

An Empirical Study of an Internet Marketing Strategy for Search Engine Optimization

Bih-Yaw Shih,¹ Chen-Yuan Chen,^{1,2,3*} and Zih-Siang Chen^{1,4}

1 Department and Graduate School of Computer Science, National Pingtung University of Education, No. 4-18, Ming Shen Rd., Pingtung 90003, Taiwan (R.O.C.)

2 Department of Information Management, National Kaohsiung First University of Science and Technology, 2 Jhuoyue Rd. Nanzih, Kaohsiung 811, Taiwan (R.O.C.)

3 Global Earth Observation and Data Analysis Center (GEODAC), National Cheng Kung University, No 1, Ta-Hsueh Road, Tainan 701, Taiwan (R.O.C.)

4 Department of Computer Science and Engineering National Sun Yat-sen University, Kaohsiung, Taiwan (R.O.C.)

Abstract

Over the past few years, more and more Internet visitors are reaching websites through search engines rather than through direct links from another web page. Search engines have come to occupy a prominent position in the online world and are being used to find all kinds of information including things, events, people, and places. The search engine is also coming to play a greater role as a critical link between firms that use the Internet to build their image and find their target customers. How to achieve a high ranking in such search results given certain search words or phrases has become an issue of much interest in Internet marketing. The purpose of the current study is to develop a search engine optimization (SEO) mechanism that can be used by an enterprise to improve the ranking of its website in the search engine results. Social networking sites are included in our exploration of Internet marketing strategy. The proposed mechanism is then applied in the operations of an online ebook store. The website rankings obtained from two well-known online search engines (Google and Yahoo) are evaluated in efforts to explore a better strategy to ensure higher rankings. The results reveal that a well-designed SEO strategy, with the incorporation of social networking, can effectively enhance the website's visibility and exposure. Such a strategy will eventually contribute to overall site traffic and improve interaction with customers. © 2012 Wiley Periodicals, Inc.

Keywords: Search engine optimization (SEO); Social networking sites (SNS); Search engine; Search engine marketing (SEM); Internet marketing

1. INTRODUCTION

Over the last few years, searching for online information has become a ubiquitous and critically important activity for many products and services. Many Internet visitors now access websites from a search engine in-

stead of through a direct link from another web page. Search engines now occupy a prominent position in the online world (Dou, Lim, Su, Zhou & Cui, 2010). Nowadays, they are used to finding all kinds of information about things, events, people, places, and more. Eventually, search engine will play an even greater role helping firms that use the Internet create an online identity and find their target customers (Wu, Cook, & Strong, 2005). Although the purpose of many searches conducted through search engines is purely information seeking, the goal of companies is to influence their potential and current customers' important decisions. As a consequence, budgets for search engine marketing

Correspondence to: Chen-Yuan Chen, No. 4-18 Minsheng Rd., Pingtung City, Pingtung County 90003, Taiwan, R.O.C. Phone: +886(08)7226141 #33561; e-mail: cyc@mail.npue.edu.tw

Received: 23 November 2010; revised 2 February 2011; accepted 24 April 2011

View this article online at wileyonlinelibrary.com/journal/hfm

DOI: 10.1002/hfm.20348

(SEM) are growing faster than spending on other types of online advertising.

SEM, including paid search engine advertising and search engine optimization (SEO), has experienced tremendous growth in the past few years. It has been found that 62% of search engine users only click on links on the first page of the search results, with less than 10% clicking on links that appear after the third page (Malaga, 2008). SEO techniques are designed to manipulate the site's content and meta tags to improve the website ranking and attract more incoming links from other sites.

