

Ranking of University Websites Based on Search Engine Optimization

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Abstract - This research shows the ranking of university websites according to the principles of SEO, which is considered important in increasing the number of visitors. It will make more purchases and services. This is a way to rank your business website through search engines which is an important tool of digital marketing. It is similar to a university website ranking called Webometric, which represents the quality of a university website. This research has developed a system to guide the website development base on SEO by testing with samples of Rajamangala University of Technology. It has also tested with popular search engines as well as testing the use of SEO tools. Researchers find equation of website ranking based on research results. This research will serve as a guide to developing quality SEO sites and improving rankings in the SERPs, which will make the site more accessible. The purpose of website development.

Keywords - Organisational Performance, Leadership Styles, Innovation

I. INTRODUCTION

Website ranking of search engines is extremely important at present, since search engines are ways for internet surfers to seek various data, goods and services [1]. They are important tools of provider website and those service users to meet easily. Current research suggests

that 80% of new users found the websites of services through search engines, and that the highest ranked results on the result pages are likely to be the mostly selected, the others would be ordered respectively. Additionally, most internet users only consider searching results on the first or second page, or at most the first 20 ranked results [2]. Therefore, teaching institutions' website development should consider these facts as there is currently high competition between them. The number of students entering higher level is reducing in number; the exception to this is bachelor degree educational institutions, which are higher in number. Data searching for educational institutions offering degree level qualifications is necessary and search tools are used to do this.

Knowledge about website development to be friend with search engines, or doing something so that websites can be easily found and are ranked in a good position is called Search Engine Optimization (SEO) [3-4], which is a sub-technique of marketing through search engines or Search Engine Marketing (SEM). This is different from Pay Per Click (PPC), which is a paid by the number of users' clicks on the website.

SEO marketing techniques must be experienced because it has patterns and steps of development. This research intends to analyse the factors that influence the website ranking of universities and educational institutions. This

research used the websites of the Rajamangala Universities of Technology as a sampling group and tested these with search words that concern the Rajamangala Universities of Technology. The research tests the main search engine, Google.com, which is the most popular search engine [1, 5] in both Thailand and International Nations, in comparison with two other search engines: Yahoo and Bing. Apart from this, it considers points ‘On page’, which are the interior factors of each website and which can be rearranged and controlled and ‘Off page’, which are exterior factors [2, 5]. The research tools used are reliable and popular in the group of website developers, according to the SEO, SEO Doctor, and SEO Quake.

University websites are important for various information advertisements, so website development based on SEO knowledge can make a university’s website appear first on the resulting webpage and will attract more visitors. Working in this way will add more students in regular formula and special courses and academic course services, or it might make a university more memorable and add to the organization’s branding. The researcher hopes the research will benefit website developers and other interested parties who wish to use SEO as a means of website development.

II. LITERATURE REVIEWS

A. Search Engine Optimization (SEO)

SEO is processes of website building or website development based on Search Engine friendly. Fig. 1, shows a model of SEO. The input section comprises of keywords, content, links, social activity, technology trends, user behaviour and so on, which are transferred to a mixing adjustment technical process called optimization. It mainly comprises of ‘on page’ optimization, which comprises of a sub technique called keyword optimization; this concerns adjustments so as to use keywords properly. This can be divided into three techniques: keyword selection, keyword distribution, and keyword density [5-7].

