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Paid search: The innovation that changed the Web

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Abstract Search engines are key to the operation of the World Wide Web. This centrality, however, presents challenges: search engine providers face the problem of revenue generation when users expect free content, while advertisers need to attract the interest of searchers. The innovation that effectively addresses these challenges is the use of text advertisements based upon search topic, known as *paid search*. The method entails advertisers competing for top listing position through bidding in ongoing auctions and then paying when users click on their advertisements, making paid search a flexible and accountable form of advertising. Since its introduction in 1998, paid search has become the dominant form of online advertising and led to Google's $140 billion market capitalization in 2006. This article analyzes the emergence of paid search and the mechanics of its operation, and offers managers guidance on its effective usage.

1. The dilemmas of search

Employing search engines to locate information is fundamental in the use of the Internet. In supplying this service, search engine providers have long faced the dilemma of how to generate revenue from content that users expect to receive for free. Heretofore, the majority of search engines (and, indeed, most other content-based websites) have relied upon advertising as their main form of revenue. This emphasis perfectly suited the needs of advertisers who sought to reach users; consequently, advertising revenues soared during the dot com boom. By the new millennium, however, disillusionment with online advertising (and its dominant technique, the so-called *banner ad*) set in, as it appeared to be an ineffective method of reaching customers. But this was not to be the end of the story: a new method of online advertising, termed *paid search* in this article, was to emerge whereby the use of search engines would trigger a display of advertisements based on the topic of the search. Paid search would become the dominant form of online advertising, powering revenues past peak levels of the dot com boom as organizations were attracted to its benefits.

This article, which focuses on the United States as the world's largest online advertising market and draws on data from the United Kingdom as the largest European market (Jennings, 2004), analyzes paid search and its attendant use issues in the following manner. First, the emergence of search engines and their corresponding reliance upon advertising is covered. The loss of faith in online advertising during the dot com period is examined, and the lessons learnt analyzed. Next, the introduction of paid search and its appeal to advertisers,

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together with its consequent dramatic growth, is considered. Finally, guidance is proffered to managers on the effective use of the paid search method.

2. The need for search

2.1. What are search engines?

The phrase "searching the Web" is something of a misnomer. When employing a search engine, a user is actually searching a database (termed an *index*) that has been created. Coverage of the entire Web offered by any search engine has always been limited. Rindova and Kotha (2001) describe how Yahoo and Excite, which both grew from graduate student projects at Stanford, emerged to meet this need for search, albeit in very different ways. The beginnings of these two companies illustrate the distinction that is made in the area of search between *directories*, the original focus of Yahoo, and *spider*-based search, offered by Excite.

Invented in 1994 by Jerry Yang and David Filo as a fun way of organizing their favorite websites, Yahoo categorized sites deemed to be of sufficient interest into a directory composed of hierarchical categories (e.g., Business, Shopping and Service, Toys). In using Yahoo, searchers could either browse the directory by clicking on the hierarchical links or explore it by typing in keywords.

The idea for Excite was developed in 1993 by five graduate students who, in contrast to the founders of Yahoo, focused on the use of software rather than human editors as a preferable method of organizing the Web. This was done using spiders, software which travels the Internet by following the links on a page to find other pages, and so on. The use of automated technology enabled Excite to create a far larger database than Yahoo, allowing users to search at the level of webpages rather than websites, as its system did not require evaluation by human editors.

2.2. The perfect match?

In the case of both directory- and spider-based search engines, software matches searches with websites (for directories) or webpages (for spiders) by quality ranking or, in Web jargon, *relevancy*. The algorithms used to perform this ranking differ and are never fully revealed, with founding search engines including the frequency and position of keywords. From an early juncture, it was considered significant to appear toward the top of a search engine list, with Lempel and Moran (2000) even going so far as to argue the importance of firms appearing in one of the first 10 positions. Position thus became a major issue for marketing professionals and led to the growth of a specialist industry, search engine optimization.

Inevitably, a manually generated directory will not be able to offer the same coverage as a spider-based system. Directories can, however, tender an edge on relevancy given that a human being evaluates the site, rather than an automated scan by software. In order to balance these strengths and weaknesses, and offer comprehensive assistance, search engines have put forth "hybrid" services. For example, from its infancy, Yahoo has supplemented its directory with the use of spider results from a variety of firms.

Its emphasis on the directory method seen as producing more relevant results, Yahoo became the early leader in the search market. Over time, however, the growth in the size of the Web and improvements in spider-based search from Google led Yahoo to become primarily a spider-driven search engine. Nonetheless, the Yahoo directory still exists; a search via http://dir.yahoo.com illustrates how its results differ from those obtained via www.yahoo.com.