Market Intelligence and Consulting research estimates Taiwan's online shopping market to reach NT\$311,600 million in 2009, representing a growth of 30.4% over the previous year. The forecast C2C (customer to customer) market size for the same period is 142,700 million, representing a growth of approximately 35.2%. The forecast B2C (business to customer) market size is 168,800 million, approximately 26.5% growth. According to Hwang (2010), the value of online retail sales should exceed NT\$358 billion in 2010. Clearly, how to improve the visibility of the goods or the site, and thus increase sales, is becoming increasingly important (Duffy & Salvendy, 1997; Gefen & Straub, 2000; Huang, Chang, & Henderson, 2008; Khalid, 2000; Lee, Chen, & Wu, 2010; Lee, Chen, Chen, & Chen, 2010; Lee, Chiu, Liu, & Chen, 2010). Some studies show that the information display format can also influence the information systems (IS) user's decisions and behaviors (Dou et al., 2010; Kumar & Krishnan, 2004). *The New York Times* made most parts of its worldwide popular news website accessible free of charge in September 2007, because of growing traffic routed through search engines and links from other sites rather than from subscribers coming directly to their official site. The ad revenue generated by readers with free access will eventually far exceed paid subscription revenue. Clearly, how to ensure that website links appear on the first page of the search results is important.

There has been increasing interest in computer-aided ergonomics and its applications in recent years, in a variety of fields such as intelligent algorithms, computation techniques, and so on (Cegarra & Hoc, 2008; Chen, 2009a, 2009b, 2010a, 2010b, 2011a, 2011b, 2011c, 2011d, 2011e, 2011f, 2011g, 2011h, 2011i, 2011j; Chen & Chen, 2010; Chen, Chen & Chiang, 2010; Chen, Chen, Yang, & Chen, 2007; Chen, Lin & Tsai, 2007; Chen, Shen, Chen, & Jeng, 2010; Chen, Wang, & Lin, 2009; Chen, Wang, Liu, & Chen, 2010; Chen, Yeh,

Chiang, Chen, & Wu, 2007; Chen, Yeh, & Liu, 2009; Leung, Yucel, & Duffy, 2010; Shih, 2010a, 2010b, 2010c, 2011a, 2011b, 2011c, 2011d, 2011e, 2011f, 2011g; McPherson & White, 2006; Tung, Yuan, & Tsai, 2009; Jayaswal et al., 2011; Marichal et al., 2011; Metin and Guclu, 2011). These computer-aided techniques are a good way to connect with ergonomics applications. In the current study, SEO mechanisms are developed to improve the ranking of a website by the search engine. Social networking sites (SNS) are combined in our exploration of Internet marketing strategy. Website rankings obtained with two well-known online search engines (Google and Yahoo) are evaluated in our exploration of a better strategy to ensure higher rankings.

2. THEORETICAL BACKGROUND

2.1. SEO and Marketing

SEO is a method for creating or altering a web page in an optimized fashion so that it will appear more relevant than other pages to the search engine. Wikipedia defines SEO as the process of improving the visibility of a website or a web page in the search engines by "natural" or unpaid ("organic" or "algorithmic") search results (http://en.wikipedia.org/wiki/Search_engine_optimization). SEO can be broken down into five major categories: key word, research and selection, getting the search engine to index the site, on-page optimization, and off-page optimization (Malaga, 2008). How search engines work, what people search for, the actual search terms typed into the search engines, and which search engines are preferred by the target audience are considered in the SEO Internet marketing strategy. Searching is one of the most important activities for Internet users. The majority of users search for information on a regular basis, and more than half of Internet traffic begins with a search engine (Dou et al., 2010). Promoting a site involves increasing the number of links. The significance of SEO is that it increases the volume of traffic directed to individual sites from search engines (Kisiel, 2010), making it a useful method for effectively enhancing a website's visibility and exposure. Moreover, it can contribute to the overall site traffic and improve interaction with customers.

SEM, including paid search engine advertising and SEO, has experienced tremendous growth in the last few years. The goal of the process of SEO is for a site to achieve a high ranking in the search engine results given certain search words or phrases. The process can

include making certain changes to a site and acquiring links from other sites. SEM is an effective audience acquisition strategy and allows companies to reach target customers through advertisements placed on search engines. A successful SEM strategy can generate steady traffic levels and tremendous return on investment. SEM is quite different from traditional online advertising where advertisers pay only when users actually click on an advertisement. Users are also inclined to trust the SEO results and are therefore more likely to purchase from that company (Malaga, 2009). Studies demonstrate that the branding impact as evidenced in the search engine results plays an important role in enhancing awareness of brands and vendors. It is found that, in addition to generating direct traffic by clicking through, SEM can improve brand profiles in the online retail setting (Dou et al., 2010; Lee, 2010; Lee & Lin, 2011). In the past few years, the search engine market has changed dramatically. Google now dominates, carrying out approximately 60% of all web searches (Burns, 2008). Yahoo and MSN are the two other major search engines used in the United States. Competition is driving bid prices through the roof as SEM becomes more common, making it virtually impossible for advertisers with limited budgets to maintain top rankings. Eventually, it becomes no longer affordable to bid on the most highly searched for words, and companies are forced to expand their campaign to include multiple search engines and many keywords. In this type of environment, SEM can provide better returns on investment than other marketing channels without these obstacles.

