

# Keyword Based Search and Its Consequences

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*Abstract-- In an information retrieval system Keyword Based search is a dominant method. Keywords Based search used to retrieve information from the web pages by Search Engines. Search Engine target the some content of website to find relevant information and rank a website in search result. Keywords matters for both Search Engines as well as Websites. Websites also used keywords to produce quality to users and to become popular. Website design is more responsible for website quality and popularity. From development of website to query design and till search performed by Search Engines, keywords considered as central point of information retrieval system. Sometime an appropriate single keyword can extract more information than multiple words. So from Website development to searching with query everywhere a proper keyword is required most. Keyword Based Search causes for spamming techniques such as Black Hat techniques, which used to break the rules of Search Engine, to give a high rank of a website illegally in SERP. Query keywords are used as a weapon to extract information from web by Search Engines.*

**Keywords—Internet Information Retrieval, SEO, URL, SERP, Inverted Index.**

## I. INTRODUCTION

In the modern internet era Search Engines has become an important tool to extract information from World Wild Web. Everyone use Search Engines to explore information from Web pages. Search Engines normally search Web pages for relevant information to user query and then display result by using ranking algorithms. As we know international language is English (United States), so well English known person can extract information from internet easily with the help of appropriate keywords. Some Search Engines provide multiple language support but till today English (United States) is wildly used language by Search Engines. The Popular Search Engine like Google, Yahoo etc. target the web page(s) keywords to find relevant web page and to rank them in SERP. Google, Yahoo and Msn are keyword-based search engines [13]. A web page which has high keyword density will get high rank in search results. Mostly Search Engines gives high rank to website which has exact matched keywords with user query.

Every Search engine has some rules to rank a web page in SERP. So if we want our website's rank high in SERP, we must analysis the Search Engine's rules to rank a web page, According to Search Engine rules website developer puts most trendy keywords in their website. In SEO the refinement of these keywords will continue with the life of website to stay in competition. Therefore the core keywords of a website need to be determined first when designing a website, and then the work is expanded to generate keyword phrases and terms around those core keywords. After the core keywords are determined, these core keywords should be also appropriately scattered in the webpage text.

Every website have some keywords belongs to some information or topic. However in Search Engine's results, people hit first few web pages in SERP. So a web page with high density of keywords gets high rank in SERP. Although a web page has images, animation, videos, sound etc but Keyword Based Search Engine mainly focuses on web pages keywords. The short comes of Keyword based Search Engines used by spammers. Spammers use Black Hat SEO technique to put illegally high rank a web page in SERP. Spammers fill website with trendy keywords, which are invisible to user but visible to Search Engine. The main methods are as follows:

- Doorway Pages  
Spammers use software to generate automatically a large number of pages including keywords and then automatically turn these pages to the home page. The purpose of these Doorway Pages is to get high Search Engine rankings.
- Keyword Stuffing  
Overload keywords in the web page, increasing the keyword density. We can increase page relevance for keywords with high density of keywords.
- Hidden Text  
The keywords are put into the HTML files. These words will be visible to Search Engines, but not for users.
- Hidden Link  
Put the key words into the link, and this link is invisible to the user.
- Cloaked Page  
Programs are used to detect whether search is performed by Search Engine or a normal user. If it's by search engine, there will return optimized web pages. If it is the ordinary people, the return will be another version.

Every web page has different information for different users. A user can be identified on the basis of query. Every query must fall into following categories: Navigational query, Informational query and Transactional query. The Navigational and Transactional queries want most relevant keywords in query to find relevant results. But informational queries can use nearby keywords to find relevant results. Transactional query can't be put by a lay man, because of highly secured tools used to complete transaction. Keywords are the foundation of Search Engine Marketing. People are looking for information, products and services online every day. The topic of every web page and what it is about should tie directly back to a keyword or keyword phrase. Keywords help visitors and customers to understand the purpose of a web page. When reading the content of the web page, a visitor will often scan for the keywords they searched for. Keywords help search engines to understand the purpose of a web page. When a search engine crawls web pages to index them it will parse the keywords on the page to determine the purpose of a web page. To be in this completion era of internet we must improve our web page's keywords according to latest trend and search. Improvement of keywords sometime called keyword research. Keyword research is market research. We must target keywords that are:

- Relevant to our services or products.
- Mostly Searched.
- Likely to bring visitors who will convert into customers

The point of every promotional activity in search engines is to connect searches with your website. Analysis of which specific keywords people use to find your product or information about your website gives us a significant advantage. According to recent studies in 2011, out of the many factors which affect search engine ranking page level keywords are the most critical. So Page level keyword is an important factor to measure the relevancy of the search engine results [11]. Finding a best set of keywords for website is a practice. SEO techniques used to refine website ranking through keywords.

