Utilization of Google Tools and Social Network Websites to Improve Performance of Search Engine Marketing (SEM)

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Abstract - Market the products in the Internet world is not an easy thing. It requires knowledge and efforts to introduce these products to consumers. Thus, marketing methods in such environment are different than offline marketing. One marketing method that can be used in the Internet is by using technology that allows the web page can be found more easily by search engines. This mechanism thereby will increase the traffic to the web page, thus increasing customer knowledge on the products. Another opportunity to market products is by posting the products on social network websites such as Facebook and Twitter. In order to see the impact of both Google Tools and social network websites to the web visit, we develop two websites. The first website is a normal website without any customization, and the second one is the customized website where we put some Google Tools and social network websites in it. The overall results prove that Google Tools helps in increasing the website rank in the search engine and social network websites provide a good mechanism in attracting users to visit a website.

Keywords: Google tools, Social Network, SEO, SEM

INTRODUCTION

Nowadays, people use internet to collect many kinds of information. The fastest way to get information is by using search engines such as Google. By using Google, people can collect information just in one click. Google as the well-known search engine offers another benefits for business. Currently, people utilizes Google for advance purposes such as for doing online marketing. For this aim, Google renewing its service by developing Google Tools, such as Google Insight, Google Keywords Tools, Google Adwords, Google Web Analytics, and Google Webmaster Tools. These tools can be used to increase a website rank and make it easier to be known by public especially internet users.

Another advanced development in internet environment is social network. Social network such as Facebook, Foursquare, Friendster, and so forth have transform the way the people behaves in internet environment. Current report on facebook users (http://www.facebook.com/press/info.php?statistics) shows the users of facebook are more than 500 million which spend over 700 billion minutes per month. People on Facebook install 20 million applications every day. These numbers show the potential of social network as media of promoting products as it involves many active users.

These developments have changed the organizations doing the marketing. The organizations need to revitalize their marketing strategy in order to get competitive advantages from their competitors. Marketing is no longer only be done through traditional media such as billboards and newspaper, but also

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needs to consider these technologies to obtain a wider range of customers. Thus marketing via internet is becoming one promising option.

People also utilizes the internet to gain some benefits from it. They can create website to promote some products and perhaps they will gain some money from such activity. Some well-known websites such as Google Adsense, Amazon, e-bay, and Commission Junctions are among of them who offer opportunity for internet users to join their affiliation programs. An affiliation program is an internet based marketing where commissions are given when user entering a website and buy items through a link that is put by affiliation website. A website which joins to affiliation program is called a publisher. Figure 1 illustrates this affiliation program.

![Affiliation Process on Internet Based Marketing](http://en.wikipedia.org/wiki/Affiliate_marketing)

A study about affiliation system has been held by Martin, et all (2009). They analyzed the affiliation system on ebay.com. The research shows that affiliation system can increase the revenue of ebay significantly. However, the research only describes the benefits of an affiliation program just from disposal rate, but it did not describe more about the way of online marketing to get a significant traffic and how to introduce the selling products.

This research aims to help publishers for creating a strategy of marketing their affiliation products by combining technologies offered by Google (Google Tools) and social network websites. Our goal is to improve the ranking of our website in the search engines and gain wider access from customers to increase our web visits. The Google Tools explored in this research include Google Insight, Google Keywords, Google Adwords, Google Analytics, and Google Webmaster, whereas the social network websites used are Facebook, Twitter, Buzz Goggle, Yahoo Buzz, and FeedBurner. Through this research, it is expected that we can examine the influence Google Tools and social network websites in optimizing search engine (Search Engine Optimization) to market products (Search Engine Marketing).