2.2. SNS

The importance of marketing through the Internet is a recognized fact (Raisinghani, 2005). A company's advertisement for services provided must have three rooms: the official website, the SNS, and the portal site (or search engine). As noted, 90% of users use search engines to find information; 84% of these never visit the second page of the search results. Therefore, how to use marketing strategies to enhance the site's ranking and visibility has become an important issue. People's daily life has been infiltrated by SNS, which have become an important social platform for computer-mediated communication. A user can construct his/her profile; share text, images, and photos; and link with other members in the SNS cyber environment (Correa, Hinsley, & de Zuniga, 2010). The SNS provides a new

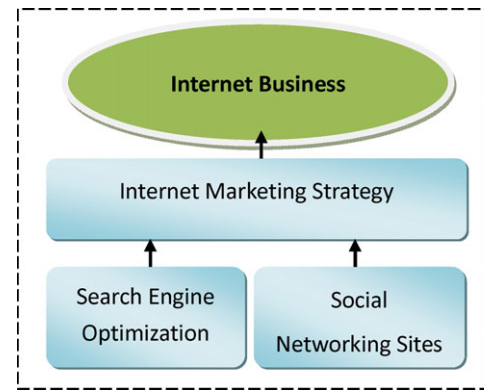


Figure 1 Research model.

method of communication and a collaborative tool to accelerate the scope of the group. Facebook is the most successful example of an SNS (Kane, Fichman, Gallagher, & Glaser, 2009; Kang & Lee, 2010; McGee, 2010).

Recently, many international enterprises such as Nike, Acer, and Amazon have set up fan pages on SNS to communicate and interact with consumers for the purpose of promoting and marketing their products. The establishment and implementation of products or brand name fan pages has also become an important research topic. Currently, according to the Association of National Advertisers (August, 2009), 66% of U.S. companies use micro-blogging (e.g., Facebook, Twitter, YouTube, LinkedIn) as a marketing tool. Micro-blogging is used to help consumers understand the company's products, to develop a good brand image, and to promote product reliability (Boyd & Ellison, 2007).

3. METHODOLOGY

3.1. Research Model

This study focuses mainly on using SEO in combination with SNS to influence Internet business behavior and develop an Internet marketing strategy for practical applications. The research model is shown in Figure 1.

3.2. RESEARCH METHOD

The SEO mechanism discussed in this study is developed based on the literature (Killoran, 2009; Michael, 2007; Viney, 2008). The SEO steps for building a website can be broadly divided into the following:

Step 1: Register the domain name. The selection of the domain name is important because

it is followed by a permanent site. A good website name is advantageous in the search engine. The closer your domain name keywords are to the topic being searched for, the easier it is to achieve good rankings with the keywords.

- Step 2:** Select keywords, and observe the pros and cons between you and your competitors according to the user's view.
- Step 3:** Submit your site to the search engines, so that they can find your site.
- Step 4:** Increase the site's number of internal and external links.
- Step 5:** Record and observe the site's ranking, and fine-tune appropriately.
- Step 6:** Analyze and maintain keyword rankings in the pursuit of high rankings and high public relations (PR) values for this purpose.

Malaga (2010) reveals several misconceptions or mistakes that may occur in the SEO process. First, more keywords are not always better, as this will not only reduce the keyword density, but also be likely to cloud the issue. Second, higher keyword density is not always the best; 20% to 25% is optimal. Third, setting up multiple pages so that each link has multiple keywords with the main home page might result in those extra pages linked to the web page being identified as spam. They may thus be removed, which is likely to adversely affect the main page. Finally, making a link to the main page as a way to increase the number amount of keywords, a practice called the "cloaking method," is considered cheating by search engines.

