

KEYWORD ANALYSIS: USING TEXT ANALYSIS FOR SEARCH ENGINE OPTIMIZATION

Chithra Harikumar

Department of Management

Amrita University

Kochi, India

jchithra191@gmail.com

Dr.Rejikumar.G*

Department of Management

Amrita University

Kochi, India

drrejikumarg@gmail.com

Abstract— Digital marketing campaigns occupied a major share in the sales promotion efforts of firms ever since the evolution of information technology. Increasing number of people accessing the Internet for various purposes has encouraged the online marketers to opt for digital channels to reach out to their target audience effectively. However, the choice overload experienced by customers due to information overload in the digital space has made many efforts of marketers to get noticed in futile. Search Engine Optimization occupies a predominant position in attracting customers to any website created by firms to communicate to their clients. The importance of search engine optimization in internet advertising, lead generation and overall profit to firms are discussed in previous studies. Search Engine Optimization is an attempt to improve a website's organic search rankings in SERP (Search Engine Results page) by increasing the website content's relevance to search terms. Search engines regularly update their algorithms to rank the web pages to generate the best result for the search engine users. These web pages are identified and indexed by the search engine according to the use of keywords included in the content, metatags, url etc., quality of the content, and link building strategies.. Therefore this research attempts to verify a methodology that will help in identifying keywords based on customer reviews appearing in digital space. A logistic firm which has got a digital presence in delivering goods to retail customers was considered to evaluate the methodology adopted for keyword identification.

Keywords— Digital Marketing, SEO, Text Mining Analysis, Keyword Search, Visualization

I. INTRODUCTION

The application of technology has brought in innovative approaches in devising marketing activities. In traditional marketing, emphasis was on print media, banners, hoodings and visual media like TV etc, but now, social media platforms get prime attention in attracting the customers[2]. The use of digital media in marketing campaigns has emerged as the most cost-effective means to communicate to potential customers of a firm. The trend is more rampant in emerging economies like India due to the dominance of tech savvy youth in the

population. The extent of internet penetration in the country further encourages marketers to opt for digital channels for effective sales promotion. Digital marketing [1] allows marketers to market their products and services using digital platforms through the internet. The significant benefits include maximum reach at most economical manner to ensure higher return on marketing investment. Digital marketing efficiently deploys approaches like search engine optimisation[3], social network analytics, web analytics, etc.for attracting better online traffic to firm's website and increasing its visibility in social media paltforms such as Facebook, LinkedIn, Twitter, Instagram, etc.

Keywords are one of the main elements of SEO and inadequate and inefficient keywords can be detrimental to a website as it can result in poor visibility on SERPs and ultimately, low return on Investment. So, primary procedure in all SEO activities is to identify the most relevant and efficient keywords for the services provided by the business. Ideal keyword search requires identification of customer search criteria in locating products and services that meets their needs. To get an idea about the requirements of potential customers, a research and analysis on their reviews on such products and services are useful. The key themes narrated in the reviews available in such user generated content can offer valid insights into search words or phrases used by customers. A significant improvement in the rankings of the websites [7] and web usability attributes such as content, design, etc that help in better conversion rate [12] is possible through usage of ideal keywords.

The existing literature on the usage of keywords [7] is mainly focused on keywords in incoming links, URLs, title tags, Meta tags [8] and description. However an attempt to identify the appropriate keywords that increase online traffic to the website based on the relevant reviews offered by the customers on the major products and services that is handled by the firm is limited. This research is an attempt in the

direction of text mining the reviews from the customers to help to identify the adequate keywords and phrases for the contents. Thus the objective of this study is to verify a methodology that will help in identifying keywords based on customer reviews appearing in digital space. A logistic firm which has got a digital presence in delivering goods to retail customers was considered to evaluate the methodology adopted for keyword identification.