**SEARCH ENGINE OPTIMIZATION (SEO) AND SEARCH ENGINE MARKETING (SEM)**

Search Engine Marketing (SEM) is a form of internet marketing that seeks benefits by marketing paid-links (Green, 2003; Machill, 2008). SEM is a marketing process that uses Search Engine Optimization (SEO) technique and Pay Per Click (PPC) advertising to increase visibility of a website (King, 2008). The benefits from SEM are the ability to market the products and to increase income from PPC advertising on the websites. SEM uses various mechanisms to market a website in order to improve it ranking in the search engines. SEM constitutes Ad words; which constitute Pay per Click (PPC), article submissions, advertising, keywords analysis and making sure we have implemented SEO.
SEO is a mechanism of customizing elements of a website in order to improve its ranking or appearance on search engine (Nazar, 2009). The ranking improvements of a website can be achieved by increasing traffic of visitors to the website. SEO currently gets intention from researchers as it offers many benefits to business, one of them is marketing with the emergence of SEM.

There are various strategies to implement SEO. Zhang and Dimitroff (2005) showed that metadata can be used to improve web visibility. Metadata consists of keywords that describe the content of a web page. The selection of keywords in a metadata is important task as it can influence the searchability of the web page in internet (Hawking and Zobel, 2007). By putting appropriate keywords to metadata, search engine can find the web page easier.

Another study from Nguyen dan Hoang (2008) reported that utilizing social media and social network can increase traffic significantly. They use social network and social media, such as twitter, feedburner, yahoo buzz, Google buzz, facebook, digg, technorati, Google reader, etc. Nguyen and Huang (2008) showed that these social media can give a contribution on search engine optimization.

Nazar (2009) stated that in order to successfully implement SEO, we should consider the following aspects: defining goals, SWOT analysis of competitors’ website, keyword discovery, crawling, considering how Google stores information and index pages, on-page optimization, off-page optimization, and Google SEO tools. Google SEO tools are interesting to investigate as they are available to use for free. The following subsections describe some important Google SEO tools.

**Google Analytics**

Google Analytics, one of the business intelligent tools developed by Google, offers a service to analyze every user’s activities to a website. By using this tool, website developer can see and analyze the traffic data of the website in real time. In addition, this tool also makes user are more prepared to write better-targeted ads, strengthen the marketing initiatives and create higher converting websites (http://google.com/analytics).

Daniel and Kaushik (2009) said that Google Analytics framework is the visitors’ pattern (how many clicks) and how the visitors entering the website (e.g. from search engine or other sources). Google has prepared the tracking code that can be embedded to the website that will use it. By embedding this tool, we can track our website and capture all visitors’ activities for further analysis.

Here are some features provided by Google Analytics that can be utilized to analyze the visitors’ activities.

1. **The Website’s Visitors Rate**
   This feature displays a dashboard delivering information about how many users visiting the website daily, weekly, monthly or in a year. Having this data, we can examine whether our visitors are increasing or even decreasing. Thus we can take some necessary actions to improve the user visits, for example by improving the quality of website contents which are considered less relevant to consumer needs.

2. **Keyword Searching**
   Google Analytics also provides information about keywords that the visitor used to enter the website. These keywords are useful in determining the popular and important content in the website. In other words, it represents the trends of searching. This information can be used by website’s owner to improve website traffic by putting popular keywords in the website.

3. **Visitor’s Origin**
   This feature provides an analysis about the origin of the visitors. This information can be used for example to determine the default language of a website by examining the country where the visitors come from the most. In addition, the information also can be used to determine the location where we should host our website. The closer the location of our server to most of our customers, the faster our customers will get response from our server. Thus it is expected it can improve customer satisfaction on our services.

4. **How the Visitors Entering the Website**
This feature captures the entrance channel of visitors to a website, whether they enter the website through direct channels, through the social networking websites, through advertisements posted on a website, through search engine results or via RSS (Really Simple Syndication) embedded in the website.

**Google Webmaster**

Another tool provided by Google is Google Webmaster. This tool is also free as well as Google Analytics. Google Webmaster helps web owners to diagnose any faults on their web. Google will give suggestions to the existing problem by giving the proposed solutions for improvement. The benefits of using Google webmaster are:

1. Provide information to the Google page and the latest website update.
2. Increasing the index search on the Google search engine.