Algorithm for Keyword Based Search: [5]

The algorithm describing the sequence of computation steps involved in present work is given below:-

Search keyvalue ()

**STEP 1:** Read a key from the user input.

**STEP 2:** Pick up the page from the page repository.

**STEP 3:** Match each key with the entire existing keyword list with each web page database.

**STEP 4:** Calculate the frequency of keyword in the page.

**STEP 5:** Show keyword frequency in keyword table.

**STEP 6:** Repeat the step from 2 to 5 for each key.

**STEP 7:** Find a page with high frequency of keywords in a keyword table.

**STEP 8;** Show results from high to low frequency keyword pages.

In above mention algorithm every keyword from query directly matched with every web page and frequency of each web page's matched keywords stored in keyword table for further use to rank a web page. Matching process will continue until the last keyword in query. Finally a web page with high frequency of keyword in keyword table gets high rank in SERP.

## II. KEYWORDS MANAGEMENT

Users mainly used keywords to search with Search Engines and search engines also use keywords further to search Web Pages. A well defined web page with trendy keywords probably got high rank in SERP. The major keywords management factors are follows:

### A. *Keyword Selection:*

Keyword selection is a factor which deals with website development time. Choosing best keywords for website clearly defined the website motive.

- Most related keywords get high traffic for website and popularity. Keywords must be related to website content otherwise after sometimes website will not get high ranking or traffic.
- Up to date keywords are backbone for website life and website ranking in Search Engine. A websites content clearly defined by modern keywords selection.
- Short length keywords and easily used keywords also help in high ranking of a website.

### B. *Synonyms keywords:*

Selection makes easy to search for a lay man. Even if user doesn't know appropriate keyword for search a website must show related information to user query. Because Search Engine gives same priority to synonyms keywords, so website with synonyms keywords causes high rank in SERP.

### C. *Keyword Density:*

The keyword density refers to the proportion of the total number of keywords on a webpage to other text and usually is expressed as a percentage [1]. Search Engine mostly ranking website on the behalf of website keyword density. A website has high keyword density related to user query will got high rank in SERP. Mostly spammers use this technique of Search Engine as shortcoming of searching. They fill their website will stuffing keywords to illude Search engine. Now this stuffing keywords website punished by Search Engine. A range of 3%-8% for keyword density is more appropriate, which is good for the website ranking in search engines [1].Use of the same keywords again and again in website may fall a website in spamming categories.

#### D. Keyword Scattering:

Keyword scattering all in website also make website popular and high ranked. A crowd of same word is not a good approach in website development. Search Engine basically targets some main part of website like <meta> tag, <title> tag, <header> tag, <alt> tag; <body> tag, in anchor text, in URL header tags, internal and external link text. These tags scattered all over the website. So at the website development time these all tag must be filled with appropriate keywords which clearly describe the content of website one by one. Name of website also play important role to consider a website in search results. First of all website name point out the role of website e.g. a website with content of animation, must be use “animation” within its name, so scattered keywords firstly prevent website from spamming categories and another thing is that a user will spend more time on website for visit from start to end of website.

### III. CONCLUSION AND DISCUSSION

Keywords are important for both Search engines and website. Search Engine and Website both constraint on the keywords to improve search quality and website popularity. Keywords are backbone for information retrieval systems. Every Search Engine mainly targets the website keywords to judge website quality. Every website must be developed against the Search engine ranking rules. Remain in competition with others we must change our websites keywords and stuff regularly. A website use most trendy keywords got more hits as compare to others websites. Well defined website content will attract more users as compare to a stuffed keyword websites. Appropriate keyword selection and keyword density at website development time will produce a quality websites.

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