ABSTRACT

The success of a World Wide Web (WWW) based marketing strategy requires the development of a high quality web site and a clever mix of methods to lead traffic to it. Of these methods of directing traffic, perhaps the most exploited is the search engine. Search Engine Marketing (SEM) is the strategy of designing a web site so that when users search for information relevant to its content, the site will be returned as close to the top of the search results list as possible. Historically, instead of using search engines, users were more likely to visit a favorite portal site or work their way through directory links, or bookmark to an appropriate and relevant web site. Therefore, marketers concentrated on generating traffic with banner ads, pop-ups, and conventional media to their sites. In recent years, users are using search engines which offer better and quicker search results. In this environment the ubiquitous and free technology of the search engine beckoned.

Search engine marketing differs significantly from all other methods of soliciting WWW visitors because search engines provide basic services for free to information seekers and providers alike. The downside is that web designers have no control over how search engines work. Designers must divine the methodology of each search engine, choose which one(s) is best suited to their purposes and tweak the design of their sites accordingly.

How much will SEM efforts improve the bottom line? Currently, and probably for some time, there is no credible way of knowing. Most of the data is collected by the marketers themselves and as a result, is rather glowing. On the other hand, publicly reported financial data shows that expenditures on paid listings ("sponsored links") are a significant revenue stream. This indicates that even as benefits are difficult to measure, online businesses are reserving larger portions of their budgets for SEM. Optimization consultants have experienced a parallel increase in requests for services. This paper will examine the history of search engine marketing, technologies and tools of SEM and its current utilization.

Keywords: Search engine marketing, Web advertising, cyberspace marketing

1. INTRODUCTION

As a universal platform for information exchange, the World Wide Web (WWW) exists in no small part to provide a channel through which businesses may display and generate sales on their offerings. For the WWW to function as an effective market place, prospective buyers must be able to find information on products and services easily and quickly. Marketing one’s enterprise via the WWW involves two general efforts. The first effort transforms marketing content into a format that makes the best use of WWW protocols, that is, the design of a website. But having a perfectly working website is no guarantee that anyone will visit it. The second effort involves making best use of any number of marketing communications methods to lead visitors to one’s site. These include non-web based mechanisms such as print and television advertising and web based mechanisms such as useful content placement upon portal pages (stock quotes, weather) or links within their categorical organization, links to web based commercial directories such as SuperPages and Bigfoot and banner ads. And then of course there are less savoy methods such as pop-up and pop-under advertisements and unsolicited email, otherwise known as “spam.”

Perhaps the most overlooked method of directing web traffic to one’s site involves the very most essential tool in WWW organization: the search function. Used to its full potential, search engines are now recognized to be as useful as and more cost effective than any of the methods described above at driving web traffic. Search Engine Marketing (SEM) is now a fully established subset of commercial activity on the WWW.
2. SEARCH ENGINE MARKETING (SEM)

Search Engine Marketing or SEM is essentially the utilization of search engines as a marketing tool for a business. Wikipedia.org defines SEM as: A form of Internet marketing that seeks to promote websites by increasing their visibility in search engine results pages. The New York Times defines SEM as: The practice of buying paid search listings (Suart, 2006). In a nutshell businesses utilize search engines to market their products and services. When users access search engines and commit a search, different links and advertisements appear. The particular link or advertisement that appears is dependent on the search that the user entered, which we will discuss more in depth later. The main idea is to identify potential consumers of your product or service and have your link or ad displayed when they enter related criteria. SEM utilizes techniques such as: Keyword-related banner advertisements, paid submission/paid listing, search engine optimization (SEO), paid placements and paid listings. Each of these techniques will be discussed further.

2.1 History of SEM

A search engine is a software program that searches for sites based on the words users designate as search terms (Duermyer, 2008). In 1993 three “bot” (programs that automate repetitive tasks at speeds impossible for humans to reproduce) that fed search engines were in existence, JumpStation, World Wide Web Worm and the Repository-Based Software Engineering (RBSE) spider. The first two listed results in the order in which they were found while RBSE spider had a ranking system. While these search engines helped, without knowing the exact name of what you were looking for it was difficult to use. Many search engines evolved in the years that followed including Yahoo! in 1994, Ask.com in 1997 and Google in 1998.

