

## Exploring SEO Process Parameters For Page Ranking

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### Abstract:

This paper presents a novel Search Engine Optimization (SEO) process that can be used for improving page rank results on various search engines used on the web. An attempt is made to explore significant parameters affecting page ranks on popular search engines like Google. The paper introduces the concept of SEO process, and discusses the significance of various factors useful in improving page ranks on Search Engine Result Pages (SERPs).

**Keywords:** Search Engine Optimization (SEO), SEO Execution Process, Page ranking, On-Page Process, Off-Page Process.

### Introduction:

Search Engine Optimization (SEO) refers to the process of development and usage of important principles of search engines, such as site structure, webpage language and interaction diplomatic strategies for a balanced planning to improve site search performance on search engine and to increase the opportunity of customer discovery and access to a website [16]. Search engines may return millions of pages for each user query, but the user only looks at a few selected pages [14]. Web crawling is a process used to gather pages from the Web, in order to index them for supporting a search engine process [1]. SEO is a process used to increase traffic of a website and get good *search engine results page*. Today every business needs an online website with a good rank. The SEO process helps resolve these problems. The major work of SEO is to examine how various search engines find the Internet pages, how to index these pages and how to conclude a particular keyword search results for ranking techniques [16]. SEO is a process of setting HTML file content, site map adjustment and control of different parameters to meet the requirements of the algorithm of search engines, in order to raise the position of the site in the search results for certain user queries. People generally see first few links of search results, so a site with higher position in search results will check first. SEO is a process to reach at program search documents for specified keywords and return a list of the documents in which the keywords are found.

### The process of SEO:

This section highlights the general process of SEO. The figure shown below indicates the process of toggling taking place between on-page processes and off-page processes.

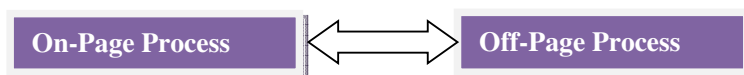


Figure 1: Interaction between an on-page process and an off-page process.

The major two types of SEO are on-page optimization and off-page optimization.

On-page optimization is the process of making a website SEO friendly and improving title tag optimization, meta description of the website, navigation structure of the website, etc. [7]. Off-page optimization is the activity performed on other sites to improve search engine ranking for our site. Off-page optimization is

performed to promote our websites through link building, social bookmarking, blog posting, directory submission, smo, etc. [7].

### The Proposed SEO Process:

This section presents the proposed SEO process in the form of a series of steps required to be carried out. Given below is a series of steps that we propose for the SEO process.

**Step 1: Keyword analysis & competitor analysis**

**Step 2: Page title and meta tag generation**

**Step 3: On-page process**

**Step 4: Link building & off-page process**

**Step 5: Directory blog and article submission**

**Step 6: Other factors and feedback**

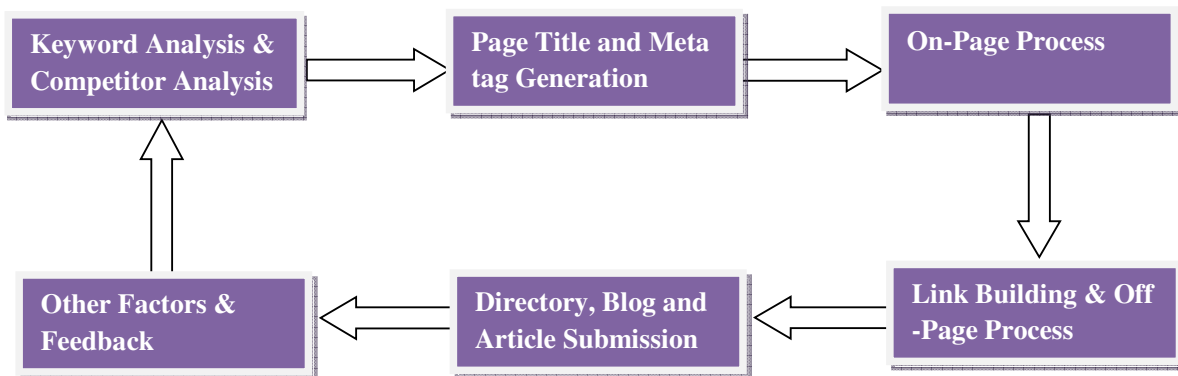


Figure 2: The proposed SEO process.

