

# System to Verify and Validates the Keywords in SEO Factors.

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## ABSTRACT

A business needs marketing in order to increase the sales of the products. Marketing is the key factor for any company to advertise the products, planning and maintaining good relationship with customers. Digital marketing is the part and partial of marketing that uses digital media to reach the customers. Digital marketing have various techniques in it, Search Engine Optimization is one of the techniques used to rank the website and drag more traffic to the website in an organic result. On-Page SEO factors are necessary components to optimize the website which increases the traffic and ranking to the website. Customer search patterns used by the customers have to be added to all the SEO factors. Manually generating these SEO factors is time consuming. This paper specifies the method of using templates to automatically generate SEO factors and validating all the customer search patterns in all the SEO factors.

**Keywords:** Digital Marketing, Search Engine Optimization, Keywords, SEO factors

## INTRODUCTION

Marketing is the one that provides the services, ideas in selling the products and services and also in advertising. This makes the business to be first in the competitive world. It should also provide the guidelines or the path of business which leads to success in pursuing the services and the goods [1].

Digital marketing is a process of marketing which uses the digital medias and technology for its marketing that can be used for advertising the marketing channels. Marketing plays a very major role in digital marketing since "Digital" acts as a channel of marketing. It is necessary to fulfill the marketing needs and it uses the tactics to satisfy the needs and demands [1].

In order to create value for the customers and build strong relationship to capture the values return from the customers, these digital marketing strategies plays a vital role and helps in fulfilling the demands and needs [6].

The customers use internet to buy the products online through different websites. All these online marketing websites need to reach the customer and maintain the good relationship between them. This can be achieved by using all the digital marketing strategies in it. The Digital Marketing includes Search Media Marketing, Search Engine Optimization, Content Automation, Content Marketing, Influence Marketing, Campaign Marketing and e-Commerce Marketing. This is an umbrella for all the techniques that comes under digital marketing. The paper discusses about the Search Engine Optimization (SEO) strategies and automation process in generating the SEO factors.

## Search Engine Optimization

Search Engine Optimization [7][8] is considered to be a part of Digital marketing which includes many techniques in it and this will help in making the website to build in

well optimized form and to rank the website in an organic search results. To make it clear it can be told as making the website more visible to the user or the customer who comes to find the products or other needs from the internet through the search engines. SEO comes under the Search Engine marketing (under digital marketing). Any business needs advertisements this is achieved using SEO Strategies that makes the customer to come to the website and purchase online, in order to drag the customers the Search engines list should have the website in it and display it in the first page. SEO factors need to be generated with all the keywords which have high search volume. The keywords are nothing but the words used by the customers to search for the products of any company website.

There are two SEO strategies such as On-Page and Off-Page optimization [7][9][10]. On-Page Optimization is a process of optimizing the website and has complete control on web page over website. To do this the keywords need to be added to the SEO factors and gain ranking through website optimization process. Off-Page optimization is a process of dragging the customers to the website through the social medias like face book, twitter and many more. Generating these SEO factors like title tag, meta description, headings, anchor tags, image alt tags etc, manually is a time over head hence it is necessary to automate the process and verify and validate all the Keywords presence in all the SEO factors. The On-page SEO elements in optimizing the website is as shown in fig 1.

## **SURVEY MADE ON METHODS FOR AUTOMATING IN DIFFERENT AREAS**

Optimizing the websites by adopting many proposed system or methods is a challenging job. Manually working is a tedious job and time overhead too, hence it is

very essential for automating many of the work in various fields that avoids the time consumption. The different methods discussed are as follows.