In the mid 1990s the number of web sites was on a sharp incline and thus the need for a search engine became increasingly important. With so many web sites accurately finding what you were looking for was more and more difficult. Over the decade that followed new search engines evolved such as WebCrawler, Lycos and Infoseek. Over time most of these search engines were bought out by the larger companies who put these engines on their servers or combined them with their existing search engines. Today there are a few search engines that see most of the volume of use. Some common search engines most utilized today are Google, Yahoo!, MSN and Ask.com. According to Searchenginewatch.com in 2006 Google racked up around 91 millions searches each day followed by Yahoo!, MSN, AOL, and Ask.com (Figure 1).

FIGURE 1. POPULAR SEARCH ENGINES UTILIZATION

<table>
<thead>
<tr>
<th>Searches</th>
<th>Per Day (Millions)</th>
<th>Per Month (Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td>91</td>
<td>2,733</td>
</tr>
<tr>
<td>Yahoo</td>
<td>60</td>
<td>1,792</td>
</tr>
<tr>
<td>MSN</td>
<td>28</td>
<td>845</td>
</tr>
<tr>
<td>AOL</td>
<td>16</td>
<td>486</td>
</tr>
<tr>
<td>Ask</td>
<td>13</td>
<td>378</td>
</tr>
<tr>
<td>Others</td>
<td>6</td>
<td>166</td>
</tr>
<tr>
<td>Total</td>
<td>213</td>
<td>6,400</td>
</tr>
</tbody>
</table>

According to Internetworldstats.com as of a last estimate there are approximately 1.6 billion internet users worldwide, or about 23% of the world’s population. The chart below shows the geographic distribution of internet subscribers.
With so many internet users worldwide the internet and SEM offers a marketing tool to get products and service to many people all over the globe.

The term search engine marketing was coined by Danny Sullivan of Searchengineeland.com in 2001. The term was created to cover the spectrum of activities involved in performing search engine optimization (SEO), managing paid listings at the search engines, submitting sites to directories, and developing online marketing strategies for businesses, organizations and individuals. SEM has continued to evolve as the dependence on the search engines has grown. In 2006 spending on SEM totaled $9.4 billion, up 62% from $5.8 billion in 2005 (Krol, 2007) and $4.1 billion in 2003 (Sen, 2005). With the increased importance of online advertising many companies are shifting their advertising budgets from the traditional print (newspaper and magazine), direct mail and television ads to SEM. According to a survey by the Search Engine Marketing Professional Organization (SEMPO) 20% of advertisers are shifting money to SEM from print magazine ads, 16% are moving direct mail dollars, 13% are shifting TV spot dollars and 13 % are moving newspaper print dollars (Bielski, 2008).

2.2 Techniques of SEM

With so many dollars put into SEM many different types of SEM are deployed in hopes to maximize the return on investment (ROI). While it is difficult finding substantial empirical evidence that had solid facts on the ROI of SEM it is evident that different companies utilize different strategies, or combination of strategies to maximize their investment. Below are the major techniques used in SEM:

**Natural/Organic:** Natural or organic SEM is essentially when search results are returned based on the natural indexing of the web site (Bielski, 2008). This relies on the users search criteria to select a website when the search terms used matches that of a business web site.

**Search Engine Optimization (SEO):** SEO is essentially a way to improve your sites overall ranking and access when searches are performed. SEO helps to ensure your site is accessible to a search engine and improves the chances that the site will be found by the search engine (Sullivan, 2009). This is accomplished through modifying their site codes to make them more relevant. Sites can modify their title tag, meta-tag, heading tags, links and other areas on their page to ensure the search engine algorithm gives their page a higher score in comparison to other pages (Porter, 2007).

**Pay per click (PPC) or paid listings:** By 2007 the pay per click programs was the primary money maker for search engines (Janson, 2007). PPC works by marketers bidding on keywords that correspond to their Web site. The highest bidder receives the top advertisement position when users search for that particular keyword. Popular key words can be very pricey, cost near $10 per click. Every time a consumer/searcher clicks on that ad, the marketer gets charged (Porter, 2007). Some search engines

![World Internet Users by World Regions](https://example.com/world-internet-users.png)

Source: Internet World Stats - www.internetworldstats.com/stats.htm
1,581,571,589 Internet users for December 31, 2008
Copyright © 2009, Miniwatts Marketing Group
will make it easy for the user to determine which search results are natural and which are paid, while others mix the results, making it more difficult for users to determine which are paid search results sometimes also called “sponsored search” (Sullivan, 2002).