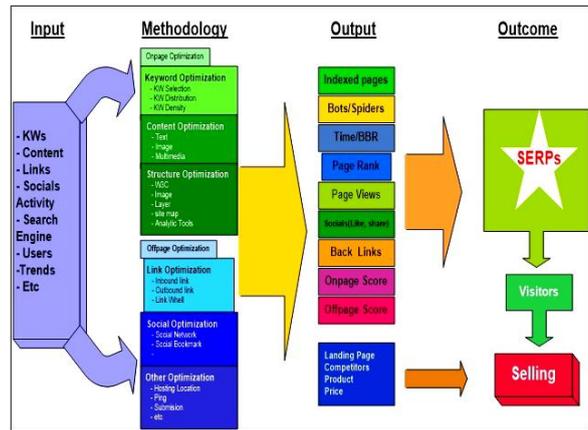


Fig. 1 SEO Model

In making keyword optimization process has often been done with structure optimization together, and which should according to W3C standard. Keyword optimization is most important to encourage bot or spider visits the website and indexing to be information of search engine [7]. In principle, it must find keywords and develop the content to be intrends and updated without duplicated [7-8]. It can also produce content as in image optimization, to attract a variety of users, and it should be related to the target of making SEO, which has three main aims. These are to add more visitors, to increase sales volume, and finally, branding through off-page optimization. In principle, it is the adjustment of things outside of websites that is regarded as difficult to be absolutely adjusted. From the research we found that website developers can adjust the surroundings or make situation for increasing the factors to be ranking results.

Making Off-page optimization usually comprises of making link optimizations, which is a link optimization with an external link; both inbound and outbound links will produce more results in rank order than internal links, which can support spider passing through links to all pages of websites. A main principle of link optimization is that it should have a proper and natural link number and that it should be a link that does not come from improper websites and concern matters [9-10]. Apart from that, it may be supported with a link wheel. At the present time, social networking is a mainstream technique and it is believed that doing social optimization will get

better results in search rankings. Doing social optimization is divided into two means; these are: social media, stressing following, liking, sharing and social bookmarking, which stresses body suggestion. Interestingly, research has noted Google.com’s rank management, which is on social network, and which is more a product from Google than other products such as Google+, blogger and YouTube etc. Apart from doing optimization it can be made with sub techniques for example an adjustment of hosting to have stability and quickly responding. After putting input in with optimization techniques it will frequently result in a bot or spider. After visiting many websites and keeping an index of webpages opened when visiting those websites, Page Rank (PR), on-page score and off-page score of SEO tools from various groups which output will directly result to outcome those are ranking list on SERPs which will add more visitors to the websites. This will result in websites that are better known by the public, which will, in turn, get more student applications. However, concerning the sale volume, many other factors such as accordant matters, beauty and standard of landing pages, price of goods and services, promotion campaign including image and name of organization, social stream altogether, may impact.

The World University Rankings of Webometrics, also known as the Ranking Web of Universities, is a global university ranking system that uses a composite index that takes into account the amount of web content. (Number of pages and files) and visibility and the impact of these web-based publications on the number of external links received from the site. The ranking was published by Cybermetrics Lab, a research group of the Spanish National Research Council (CSIC). The study found that there are many similarities with SEO.

**TABLE I
SEO VS WEBOMETRICS**

SEO	WebOmetric
On page optimization - Keyword - Content - Web Structure	Presence - Web page Openness - Rich file
Offpage Optimization - External Link - Backlink - PR - Indexed	Impact - Link Excellence - Academic Document Published, Scholar

Website ranking is based on both SEO principles and Webometric. It is determined by factors 2, mainly internal and external. By internal SEO, called Onpage Optimization is something that can be further enhanced inside such as website structure, keywords and content, which Webometrics will consider. Presence and Openness issues, such as the number of pages. Number of documents published within the domain or website. Off page optimization is an external factor, similar to Webometric, that is, Impact and Excellence. Considerations such as the number of links referenced and the number. Academic papers published through research and reference databases. There may be some differences in the details, which are both SEO and Webometric. It will also reflect the quality of the university website.

III. METHODOLOGY

This research uses the websites of nine Rajamangala Universities of Technology as a main sampling group by testing and keeping search statistics through the main search engines, Google.com, Yahoo.com and Bing. In this research, the researcher gives more importance to Google.com, since using statistics in Thailand and around the world is increasing in proportion [11]. The recorded results have been into a table and charts and the data analysed.

