

IMPLEMENTATION STEPS TO OPTIMIZE SEARCH ENGINE MARKETING (SEM) RESULTS FOR SMALL AND MEDIUM SIZED E-COMMERCE COMPANIES

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ในการตลาดอินเทอร์เน็ต เสิร์ชเอ็นจิน (search engine) คือช่องทางหนึ่งที่สำคัญอย่างยิ่งของนักโฆษณาในการทำการตลาดทางอินเทอร์เน็ตในปัจจุบัน นักการตลาดในโลกออนไลน์ใช้ประโยชน์จากเสิร์ชเอ็นจินทั้งในแง่ของการเข้าถึงกลุ่มเป้าหมายรวมทั้งการทำกิจกรรมทางการตลาดอื่นๆ บทความนี้มุ่งที่จะนำเสนอกระบวนการการปฏิบัติงานที่จำเป็นสำหรับการทำการตลาดบนช่องทางเสิร์ชเอ็นจินเพื่อสร้างความได้เปรียบทางกลยุทธ์ให้แก่องค์กร กลไกของเสิร์ชเอ็นจินประกอบด้วยประสบการณ์ของผู้เขียนเกี่ยวกับการตลาดโดยใช้เสิร์ชเอ็นจินก่อให้เกิดนัยที่สำคัญในกระบวนการปฏิบัติและความคิดรวบยอดสำหรับขั้นตอนการดำเนินการที่นักการตลาดสามารถนำไปใช้เพื่อพัฒนาเว็บไซต์ได้อย่างมีประสิทธิภาพ

Abstract

In terms of Internet marketing, search engines are the channel of choice for most of the internet advertisers in nowadays online-market. Considering its growth as an online advertising media, online marketers exploit this media using Search Engine Marketing (SEM) together with its strategies and implementation steps. This paper suggests some implementation steps for SEM to facilitate startups websites to be visible and competitive throughout this media. Delicate search engine mechanisms regarding indexing and web crawling develop Search Engine Marketing into the implementation steps including short-term and long-term marketing strategies. Search engine mechanisms schemes with the aid of author's experience in organizing SEM contribute to the steps

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implication and conceptualization. In the light of implementation steps, marketers are competent to constantly advance their websites with the direction.

I. INTRODUCTION

Since public networks were successfully embedded with internet protocol in the past decade, Internet usage increased dramatically by 100 percent annually in the late 1990s, which was organic growth without central supervision (Coffman & Odlyzko, 1998). Non-proprietary organic growth of Internet Protocol revolutionizes this public network into a marketing channel for online marketers, who included Internet marketing in their marketing mix (Alrawi et al., 2008). The Search Engine is an essential tool for Internet surfing, it gathers information from both World Wide Web and FTP services that are the systems of interlinking hypertext documents accessed through the internet (Quittner, 1999; Berners-Lee & Cailliau, 1990).

Search Engine Marketing (SEM) is a type of online marketing that improves website visibility in search-result pages through the application of Search Engine Optimization (SEO), paid placement, contextual advertising, and paid inclusion; it usually focuses on brand development and direct Internet user response. SEM provides the marketers with higher return on investment (ROI) than traditional Internet marketing (Boughton, 2005; Sherman, 2002). Conventional internet marketing permits marketers to commence their advertisement through ads banner with certain payment rates. The lower ROI of ads banner compared to SEM has serious implications for an inflexible payment rate since no matter

what the respond to banner ads is, the payment rate remains the same (Boughton, 2005; Ramos & Cota, 2009). The SEM strategies such as “pay per click” and “cost per click” offer a flexible payment rate to the Internet marketers because the payment rate directly relates to the rate of actual ads responded to, which is determined by the number of click achievement on the paid ads (sponsor link). The long-term SEM strategy of Search Engine Optimization, on the other hand, enables marketers to improve their website’s organic search-result ranking (Boughton, 2005; Ramos & Cota, 2009; Szetela, 2009).

