d. Too Much Is Out Of Control

While on-page SEO is important, off-page SEO i.e. inbound links has a bigger impact. It is harder to get quality inbound links. So while you can work hard to optimize every web page, you still have to rely on things that are hard to control.

e. No Guarantee

Search Engines modify their algorithm, some nearly every day. Thus, ranking on a Search Engine tends to change. It is wise for business not to depend completely on Search Engine traffic.

8. Conclusion

Search engine optimization is about making small modifications to your website which have a noticeable impact on your site's performance in organic search results. The field of SEO is constantly changing thus making technical SEO assistance a must for large organizations. Still Businesses need to recognize the two fundamentals for high-quality SEO, On-Page and Off-Page. Mobile search and Social Media are the future of SEO. Organizations must recognize to win top spots in Search engine's results page. Search engine optimization

plays a critical role in web commerce. Despite the disadvantages, SEO is very beneficial and overall a good investment.

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