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What is search engine optimization: SEO?

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Abstract

Web sites, which index and class other web sites according to their keywords, explanations and contents and make it easier and faster to reach obtained site-search results, are called as search engines.

SEO “Search Engine Optimization” is the one of the widely used technique that provides web sites fast reachable. In this work we explained required information to make a web site more indexed by search engines and considering their keywords make them first listed.

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Keywords: SEO, search engine optimization, page rank, backlink, bot, meta tags, social media

1. Introduction

Internet is a wide community including millions of users and it is also named as one of today’s most important communication tools. This wide community is also known as an important customer potential for everyone who thinks about business works based on Internet environment. Internet has become new channel of the business area in the modern world in which it is not possible to reach such a wide volume by using traditional selling channels. The working method, which has changed with the Internet, has created some changes in other areas and it has also enabled companies to need Internet based marketing activities (Eren, 2009). As a result of increasing popularity of the Internet, a crowd, which is also named as “electronic community” was appeared. Marketers, who try to reach customers in a fast and effective way with direct marketing method and also reduce customer reaching – costs, aim to reach electronic communities that have big potentials. (Eren, 2009). According to companies, this crowd, which is also named as electronic community, is evaluated as a customer. Because of this, they try to introduce and market their companies via developed web sites. On the other hand, they also know that the most important and effective introduction and marketing way is taking part on top lists of search engines.

Whereas Internet includes hundred thousands of web pages, it is better to use search engines in order to reach wanted data or information. According to Comscore World Metrix evaluation on April 2009, Turkey has 7th biggest Internet population in Europe and furthermore, it also has users who spend the most time on the Internet in Europe (Internet1, 2009). According to the research study on July 2009, 81 percent of Internet users enter to the Internet environment via search engine web pages. For instance, 80 percent of people, who want to buy car, search

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for a car by using search engines. According to the research study on February 2009, Google is the most widely used search engine(Internet2,2009).

It is too important for search engines to give response for lots of people, especially marketers. Companies, which are aware of this situation, aim to take part on the first page or first row of search engines by using Internet advertisement or more natural approach: search engine optimization (seo). Because of lower costs, “seo” is preferred rather than Internet advertisement.

Because of this, such a study has been performed in order to make “seo” more popular and widespread. Search engines and their working mechanism were explained in the second section of this paper. In the third section, search engine optimization was explained and some information and tips about how “seo” can be performed was also given. Finally, an evaluation for the whole study was performed in the last section.

2. Search Engine and Its Features

Search engine is some kind of software, which collects data about web sites. At this point, the collected data includes the web site URL, some keywords or keyword groups that define the content of the web site, the code structure that forms the web page and also links provided on the web site. The related collected data is indexed and stored on a database. All of these operations are performed by the search engine software (crawler, spider, bot).Search engines use special programs, which are named as spider or bot. These programs move by using hyperlink structure of the Web. They navigate through web pages periodically and capture changes that have been made since last navigation (Spiders / Crawlers). Data obtained by the related programs are stored in a very wide database system. This database is called as the index of the search engine. On the other hand, the performed operation is called as “indexing”. When users perform a query in order to get some data or information, the related query is transferred to the search engine index and results are shown to users(query). Essential competition factor among search engines is appeared during “relevant result showing, sorting” process. After determining the related pages with the performed query, they must be shown to users in a sorted list structure. At this point, search engine algorithms take an important role and they try to show the most relevant results for users (İyiler, 2009).Briefly, searching robots collect data about each URL and store the collected data in a database. When a user connects to the search engine for a search session, references in the related database are evaluated and obtained results are returned back to user(Atay and others, 2010).

3. Search Engine Optimization

Data or information about an unknown subject is usually searched on the first page of search engines. After examining first 5 result pages, other remaining pages are not evaluated by users. Because of this, it is important to move a web page to top lists of search engines in order to introduce it better. In order to achieve this, the search engine optimization must be used by web site developers. Because, it is possible to move a web page to the first page of a search engine by using only some necessary optimization rules. It is important to have an effective, well-structured and good-looking web page to introduce the related company, services or products better. But it is also too important for customers to search and find the related web page on a search engine easily. Furthermore, 80 percent of Internet users also search for products or services by using search engines mostly(interactive-advertisements)(Internet3,2010). It is an easy and effective way to introduce and market a company by using a web page. In order to achieve this, information related to the company is obtained by using search engines. In a competitive business environment, moving up to top lists can be achieved by using search engine optimization.