### **1. Application of Data Mining for Enterprise Digital Marketing Strategy Making [1]**

Marketing is very important for any business to be first in market. Nowadays the internet is being used widely and all the traditional marketing is moving to digital marketing that makes easier in advertisements and maintaining. To make the business to stand in first place in this competitive world, there are many marketing tactics to be used. Kuo-Qin, Yan Shu-Ching, Wang Shun-Sheng, Wang Yi-Ping, Lin are the authors explained about the concept of digital marketing strategies and internet marketing. Digital marketing is using the digital media technology for advertisements. Digital marketing helps in reducing the cost in advertisements, advertising the product makes the narrow and direct relationship between customer and company. Internet marketing is the process of marketing using the internet and advertising the products of websites and making the website products to be displayed in the search engine index list, this internet marketing includes the SEO concept, keyword advertisements and many more in it.

### **2. The Role of Search Engine Optimization on Keeping the User on the Site [2]**

Internet is rapidly increasing its power of usage in all the fields. Similarly online purchase and other online business need internet marketing. Search engines are the main engines that serve the humans and help them to find out what they are seeking in internet. Making the website to rank higher and also be in the list of Search engine index SEO is widely used. Gokhan egri and Coskun Bayrak are the two authors explained their ideas in making the user to stay on site

using the SEO strategies. Search Engine Optimization is a process of optimizing the website using the strategies of On- Page and Off-Page Optimization. Developing the well formed SEO factors makes the website to be well optimized and be in the first page of search engines. The different SEO factors are meta tags, title tags, meta description, anchor tags, image alt tags, headings and many more. A well defined SEO factor makes the website to rank the website higher in organic way.

### 3. Generating Titles for Paragraphs Using Statistically Extracted Keywords and Phrases [3]

Manual work is very difficult task, generating or developing the titles for any paragraphs or documents is a manual overhead and also time consuming process. Didem Gokcay and Erhan Gokcay are the two authors explained about the method of using statistical approach of generating titles for paragraphs using statistically extracted keywords and phrases. This paper describes abstracting, automating indexing and title generation which uses the online dictionaries to obtain the titles automatically from the documents and the paragraphs. The process of manual work can be overcome by automating it by using the prototype system. The concept of statistical paragraph analyzer is used in analyzing and generating the titles automatically for the paragraphs. The key idea is to use the Templates and analyzing the paragraphs. Here it uses Noun and Noun phrases in generating the templates, based on selecting the templates the titles will be automatically created. The templates are as shown in fig 2.

### 4. Machine Learning for Keyphrases Extraction Based on Naive Bayesian Classifier [4]

Extracting the phrases or keyphrases manually is a time overhead process. To get rid of this overhead Jiabing Wang, Jingsong

Hu and Hong Peng identified the automation concept of Machine Learning for Keyphrases Extraction Based on Naive Bayesian Classifier. The three authors explained the concept or the method of finding whether the phrases present in the paragraph or document and is it the expected phrase or not. To aim this there are two methods discussed as

#### i. Term Frequency

It is the process of finding whether the phrase is present in the document contents or not. For the phrase  $i$  in total phrase  $n_i$  and document  $d$ , the formula given to find the TF is shown in Eq 1.

$$TF = \frac{n_i}{\max_{l \in d} n_l}$$

Eq 1: Term Frequency [4]

#### ii. Inverted Document Frequency

For the phrase  $i$  and document size  $Q$ , the total number of times the document  $q_i$  in which phrase  $i$  appears. Then Eq 2 calculates IDF.

$$IDF = \log \frac{Q}{q_i}$$

Eq 2: Inverted Document Frequency [4]

#### iii. Title, Heading or Subheading (THS)

This will be 1 if the phrase is present in the Headings, title and subheading. If not it is 0.

#### iv. Paragraph Distribution Function (PDF)

For Phrase  $i$ , document  $d$ , number of paragraphs  $m_i$ , the phrase  $i$  arrives. Then the PDF is calculated by Eq 3.

$$PDF = \frac{m_i}{\max_{l \in d} m_l}$$

Eq 3: Paragraph Distribution Function [4]

## PROPOSED METHOD

Search Engine Optimization is a technique used to optimize the website, SEO factors with keywords are used to enhance the WebPages. Manual work in generating the SEO factors like title tag, meta description, image alt tag, URL tags meaningfully for one or two products is a easy task but generating the same for thousands of products for any company's website is tedious job and to validate and verify the presence of high search volume keywords or customer search patterns in all the SEO factors is very important part. Hence it is necessary to develop a system that automatically generate, validate and verify the keywords in all the SEO factors.