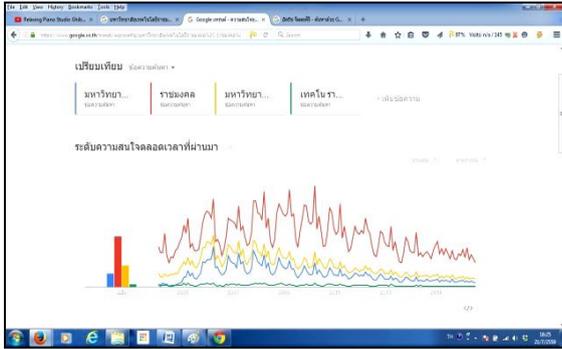


Fig. 2 Keyword Trends

Fig. 2, shows trends of user searching from five keywords by the Thai language, that is taken as a sample in this research include 'University', 'University of Technology', 'Rajamangala University of Technology', 'Rajamangala of Technology' and 'Rajamangala'. The figure shows the term of 'University' is the most searched. It is a broad term that is not specific to the university. The Reason of Rajamangala University of Technology are used sampling group, Because they are special group of University, that are new group of university and can used many keywords for website promote. It is a challenge for the developers website or webmasters, in order to develop the university's website and become to top level of easterners who visit the site. And the University website is widely known in a short time later.

Table II, shows the results of testing five keywords, Rajamangala University of Technology, Rajamangala, University of Technology and University, and considering ranking on the first page or ten prior orders. Concerning the priority order, which results in the number of website visitors, the results found that the websites of Rajamangala University of Technology, Thanyaburi found all five keywords and had the best average search ranking; also, four universities were found with four keywords; those are Rajamangala University of Technology, Pranakorn, Rajamangala University of Technology, Tawan-Ok, Rajamangala University of Technology, Lanna, and Rajamangala University of Technology, Suwannaphumi. The two universities that were found with three keywords were Rajamangala University of Technology, Isan, and Rajamangala University of Technology, Srivichai. The Rajamangala University of Technology, Rattanakosin, and Rajamangala University of Technology, Bangkok, were both found with two keywords. In terms of keyword competition of the term 'University', and when considering all groups together, Chiang Mai University has the highest results. The next in terms of keyword competition concerning the term 'University of Technology' is King Mongkut's University of Technology, North Bangkok, which stands first.

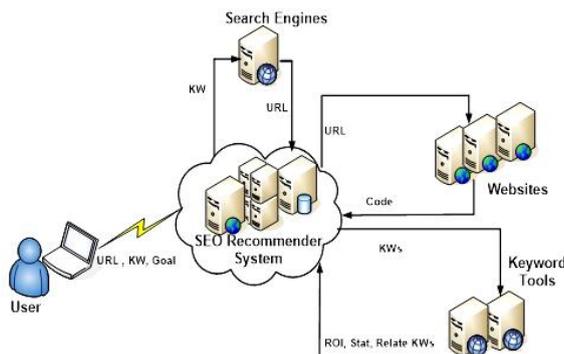


Fig. 3 SEO Recomender System

TABLE II
EXAMPLE RESULTS OF TESTING

URL / Website	Keyword / Ranking (SERPs)					Webometrics
	Rajamangala University of Technology	Rajamangala Techonology	Rajamangala	University of Technology	University	World rank
www.rmutt.ac.th	1	1	1	7	6	3700
www.rmuti.ac.th	3		8	5		4820
www.rmutsv.ac.th	4	5	4			5544
www.rmutp.ac.th	5	2	2	4		5040
www.rmuto.ac.th	6	3	9	9		5702
www.rmutl.ac.th	7	10	7	8		4829
www.rmutsb.ac.th	8	4	3	3		5954
www.rmutr.ac.th	9	7				7084
www.rmutk.ac.th	10	9				6844
www.kmutnb.ac.th				1	3	2605
www.mut.ac.th				2		3197
www.kmutt.ac.th				10		989
www.cmu.ac.th					2	733
www.ru.ac.th					4	3640
www.msu.ac.th					5	2093
www.ku.ac.th					7	731
www.nu.ac.th					8	1276
www.mahidol.ac.th					9	551
www.facebook.com			10			
www.wikipedia.org	2	8			1	