II. RELATED WORK

The quality of search engine optimization significantly influences the overall effectiveness of digital marketing strategy [5]. A strategic SEO includes strategic keyword research, improving the content, layout, design and inbound links to a website, which eventually results in better visibility on SERPs and increase in online traffic to the website. To ensure stable performance of the website, an SEO program needs to be planned and updated continuously by updating keywords and keeping track of the search behavior (in terms of using keywords) of the target audience.. Use of appropriate keywords can significantly increase the number of potential customers to the website. Appropriate keywords [6] are useful for optimizing organic searches to a higher extent than in paid search. Keywords and SEO are directly linked to the success of a winning search marketing campaign and hence it is ideal to ensure SEO keywords are highly relevant to the potential customers' needs and expectations as well as the products and services offered by the website owner. SEO keywords are words and phrases in the web content that make it possible for potential customers to land on the desired page via search engines. A website optimized for search engines communicates with the potential customer in better alignment with their search criteria.

Use of appropriate keywords throughout a website is important in improving search engine ranking as part of internet marketing strategy. The first and foremost application of keywords in the organic search engine optimization (SEO) process appears in the 'Meta Tag' or HTML code of the webpage. The keywords that are relevant to the particular page are placed in the Meta keywords tag from the largest to the smallest phrase. Further, the same keywords are strategically placed in the 'Title' and 'Meta Description' of the page so that search engines understand the purpose of the page. Strategic use of same keywords throughout the content of the web page is applied to ensure better search retrieval. Search engines usually use the first 200 words in a webpage, and therefore an appropriate use of identified keyword in the entire website is essential for optimum results. To optimize a website for search engines, use of keywords within headings of the webpage is preferred as this emphasizes their relevance with the theme of the web page. Also, use of keywords as anchor text enhances the credibility of that word for search engines.. Usage of keywords relevant to the objectives of the firm and in a

manner that makes sense to the search engine can be a game changer for the business. While using the keywords in the text of the webpage, it should be ensured that as far as possible keywords should be placed at the beginning of the text. It is also important that the keywords/ phrases are distributed in proper order throughout the text maintaining proper density. Keyword stuffing is considered as a negative strategy for SEO.

Keyword research describes the process of researching, analyzing and selecting the best keywords that will attract quality online traffic from search engines to a website. It is critical for a website to make proper research on selecting keywords before preparing the SEO strategy as the entire procedure of SEO revolves round this key aspect of website. Unless the appropriate keywords are taken and used, the SEO process will end up with wasting of resources. Keyword research is regarded as an on-going process to retain attention of potential customers as their priorities in search keeps on changing. . Thus expanding and modifying the keyword database in tune with variations of the search behavior of the potential customers can improve website traffic, lead generation and thus sales. A text mining process that takes out useful and valuable information from randomly organized text data [10] is useful in this regard. A typical text mining process, deduce major themes of customer preferences based on the keywords extracted from text data of their reviews. The extraction of information helps to bring connectivity among themes uncovered [13]. Text mining helps in identifying relationship among identified themes and concepts hidden in the textual data and therefore, better validity on identified keywords used in SEO is ensured. Text mining is regarded as a superior process than traditional content analysis, and used widely in consumer product review analysis and similar applications.

III. METHODOLOGY

Research Process

In this study, we identified appropriate reviews about performance of logistic industry and located the keywords through a text mining process. First, online reviews of customers of leading logistics firms like DHL, Blue Dart, FedEx and VRL Logistics were collected from Mouthshut.com collected. An extra care was taken to scrutinize the reviews for its relevance in offering valid insights about customer expectations and perceptions about various aspects related to logistic services. The reviews are collected from the customer reviews sections from the company websites and also from the social media sites like Facebook and Twitter pages. The reviews are analyzed using "Voyant tools", an open-source, web-based application for performing text analysis. Voyant tools offers text analytics such as word frequency lists, frequency distribution plots, and "key word in context" details to understand important themes in textual data and their mutual relationships.