The top organic search engine position merely triumph the keyword competition, however they cover no perfect SEO tactics because search engine ranking policies remain a business secret (Boughton, 2005; Castillo, 2004). Inorganic search (sponsor link) requires a bid for the higher ranking of ads; the Keyword Price Index (KPI) alters the bid rate from one to the other keywords in which high competition among keywords will increase the KPI (Castillo, 2004; Moran & Hunt, 2006). Nevertheless, Internet marketers who cannot afford to bid for certain keywords may either change the keywords for their ads or switch to a lower-tier search engine resulting in various SEM issues, such as “click fraud”, which refers to clicking on ads without any interest, and “lower impression”, which refers to the lower searcher perception about the ads (Boughton, 2005; Kitts et al., 2006; Mordkovich, 2010a; Net application, n.d.). These issues exist for

SEM in general, however, they will be enhanced once the marketer switches to lower-tier search engines because such search engines provide lower prevention of click fraud and have lower web traffic. These issues, in addition, degrade the sponsor link performance in which a lower impression confers on the Internet marketer a higher opportunity cost while click fraud decreases the return on investment (Boughton, 2005; Mordkovich, 2010b; Ramos & Cota, 2009; Szetela, 2009).

Apart from creating an E-commerce homepage, Internet marketers may organize their E-commerce website by applying for web application services from a provider such as tarad.com which provides E-commerce applications to online firms for a monthly charge, this service allows vendors to easily create the websites with less consumption of time. Nevertheless, sophisticated homepage creation techniques dictate the SEO friendliness of the website including programming language selection, language creation, and language arrangement in which the simplicity of language arrangement and its selection are considered two major language approaches that affect the SEO friendliness of the website (Kymin, 2010; McCoy, 2010b). Content creation, on the other hand, is the key to the SEO tactic since web crawlers rank the non-sponsored link primarily according to the relevance of the content to the entered query (Burani, 2010; Castillo, 2004; Cutts, 2010; McCoy, 2010b; Ramos & Cota, 2009; Szetela, 2009).

The Implementation steps of Search Engine Marketing provide an avenue to the search engine market for startup E-commerce sites. Apart from the SEM strategies,

the SEM implementation is prioritized to be the major discipline for startup websites since it involves the tactics of ads optimization. It, moreover, allows the marketers to continuously optimize their pages. Subsequent to the revision of Search Engine Marketing Strategies and Search Engine Mechanisms, this paper focuses on the development of SEM implementation steps for startups e-commerce websites. The purposes are to suggest SEM implementation steps and to revise the SEM philosophy. The paper covers the steps from homepage formulation to the SEO processing which are involved with the long run SEM.

II. EARLIER WORKS ON SEARCH ENGINE MARKETING

Boughton (2005) described how search engine usage in America is increasing and that paid search advertising now occupies one third of total online ad expenses. For this reason, there is high competition for popular keywords; many advertisers cannot afford to bid for the top positions on the leading search engines. Advertisers may then turn to second-tier search engines for better position and greater ROI. Lower-tier search engines offer lower bid prices, however, they are usually also burdened with the click fraud issue, in which competitors click on advertisements themselves, either to boost a competitor's ad expenditure or to increase their own compensation. Click fraud is very difficult to detect, and the best solution is to implement advanced software systems that track the locations of incoming clicks. SEM campaigns, when properly implemented, have proven that it should be

an essential part of any well-developed interactive marketing strategy.

Sen (2005) explained that buyers use search engines to search for information tend to trust and follow links displayed in the editorial section of the search-results page. Most online firms do not invest in search engine optimization (SEO) to get better search-results rankings for their listings, but instead prefer paid placements. They explain that SEO is more expensive than paid placements, and has low potential to improve search-results rankings. This implies that firms would invest in SEO if it was less expensive and its rankings were more reliable. Although SEO and paid placement costs are similar, and SEO usually produced high rankings, paid placement is still the preferred search engine marketing (SEM) strategy for most online firms.