In order to generate the SEO factors the methods or the ideas obtained by surveying is been used i.e. the idea of using the templates. The standard templates have to be generated with all the necessary entities filled in it. By selecting the templates the title tags, meta description, URL tags, image alt tags will be generated. The same survey was done on validating and verifying the keywords, whether the keywords are present or not. It is done by comparing each keyword that is generated for all the products with generated SEO factors. Based on the number of times the keywords present in all the SEO factors the keywords score or the keyword density will be calculated. The keyword has to be present at least once in a product. If the keyword is present at least once then the message will be sent to particular to upload it to the website if not the proper intimation has to be sent to the particular to generate the SEO factors with all high search volume keywords.

## CONCLUSIONS

Digital Marketing using digital technology and digital media plays a major role in dragging traffic and attracting the customers. Search Engine Optimization is a technique under digital marketing used for

optimizing the website. Keywords are the necessary entity that is used in each and every product or the services provided to the customer. Manually generating the SEO factors meaningfully according to the search engines constraints in order to enhance the web page is a big overhead and time consuming. This has to be automated in different fields like digital marketing, documentation and for different web paragraph to make work easier.

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Fig 1: On-page factors in website optimization [5]

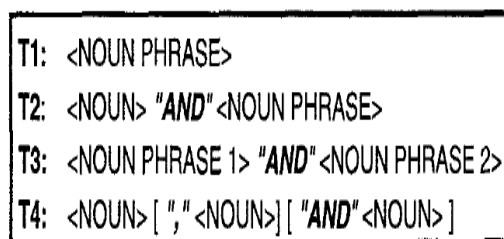


Fig 2: Title Templates [3]

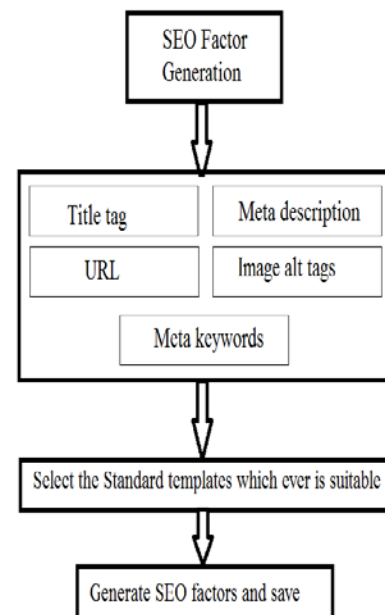


Fig 3: SEO factor generation

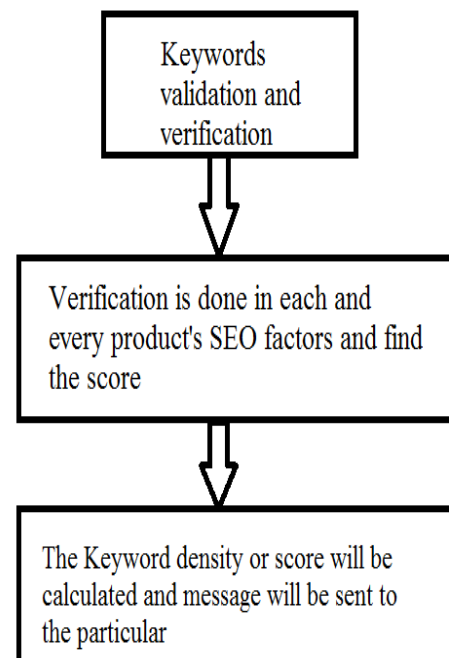


Fig 4: Keyword validation and verification