3. The advertising model

Due to the difficulties of implementing a charging-based model for search, providers have historically relied upon advertising as their dominant source of revenue. The advertising model was highly lucrative for the major websites in the late 1990s, as dot coms spent heavily and established organizations wished to create and/or maintain an advertising presence. The rapid growth of online advertising in the United States is represented in Fig. 1, which illustrates the period 1997–2005. At the height of the dot com boom, online advertising in the year 2000 totaled over $8 billion, which accounted for 3.5% of total advertising expenditure. This disbursement was heavily concentrated, with the top 10 websites accounting for over 60% of revenue.

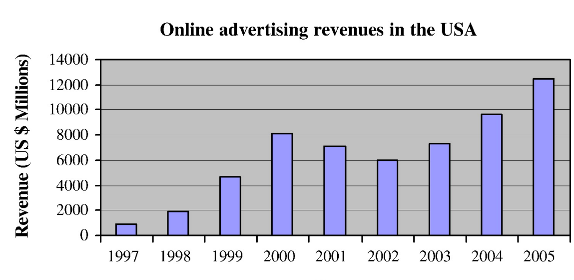

Figure 1 Online advertising revenues in the U.S., 1997–2005. Source: Interactive Advertising Bureau, www.iab.net (*2005 is estimated).

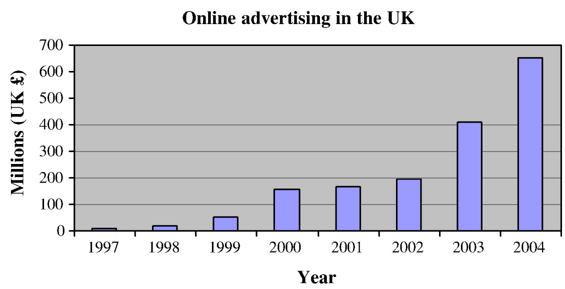

Figure 2 Online advertising in the U.K., 1997–2004. Source: The Advertising Association (2005).

The development of online advertising grew swiftly in the United Kingdom but, because of the lower profile of e-commerce in the country, lagged behind that of the United States. Fig. 2 illustrates the growth in the U.K. during the period 1997–2004, with the 2000 value of about £155 million accounting for less than 1% of total advertising expenditure.

Search engines came to face a great challenge in that users would not stay on their sites long enough to justify high advertising rates. In response, during the late 1990s, search engines such as Yahoo and Alta Vista transformed themselves into portals offering email, news, and other forms of content in an effort to extend visit duration. AOL and MSN, the Microsoft subsidiary, would become the other major players in the portal market.

Until 2003, the dominant form of online advertising was the banner ad, so named because of its prominence and placement (originally across the top, later along the side or bottom) on the webpage to gain viewers' attention. In the year 2000, banner ads generated 48% of online advertising revenues in the United States (Interactive Advertising Bureau, 2001) and 53% in the United Kingdom (Pastore, 2000). Following the dot com bust of 2000, however, online advertising lost its appeal; by 2002, the United States saw a 25% reduction in online advertising revenues. In contrast, the smaller U.K. market continued to grow, albeit at a lower rate, presumably because it did not experience the same level of dot com hysteria as the United States.

3.1. Old habits die hard

In the late 1990s and the early years of the new millennium, there was a fundamental questioning of the effectiveness of banner ads. Banner ads were generally priced on the basis of audiences, cost per thousand (CPM), or on a flat fee basis much like television and print advertising (Hoffman & Novak, 2000). Comparing advertising via traditional media versus advertising using the Web, Internet enthusiasts