III. SEM STRATEGIES

SEM strategies which include paid placement, contextual advertising, and paid inclusion are an advertising model which allows marketers to improve their website visibility on search engine page results within inorganic searches (Szetela, 2009). Pay per click is a form of the paid placement, where advertisers pay the search engine only when their sponsored links are clicked, such as GoogleAdword. The better positioning of this type of ads can be accomplished through bidding; advertisers bid for the keywords that are relevant to their target customers. Cost per click, moreover, is the total cost that advertisers or other Internet publishers have to pay search engines for the click on their sponsored link, which directs the traf-

fic to their website. High-tier search engines such as Google have developed an automated system to prevent violent clicks by any Internet user attending to distort the results, however, click fraud is still a major hazard for this plan (Ghosemajumder, 2008; Szetela, 2009).

Contextual advertising allocates the targeted audience to the advertisers; its mechanism is to display the ads which are relevant to the neighboring content. Through this plan, the internet advertising channel is extended rather than the inorganic search-results pages. GoogleAdsense is an example of contextual advertising; its robot investigates the relevance of content to the ads and presents the ads in the form of pop ups or ads banner on that webpage (Szetela, 2009). Many search engines such as Yahoo mix paid inclusion programs, pay per click and pay per page with the organic search results from web crawling; advertisers pay the program to shorten the visiting schedule of the web crawler that promotes SEO tactics in the long run (Szetela, 2009; Zawodny, 2004).

Search Engine Optimization (SEO) is a procedure to improve website visibility in natural or unpaid search-results pages which are called organic search results. It is considered the most technical part of SEM since it involves the process of webpage formulation and webpage modification (Burani, 2010; Witten et al., 1999). This strategy focuses on the relevance of content to the query entered by the searcher; several tactics can be used to improve website search engine position, including content optimization, link creation, and URLs formulation (Kymin, 2010; Morgan, 2008). In order to propose the SEO tactics and to suggest the

SEM implementation step, the search engine mechanisms, moreover, need to be recognized, therefore, the author reviews its mechanisms in the following part.

IV. SEARCH ENGINE MECHANISMS

Once a searcher enters the query into the search box, the search engine will search for Webpage that are relevant to that query from its index and rank them according to that relevance; this process is called “on-line operation” or “on-request execution” (Castillo, 2004). The indexing process is consequently focused on Webpage creation; the web crawler visits the Webpage and collects information for indexing, then, the Webpage is kept in the search engine index after it is indexed, this process is known as “off-line operation” or “periodic execution” (Castillo, 2004). The first stage of indexing is to extort a standard logical view from the document. “Bag of words” is the name of the logical model for the document usually used in the indexing process, in which the document is seen as an unordered set of words (Castillo, 2004; Baeza-Yates, 2004).

Besides the relevance of the Webpage, the value of the Webpage, which is the combination of page quality and page freshness, improves the search engine position of the page. The page quality refers to the interest in the page by the user, including the web traffic and user retention time on the Webpage; the web crawler measures the Webpage’s intrinsic quality in terms of link popularity, similarity to given query, usage popularity, location which focuses on the perceived path depth from the index to the

certain page, and the IP address of the domain name, as well as the geography. Page representational quality is concerned with the page URL which represents the page objects (Castillo, 2004; Cho & Garcia-Molina, 1998; Diligenti et.al., 2000). High site freshness involves the update frequency of the page, usually monthly or annually, therefore, the site needs an updating schedule to keep the freshness of the website recognizable to the search engines.

Web dynamics refer to web growth and document updates; document updates are the changes in the web in terms of content creation, document updates, and deletion (Neil, 2001; Risvik & Michelsen, 2002). Web growth, on the other hand, is the expansion of Website content; it promotes search engine optimization as web crawlers tend to visit large sites first (Castillo et al., 2004). Without extra website information provided by the webmaster, Web crawler scheduling strategies including breadth-first, back link count, batch-PageRank, partial PageRank, OPIC, and large-sites-first are applied using only the information gathered during the crawling process (Abiteboul et al., 2003; Boldi et al., 2004; Castillo, 2004; Castillo et al., 2004; Cho and Garcia-Molina, 1998; Najork & Wiener, 2001).

