

Study of website Promotion Techniques and Role of SEO in search engine results

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Abstract— The explosion in the designing of websites to reach maximum people by business sectors has been tremendously increased in last few years. Obviously website is of no use if it not visited. There are number of ways to promote the website and reach to maximum users. To promote website through search engine results is most effective way. Promoting website in search engine result has been completed with Search Engine Optimization (SEO) techniques. It is possible to move a web page to the top list results of a search engine by using only some necessary optimization rules. SEO is helping a web site to appear in first result page of a search engine. SEO is least costly and most effective way to reach many people. In the present paper we explained different website promotion techniques, explores the different search engine optimization techniques with on-page and off-page optimization. This paper reviews the work done by different researcher which identify on-page optimization techniques used in web pages using different methods and among them find out important on-page optimization techniques to help website to rank high in search engine results.

Keywords- Search engine optimization, web site promotion, on-page, off-page.

I. INTRODUCTION

In today's era, Internet is one of the most important communication tools. Millions of user access information by surfing internet. Mostly the business work is based on internet environment instead of traditional selling. Internet has becoming a new approach of business area. As internet is gaining popularity day by day, companies try to reach fast and efficiently with direct marketing method [1]. They try to introduce and sell their products by introducing their products on websites. The publicly available information on web is continuously growing at an unbelievable rate [2]. Promoting a website and reach to user is a major challenge for website owner. There are number of ways to promote the website and increase traffic. But the most effective way to reach maximum users and to become more popular is to promote the website in search engine result list. Websites are very often unused if they would not get top position in search engine results. It gives more profit to website if site appear in top search engine result in order to reach maximum users. According to results of GUVU's (Graphics Visualization Usability) World Wide Web user survey, 86% users find useful website through search engines [3]. People use search engines as much as surfing web to search information on internet [4]. Search engines are the most popular implementation of information retrieval techniques used by millions of people every day [5]. But users are interested in top results. Only top 10-20 results are seen by users [6]. There is tendency of user that they look at search result which can be seen without scrolling. [7]. Even users were likely to trust and click top results return by Google,

regardless of relevance to information they are looking for [8]. According to statistical survey in 2013, 99% of user share only tried first page of search engine result page [9]. To attract more visitors to website and generate revenue, the website owners find out ways to promote website in top search result pages. High placement of website in search engine result is one of the strongest contributions to website's success. This task is completed by Search Engine Optimization process. SEO is the process which improves quality and volume of search engine traffic via natural search results. Search engine optimizers promise commercial website owner to achieve a high ranking of their websites in the result pages and thus will get high traffic by web surfers [10]. Business information can be published quickly on search engine result with high ranking by using SEO technologies [11]. On-page and Off-page optimization techniques plays major role in web page design. SEO is more beneficial for website design to improve search engine ranking [12]. SEO techniques help the web designer to promote their site & improve position in search engine natural listing [13]. Main objective of SEO engineers is to make their websites appear preferentially in the results and attract more visitors [14]. SEO is cost effective process and effective website promotion technique among all. SEO can be preferred rather than Internet advertisement because of its lower cost [15]. Because of this study of website promotion techniques especially effect of SEO techniques on search engine results has been performed in order to make SEO more popular and widespread.

Literature survey will be covered in second section of paper. Section third contains overlook of website promotion techniques. Section four explores idea of on-page SEO and off-page SEO. Review of work done by previous researchers over on-page optimization is summarized in section five. Finally section six ends up with conclusion.

II. RELATED WORK

Nursel Y. and Utku K. explained in detail what is SEO, what are features of SEO, how SEO can be done. According to study intelligible and readable language in websites, original content, use of social media sites like facebook, twitter, observed effects of changes, user behavior etc. are important in promoting a website. The most important idea the author reports that SEO is a process and for each company on internet have to perform SEO [15]. According to Sherin B. to promote good sales and to improve brand awareness, having a website is not enough. This paper explores the working of search engines, SEO techniques, tips for on-page optimization and off-page optimization. Paper concludes that proper use of SEO ensures website to get high ranking which ultimately helps in making high return on investment [16]. Michael E. identified the most popular techniques used to rank a web page highly in Google. This paper provides insight into the techniques that gives success to search engine optimizers by giving assurance that the page ranks highly in Google [17]. Khalil R. and Muhammad K. review different optimization techniques for individual web page or entire website to make them search engine friendly. The author analyzes and summarizes the SEO techniques and performs comparative study of previous research work regarding the technique used in SEO [18]. S. Dhawan, and et. al. present an approach and techniques to online promotion of electronic business models using search engine optimization. This paper analyzed online promotion techniques, SEO, on-page optimization, paid and non-paid search marketing and factors that affect SEO. According to author the number and quality of external links are major ranking factors [19]. Zhou H. and et. al. discuss in detail the technical process of website SEO in terms of search engine working principle, factors affecting search ranking and website SEO method. Keyword selection, high quality back links, rich content, rational website constitution etc. are the SEO techniques for better ranking in search result [20]. Mo Y. analyzes the impact of receiving and recording of search engines and ranking rules to get understanding of features of search engine algorithms commonly used and proposed the tactics for development of website [21]. Meng C. and Hu S. explain search engine optimization. New website building concepts and design concepts are introduced for the purpose of construction of SEO. The paper specified the different SEO tools, strategies and methods. Author performed the analysis and from analysis concludes that the enterprise and e-