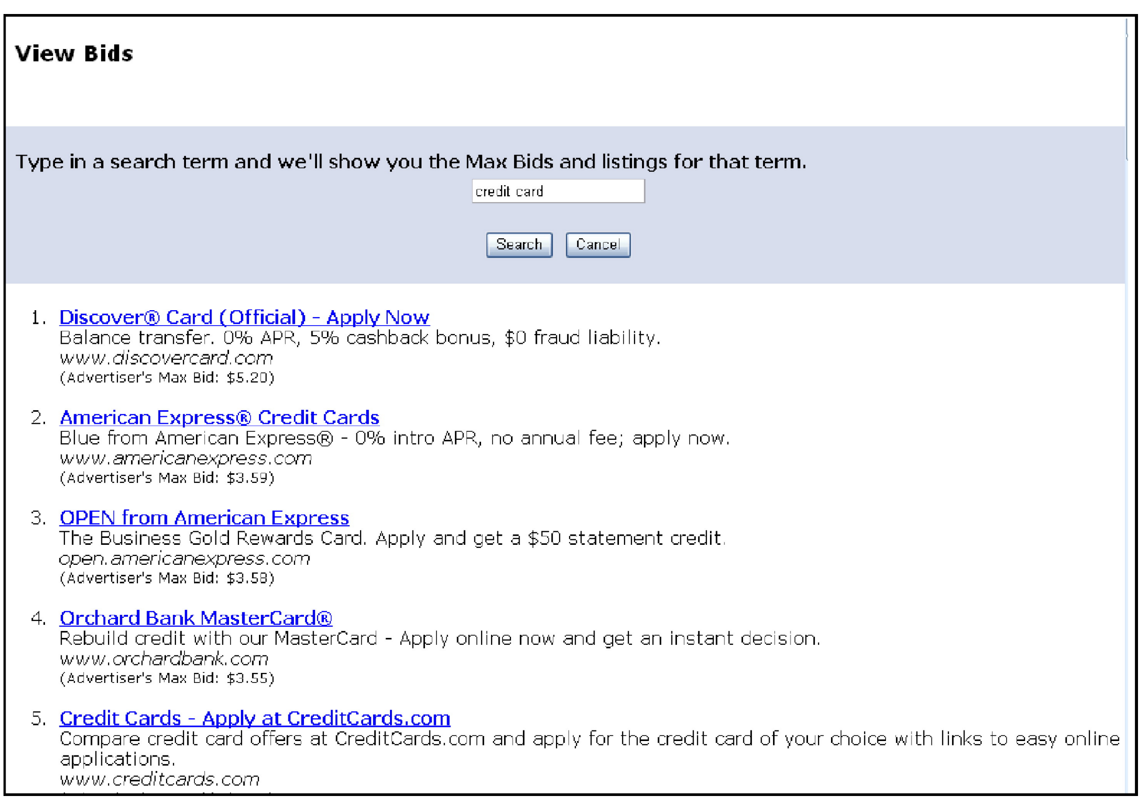

Figure 3 The paid search model. Source: www.overture.com (Accessed June 5, 2006).

emphasized the key difference of the interactivity of the Web, which was touted as a superior approach. While other forms of advertising could be measured through response (e.g., the number of calls to a dedicated telephone number), the Web enabled immediacy. Users could click on a banner to be taken directly to an advertiser's website, an action measured as the *click-through rate* (CTR). CTRs were to become a liability for the sellers of online advertising, however, when in the late 1990s it became all too apparent that most users were simply ignoring banner ads. Due to this decline in effectiveness, the percentage of online advertising revenue accounted for by banners in the United States fell from 48% in 2000 to 21% in 2003 (Interactive Advertising Bureau, 2001, 2004).

4. Paid search: The innovation that changed the Web

The collapse of banner advertising left search engines/portals desperate for new sources of revenue. In 1998, a California-based start up, Goto.com (later renamed Overture), emerged on the scene, offering a solution via a new method of advertising known as paid search. This revolutionary approach would transform online advertising.

In the paid search model, listing position is determined by how much an advertiser is prepared to pay for a keyword or phrase. Advertisers bid for position in ongoing auctions, as illustrated in Fig. 3. When a user searches for a specific keyword, the order of the results they see is determined by current bids in the auction. Payment is made by advertisers each time a user searches for a term and then clicks on their link. To extract an example from Fig. 3, Discover Financial Services (the owner of www.discovercard.com) would pay GoTo $5.20 each time a user clicked on their link during a search; hence, the terms used to describe the action: *paid search*, *pay-per-click*, *pay-for-placement*, *pay-for-performance* (an Overture trademark), *paid listings*, and the industry standard *sponsored search*. The author of this article has chosen to use the term *paid search*, believing it most accurately describes the process of paying for position in a search engine. For clarity of distinction, non-paid search will henceforth be described using the industry standard term, *organic search*.