In a Breadth-first scheduling strategy, the web crawler will capture first the high quality pages; it will visit all homepage of the entire seed website and collect that information so that any new page is added to the end of its queue (Najork & Wiener, 2001). The backlink count strategy crawls first the Webpage with highest amount of links pointing to it, therefore, the next page to be crawled is the page with the most links from the previously crawled page (Cho and

Garcia-Molina, 1998). A Batch-PageRank scheduling strategy calculates the PageRank of the Webpage, using the crawled page information so far and crawls first the pages with high calculated PageRank after it completes the first round crawl. It has been proven that this strategy is better than backlink count, however, the application of a partials graph can be inexact in calculating the PageRank (Boldi et al., 2004; Castillo, 2004; Cho and Garcia-Molina, 1998). Like batch-PageRank, partial PageRank assigns a temporary PageRank to the new page during the re-calculation process dividing sum of the PageRank of pages pointing to it by the number of out-links from that page (Castillo, 2004).

In an OPIC strategy, all pages start with the same amount of cash. Once the page is crawled, the cash is split among the pages it links to. The priority of the page being crawled is the sum of cash the other pages split to it. Although it is similar to back link count strategy, the process is much faster since there are no random links and the calculation will not be iterative (Abiteboul et al., 2003; Castillo, 2004). Large-sites-first prioritizes the sites being crawled according to the number of un-crawled pages found so far for that Website therefore avoiding pending pages in any Website (Castillo et al., 2004).

V. IMPLEMENTING SEM

On behalf of a Search Engine Marketing implementation process, the SEM strategies have to be clearly understood including Search Engine Optimization, paid placement, contextual advertising, and paid in-

clusion. The implementation complexity has arisen with SEO tactics since it includes Website formation and Content creation procedure which requires expertise in programming language conception. Apart from SEO tactics, paid placement provides more simplicity in which it is operated as base on the payment; the advertiser pays for their ads to make it visible in the inorganic search section of the search engine. SEO sometimes can be reinforced with the budget; the advertiser engages the SEO Company to organize these tactics, moreover the advertiser pays the search engine Web crawler in order to inquire the crawler to visit the Webpage faster. Search Engine mechanisms are the prerequisite discipline for Search Engine Optimization (SEO) tactics since they involve the running process of Web crawlers, the indexing process which collects the Webpage into search engine memory, and the search process itself. The entire discipline required for implementing the SEM was clearly revised in the previous parts which are the SEM strategies and Search Engine Mechanisms topics.

The author and his colleague have experience regarding the SEM procedure and successfully optimized a websites visibility in the search engines; the website created by the author and his colleague seizes the top position in search engine for certain queries. Moreover, they acquired know-how on SEO-friendly website creation techniques, which requires specialty in programming language. Entire SEM implementation steps were suggested by the author; they cover the processes from creating SEO friendly website to extending the website. This figure illustrates the overall step



Figure 1: SEM Implementation Steps Activity Flow.

Source: Created by this author for this paper

of SEM implementation (Figure 1).

The last step is iterative since the website needs continuous improvement and maintaining of freshness. According to the already described theory of page freshness in paragraph 2 of the Search Engine Mechanisms topic, Website freshness benefits the SEO process therefore this step should be repeated monthly. Based on the theory of Large-sites-first scheduling strategy in the last paragraph of the Search Engine Mechanisms topic, Webmasters ought to regularly extend their website in term of number of pages.

Step 1: Create SEO friendly websites

An attractive website from the internet users' viewpoint refers to a website with simple layout and colorful webpages. It will be more attractive to the user if it contains images, movie clips, flash, and the other kinds of entertaining media. The Web crawler perspective is different; it considers the simplicity of programming language including the arrangement of the language. Hypertext Markup Language (HTML) is the prime form of markup language for interpreting the text, which is considered the most SEO friendly language for webpages (Beasley, 2003; Camusio, 2009). Another

SEO friendly programming language is eXtensible Hypertext Markup Language (XHTML) which belongs to the XML family which is an extend version of HTML. On the other hand, a Web crawler (spider) considers the appearance and layout of the content, therefore, Cascading Style Sheets (CSS) in the programming language (code) improves the SEO friendliness of a website (Beasley, 2003; Biundo & Enge, 2010). Nevertheless, flash objects confuse the spider and it may cause the spider to leave the page once those objects are crawled, resulting in higher opportunity cost. Script languages such as Hypertext Preprocessor (PHP) and JavaScript are not SEO friendly, however, they do not cause the spider to leave the page.