**Key word-related banner advertisements:** Key word-related banner advertisement was one of the earliest forms of SEM, and is still widely used today. Rather than showing as the results of a search as the PPC does, when key words are searched a banner advertisement (generally either at the top or along the right side of the page) appears for your company or Web site. Again, like PPC you bid on how much you’re willing to pay for key word searches (Sullivan, 2002).

**Paid Placements:** Paid placements are similar to the Key Word-related banner advertisements discussed above with the exception of the results show in a sponsored links section. Rather than an advertisement the results show as a related link of sponsored Web sites. This can be a faster way to obtain visibility. In some scenarios search engines like Google will crawl through the content of sponsored sites and place them in the sponsored margin based on the content. Advertisers should know that users trust the editorial section much more than the sponsored links section so it may not be as effective as the SEO techniques of SEM (Porter, 2007).

**Paid submission/paid listing for regular updates:** This process is generally used in conjunction with other forms of SEM. This is just typically an agreement made with the search engine to perform regular updates and helps to ensure the Web sites URL is added to the search engines index and regularly updated. This really helps the users Web site stay near the top of a search (Porter, 2007).

**Pay Inclusion:** Marketers pay a flat fee to be guaranteed inclusion in a search engine’s natural listings. As of 2007 Yahoo! was the only search engine to offer this service.

All of the above methods are currently used strategies for SEM. Some are utilized alone while others are used in combination. These methods are the most commonly known and used as of right now, but are not all inclusive of what currently exists or what is to come in terms of SEM. As the internet and search engines continue to grow and evolve new forms of SEM will undoubtedly arise and potentially become the new standard.

### 2.3 Tools of SEM

Many SEM tools exist that can help a business or Web site maximize their internet marketing. Some tools are completely free and highly available. Many of the existing tools target SEO and ways to optimize your key words to improve a sites natural listing rank. This section focuses on keyword research tools that exist, search analytics tools, search engine rank checkers, link analysis tools and PPC tools.

#### Keyword Research tools:

- **Google AdWords Keyword Tool** – This tools estimates search volumes and shows them in numbers rather than graphs. Being that Google is the largest of the search engines by far they also possess the most compiled data.

- **SEO Book Keyword Tool** – This comprehensive and free tool will give estimated daily volume of searches for each of the major search engines along with a total volume estimate. The format of this tool also makes it easy to import into Excel or Access for further analysis.

- **Google Traffic Estimator** – This tool tracks and estimates the number of clicks that a particular keyword would get at a particular bid price. It also estimates cost of using that at varying cost per click options.

- **Microsoft Ad Intelligence** – Unlike many other tools that use estimates this tool utilizes actual search data. Microsoft also has formatted it to seamlessly work with Excel.
All of these tools are available and can assist a marketer in knowing which keywords they can include in their Web site which will boost their natural listing ranking. These tools are considered to be SEO tools as they are solely there to be used to optimize your keyword usage and knowledge (Wall, 2008).

**Search Analytics tools:** Search analytics tools give a business the knowledge and information to refine their strategy based on what is working and what is not. A few top tools are:

- **Google Analytics** – This tool is very robust as well as free. Google has compiled a lot of data and this tool has many options. The idea is to provide information on what words and techniques are successful as well as analyzing online traffic. If any, the one downfall with this product is Google might be tracking your inquiries and analysis and sharing it with others.

- **Clicky** – Clicky is an inexpensive web based analytics tool to help aid in determining the success of searches using your keywords.

- **Mint** – Mint is very inexpensive and runs right off of your server (one time $30 licensing fee). It offers real time data however is not quite as feature rich as the previous two tools.

Search Analytics tools can help organizations to determine their traffic and searches based on their keywords. Better knowing how and where the traffic is coming from can help a business to better utilize searches to bring more potential customers to them (Grannis & Davis, 2008).