commerce sites with search engine do effective website promotion [22]. Swati P. and et. al. present feature of search engine page ranking algorithm, SEO techniques. This paper outlined the on-page and off-page SEO techniques, white hat SEO techniques and black hat SEO technique. Author reports that white hat SEO return quality content but using black hat SEO techniques site appears in search engine result quickly but stays for short time there[23]

III. WEBSITE PROMOTION TECHNIQUES

In today's era, mostly the business work is based on internet environment instead of traditional selling. The internet has become a new approach of the business area. The explosion in the designing of websites to reach maximum people by business sectors has been tremendously increased in last few years. They try to introduce and sell their products by introducing the products on websites. Such websites may belong to the business, educational institutions, entertainment, or even individuals who wish to reach the largest possible audience or to have 'hits' or 'traffic'. If a website developer designs a website and would like to draw more traffic to this established site, he may hire advertisers. The advertiser will need to promote it in order to draw visitors and generate revenue. Website promotion is one of the keys of creating a profit producing website. Promoting a website is a major task in website development. There are a number of ways to promote the website and increase traffic. Website developers and bloggers can make links that point to their site to increase the page rank. Links are the currency of the web, affiliate programs and banner ads could be seen as establishing an exchange market [24]. Business sites could use spamming links to their website in guest books, web logs, or online discussion board or have affiliate sites to direct traffic on a pay per sale (or pay per click) rate. Besides this, people use search engines as much as surfing the web to search information on the internet [4]. So promoting the website in search engine result through search engine optimization techniques is the most effective way. SEO is least costly and most effective way to reach many people. The following section discusses few of various such website promotion activities.

A. Banner Advertisement

Advertising banners are displays on a webpage. By clicking the banner, advertiser's webpage or other webpages are displayed where user can purchase product or service. Website owners get revenue every time somebody clicks on advertisement. The effectiveness of banner advertisement has been measured with its click-through-rate. Some form of paid ads is important sometimes to grow business since paid ads motivate others to spread their marketing message to their

own networks of visitors and customers. Out of all tested group static square (SqS) banner ad outperformed the others. It showed the best click-through-rate 0.47%, which would drive the most traffic to the website and engage the users viewing the ads most[25].

B. Affiliate Marketing

In online or offline business, marketing and sales are key to success for any business. In offline world, business just can't make money without a good sales team. Basically, business affiliates send visitors to their web site by placing a banner advertisement, small graphic or ordinary text at their site, which links to owner site. If someone clicks on the link and buys a product or service from owner site or signs up for something, the affiliates get paid a commission.

Three types of affiliate programs are:

Pay-per-click program is if someone clicks through a link, advertiser pay their affiliate a small fee. They pay commissions even if visitors never make any purchases.

Pay-per-lead program is advertiser ask visitors to do something, sign up for their newsletter, download a trial version of software, a request for a quote, advertisers affiliates are paid for each lead they send to business.

Pay-per-sale program is by far the most popular type of affiliate program. Basically advertiser offer affiliate a portion of the profits on everything that is sold.

C. Opt-in list

Web sites do not make many sales. Email follow-up makes sales. So to make money on the Internet business, advertisers build their own opt-in list. Opt-in list are targeted and carry information about specific topics or promotions by analyzing user interest. Typical opt-in list contain newsletters, product information or special offers. This way advertiser can build relationship and creditability with thousands of potential customers all over the world and promote website.

D. Search Engine Optimization

SEO is a process which help website to rank better than other sites. SEO is very important for web-based companies which would like to improve results ranking in search engines natural listing and attract more online visitors to website and finally improve marketing capability of website. Use of right strategies, right tools and powerful techniques enhance the number of visitors to site by placing site in top search results. Search engine optimizers use different SEO techniques at time of designing web site to improve ranking position.

IV. TYPES OF SEO TECHNIQUES

SEO procedure is basically work on two types of optimization techniques, On-page SEO and Off-page SEO. Both have their own ways to promote website in top search engine result list.