Logistics	40
Experience	40
Product	40
Courier	30

TABLE: I

From the words found we see that the “service” and “delivery” are more related to words such as “worst” and “good “. In the case of “service” the words commonly related are company and its brand name, customer and the services provided to them, easiness of service, service related to delivery, ship and shipment services, condition and packaging services. In the case of “time” mainly search occurs for timely service providers, timely delivery, time suggestion, good company with timely services, shipping company etc. In case of “products” the words mostly linked are days, delivery, worst, package etc. In case of “package” the words commonly related are receive, company customer, shipment, days, delivery. In case of word “company”, mainly check with words like good company, logistic company with country name, delivery shipping services, damage free. In case of “days” words related are package, call, order, delivery. In case of “delivery” words related are easy delivery good delivery, delivery issues, delivery service, delivery time, delivery items.

From the above table we identified the keyword and frequency and from Figure: II we get to know their interconnection with each other. As customer even checks for the brand name of the company whether it’s a good company or not before they select a logistic service provider. The customers of logistics industry can range from common people to corporates. Below Table: II shows the relationship scores between words and keywords.

Keywords	Score
Customer Service	548.0641529
Delivery Service	130.8438122
Great Service	112.4256677
Good Service	109.8591337
Excellent Service	101.5924139
Delivery Time	100.555923
Courier Service	92.40775493
Gati Courier Service	62.39332037
Stark Logistics	48.20570514
Customer Services	39.41889666
Kuber Logistics	38.70967822
Bad Service	37.13763749
Customer Service Team	31.81511686
Courier Service Delivery	34.42555322
Shipping Service	31.13207125
Delivery Date	28.40337147
Courier Company Delivery	25.81540827
Time Delivery	25.13898076

Delivery Of Product	24.90290785
Express Delivery	24.40953662
Pathetic Service	21.63725743
Fast Service	19.89162225
Delivery Of Package	18.69046953
Day Delivery	18.25038541
Delivery Day	18.25038541
Great Customer Service	18.23202062
Logistics Company	18.81353632
Good Condition	18.57476079
Delivery Of Package	18.69046953
FedEx Service	17.13013855
Dedicated Service	17.5068502
Slow Service	17.5068502
Service Providers	17.5068502
Excellent Delivery	16.69346729
Staff Service	14.87245654
Delivery Person	12.20476831
Excellent Packing	11.91578427
Excellent Shipping	11.91578427
Delivery Process	11.66095791
Excellent Company	11.59227704
Village Courier Service	11.02968498

TABLE: II

From the above table we generated some keyword patterns /key phrases and its average monthly search volume and its pay per click competition from various performance site that provides keyword performance metrics

Keyword	Avg. Searches	Competition
international shipping	10K – 100K	0.69
international delivery	1K – 10K	0.8
shipping packages	1K – 10K	0.46
freight companies	1K – 10K	0.61
international shipping services	100 – 1K	0.75
international package shipping	100 – 1K	0.77
global shipping services	100 – 1K	0.74
parcel forwarding	100 – 1K	0.54
international parcel delivery	1K – 10K	0.17
international parcel service	100 – 1K	0.9
international parcel shipping	100 – 1K	0.85
shipping services	100 – 1K	0.77
international shipping prices	100 – 1K	0.48
shipping forwarding service	100 – 1K	0.24
parcel shipping	100 – 1K	0.33
International parcel service	1K – 10K	0.46

forwarding service	1K – 10K	0.47
international delivery service	10 – 100	0.71
shipping abroad	100 – 1K	0.94
shipping packages internationally	100 – 1K	0.84
best international shipping	100 – 1K	0.16
shipping worldwide	100 – 1K	0.61
international package shipping companies	100 – 1K	0.48
overnight international shipping	100 – 1K	0.71
shipping companies overseas	100 – 1K	0.67
express international shipping	100 – 1K	0.52
worldwide shipping company	100 – 1K	0.48
door to door shipping international	100 – 1K	0.59
low cost international shipping	100 – 1K	0.52
cheap shipping	10 – 100	0.97
best international shipping company	1K – 10K	0.83
international express shipping	100 – 1K	0.7

TABLE: III

From the Table : III, the performance metrics like average search volume and pay per click competition helps the industry or firm in finding out the keywords/phrases that are cheaper and have relatively high search volume. A scrutiny on search grounds has identified the following keywords/phrases as the most economical one. From the table, we identified keywords that show good search volume with less competition and also low search volume with high competition. For using economically suitable keywords ones which have high search volume than the competition value should be selected.