**Search Engine Rank Checkers tools:** Search engine rank checkers will tell a business or web site where other web sites rank for certain key words. These tools can help organizations to identify if weighting of certain things are changing such as domain authority, anchor text and related words. There are a couple such SEO tools available including:

- **SEO Book Ranking Checker** – This is a Firefox extension and it will allow you to track where an organization rank in different search engines for different key words. This is a free tool.

- **Advanced Web Ranking** – At a fee starting at $99 this tool will track an organization ranking over time and can work with hundreds of search engines including foreign ones.

Search engine rank checkers are a tool to help a web site understand where they rank for different searches. Utilizing such a tool can help a user to find better ways to use words or phrases in conjunction to boost rankings (Grannis & Davis, 2008).

**Link Analysis tools:** Link analysis tools help to track link strategies and what links are most frequently clicked and from where. Some existing tools are:

- **Yahoo! Site Explorer** – is more in-depth than the Google and Microsoft Link tools. It provides data on inbound linking, links that direct users/consumers to a web site.

- **Google Blog Search** – Tracks linking from blogs to a web site.

- **Google Webmaster Central** – This allows a firm to download a listing of links pointing to a web site. With this tool firms are able to find those links that are not as heavily utilized and ask those with the links to use a more specific anchor text.

- **SEO Link Analysis** – Works in conjunction with the Yahoo! Site Explorer to add data regarding links which are not represented using Yahoo!.

- **Zenu Link Sleuth** – This tool looks for broken links by searching other web sites as well as identifies documents that are no longer online. This helps firms to keep their links and site up-to-date and maximize their potential traffic.

- **Advanced Link Manager** – This software tracks your competitor’s backlinks.
Links are often the source of the majority of traffic your site receives. Ensuring that your links are not broken, and links to your site are in the appropriate location is a definite way to boost awareness about and traffic on your web site, thus potentially improving profits (Grannis & Davis, 2008).

**PPC tools:** Pay per click tools run a variety of purposes but are all focused on improving and maximize your ranking and ultimately your number of clicks. Such tools include:
- Google AdWords Editor – This free tool allows users to easily edit their AdWords campaign in bulk
- Google Website Optimizer – Another free tool from Google that makes it easy to test and improve your landing page/ranking.
- Speed PPC – This somewhat expensive ($499) tool allow he user to cross reference ad campaigns and landing pages for geographical targeted keyword combinations.
- PPC Tool Suite – This tools offers a host of free tools including keyword list generators, typo generator and an ROI calculator to help in you keyword and SEM strategy decisions.

The PPC tools above are only some of the many available. These tools are geared towards providing information to the business/web site to aid in the SEM campaign (Grannis & Davis, 2008).

As evident from the list above many tools exist to aid in a successful SEM program. Many of these tools are either free or low cost to use. A business can take advantage of these tools to help maximize their web traffic; SEO is really the purpose of these tools. Businesses can track which key words produce the most hits, track what words and phrases are working and which are not, maximize the usage of links to their site and find out how to best plant links out on the web. Fixing broken links and eliminating out of date document links can also help users to find your site more beneficial thus upping overall satisfaction. These tools are available from the novice marketer to the large web marketing firm and provide some evident benefit at little or no cost. By effective use of resources available a business can definitely boost the number of visits to their website.

Research indicated that in 2006 26% of search engines marketers used Web analytics and key word bid management tools as part of their SEM strategy, up from 19% in 2005. These survey numbers indicate that marketing experts and markets recognize the importance and the potential benefit of utilizing these SEM tools to help better their online marketing strategy and campaign. One other survey indicated that over half of all online marketers manage their own SEM efforts rather than using an agency for SEO. So these free tools offered online are very critical to many companies overall marketing strategy.