Briefly, the search engine optimization (SEO) is enabling a web site to appear in top result lists of a search engine for some certain keywords. There are many different factors that enable a web site to move up top results. The most effective way to take attention of many users is connected with search engine optimization. Because the search engine optimization is basically based on keywords that are suitable to the web site and can be used to search with search engines. In order to optimize a web site according to search engines, it must be suitable to some technical conditions(Sezgin, 2009) A typical search engine optimization process that can be performed to move up a web site, is represented in Figure 1.

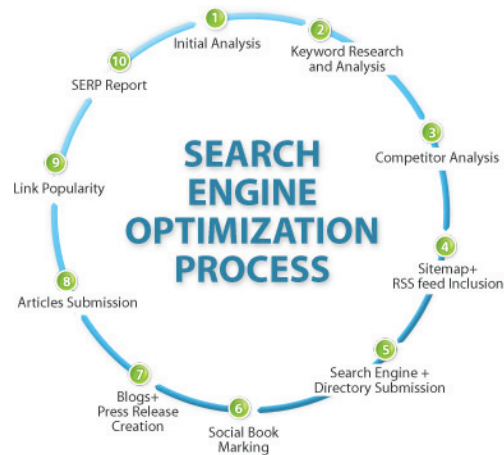


Figure 1. Search engine optimization process

Search engines must be taken into consideration while designing a web site. Some questions that must be answered before starting to web site designing are listed as below:

- Is there any vital method or approach used on search engines to take users' attention to the related web site?
- Which search engines is the related web site wanted to appear on?
- Which row on the results page is satisfactory? (İyiler,2009)

Optimization of a search engine can be performed in two separate groups. One of them is internal web site optimization. The other one is external web site optimization. Internal web site optimization includes web site design, meta tags, keywords that are necessary for the web site, page names, pictures, links, content texts in each page and styles that used for the related texts, site map, RSS feeds, pages in different languages...etc. On the other hand, external web site optimization includes adding web site to the site guide, using social media factors, using links from other optimized web sites to the related web page...etc.

3.1. How Search Engine Optimization Can Be Done?

First, the keyword analysis must be done for the web site, which the optimization operation will be performed for. Keyword analysis of a web site must be done according to the following rules or tasks:

- A strong list, which includes potential keywords, must be formed via keyword analysis.
- By performing some search, web sites in top 5 list must be found out.
- Links must be counted and their target keywords must be found.
- Words, which were not tested in the keyword analysis, must be found and listed.

Some sites that are used during keyword defining analysis.

On the Internet, there are some web sites that show some information about searching words used in different sectors and business fields. Some of them are listed as below:

- <http://searchmarketing.yahoo.com/rc/srch/>
- <https://adwords.google.com/select/KeywordToolExternal>
- <http://www.wordtracker.com> (with payment-has demo usage)
- <http://www.goodkeywords.com> (with payment-has demo usage)
- <http://www.clicktracks.com/entrypoint.php?a=46673> (with payment-has demo usage)
- <http://www.webtrends.com/>
- <http://www.seoachat.com>
- <http://www.keyworddensity.com>
- <http://www.webjectives.com/keyword.htm>
- <http://www.google.com/trends>

By using obtained data from these web sites, it is possible to know competitive power and density of a keyword.

In keywords, products or services must be defined in their both short and long word usage structures. At this point, definitions are made with some words rather than using a short and single word. According to statistical research studies, Internet users prefer using 2 or 3 words to perform a search on a search engine. Because competition in single word is denser than the one with other preferences. Some different keyword using approaches can also be used to prevent from usual typing errors. Placing keywords to the top part, section titles and image names is an important task for the optimization. A keyword density with 5-8 % (5-8 keywords in 100 words) is suggested to use in the page content. Favorite keywords located at top part enable the robot to evaluate the web site as the most suitable site for the searched word. Using same keywords or definitions repeatedly in the page content, meta tags or HTML area may be evaluated as spamming by the robot.

Briefly, the related keywords can be used in the following fields in order to move web site on top results of search engines:

- In the page title-tag, -In meta description tags, In keyword description tags, -In heading tags
- In lower description tags, -In graphics, -In link texts, -In plain texts, -In domain fields (if it is possible)

3.1.1. Some important points necessary for SEO

Web site design: Design of a web site is an important factor that must be taken into consideration during the search engine optimization. For instance, whereas flash animations and other special, effective elements like animated pictures are important to provide a good-looking web site, they must be used at a limited number to ensure better evaluation results for SEO. Especially flash animations lower the loading time of web page and texts included in flash animations can not be indexed easily by bots. A real, useful web site must have simple structured content that can be indexed easily and preferably, web pages must be provided in HTML format.