IV. RESULT

In considering the keyword ‘Rajamangala’, the best ranking is Rajamangala University of Technology, Thanyaburi, as shown in right side of Fig 2. The second ranked is Rajamangala University of Technology, Pranakorn. The third ranked is Rajamangala

University of Technology, Srivichai, was shown to have 2 URLs in the result on SERPs. The fourth ranked is Rajamangala University of Technology, Isan. The next is the Rajamangala University of Technology, Suwannaphumi, Rajamangala University of Technology, Tawan-Oak, Rajamangala University of Technology, Rattankosin, and Rajamangala University of Technology Bangkok, respectively. It is noticeable from the test that Content Management System (CMS) has been mainly used as a tool to develop websites by the first and second ranking results, and that the other eight used Wordpress. The third ranking used Drupal, and

the final ranked used others and are developed by Joomla; however, it was found that the index making value is unreadable or de-indexed, resulting in the ranking fallen to the second page of SERPs. We found CMS is a good website development tools [11].

We found that the main step of the SEO technique is improving users’ ability to search for a website’s “Golden Keywords” which are the most important keywords available to the site [12-13], since the keyword factor would lead to website improvement, according to the SEO principle of content optimization, in which keywords are mixed to continually create content. Meanwhile, structure optimization must distribute the keywords according to a proper webpage structure. Regarding off-page they can nevertheless create an environment or situation that yields positive results for their website.