Content is the key consideration in SEO friendly website creation; the assigned keyword in Meta Tags should be included in the content so that the percentage of the keywords will fall between 3 to 9 percent of a certain webpage's code. Moreover it is highly recommended that Meta tag be included in the code; these cover title name, keywords, and description. In addition, the text size should be varied according to the priority of the content using Tag <H1> or <H2>. The URL should illustrate the object on the webpage, for example, if the

webpage contains content and objects about water filters then the URL should include the word “water filter”. Besides that, the URL ought to be in the same language as the webpage or assigned keywords. The Anchor is the website interlinks tags; when the user clicks on it, the links will lead to another page allocated by the webmaster (Morgan, 2008; Walker, 2010). The anchors benefit both SEO and user friendly issues of the website as they allows spider to crawl on them and provide simplicity to the user.

Step 2: Submit Web URL to the Search Engine

Once the Web URL is submitted to the search engine, the indexing process done by an off-line proc Search Engine Mechanisms topic, may be shortened. Considering the web crawling theories described by Castillo (2005), the submitting process provides the spider with the website’s initial information and therefore condenses the crawling schedule.

Step 3: Add Backlinks to your website

Concerning the described theories of the backlink count scheduling strategy in the fourth paragraph and OPIC strategy in the last paragraph of the Search Engine Mechanisms topic, the links pointing to your website from other relevant websites should be added. For example, if your website is about water filters, you should have the links pointing to your website from other water filter websites or other related websites such as healthcare, water treatment, pollution, or sanitary ware websites. According to the

batch-PageRank and partial PageRank scheduling strategies presented in the same paragraph, backlinks should be added to high PageRanked websites because it will provide your site with a higher amount of cash than backlinks from the lower PageRanked website. These PageRanks are directly proportional to the temporary PageRanks assigned by the spider; Google PageRanks are an example of them.

One-way backlinks may provide a better outcome than two-way backlinks, which refer to link exchanges among webmasters. Two-way links are simple to acquire because they employ a bartering process and most of the time require no budget from the marketer. One-way links, on the other hand, have a higher potential to require SEM budget especially, backlinks from high PageRanked sites because most of the time they are commercial. Moreover, one-way links may be more effective operating with the hub websites for example you have websites A, B, C... Z link to one website then you have that website link to yours.

Step 4: Wait for the indexing process

Following the URL submitting process, it is now the time to wait for a spider to index your website during which you can continue adding the backlinks for your site. This step sometimes overlaps with the previous step. Normally, indexing requires a couple weeks to be completed, since the spider do not immediately crawl your website after your site is submitted, however, it considers information given by your website and moves your website up in its crawling queue (Castillo, 2004). The indexing process can be monitored by entering

the full URL of your website in the search box of the search engines you submitted your site to. For example, if you submitted <http://www.abc.def> to the Google search engine, then in order to search for the indexing outcome, you can simply enter <http://www.abc.def> into the Google search box. The links of your website will be shown in an organic search result page; the number of links will depend on the indexed webpages of your site.

Step 5: Organize the paid placement program

Organizing the paid placement program is simple to operate and it requires a SEM budget; making a payment to one of the paid placement program offered by search engines, then selects the query you want your website to be visible in. For example, if you select the GoogleAdword program, which uses pay per click, then you pick the “water filter” query as the one you want your website to be relevant to. When the searcher enters the query “water filter” in the Google search box, the links for your website will appear in an inorganic search-result page. Sometimes your link may not be in the top position in this results page, since there is high competition in certain queries, in this case you are required to make a bid to improve the positioning of your link; the more you pay for one click, the better position your link is.