Using frames: Frames in a web page is not a suitable approach and design method for search engines. At this point, `<noframes></noframes>` tags must be added to the related web pages. Because frames may cause some problems for indexing operations performed by spiders.

Using pictures: Texts provided on picture files can not be read by search engines. Because of this, using links in text forms is more effective than using picture files for the related links. Nowadays, .PNG picture format is widely used on the Internet because they provide both high quality and low size for provided pictures. At this point, “alt” labels must be used to define these picture files in order to introduce them to search engines. Additionally, picture names may also include the related keywords. For example;

```

```

Cheating: Some cheating methods like adding keywords to the background of a web page may be determined by search engines and also evaluated as “spam”. For instance, adding keyword in a white font color to a white color web page is evaluated as a spam by most of search engines.

Choosing domain field: While defining domain field of a web page, it is important to choose a suitable domain according to the related keywords. It is also important that the hosting company, which includes the chosen domain, must provide a 24 hour - continuous service. At this point, working with a qualified, competent hosting company is important for SEO. Web site names must be short and suitable for objectives. Using special characters (like “-“ and “_”) in the web site name lowers the page rank.

Using title labels: Title label defines title of a web page for both users and search engines. In a HTML code structure, `<title>` label must be included in the `<head>` label. Additionally, it is also important to choose unique title for each web page. A title with 50-80 characters is a suitable approach to be found easily by search engines.

Title content means short abstract that defines the web page in the related search engines. The title content is usually displayed on the first row of the search result pages. It is important to use specific names that define the performed job or produced product while determining the site name. Expressions like “Hoşgeldiniz/Welcome”, “Anasayfa/Homepage” are inefficient to look effective within the search engines.

Using description labels: While defining a “description”, it must be typed in sentence form. It is also important that the defined sentence must include 150-155 characters.

```
<meta name="description" content="What is search engine optimization? How-to?"/>
```

The “abstract” label, which summarizes the page content with a single sentence, can be used instead of “description” label. For instance,

```
<meta name="abstract" content="How can search engine optimization be performed?"/>
```

Using keyword label: A keyword must not be in a structure that can be repeated. In the label, there must not be keywords more than 20. Keywords must be sorted from important ones to unimportant ones. For instance,

<meta name="keywords" content="seo, search engine optimization, search engine, robots, backlink, page rank, social media"/>

Keywords that are included in the “keywords” must be used in the page at least thrice. In this way, keyword density that was determined by search engines for each page is ensured. Big density may cause some negations as a result of unnecessary keyword usage.

Using keywords in page contents: Using these keywords as in different styles (bold, italic, underlined) from other texts may take attention of search engines and enable them to define the related texts as one of the determined keywords((Sweeney, 2001)). Typing remarkable words in different styles is a true approach but editing all content in the related way is not true. In pages, it is more effective to use *strong* label rather than *bold* label. It is a good solution to put keywords in close places to page heads, paragraphs and page ends. The most suitable keyword density is between 5-7% and 7-8%.

Using robots label: The robot label defines the working mechanism of the robot. For instance,

Index: Index and archive the page.

Noindex: Do not index and archive the page.

Follow: Index other pages linked to the related page.

Nofollow: Do not index other pages linked to the related page.

Image index: Index images.

Noimageindex: Do not index images.

Imageclick: Index image links.

Noimageclick: Do not index image links.

Archive: Archive the page.

Noarchive: Do not archive the page.

All: Archive all contents of the page.

The code: <meta name="revisit-after" content="7 days"> is used to enable robots to visit the related page after each 7 days.

Using “index, follow” with the robots label: Each page within the web site must have index and follow definitions. These definitions enable search engine to index the related page and watch the links included in this page. With this useful method, all pages of the web site are indexed. Spiders are some kind of programs that are used by search engines to analyze pages on the Internet environment. The related programs track provided links and read all pages by passing from one page to another page. At the final step, they evaluate the quality of the page and take a copy of the page to show it under the search results(Blackson, 2008).

Using the h1 label: h1 label is an important element that can be used to optimize web pages for specific keywords. The h1 label is taken seriously by search engines when they are used associated with only page content and words that are used with h1 label come into prominence among other words(Rognerud, 2008). For example;

<h1> keyword </h1>

Size of texts in the h1 label can be adjusted by using Cascading Style Sheet (CSS) formats.

Backlink: Google evaluates each link given for a web site as a positive step for the related web site. Because of this, it has become necessity to backlink to the related web site or texts included in the web site. However, it is not necessary to give link from the main web site to the related web sites. Google uses link values while performing pagerank measurement of a page. While performing this measurement, it also pays attention to contents of the pages. Because of this, it is important for the web page to have similar content with the page where backlink has been performed.