#### Step 1: Keyword Analysis & Competitor Analysis

A thorough keyword analysis is the foundation of search engine optimization. A balanced presence of a keyword in the title tag, the meta description, the body text and the H1 and H2 heading tags is optimal, while keyword stuffing should be avoided [13]. Keywords are phrases under which you want your website to be found in a search engine. Keywords are typically two-to-five-word phrases you expect people to search for and find your website. Keywords are what our prospective site visitors may type in a search box [2].

A critical component of SEO is choosing the right keywords for optimization. If you sell any product, you may want your website to be ranked for a head term. However, if you optimize multiple pages on your website for each specific pair of products that you sell, you are going to have much more success and it will be easier to rank on the SERP. A keyword like a long-tail keyword phrase or term is good. Single word keywords are usually not well-targeted and are hard to rank for. Longer keywords are easier to rank well and typically have better conversion rates.

It is required to run a ranking check of each search engine for all applicable search terms: SEO keywords and phrases for competitive research [4]. We typically check the rankings for the competition in Google, Bing, Yahoo, and may be some engines which are used specifically in our country or industry.

The table given below highlights typical comparison among selected competitors by presenting information about page ranks and links [4]:

KEYWORD: SHOT BLASTING MACHINE MANUFACTURING COMPANY IN INDIA						
Site Name / Competitor Site Name	Google		Yahoo		Bing	
	Page	Link	Page	Link	Page	Link
<a href="http://www.nesco.in/indabrator.html">www.nesco.in/indabrator.html</a>	1	3	1	1	1	1
<a href="http://www.pshotblast.com/aboutus.php">www.pshotblast.com/aboutus.php</a>	1	5	1	2	1	2
<a href="http://www.sfecindia.net/">www.sfecindia.net/</a>	1	7	1	6	1	6
Competitor site name3	1	6,7	1	7	1	7
Competitor site name4	1	5	4	5,8	4	5,8

The proposed sets of parameters that play a vital role while doing keyword analysis and competitor analysis in page ranking include identification of the real competition, competitive rankings, keyword review, keyword use in the root domain name (e.g. keyword.com), site architecture of the domain (structure and hierarchy), length of domain registration, server/hosting uptime, keyword density formula (# of keywords ÷ total # of terms), domain banned from google’s index for web spam, and domain’s rankings penalized in google for web spam.

**Step 2: Page Title and Meta Tag Generation**

The <title> tag tells both users and search engines what the topic of a particular page is. The <title> tag should be placed within the <head> tag of the HTML document. Ideally, a unique title should be created for each page on the site [9].



Figure 3: Title tag and meta description.

There are two major meta tags – **meta description** and **meta keywords**. The **Meta Description** is a text snippet that describes what our specific webpage is about. The meta description is limited to 150 characters. A page description meta tag gives Google and other search engines a summary of what the page is about. Whereas a page title may be a few words or a phrase, a page description meta tag might be a sentence or a short paragraph. Description meta tags are either too short, long, or duplicated too many times. Like the <title> tag, the

description meta tag is placed within the <head> tag of our HTML document. We consider the following example code to understand the concept.

Example Code:

```
<meta name="description" content="Silica Gel packets and Container Desiccant bags in India. We offer "Solution by Calculation" approach, a robust method that provides peace of mind and an effective and affordable solution is achieved through study of qualitative & quantitative factor contiguous to moisture & humidity specific problem.">
```

**Meta keywords** consist of an additional text snippet in the HTML that allows us to list a few different keywords that relate to the webpage. It is recommended to put 5-7 keywords in the meta keywords.

Example Code:

```
<meta name="keyword" content="Silica Gel packets and Container Desiccant bags in India">
```

It is proposed that the following set of parameters affecting page rank be used while creating the page title and meta tags: keyword used anywhere in the title tag, page meta robots tags, keyword used as the first word(s) of the title tag, keyword used in the meta description tag, keyword used in the meta keywords tag, keyword stuffing in the title tag, keyword stuffing in the meta description tag, excessively long title tag, and keyword stuffing in the meta keywords tag.