Step 6: Monitor the results of paid placement

The Search Engine reports the paid placement outcome via their dashboard,

therefore you are able to monitor the results of your marketing program. Click Through Rate (CTR) is a ratio of the number of click achievement to the number of impressions; it is a measurement of online advertising performance (Stern, 2010). Moreover, the dashboard shows a daily report in which the optimum time that your link is clicked the most is illustrated allowing you to improve your strategy on bidding. Within the same dashboard, the cost per click can be observed since the cost of sponsored links at different times of the day is varied based upon the bid rate. Furthermore, monthly and annually reports are presented by the dashboard where the peak day and month are shown.

Step 7: Perform SEO

As part of the long-term SEM strategy, Search Engine Optimization (SEO) requires expertise and a clear understanding regarding Search Engine Mechanisms. SEO tactics can be outsourced, several SEO companies with this expertise are available for you to appoint. If the time is available for you to conduct SEO yourself, the described strategies in step 1 and 3 are the keys; the initial step of SEO friendly website creation is prioritized to be the most important step among these steps since it may cost you more if you have to come back to correct it. Moreover, you will sometimes need to follow the SEO check list provided by a SEO tactics website such as webconf.com, where approximately 70 factors that will enhance your optimization process are shown. On the other hand, a paid placement program enhances optimization performance because it increases the traffic to

your website; search engines positions the links taking into consideration the web traffic apart from the relevance of the content.

Step 8: Monitor the results of SEO

The outcome of the optimization process may be monitored through the search engine results page; you can simply enter your selected query in the search box and then you can keep track of your link position on different search engines. On the other hand, websites for webmasters such as iwebtool.com and webmaster-toolkit.com report number of backlinks, the search engine position, a keyword analysis, and other parameters important for the optimization process. Keyword analysis allows you to make an adjustment in your webpage programming language to match 3 to 9 percent of desired keywords. Consequent to this step, you can return to add backlinks to your website if you find that they are inadequate when comparing your website to those of competitors. It is, moreover, important to know which sites are your key competitors, which refer to the websites with the same query targets as your website. The basic method to improve your optimization process is to perform better than your competitors in term of relevance, backlink count, and the simplicity of your website. You will also need to minimize the load time of your website, and use other SEO perspectives that your competitors included in their websites.

Step 9: Update your Webpage

Apart from the adjustment of your code described in the previous step, you should

consider adding content into your webpage where you will sometimes need to add more webpages to your website and you will need to include new content for the new webpages. According to the large-sites-first scheduling and page quality described in Search Engine Mechanisms topic, websites should be updated monthly with new webpages in order to maintain its freshness and its attractiveness to spiders in term of page quality. Updating your website too frequent such as weekly or daily will cause your website to be suspended for months by the search engine; in that stage your website's search position will never improve. Using backlink addition, on the other hand, is not considered an update process because it does not involve website modification, therefore backlinks can be continuously added regardless of addition frequency.

VI. CONCLUSION

With the aid of keyword competition, search engine marketing corresponds to traditional marketing in that information regarding competitors should be analyzed. The SEM strategies matches brand promotion campaigns since it improves the websites visibility in search engines. The websites carries the brand to the marketplace, which are the internet protocol allowing customers (internet users) to be aware of the brand. Search Engines, moreover, are a competitive advertising media on the Internet nowadays since it provides more ROI than others online media such as banner ads. Search Engine Marketing can be enriched using various methods, however, the suggested implementation steps

focus on website development, and SEM strategies, including paid placement and the SEO process. Others search engine marketing perspectives could be enabled by further suggestions, including the use of social networks in SEM. The Search position of the website may be sustained through the search engine optimization process, including all of the suggested steps in this paper. Paid placement, on the other hand, is considered to be a short-term plan because it consumes the marketing budget. With the fact that firms should minimize their expenditures on SEM from time to time and the SEO is the solution to this issue, therefore SEO is considered a long-term SEM strategy. In addition, paid placement increases web traffic once implemented thereby benefiting the optimization process because web traffic is a factor considered by search engines in the ranking process.

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