**Crawl error**

This tool is used to diagnose error of HTML in the website. The error occurs as the Google Webmaster cannot access the website, thus it makes the robot cannot index the website to the search engine. Some possible errors include: not found, URLs not followed, URLs restricted by robots.txt, URLs timed out, HTTP errors, URL unreachable, and Soft 404s.

**Crawl stats**

The Crawl Stats provides report on the website's crawl history over the past 90 days. The information provided by this tool comprises pages crawled, kilobytes downloaded and time spent downloading on a daily basis. Through this tool, we also can check whether there are anomalies, spikes and valleys in the website. Thus, we can assess what we have done that may have caused these changes. If the changes are positive, we can apply the same thing in the future, but if the changes are negative then we should avoid doing the same thing in the future.

**Malware diagnostics, internal link**

Google webmaster tool also provides information on whether the website that we analyze contains malware that could endanger the visitors. In addition to diagnosis of malware, Google Webmaster tool also analyzes how many internal links exist within the website. The more internal links within the website will be, the easier for search engines to index the website.

**Google Keywords**

Google Keywords tool provides statistical data about keywords which are most frequently searched by the visitors. This information is very important to help us in determining appropriate keywords for our website. By having popular keywords, it is expected that it will increase number of visits to our website.

**Google Insight Search**

In addition to the above tools, Google also provides a knowledge-capturing tool, namely Google Insight tool. This tool gives an idea of what a search trends around the world. These tools provide data in accordance with terms time and territory that is often sought by users of the Google search engine.

**METHODOLOGY**

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As we mention, we aim to see the impact of Google Tools and social network websites to improve the performance of SEM. The performance of SEM can be seen from web visit which is also the goal of SEO. It is expected that the more popular the website, the possibility of customers to buy products from it will be higher. In order to see the impact of both Google Tools and social network websites to the web visit, we develop two websites. Both websites provides information about particular products which are derived from the affiliations website.

The first website is a normal website without any customization. We create website with default setting and without embedding any codes that we expect can increase web visit. We use this website as our baseline to measure the performance of our proposed SEM strategy.

The second website is the customized website where we put some Google Tools and social network websites in it. Our goal in this modification is to improve our website to be more friendly to search engine and social network. In order to make it more friendly to search engine, we employ the Google Tools with expectation that we can improve the ranking of the website in the search engines. We choose Google Tools as it provides simple mechanism to incorporate their tools into a website. The plug-ins of Google Tools that we use in this research includes: robot meta and robot.txt, SEO Image Friendly, All in One SEO, Google Insight, and Google Adwords. To make our website more friendly to social networks websites, we employ Sociable plug-in which enables the website to link to social network websites.

Our scenario to collect data for analysis comprises of the following steps:

a. Develop website infrastructure
   First, we choose domain for our websites. For normal website, we choose www.partsoo.com as our domain. Whereas for the customized website where we have considered SEO techniques in it, we choose www.reviewsoo.com as the domain. We develop those websites by using CMS (Content Management System) Wordpress 2.9. Wordpress is built on PHP languages and uses MySQL Database. Both websites have already joined at affiliation system and been called publishers.

b. Install SEO and SEM Plug-ins
   Wordpress CMS offers many benefits as it is already supported by many SEO Communities that create some SEO and SEM plug-ins to be used easily. First step of installation is setting the permalink in order to make our website can be indexed by search engines. The next step is installing SEO and SEM plug-ins, which include Robot Meta and Robot.txt, SEO Image Friendly, All in One SEO and Sociable plug-in to help posting the website content on social networks. These plug-ins are installed on our customized website.

c. Post Affiliation Products
   Before posting the affiliation products, we identify current global product trends. We use Google Insight to see these trends. Finally, we decided which products that we will post to the website.

d. Keyword Analysis
   After posting the affiliation products, we determine set of keywords that characterize our posting. We use Google Adwords Keywords. For this purpose, we decided to use keywords related to the title and description of a posting.