Keyword	Avg. Searches	Competition
international shipping	10K – 100K	0.69
best international shipping company	1K – 10K	0.83
shipping packages	1K – 10K	0.46
freight companies	1K – 10K	0.61
international parcel delivery	1K – 10K	0.17
International parcel service	1K – 10K	0.46
forwarding service	1K – 10K	0.47
worldwide shipping company	100 – 1K	0.48
shipping services	100 – 1K	0.77
international shipping prices	100 – 1K	0.48
shipping forwarding service	100 – 1K	0.24

international shipping services	100 – 1K	0.75
international package shipping	100 – 1K	0.77
global shipping services	100 – 1K	0.74
low cost international shipping	100 – 1K	0.52

TABLE: IV

Long tail keywords are the more preferred ones when it comes to the venturing businesses who want to promote their webpages through search engines. For instance, for services that can be found out in local search, region specific keywords can work wonder. It will help the website/ page get better visibility among the competitors than competing with the brands.

Apart from using the keywords in Meta tags and in page source, it is also useful to place them in the

IV. CONCLUSION

The study implies that test mining can significantly help a firm in identifying the keyword for search engine optimization on the basis of reviews offered by its customer. Further for a logistic firm these are the keywords which are most important to the customer are “delivery”, “service”, “time”, “package”, “company”, “customer” , “experience” , “days” etc.. Hence these words or its combinations should figure in the metatags and contents of the webpage to attract more online traffic. Brand visibility and Search visibility are important parts to acquire the visitors to our page. Seo helps in getting the good ranking for the website and good ranking is only get through the usage of good keywords and good ranking gets the visitors

V. LIMITATIONS

The major limitations of this study are insufficient data and here no sentimental analysis has done. The performance of these keywords in real time has not been explored. Highly vulnerable results in search volume and completion rate of the key phrases can also influence the results. In future study, we need to collect more reviews and also do some more industry comparison.

REFERENCES

[1] P.K. Kannan a,* , Hongshuang “Alice” Li b, Digital marketing: A framework, review and research agenda in dec 2016
 [2] Maria Teresa Pinheiro Melo Borges Tiago a,* , Jose’ Manuel Cristo’va’o Veri’ ssimo Digital marketing and social media: Why bother? in 2014
 [3] Nursel Yalçın, ,Utku Köse What is search engine optimization: SEO? in 2010
 [4] Reto Felix a, Philipp A. Rauschnabel b,* , Chris Hinsch Elements of strategic social media marketing: A holistic framework : c in 2017

- [5] Thomas Martin Key *, Andrew J. Czaplewski :Upstream social marketing strategy: An integrated marketing communications approach in 2017
- [6] Krishna Choudharia,Vinod K Bhallab Video Search Engine Optimization Using Keyword and Feature Analysis in 2015
- [7] Wilson, Ralph F;Pettijohn, James B : Search engine optimisation: A primer on keyword strategies,*Journal of Direct, Data and Digital Marketing Practice*; Oct-Dec 2006;
- [8] Alimohammadi, Dariush :Meta-tag: A means to control the process of Web indexing,*Online Information Review*; 2003; 27,
- [9] Bing Liu :Sentiment Analysis and Opinion Mining Synthesis Lectures on Human Language Technologies,May 2012, 167 pages , University of Illinois at Chicago
- [10] W. Fan, L. Wallace, S. Rich, and Z. Zhang,:Tapping the power of text mining *Communications of the ACM*, Vol. 49, No. 9, pp. 76-82 2006,
- [11] Reference of pdf by paul hemp in 2009(Death by Information Overload) <http://hbr.harvardbusiness.org/2009/09/death-by-information-overload/ar/pr>
- [12] Eugene B. Visser,Melius Weideman : An empirical study on website usability elements and how they affect search engine optimisation
- [13] Hong, J. W., & Park, S. B. Study on the Extraction of Core Keywords and Its Effects through Text Mining, *International Journal of Web Science and Engineering for Smart Devices* Vol. 3, No. 2, (2016), pp. 7-12