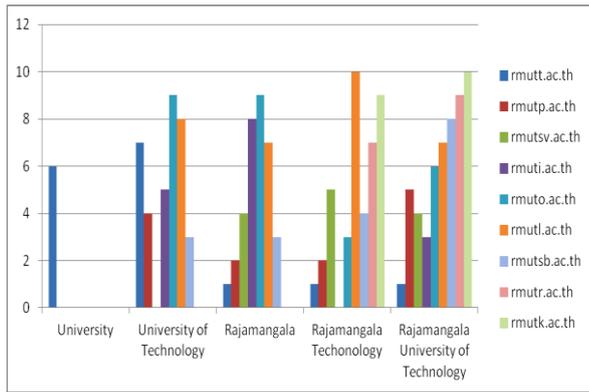


Fig. 4 Ranking of Sampling Group

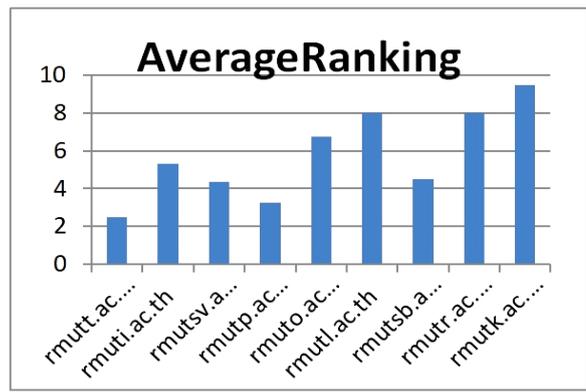


Fig. 5 Average Ranking

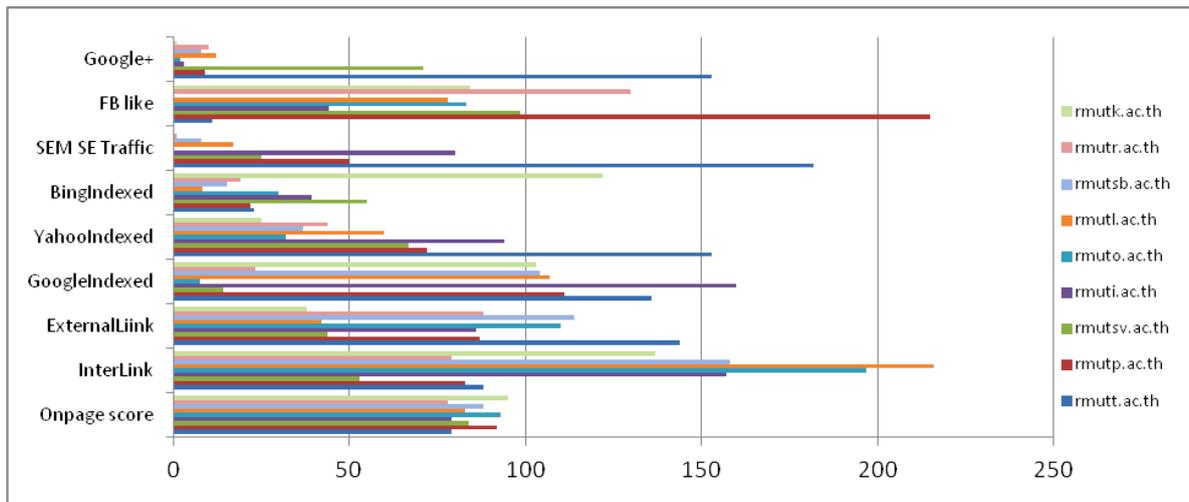


Fig. 6 Factor of Sampling Group

$$SERPs = \Sigma (On\ page\ (KW,\ Structure) + (Off\ page\ (Indexed(number,\ date) + External\ Link\ (Inbound,\ Outbound + Traffic + Social))) \tag{1}$$

This can be explained by the following factors:

- On-page score is the total score result of a Structure Optimization, or restructuring of the website, as per the W3C blend with keyword optimization.
- Search Engine index is the result of the bot/spider visited website and stored the keyword and content.
- External link is similar to link optimization (Inbound, Outbound), which will affect the page ranking directly.
- Traffic is the traffic information of the website, which will affect the ranking.
- A Social Media represents the amount of

activity and popularity through the social network.

When we consider deeply the effecting factors listed on the sampling group websites of all Rajamangala Universities of Technology from issues and factors those are On page Score which is resulted from method of Structure Optimization integrated with Keyword Optimization and Content Optimization. Off page Score is resulted from method of Link Optimization (Number of internal link and external link), Indexing of search engines, those are Google, Yahoo, Bing etc. And the last is new trends, which is Social Optimization considered from number of activities with social network and social bookmarking.

A conclusion has been formed regarding the factors affecting ranking on SERPs. The number of external links and indexing which

occurs from keywords and content numbers which have been shown by considering from frequency and update visiting of bots or spiders. Considered from factors mentioned above it's noticed that Google's ranking mainly bases on websites that concerned with products or services of itself such as YouTube, Google+, blogger.com etc. So webmasters or online marketers should not absolutely overlook this point in marketing through the main search engine, Google.com [5].

V. CONCLUSIONS

Ranking of Search Engine Result Pages (SERPs) is the main means by which users can easily find university websites through popular search engines. From the start, website development should be done using "Golden Keywords" or good keywords, since the data searching behaviour of internet users still stresses mainly typing keywords. Proper keywords have to be been matched with URLs and these keywords need to be properly developed for being in trend and unique; the website structure also needs to be suitably proportioned among text, figures and others. The research has shown the factors affecting ranking of SERPs. They are the number of links (external link), indexed number, which comes from number of keywords and contents. These have been shown to public by considering from frequency and update of visiting of bots or spiders. Those visiting website of bots or spiders affected to indexing of search engines. There is considerable data traffic and apart from that it includes activities occurring from social network. Optimization should be carried out On page, which can be done easily, because it can modification inside website, and Off page; although it is outside effects, Webmaster can make situation and surrounding for increasing Off page scores. The results or target of using SEO is mainly to secure primary rank or position of SERPs, which results in increasing both the number of visitors application to regular syllabus and academic service, including making universities become well known to the public.

VI. ACKNOWLEDGMENT

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(Arranged in the order of citation in the same fashion as the case of Footnotes.)

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