### Step 3: On-Page Process

The on-page process for SEO refers to settings that can apply to the website so that it is optimized for various search engines. On-page SEO performed on a page includes contents as well as tags [10]. This section provides useful guidelines for performing various on-page processes.

The on-page processes which are required to be performed include (a) Development of appropriate website content, (b) Preparation of proper URL structure, (c) Creation of proper site map and navigation, (d) Giving proper information to pictures, (e) Creation of appropriate headline tags, and (f) Application of enhanced text formatting.

- a) **Development of appropriate website content** – Website content is conceptually unique content that people would want to read and link at. We should ensure that each page has significantly unique content that does not exist on other pages on website or other sites.
- b) **Preparation of proper URL structure** – The actual structure of website URL can have an impact on the search engines' ability to index and understand website's content. Permanent links are the URLs of the pages. A good URL should be less than 255 characters and should also use hyphens (-) to separate the different parts.

Example :

<http://www.perfectsorb.com/desiccants/silica-gel-packets/>

- c) **Creation of proper site map and navigation** - It is also a good idea to have a site map linked from the home page that links to all major internal pages. The idea is to give search engine spiders another route through website and to give users a basic way to flow through website if our navigation is broken or confusing. The navigation of a website is important in helping visitors to quickly find the content they want. It can also help search engines to understand what content the webmaster thinks is important.
- d) **Giving proper information to pictures or images** – Every picture that we upload to website will have a filename. When the picture is inserted in a website, the picture's filename actually lives in website's sources code, or HTML. We should use filenames that describe the picture. Pictures are important but the smaller size of the image is much better. Use the ALT tag to describe an image which helps search engine understand what the image is about.

Example Code:

```

```

- e) **Creation of appropriate headline tags** – Use keywords in headings and subheadings throughout the page—this heading should capture the person's attention and tell that they are in the right place. Heading tags go from H1 to H6, with the biggest tag being the smallest number.

Example Code:

```
<div id="tagline">  
    <H1> DHAVAT INFOTECH PVT. LTD. </H1>  
    <H2> WEBSITE DEVELOPMENT COMPANY </H2>  
</div>
```

- f) **Application of enhanced text formatting** – Every page is required to be properly formatted. Important parts of the report are highlighted with bold, underline or italics. We should not just throw text on the page but make sure that it is readable as well. It should also be in good size font. We use a plain sans serif for body text, use the default <strong> and <em> tags for emphasis, and use CSS to make the headers a highlighted text than body text. If website formatting is clean and simple, it will be easy for people to read the website text.

Following is a list of parameters required to be taken into consideration while doing on-page process : existence of substantive, unique content on the page, language of the content used on the site, keyword used anywhere in the H1 headline tag, keyword used as the first word(s) in the H1 tag, keyword used in the first 50-100 words in HTML on the page, address in on-page text content, keyword used in the page name URL, keyword used in the page folder URL, keyword used in other headline tags (h2 – h6), keyword used in image Alt text, keyword frequency in the HTML text on a page, keyword used in image names (e.g. keyword.jpg), keyword used in b or strong tags, historical content changes, keyword used in i or em tags, query parameters in the URL vs. static URL format, keyword used in a list of items on a page, keyword used in the page's query parameters, hiding text outside the visible page area, keyword stuffing in the on-page text, keyword stuffing in the URL, hiding text with CSS (display:none) styling, excessively long URL, etc.

#### Step 4: Link Building & Off-Page Process

Off-page process for SEO refers to the activities outside the boundaries of a webpage. Off-page optimization means giving back links to our websites, which includes advertising the website on blog, social networking

media [10]. Link building forms one of the important areas of SEO. The basic principle used by all search engines to gauge popularity is still counting the number of links that point to a website [7]. If we are trying to replicate the success of a competing site, it is important to start by trying to get a number of higher quality links before getting too many low quality links. Webmasters can improve the rank of their sites by increasing the number of high-quality sites that link to their pages [12].