A. On-page SEO

On-page SEO is the set of techniques that search engine optimizer apply to source code of page. Basically on-page SEO emphasis is on text and web site content. On-page SEO factors have direct control over the web site. On-page SEO is what the web developer does on website to improve rankings on search engine results. It includes the optimization of website design elements such as keyword formatting, keyword in meta tag, keyword in title tag, position of keyword, density of keyword, site structure etc. which can be directly controlled by site itself are listed as follows:

1) *Keyword Formatting*: Properly placed relevant keywords in a web page is the most important factor in optimizing a website. Web page containing right amount of search keyword at right places increases possibility to appear in top search results.

2) *Keyword in a Title tag*: Title is a significant ranking factor. Title tag describes what a page is about. Most search engine use the website title tag as main SEO term for sites listing in search result pages[26]. Page title should be unique, brief and appropriate.

3) *Keyword in a Head tag*: H1 is a primary visible page heading in web and considered as important optimization factor[27]. Keyword in H1 tag is used to describe main topic and subheading for additional emphasis.

4) *Keyword in Description meta tag*: Meta description tag gives short and unique description about a web page which reflects the content of page. Occurrence of keyword in meta description tag is one of the important SEO factor.

5) *Keyword in a keyword meta tag*: It specify what the page is about. It contain related keywords appear in body of page.

6) *Keyword in URL*: The website will be searched more easily if keyword occurs in URL. Shorter length URL's are preferred in SEO[28][29]. URL should be simple and understandable.

7) *Keyword in a Anchor Text*: Search keyword in Anchor text represent what is linking. Pages using link text based search keyword often rank high. Anchor text is less ambiguous and provides more focus result for query based on anchor text. It is more useful feature even than title tag[30].

8) *Keyword in a Alt Text*: This specifies alternative text of what the image is about. This short description is helpful to search engine. If an image used a link then alt text is treated as anchor text of text link. Keyword in image alt improves ranking in search result.

9) *Density of Keyword in Body tag*: Density of keyword is measured by frequency of keyword present on web page compared to total number of words on page. Keyword density in body tag and title tag is considered as strong optimization factor.

10) *Outgoing links*: Webpage contain links to other pages. Outgoing links related to search keyword or reputed sites improves ranking of website. Outgoing links with relevant information benefits the user.

11) *Relevant content*: Most important text and most relevant keywords appear in beginning of first paragraph of page raise the probability of site to get rank high in search engine result pages.

12) *Robots.txt*: Search engine crawlers often rely on Robots.txt . Robots.txt is place in root directory. Robots.txt tells search engine which pages are to be visited and not to be visited. If Robots.txt is missing the site may not be indexed or indexed properly.

13) *Sitemap*: Sitemap is mainly design for visitors. Search engine crawlers may also use it to crawl all pages in site and increase possibility of most of pages indexed.

14) *Directory Structure*: Directory is basically a series of web pages linking to other web pages. Layer of web directory upto 4 and for large website upto 5 often easily indexed by search engine robots.

15) *Location of keyword*: Search engine crawler often finds position of search keyword. Search keyword appeared at first position in title tag, header tag, meta description tag increase ranking of page .

B. Off-page SEO

Off-page SEO includes tricks to acquire relevant back links from reputable sites to improve sites ranking. Search engine optimizer will have less control and so executing these techniques become more challenging. Off-page SEO is process to reach and make relation with other site through the attractive web content and reach to maximum people which have related websites for getting back links. This link building process takes time. Off-page SEO are described as follows:

1) *Link Reputation*: The amount of back links is a signal popularity or importance of that website. But quality of external links is also very important. External links with good reputation, relevant or similar content, key phrases similar to search term have probability to rank website in top search engine result list

2) *Click Popularity*: More number of clicks to the site is known as click popularity which increase traffic and ultimately promote the website in search engine result list. Search Engine keeps track of IP address and clicks from single IP address will be considered as only click.

3) *Inbound Link*: High quality external links pointing to a website are called inbound links. Total number of inbound links is called as link popularity. In Google, page rank of website is determined according to quantity and quality of inbound links. To promote site in top ranking list, the quantity and quality of external links are still recognized as the major ranking factor[31].

4) *Social Networking Sites*: Sites sign up for most popular social networking sites such as facebook, LinkedIn, Twitter, Google+. Such sites have large impact on search results. Social sites allow website to connect, interact with other peoples and promote site and build online reputation.

5) *Blog Commenting*: Search engine optimizer create back links by commenting on different blogs and websites. The blog comment is most effective way to promote website. It also helps search engines to crawl site very frequently as they have to update latest blog post entries which directly help to rank higher in search engine result pages. Using good writing skills, important contribution to conversation improve possibility of achieving a link and directing traffic from that blog to website. Using a blog, advertiser can talk about their subject from different point of view using non advertising language and point out solutions which can be found in their website.