3.3. Research Processes

The process developed in the current study is outlined below:

- Analyze the current market niche for the goods (or website) offered, through competitive market analysis and commodity analysis.
- Divide the final list into "potential customers," "wait and see customers," "target customers," and "determined customers" through customer segmentation.
- Determine the site's current search engine ranking and record the number of current views.
- Determine the appropriate keywords through SEO theory.



Figure 2 Schema of the Internet marketing strategy.

- Establish a Facebook fan page and Google blog and link them to the site.
- After finishing all of the above, record the search engine rankings and visitor numbers, then evaluate the effectiveness of this strategy.

Viney's (2008) SEO process is modified for use in this study. The steps include: looking for keywords (Discovery), enhancing the attractiveness of the keywords (Attractiveness), using the selected keywords (Deployment), changing the site to find the appropriate niche (Discovery), enhancing the attractiveness of the product (Attractiveness), and deploying goods (Deployment) to ensure development and sustainable management of the products or website.

SEO is the focal part of the process with Facebook and Google Blog, and changing links is used as a supplement to the Internet marketing strategy. The corresponding diagram is shown in Figure 2. The proposed Internet marketing strategy helps to secure higher rankings and increase traffic and exposure as a whole. Because Facebook is the most important SNS, its impact can also be used to improve SEO results. Google Blog is a subsidiary of Google; a quick Google search will be able to increase the visibility of a website with the top news release. When a large number of people go to a discussion area to exchange links or sites, it not only increases a website's exposure, but also increases the number of both internal and external links, which improves the site's PR value.

3.4. Implementation

The proposed mechanism is implemented and applied for the operation of an online ebook store in Taiwan. The rankings of the website from two online search engines (Google and Yahoo) are evaluated in efforts to explore a better strategy to ensure higher rankings. The process is shown in Figure 3.

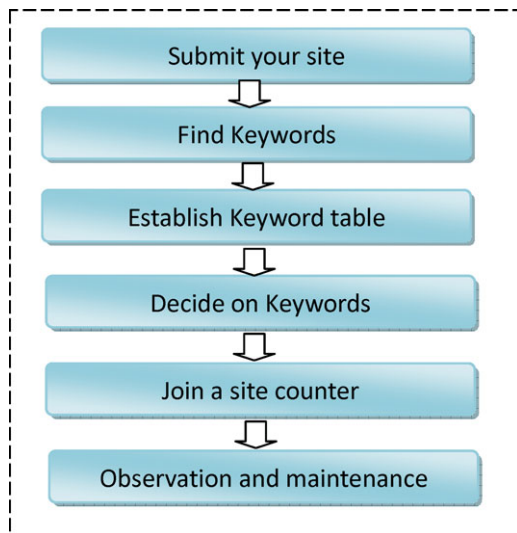


Figure 3 Implementation process.

Three major types of keywords are found in the implementation process. The main keyword density is then analyzed, and finally the site ranking recorded. Furthermore, the best results for the keywords are determined. The three types of keywords are indicated by T1, T2, and T3. Because it takes so long for the search engine to index a website, administrators should submit the website as quickly as possible to Google, Yahoo, and so forth. Tools such as “Google insights,” “Google Trend,” and “Google AdWords” can be used to identify the appropriate keywords. The instruction “all-nanchor” can be keyed in on the Google search bar to find your site’s direct competition. The results are used to create a keyword table. Details of the method are shown in Appendix 1. A site counter is added to calculate the number of visitors to observe the traffic (Moran & Hunt, 2006). Because this is a Taiwan website, the main keywords chosen are Chinese. The search volume will differ for Chinese and English keywords.

T1:

Title: 華文電子書閱讀器專賣-XX書庫

Meta description: "XX書庫·華文電子書出版平台·提供繁體華文電子

書線上閱讀、下載·提供出版社將出版品以電子書銷售·

提供作者將作品以電子書發表、銷售·提供出版品專業轉製、製作電子

書服務·銷售電子書閱讀器、代客安裝電子書內容 <http://bookpa.com>"

Meta keywords: "bookpa.com,電子書,電子書閱讀器,ebook, ebooks,出版,出版

社,書籍,書本,雜誌,報紙,onyx, boox, irex,XX書庫,XX,書

庫, kindle, kindle2, kindle dx, KindleDX, ipad, apple ipad"