In order to raise awareness of their website and novel paid search model of online advertising, GoTo invested heavily in a marketing and public relations campaign. The effort proved successful; indeed, by November 1998, www.goto.com was the 24th most visited site on the Web (Overture, 1998). Advertisers were drawn to it, as it offered a low risk way of advertising which met their desire for accountable forms of advertising based on CTRs. They also appreciated the flexibility: bids could be changed at

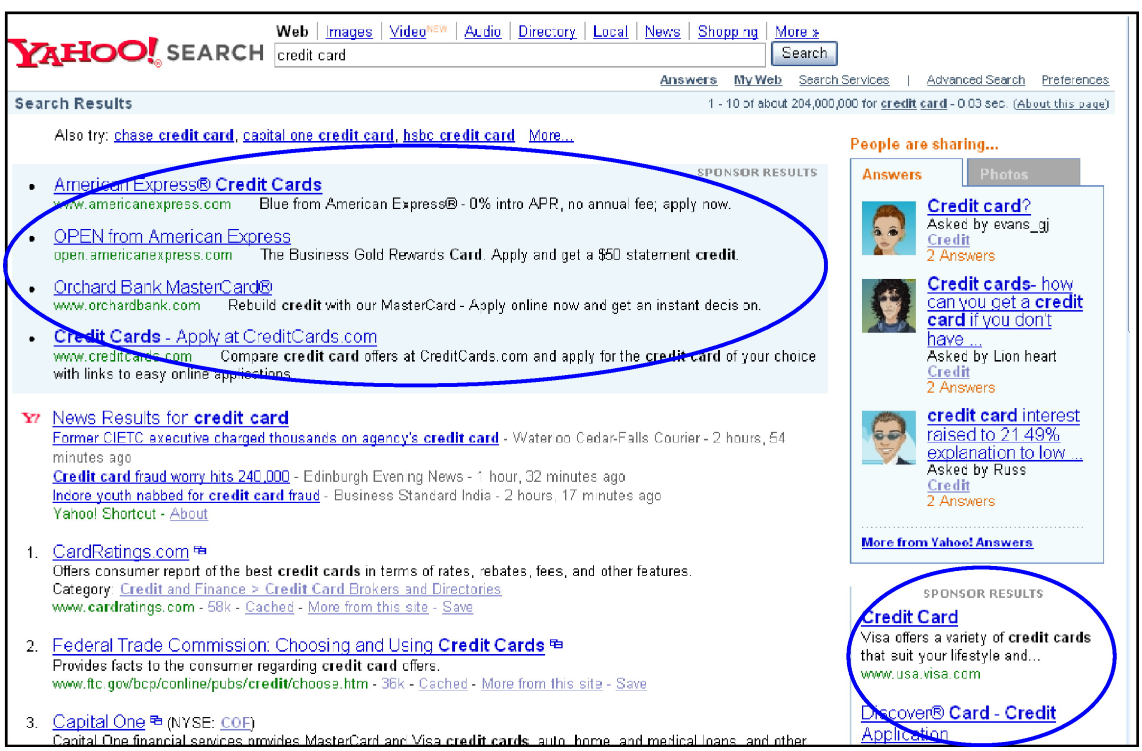

Figure 4 Paid search on the Yahoo website. Source: www.yahoo.com (Accessed June 5, 2006).

any time or withdrawn from the auction altogether. Daily limits on cost could also be set so that if a budget level was reached, the advert would be withdrawn from future searches for that day. Furthermore, top position in paid search could be guaranteed and implemented instantly, as opposed to the slow wait associated with organic search by search engine optimization.

As a means of increasing its appeal to advertisers, GoTo made the strategic decision to supply its services to other sites rather than try to attract its own traffic. To signify this change, the company renamed itself Overture in 2001. The advertising model's initial success and the opportunity for new revenue streams led heavyweight portals to embrace paid search, with the likes of AOL, Yahoo, and MSN signing agreements with Overture in 2000, 2001, and 2002, respectively. This led to paid search appearing alongside organic search results (as illustrated in Fig. 4), with revenue being split between Overture and the host website. The results displayed in Fig. 4, the “sponsor” results, have been dynamically generated from the Overture auction system.

By the end of 2001, Overture stated that it had 32,000 advertisers and tens of thousands of websites using its search technology. Such reach enabled Overture to grow from a start-up to an IPO which raised \$90 million in 1999; in 2002, the company generated revenue of \$668 million (Overture, 1999, 2003).