**Inbound Link:** Place website link with other local businesses with well reputed websites in exchange for link to their website. Another great way to attract inbound links is to use blog to post articles related to current events or news. It helps in enhancing the page rank.

**Social Network:** Place the website link in the social networking websites such as Twitter, Facebook and Google+ on website. Write a few blog posts and share them on Twitter, Facebook, Google+, and LinkedIn.

**Internal Link:** While creating content on website, on blog or on specific web pages, we may want to reference other pages on website. We can reference other pages by inserting a link to another webpage within specific webpage content. The use of anchor text is recommended while linking to another webpage or even another website. When anchor text is used, it implies that the page we are linking to is about the keyword or phrase used as an anchor. This helps in enhancing the page rank.

**Reciprocal links:** A common practice in link building is link trading, or “we will put a link to your website on my website if you put a link to my mine on yours.” their value is certainly not as good as a one-way link to your website. There was most likely a time when reciprocal links were just as good as any other, but the search engines are always getting smarter in determining how much reciprocal a link should receive.

We suggest the following set of parameters to be taken into consideration, that affect page ranks while doing link building and off-page process, for performing SEO: keyword-focused anchor text from external links, external link popularity (quantity/quality of external links), diversity of link sources (links from many unique root domains), page-specific trustrank (page has earned links from trusted sources), trustworthiness based on link distance from trusted domains, iterative algorithm-based, global link popularity (PageRank), topic-specificity/focus of external link sources, keyword-focused anchor text from internal links, link popularity of the domain based on an iterative link algorithm, links from hubs/authorities in a given topic, temporal growth of links to the domain, links from domains with restricted access (.edu, .gov, .mil), location of information in the site hierarchy, internal link popularity, quantity & quality of Nofollowed links to the page, links to the domain in gmail emails, link determined to be “Paid” rather than editorially given, link acquisition from known link broker, links from the page to web spam sites, links from the domain to web spam pages, link acquisition from low quality paid directories, excessive links from sites owned by the same registrant, link acquisition from manipulative viral campaigns, etc.

#### Step 5: Directory, Blog and Article Submission

A web directory, is not only a collection of links but the links have been categorized under relevant topics; and sites are listed only after they undergo editorial reviews [17].

Articles play an important role to promote the website on search engine. Articles increase the content on the website and also the Keywords Density for the targeted keywords. The article should use a common scientific layout and structure, including standard sections: introduction, related work, results, and so on [11]. If articles are informative and effective, then website would have a greater chance of generating traffic which is the key to success of a business. Submitting the article allows the writer to post article on multiple high page ranked and well-reputed article directories to achieve goals. More submission means more traffic and backlinks.

We suggest the following parameters, that should be considered while doing directory, blog and article submission for the SEO process: submitting the url on different directories, the article written relevant to one's site having appropriate keywords, the articles written according to the products or services, article qualitative backlinks, keywords within the body of the article, articles-informative and effective, submitting the article on different article directories, etc.

#### **Step 6: Other Factors or Parameters for Page Rank**

In 2015, we should expect Google to reiterate its algorithms, and emphasize more on new parameters since many of those have become either obsolete or of less importance. Changes in parameters have radically changed the way we go about with our SEO strategies [6].

We suggest the following additional parameters that should be considered for the SEO process: use of external-pointing links on the page, query parameters in the URL vs. static URL format, ratio of code to text in HTML, existence of a meta description tag, HTML validation to W3C standards, use of flash elements, use of advertising on the page, use of google AdSense, domain registration with google webmaster tools, link diversity based on number/variety of root domains linking in, temporal growth of links to the domain, percent of followed vs. Nofollowed Links that point to the domain, site architecture of the domain, length of domain registration, domain registration ownership change, uses of XML sitemap, domain registration with google local, references of the domain in the yahoo directory, references of the domain in dmoz.org, references of the domain in Wikipedia, use of security certificate on the domain, alexa rank of the domain, facebook data about the domain or page, historical click-through rate from search to the exact URL, country code TLD of the root domain, language of the content used on a site, geographic location of visitors to a site, geo targeting preference set inside google webmaster tools etc.