T2:

Title: Ebook reader store-XX書庫-網路電子書店

Meta description: Bookpa-網路電子書與閱讀器專賣店-

XX書庫 < 六大服務 > : 中文電子書出版平台 ; 繁體中文電子書線上閱讀、下載 ; 出版社將出版品以電子

書銷售 ; 作者將作品以電子書發表與銷售 ; 出版品專業轉製、電子書製作 ; 電子書閱讀器專賣與購買 ; 代

客安裝電子書內容。

Meta keywords: 電子書-電子書下載-網路書店-ebook reader-ebook-free ebook- ebooks- free ebook- ereader-

閱讀器專賣店-電子書閱讀器-電子書製作-電子書閱讀-電子出版-電子紙-免費電子書-繁體電子書-

中文電子書

T3:

Title : 電子書閱讀器-繁體中文出版-Ebook reader-XX書庫

Meta

description : 電子書閱讀器專賣店 ; 免費繁體中文電子書出版平台 ; 作者出版品電子書線上閱讀、電子書

免費下載 ; 作者及出版社以作品製作電子書 , 电子书阅读器 , ebook reader store

Meta keywords : 電子書-電子書閱讀器-出版社-中文電子書出版平台-線上閱讀-免費下載-ebook reader

store-作者

TABLE 1. Keyword Table

Keywords	Monthly Search Volume	Original Competition	Direct Competition	KEI	KOI
電子書	301,000	21,700,000	14,400,000	4,175	6,292
電子書閱讀器	9,900	10,700,000	636,000	9	154
繁體電子書	4,400	8,780,000	675,000	2	29
專賣店	201,000	15,700,000	58,200,000	2,573	694
中文	16,600,000	500,000,000	331,000,000	551,120	832,508
華文	18,100	4,120,000	3,630,000	80	90
Kindle	6,120,000	24,700,000	32,800,000	1,516,372	1,141,902
Kindle 2	1,000,000	28,400,000	28,100,000	35,211	35,587
Amazon kindle	673,000	27,800,000	27,700,000	16,292	16,351
Amazon kindle 2	110,000	145,000,000	24,000,000	83	504
ebook	13,600,000	87,800,000	61,200,000	2,106,606	3,022,222
ebooks	4,090,000	78,100,000	59,500,000	214,188	281,145
Free ebook	1,500,000	33,900,000	4,310,000	66,372	522,042
Free ebooks	1,220,000	50,400,000	3,360,000	29,532	442,976
ebook reader	1,000,000	24,800,000	1,900,000	40,323	526,316
ebook store	60,500	26,000,000	384,000	141	9,532
ereader	450,000	5,230,000	2,350,000	38,719	86,170
Reader	30,400,000	354,000,000	260,000,000	2,610,621	3,554,462

Note: 電子書: ebooks; 電子書閱讀器: ebook reader; 中文電子書閱讀器: Chinese ebook reader; 閱讀器: reader; 繁體電子書: traditional ebooks; 中文出版: published in Chinese; 專賣店: store; 中文: Chinese; 華文: Chinese.

4. RESULTS

The results are shown in Table 1, including keywords, keyword ranking, and number of visitors. A table of keyword values is first compiled by two methods: KEI in equation (1) and KOI in equation (2).

$$\text{KEI} = \text{Monthly search volume}^2 / \text{original competition}$$

[1]

$$\text{KOI} = \text{Monthly search volume}^2 / \text{direct competition}$$

[2]

4.1. Results of Keyword Selection

The best keyword combination for the website is chosen according to the main keywords 電子書閱讀器. There are three types (indicated by T1, T2, and T3) as shown in Table 2.

4.2. Results of Keyword Ranking

The keywords are ranked for two major search engines commonly used in Taiwan, Yahoo and Google. Based on the different rankings, different keywords are cho-

TABLE 2. Comparison of Keywords

	Density of Keywords	Keyword Sequence in Title	Ranking
T1	6%	Second	0
T2	13%	NO	400
T3	21%	First	191

sen and recorded. The Yahoo and Google rankings are shown in Tables 3 and 4, respectively. A value of 1 means that the keyword appears on page 1 and is ranked as the first site. At first, keywords cannot be found that are accepted by the search engines. Three days is chosen as a unit of time in this study for enhancement of the rankings, but generally, approximately six months are needed to carry out an SEO process.