ANALYSIS

Our websites are run for four months during February – May 2010. The Google Tools that we have embedded in our websites helping us in providing information about the visitors of our websites. Our interest is to see number of web visit in our websites, both for normal and customized websites. The web visit is an indicator of popularity of a website. The more popular the website, the possibility of customers...
to buy products from it will be higher. Based on data that we have collected from Google Analytics, we can see some data includes web visit, origin country of the visitors, etc. Table 1 below shows the number of web visit to the both websites during the four months.

Table 1. Number of Visits to Our Websites

<table>
<thead>
<tr>
<th>No</th>
<th>Month (2010)</th>
<th>The Number of Visit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Customized Website</td>
</tr>
<tr>
<td>1</td>
<td>February</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>March</td>
<td>261</td>
</tr>
<tr>
<td>3</td>
<td>April</td>
<td>335</td>
</tr>
<tr>
<td>4</td>
<td>May</td>
<td>219</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>815</td>
</tr>
</tbody>
</table>

Table 1 shows that by adding Google Tools and posting to the social network, during four months of our trace it can increase number of visits to the website around six times, with average number of visit per day around 1.2 for normal website and 7 for customized website. Moreover, the customized website needs one month to be recognized and visited by the customers, whereas the normal website needs around two months to be visited by customers. This result confirms that the use of Google Tools and social network websites make the website to be recognized faster than the website without any customization.

We also examine our website content ranking in the Google search engine. We found that the contents of customized website obtain higher ranking in the Google search engine than the contents of normal website. For example, normal website only has one content in the first rank in the Google search engine, whereas the customized website places its two contents in the first rank. Table 2 below summarizes the comparison of normal website and customized website in term of the position of their contents in the Google search engine. For the sake of simplicity, we show only the comparison for the top-5 rank in the search engine. This confirms that by using appropriate keywords, our website will be more recognized by search engines.

Table 2. Number of Contents in a Particular Rank in the Search Engine

<table>
<thead>
<tr>
<th>Rank in Search Engine</th>
<th>Normal Website</th>
<th>Customized Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>14</td>
</tr>
</tbody>
</table>

We also recorded source of web visits for our customized website. We classify source of web visits whether it comes from search engine, social networks, and others as can be seen in Table 3. From the table, it can be seen that social networks attract more users than search engine. Moreover, data from Google Analytics showed that visitors of customized website coming from 28 countries, whereas visitors of normal website coming form only 12 countries. It confirms that in order to reach wider access, social network websites are more promising media than search engines.

Table 3. Source of Web Visits of Customized Website

<table>
<thead>
<tr>
<th>Rank in Search Engine</th>
<th>Normal Website</th>
<th>Customized Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>No</td>
<td>Source</td>
<td>Number of Web Visits</td>
</tr>
<tr>
<td>----</td>
<td>--------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>1</td>
<td>Search engine</td>
<td>256</td>
</tr>
<tr>
<td>2</td>
<td>Social networks</td>
<td>329</td>
</tr>
<tr>
<td>3</td>
<td>Others</td>
<td>230</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>815</strong></td>
</tr>
</tbody>
</table>

**CONCLUSION**

This research is conducted to assess the influence of the use of SEO and social media websites to improve the performance of SEM. The performance is measured by using the number of web visits. SEO technique used in this study is by utilizing the Google Tools such as Google Keyword, Metadata, Image Friendly, Google Insight and Robots.txt. Social network websites used in this research are Facebook, Twitter and Feedburner. We develop two websites with and without customization, and compare the performance both of them. Results of our tracing to our websites during four months conclude the followings:

- **Our proposed mechanism** is capable in improving the web visits. Our proposed mechanism offers improvement in web visits more than 6.1 times than normal website without any treatments.
- **Google tools** are capable in improving the rank of our website in search engine. Number of contents with high ranking is higher in customized website than the normal website.
- **Social network websites** attracts more users than search engines. Thus it shows that posting contents to social network websites provides wider access to customers.

**REFERENCES**


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