Using the site map: On the site map, each page included within the web site must be linked. If visitors encounter with some difficulties while navigating on the web site, they may look at the site map. This page helps search engines to find all of the developed web site. It is a sensible step to send a XML file including the related links to search engines.

The SEO may be required to design the web site in a foreign language.

Including web site pages within the root directory: For example, using www.seodeneme.com/index.html. Search engines can not reach to web pages at high levels and evaluate them as insignificant pages. At this point, including the most important pages under the third or fourth directories is an important disadvantage for SEO.

Using a separate directory for images: By performing this task, foreign users are not allowed to use images displayed on the web site. For instance; it is possible to prevent examining the image directory by using the robot.txt file or robots labels.

Providing a fast and useful site navigation: Pages included within the web site must not include intensive content. Images included in the web site must be optimized and transformed into suitable, different formats. If it is necessary, compression operations may be applied to images with high resolution and size. Additionally, a good navigation structure that provides an easy access to the sub-pages must be developed.

If the web site uses a different language from the HTML, including some static contents is an important task.

In order to add web site to guides, measure link popularity of the company's or competitors' web sites and find out with how many links that company's or competitors' web sites are included in important guides and the related search engines, the web site: <http://www.iconinteractive.com/tools/pop/index.php> can be used. At this point, the URL of the web site can be typed in the "Domain" field and by using the "Go" button, results can be obtained. Results located on the first three rows show traffic measurements from the Alexa, situations in the DMOZ and Zeal guides and given links in the 6 important search engines (alltheweb, altavista, Google, Hotbot, MSN, Yahoo!). Web sites with 1000–5.000 links are evaluated as "average", with 20.000 links are evaluated as "popular" and with links above 100.000 are evaluated as "hit/icon" sites. On the related results page, links given to the web page can be seen by using the "View" button.

Another method to see web page links is typing www.sitename.com link to the search field of the search engine. With this method, it is possible to see web pages that include the typed web site and other resources.

Web site page must be checked regularly for broken links.

Using the social media: The social media can be defined as internet platforms that people use to communicate with other online users via text, images, videos and sound files (Google, 2008). The social media is based on "communication" and "sharing". For instance, answers for specific questions can be received by using the social media. Context of the related questions may be changed from light questions like "Which color dress I can wear for this evening?" to large scaled questions like "I am a cancer patient. Which doctor I must go for the treatment?" (Hatipoğlu, 2009).

Context and definition of social media tools may be changed for different people but generally, these tools mainly include blogs, micro blogs, RSS feeds, social networks, social bookmarking sites, forum and communication environments and image and video sharing platforms. On the Internet environment, there are many blogs, millions of video and image contents and millions of user profiles created with real names and nick names. ((Hatipoğlu, 2009).

According to the April, 2009 – comScore World Metrix statistics, Turkey has the 8th biggest social network population in Europe. With this population above the world average, it is easy to introduce power of a web site in a country like Turkey.

The SEO is a process and because of this, optimization results of the web site must be evaluated and analyzed periodically.

4. Conclusions

According to the performed research studies, number of web sites on the Internet is above 156 million. Developing a web site is a marketing tool, which is the least costly and the most effective to reach many people. Internet is a tool, which is used for management, marketing, performing production tasks, creating the company strategy, testing the created company strategy and analyzing market and the competitor. Reaching to web sites is usually done by using search engines. On the other hand, taking place on top rows in the search results can be done by using search engine optimization. Because of this, SEO is too important for a company. It is important to use some important techniques in the search engine optimization. For example, unnecessary keywords that aim search engines but have nonsense on users is a negative approach to use. On the other hand, original contents that provide new, useful services that other web sites don't have is also an important point. Using intelligible and readable language is also important. Images (animation, flash) are indispensable elements of a web site but image using must be optimized to enable robots to index them. In order to achieve this, intelligible file name and "alt" value can be used. For links, it is also suitable to use "alt" label. Documents, cards and posters that are used in the web site should also include the URL of the web site. Additionally, using social media also enables the web site to become more popular. Finally, site statistics should also be checked regularly in the context of the following list:

- Users' reaching methods to the web site and their behaviors can be examined.
- The most interesting content can be determined.
- Effects of the changes, which have been done on the web site, can be examined (For instance, has the incoming user traffic from search engines increased after changing the title and definition meta tags?)

More detailed information about search engine optimization has been explained in the 3. section of the paper. One of the most important idea that can be obtained from the related section is that search engine optimization is a process. For each company on the Internet, it is an obligation to perform search engine optimization.

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