4.3. Results of the Number of Visitors

The experimental website is new, having been set up for only approximately three months. One week is selected as one unit. The results are shown in Figure 4. The experimental results show that the website's ranking

TABLE 3. Rankings from Yahoo

電子書閱讀器	電子書	閱讀器	中文出版	繁體電子書
3	17	3	0	0
1	39	2	0	0
3	39	5	0	0
2	16	5	1	2
2	16	5	1	2
2	16	5	1	2
2	16	5	1	2
2	16	5	1	2
4	38	13	25	66
3	38	14	27	4
3	36	14	27	65
3	37	14	27	64
3	26	4	12	5
3	37	4	17	11

TABLE 4. Rankings from Google

電子書閱讀器	中文電子書閱讀器	ebook Reader	ebook Reader Store	Reader Store	中文出版	繁體電子書
0	69	90	3	3	17	96
0	68	87	3	3	17	95
0	67	77	2	3	17	95
0	64	80	3	51	15	93
0	70	80	2	2	16	93
0	63	81	2	2	15	87
0	64	81	1	2	15	88
400	58	68	1	2	16	82
233	44	68	1	3	13	83
211	42	69	3	3	13	82
203	41	75	3	4	15	84
195	42	70	3	5	15	84
191	42	71	3	4	15	88

**Figure 4** Number of visitors.

TABLE 5. Ranking Strategies for Yahoo and Google

Search Engine	Ranking Strategy
Google	<ul style="list-style-type: none"> Evaluates the content and the title: Google uses this technique to find the websites that users really want. Google will give a high weight to the keywords in the title; meta keywords and meta descriptions are not weighed. PR(Page Rank): The most important website will get a high rank of less than 100%.
Yahoo	Unlike Google and MSN, Yahoo obtains the weight from the title and meta description; meta keywords get little weight.

improves from 0 to 2 in just two months, which is an indication of the good results from this strategy.

4.4. Comparison between Yahoo and Google

During the process, it is discovered that the website's ranking sometimes decreases. Many methods are used to try to find the reasons, and rankings between the two search engines are compared (Smith, 2004). The comparison results are summarized in Table 5.

TABLE 6. High-ranking Websites for Google and Yahoo

Search engine	Analysis of High-ranking Websites
Google	<p>Websites will obtain a high ranking from Google for the following reasons:</p> <ol style="list-style-type: none"> 1. High Page Ranking: Most are news sites or large enterprise sites, because the number of websites and link counts is high enough. 2. Government or educational institution websites. 3. Domain names and keywords are consistent with a high ranking.
Yahoo	<ol style="list-style-type: none"> 1. Keyword density is appropriate. 2. Government or educational institution websites. 3. Domain names and keywords are consistent with a high ranking. 4. Website is well known and has many visitors.

Based on the results in Table 5, the factors leading to high rankings from the search engines are generalized and compared, as shown in Table 6.

5. DISCUSSION AND CONCLUSIONS

The implementation and evaluation of the marketing strategy and SEO strategy developed in the study are discussed. The results show that Google's ranking algorithms are more rigorous than Yahoo's. In other words, it is more difficult for new sites to raise their ranking in Google than in Yahoo. The proposed SEO process is divided into the following three steps:

1. Grasp and measure the site's keyword distribution, especially the "Title" and "Description." The best density is approximately 20%. If a good ranking can be obtained in Yahoo, this high ranking will increase the site's page views with an enhanced Google Page Rank.
2. Google's Page Rank update period is approximately three to six months, making it difficult to observe the site's PR values before this time. If high PR value pages (such as news or government sites) can be avoided, however, a good effect can be achieved at the beginning. The choice is English keywords for the Chinese website.
3. After the PR value is enhanced, more keywords can be used for the site. When the PR value is high, it is easier to get a good ranking for more keywords.

After going through all the SEO steps and social networking actions, it is suggested that companies who want to build a new website, or want to promote new products through the Internet, follow our experimental strategy. The suggested strategy is shown in Table 7.