6) *Article submission*: Articles are submitted to popular article directory sites like Ezine, Go Articles, Now Public etc. It is one of the best technique for making back links and drive traffic to website. The articles are written daily and submitted to popular article directories with title, body, author introduction, website link. Search engine crawl the article only when it is approved by article directories.

7) *Forum Marketing*: Forum is a place where discussion about all appears. Many people interact with each other by sharing information, doubts, advices, feedbacks, services, products etc. When website owner go to forum he put links inside to their signature. When website owner post some comments or answer to people questions through signature then the site gets back links from each comment. This helps to raise search engine ranking and raise website traffic.

8) *Search Engine Submission*: Submission of website to major search engines like Google, Yahoo , Bing etc. By this way search engine crawl the site but not give assurance rank well.

9) *Social Bookmarking*: Blogs or pages are posted to most popular bookmarking sites like StumbleUpon, Digg, Delicious, Redditt etc. Search engine optimizer looks for related social bookmarking site and post contents there. Sites updated frequently with information like how many times it has been saved by different users. The site show continually updated list of popular web pages which increase traffic based on how effectively participated.

10) *Directory Submission*: The amount of back links is a signal popularity or importance of that website. But quality of external links is also very important. External links with good reputation, relevant or similar content, key phrases similar to search term have probability to rank website in top search engine result list.

11) *Video Marketing*: Submitting videos to video sharing websites like youtube, vimeo etc. These allow the people to find content of website and increase web traffic.

12) *Photo Sharing*: Submitting Photos, images to major photo sharing websites like Flickr, Picasa, Photo Bucket etc. This helps in following a link to website and increase web traffic.

13) *Web Content for Mobile users*: In today’s era user will be browsing from ipads and mobile devices. If websites posted content which take too long to satisfy need, user will lose patience and move to next site. Quality content helps business in converting browsing into paying clients.

V. REVIEW ON RESEARCH WORK

Table 1 shows the summary of research work on search engine optimization with the purpose, method used and conclusion considered by different researchers.

TABLE I. REVIEW ON RESEARCH WORK

Author	Research work by different Authors		
	Purpose	Method	Conclusion
M. Cui and S. Hu	Website optimization is done using internal coding method, web site content realizable form and website overall architecture	Analysis from search engine retrieval results is done using SEO tools like keyword tool, link tool, usability tool	Flat structure of website, directory layer less than 4, static URL, optimization of image, frames, flash, form are important SEO factors to ranking of search engine
A. Su and Y. Hu	Design a ranking system , a linear learning model coupled with recursive partitioning screen	Collect Google’s search engine result, use ranking engine with reverse engineering concept to analyse importance of different ranking features.	Correctly predict 7 out of top 10 pages for 78% keywords. Provide guidelines for SEO’s and webmasters. Accordingly important search engine optimization factors in search engine ranking are page rank, search keyword in host name, title tag, meta-description tag, path of

Author	Research work by different Authors		
	Purpose	Method	Conclusion
			URL.
Shi J., Cao Y. and Zhao X	Analyze impact of SEO techniques on effectiveness of SEO, to figure out which technique strategy most effective.	Use third party measuring tool based on the data collected from 116 websites of Baidu search engine. Use regression analysis.	The impact of SEO techniques like big page size, title length, keyword density up to 1-10% , web directory upto 4 have positive effect on page ranking.
Feifei X, and Guangnian Z	Design a System to auto analyse and verify search engine algorithm via statistical principles and make comparison	The system developed in java using Eclipse RCP software can predict and verify ranking algorithm. Used in popular search engines via capturing and comparing top 100 web pages in search engine result.	According to statistical analysis top ranking factors are keyword in title tag, anchor tag, meta description tag, alt text tag and keyword in URL, keyword density between 3%-5% .
M. Abidou, M. El-Kady and A. Hussein	Used a monitoring tool to select first 20 results from Google and identify most popular techniques used to rank a web page highly in Google	Weights are assigned to each SEO factor then factor weight computed for each page. Important SEO factors are find out.	According to paper important SEO factors are keyword in H1 tag, keyword in meta description tag, approximate page length, page URL with hypothesis.

VI. CONCLUSION

This paper reports studies of various web site promotion techniques, search engine optimization techniques, on-page search engine optimization and off-page search engine optimization. Website ranking in search result is strongly depends on how SEO is implemented. SEO is a cost effective process and most important web promotion technique among all website promotion techniques. SEO help website to rank

high in search engine result. With proper use of SEO techniques, relevant sites get top rank in search results and satisfy user. The goal of paper is to provide awareness and encourage further research in this area.

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