### 3. UTILIZING SEM

Empirical evidence suggests that the bulk of SEM dollars (82%) are still being spent on paid placement campaigns rather than SEO (Freeman & Bayriamova, 2006). This skewed distribution of funds in SEM would suggest that paid placement yields the best results, or greatest ROI. In Ravi Sen’s (Sen, 2005) article he explains that experts indicate that it costs less to purchase paid placements for campaigns for thousands of words than it does to implement SEO programs for even a few hundred words. In addition SEO does not deliver consistent results as it is still highly dependent on natural ranking and weighting by the search engines. This creates unpredictable traffic. Search engine algorithms also vary significantly, rely heavily on natural search listings and SEO specialist end up having to guess and adapt to changing strategies to maintain positions or improve their rankings (Freeman & Bayriamova, 2006).

The search tools discussed above indicate that they are priced at a point that SEM is available to nearly any business. Basic techniques and software (which in many cases are completely free) are very widely used for SEM by many smaller online retailers. One survey of 150+ online retailers indicated that 90% of online retailers utilized a pay-for-performance search placement. This same survey indicated that nearly 35% of these retailers’ sales come as a result of online marketing (Grannis & Davis, 2008).

These studies indicate that a variety of online sites and retailers are utilizing some form of SEM. With its fairly low cost almost anyone is able to access online marketing without the help of an expert.
4. DOES SEM WORK?

Much skepticism exists surrounding the real success of SEM and how difficult it can be to measure it. Sure many companies are shifting their advertising dollars from TV, Magazine and newspaper ads to online formats, that doesn’t necessarily mean it is the best investment of advertising dollars. It is interesting to know that Proctor & Gamble, a huge company, spent only about 1.5% of its advertising budget on internet advertising. Should ad sellers and smaller advertisers take P & G’s lack of internet investment a sign of the lack of ROI? Part of the reason for this small percentage is for many companies TV and print advertising still work and continually show results. With some declining costs in the traditional forms of advertising as a result of the softening economy it also may not make sense for these larger companies to make the shift (Klaassen, 2008).

A study by Yahoo! indicated that 92% of people have searched online for additional information about a product or brand name they spotted in an ad somewhere besides on the Internet. People who see business posters and TV ads will go and search for its products/services online (Bonello, 2008). This reinforces the idea of a need for blended marketing strategies. Having a TV or print add may no longer be enough, however those types of media still drum up a significant business. It is evident that SEM does work, however finding hard numbers to support that is somewhat challenging.

5. THE FUTURE OF SEM

With the technology so rapidly changing it is difficult to predict the future of SEM. With more and more retailers moving online and more and more using SEM it is predicted that in time the pay per click costs will rise as businesses bid higher for keywords. As costs rise new techniques will likely be developed to undercut those high costs and perhaps will include ways to increase natural search ranking. Very little discourse exists on what the future holds. The Internet and technology world so rapidly changes it is often hard to predict.

6. CONCLUSION

SEM in its simplest form is the utilization of search engines to perform some aspect of marketing for a business. SEM evolved and continues to evolve with the expansion of the Internet and its overall importance in the world, with some 23% of the world population now having Internet access, and more and more business being conducting using it. Many methods exist in SEM; some have proven more effective than others. The tools that exist to aid in SEM vary from cheap to expensive, and simplistic to complex. Businesses of all shapes and sizes are using SEM and the percentage is continuing to grow. The Internet has evolved so quickly as compared to previous forms of communication that it has opened up a whole host of new careers and opportunities. Small business can become huge overnight, largely with the help of SEM and the access to the world the Internet provides. It is predicted that over the next few years SEM will continue to evolve and spread its span to more and more businesses looking to use the Internet more successfully. SEM can be a low cost and effective way for any business to maximize the traffic to their web site regardless of size or history.

REFERENCES


Kro1, Carol “Search Engine Marketing Spending Surges” B to B 91 no 23, 36F December 2007.


Porter, Alex “Search-Engine Marketing: Click, Click….Are You There?” Pharmaceutical Executive, March 2007, No 3, pp. 104-105.


AUTHOR PROFILE:

Dr. Farrokh Mamaghani is professor of MIS in the Bittner School of Business at St. John Fisher College in Rochester New York. He has over fifteen years of industry experience as a senior programmer at the Systems Design Concepts, Inc. in Washington DC, and systems analyst/database designer at the World Bank and other organizations. He has published/presented over thirty five papers in academic journals and conferences. His research interests are in information technology resources evaluation/selection and knowledge management. He holds a Doctor of Science (DSc) in information systems from George Washington University.