According to Baxter (2010), developing a successful Internet strategy can help attract new customers and take your business to the next level (Baxter, 2010). This study has both theoretical and practical implications for understanding the effectiveness of SEO techniques. It also relates to the strategy of brand positioning (Dou et al., 2010). Therefore, according to the theory, if we get higher ranking in the search engine results not only convey a favorable image to visitors, but the site also has more opportunity to attract more visitors. We not only have to understand the ranking strategies of different search engines, we also need to pay attention to changing keywords on a monthly basis. In other words,

TABLE 7. Implementation Strategy

Strategy	Description
1	Select the appropriate domain name and keywords; then, through keyword-targeted action, carry out the SEO pre-action. Although this process is more time-consuming, it is effective and easier to maintain, and the cost is relatively low.
2	Make use of social networking to increase interaction with visitors, while at the same time creating links to other websites to help optimize your site's PR value which also helps your website become known by others.
3	Continue to observe and maintain the ranking of keywords to make the appropriate changes. Keep the site dynamic and continuously updated to be more conducive to sustainable development.

a keyword that might be popular this month might not be next where the keyword will affect the overall traffic to the site.

In the future, we hope to apply SEO techniques to a wider range of areas, and study whether this technique

can be used with more search engines. In the Internet marketing strategy, more methods need to be explored to increase the number of search and browsing results. After all, the network is always changing. How to keep pace with these trends can also be considered a direction of future efforts.

ACKNOWLEDGMENTS

We appreciate the financial support in the form of research grants to Chen-Yuan Chen from the National Science Council, Republic of China (Grant Nos. NSC 98-2221-E-153-004, NSC 99-2628-E-153-001, and NSC 100-2628-E-153-001). We are also most grateful for the constructive suggestions of the anonymous reviewers, all of which led to the making of several corrections and suggestions that have greatly aided us in the presentation of this article. In addition, we thank Cheng-Hsuan Tsai and Chen-Ping Chiu, of the Department and Graduate School of Computer Science at the National Pingtung University of Education, for help with the literature corrections.

APPENDIX 1

Method for Finding Keywords

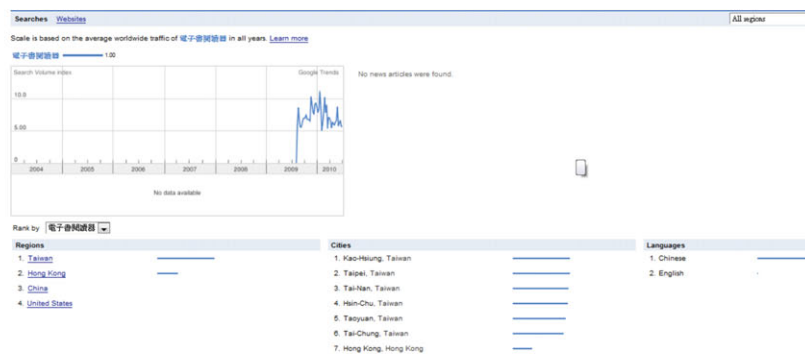


Google Insights can be used to see the popularity of keywords and find related keywords.

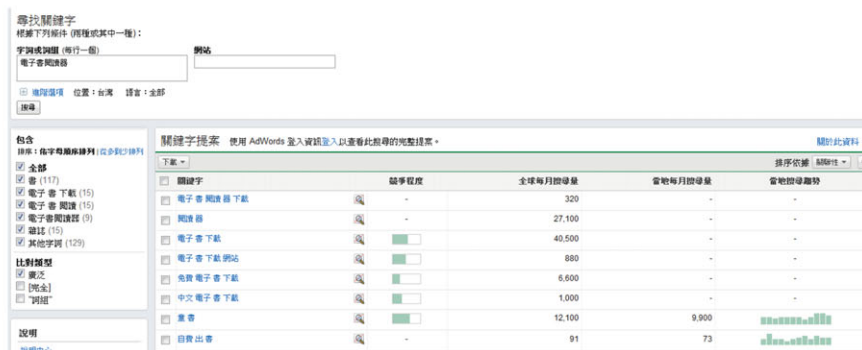




Google Trend can be used to find the keyword's traffic condition and where the keyword is popular.



Google AdWords can be used to find the monthly search volume for the keywords.



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