We suggest the following other negative affecting parameter that should be considered for the SEO process: domain banned from google's index for web spam, domain's rankings penalized in google, cloaking with malicious intent, cloaking by user agent, frequent server downtime and site inaccessibility, hiding Text with similar colored text or in background, excessive repetition of the same text to a page, domain has not earned trusted links, etc.

**Conclusion:** This paper presents a novel approach for carrying out the SEO process. There are six basic steps that we have mentioned in this paper for performing the search engine optimization process for a specific website,. These steps include keyword analysis & competitor analysis, page title and meta tag generation, on-page process, link building & off-page process, directory, blog and article submission and other factors and feedback. During these six steps there are multiple factors which affect a page rank in different search engines. In this paper, we have made an attempt to cover the major parameters explored through our experience for getting a good page rank using the proposed SEO process. However, numerous other factors may also be identified.

#### **References:**

- [1]. Ayar Pranav et al, "Efficient Focused Web Crawling Approach for Search Engine" *International Journal of Computer Science and Mobile Computing*, Vol.4 Issue.5, May- 2015
- [2]. Aaron Matthew Wall, "Search Engine Optimization Book"
- [3]. Christina Meyer, "SEO Guide 2015", <http://www.amazeemetrics.com/en/blog/seo-guide-2015>, 5, Feb, 2015.
- [4]. Creator SEO Team, "CreatorSEO Competition Process Guide"

- [5]. Dr S. Saravanakumar, K Ramnath, R Ranjitha and V.G.Gokul, “A New Methodology for Search Engine Optimization without getting Sandboxed”, International Journal of Advanced Research in Computer and Communication Engineering Vol. 1, Issue 7, September 2012
- [6]. Faizan Tariq, “White Hat SEO in 2015: Factors Promising Great Results”, <http://blog.linkbird.com/en/strategies/white-hat-seo-in-2015-factors/>, 27 Jan 2015
- [7]. Geetanjali Tyagi, Megha Sharma, Kumar Kaushik, “Using Search Engine Optimization Technique Increasing Website Traffic and Online Visibility”, International Journal of Advanced Research in Computer Science and Software Engineering, Volume 5, Issue 1, January 2015
- [8]. George S. Spais (Greece), “Search Engine Optimization (SEO) as a dynamic online promotion technique: the implications of activity theory for promotion managers”, Innovative Marketing, Volume 6, Issue 1, 2010
- [9]. Google Team, “Search Engine Optimization Starter Guide”
- [10]. Gurpreet Singh Bedi et al, “Analysis of Search Engine Optimization (SEO) Techniques”, International Journal of Advanced Research in Computer Science and Software Engineering, Volume 4, Issue 3, March 2014
- [11]. Joeran Beel et al, “Academic Search Engine Optimization (ASEO): Optimizing Scholarly Literature for Google Scholar & Co.”, Journal of Scholarly Publishing, 41 (2): 176–190, January 2010
- [12]. Khalil ur Rehman and Muhammad Naeem Ahmed Khan, “The Foremost Guidelines for Achieving Higher Ranking in Search Results through Search Engine Optimization”, International Journal of Advanced Science and Technology Vol. 52, March, 2013
- [13]. M. Usha, Dr. N. Nagadeepa, “On-Page and Off-Page Optimization Techniques for Search Engine Results Page (SERP)”, International Journal of Advanced Research in Computer Science and Software Engineering, Volume 5, Issue 1, January 2015
- [14]. Michael P. Evans, “Analysing Google rankings through search engine optimization data”, Internet Research Vol. 17 No. 1, 2007
- [15]. Nisha, Dr. Paramjeet Singh, “A Review Paper on SEO based Ranking of Web Documents”, International Journal of Advanced Research in Computer Science and Software Engineering, Volume 4, Issue 7, July 2014
- [16]. Rakesh Kumar and Shiva Saini, “A Study on SEO Monitoring System Based on Corporate Website Development”, International Journal of Computer Science, Engineering and Information Technology (IJCSSEIT), Vol.1, No.2, June 2011
- [17]. <http://irisemedia.com/blog/how-to-identify-link-farms/>