4.1. Join the crowd: Other paid search providers

Inevitably, many copycat providers were attracted to the booming paid search market. In the United States, players such as FindWhat emerged but failed to establish a serious market presence. In the smaller European market, U.K.-based firm eSpotting was able to establish market leadership prior to Overture entering the scene. Despite multiple competitors on the paid search front, Google, the start-up founded in 1998 by Stanford PhD students Sergey Brin and Larry Page, entered this market and became its dominant player. Originally, Brin and Page focused on organic (spider-based) search and developed a method known as PageRank™, which ranked webpages through the quality and quantity of links to them, in something akin to a citation system (Brin & Page, 1998). Google offered search via its own site and licensed its technology to other websites, most prominently Yahoo. This gave Google exposure and, through highly relevant results, media coverage, and word of mouth, it grew in importance as a site in its own right, eventually becoming the dominant organic search player.

Capitalizing on its audience, Google introduced in 2000 an in-house managed program (later known as AdWords) offering paid search on its own site, the results of which displayed alongside organic search results. Pricing was initially based on the number of users who viewed the advert, the traditional cost per thousand impressions (CPM), which restricted the program to larger advertisers. In February 2002, however, Google switched from the CPM model to cost per click, effectively cloning the Overture model. In an attempt to retain some relevancy with its paid search, Google's model also considered the click-through rate when deciding on position (Google, 2002).

To grow further, Google launched the Google Network, supplying paid search to other websites. This provided direct competition to Overture, from which major portals such as AOL and AskJeeves were eventually poached. The importance paid search played in Google's business was underlined by the 97% contribution of advertising to the company's total revenue in 2003 (SEC, 2004). The emergence of Google led Overture to become a Yahoo subsidiary (known as Yahoo Search Marketing) in 2003, and left control of paid search on major portals/search engines divided between the two giants (see Table 1).

MSN hoped to change this two-party domination with the 2006 introduction of its own paid search product, AdCenter. In addition, numerous smaller players offer paid search to many of the smaller websites. While these smaller players are disadvantaged by a lack of reach, they provide low-cost bidding compared to Overture and Google.

5. The success of paid search

As illustrated in Table 2, paid search has grown to dominate online advertising in the United States, enabling revenues of 2004 to surpass those of 2000. According to the Interactive Advertising Bureau data used in Fig. 1 and Table 2, paid search was an industry with a value approaching \$4 billion in the United States in 2004. Growth was heavily concentrated, with the retail, financial services, travel, and media and entertainment sectors, already large

Table 1 Providers of paid search in the U.S. and U.K.

Website	Paid search provider
AOL	Google
Ask	Google
Google	Google
MSN	MSN
Yahoo	Yahoo

Source: Compiled from the websites of the firms listed.

Table 2 Online advertising in the U.S. by category, 2000–2004

	2000	2001	2002	2003	2004
Banner ads (%)	48	36	29	21	21
Sponsorship (%)	28	26	18	10	8
Search (%)	1	4	15	35	40
Classifieds (%)	7	16	15	17	18
Other (%)	16	18	23	17	13

Source: Developed using data from the annual advertising reports (2001–2004) of the Interactive Advertising Bureau.

players in online advertising, accounting for nearly 80% of expenditure (McGann, 2005). Growth also occurred in Europe, albeit from a lower base, with paid search being worth 576 million Euros in 2004, estimated to grow to 1525 million in 2009 (Jarboe, 2005). Paid search only accounted for a small percentage of the average online marketing budget in Europe, reflecting the slower rate of adoption (Jennings, 2004). The market in the U.K., however, was more developed, with paid search accounting for over 40% of expenditure (Interactive Advertising Bureau U.K., 2004).

5.1. The appeal of paid search

Research in the areas of travel and finance shows that users are over four times as likely to click-through on paid search as compared to organic search; conversion rates are higher for paid search, as well, on average twice the organic rate (Lamberti, 2003). This begs the question: why is paid search more effective than organic search? Surely, the only differences between the two involve the issue of payment and the positioning of the advertisement. Considering both possibilities, it is reasonable to argue that prime location at the top of the page plays an important role.

Research also indicates that marketers are highly satisfied with the paid search concept, believing it offers higher return on investment than offline marketing methods. Significantly, CTRs and, crucially, conversion are far higher in the lucrative area of finance, something theorized as due to the maturity of the sector and specialization of search phrases used. Jupiter research, however, contradicts this point of view by revealing that, in their experience, only one in seven searches results in a click-through on a paid search result (Jarboe, 2005). Importantly, it must be remembered that paid search is a relatively new phenomenon and that its allure may wear off.

5.2. The long tail

The skewed distribution of web searches, whereby a large percentage of searches occur relatively rarely and a small percentage of searches occur very frequently, enables small advertisers to utilize main search engines/portals, something unthinkable prior to the advent of paid search. This skewed distribution, known in statistics as the *Pareto distribution* and popularized as the *long tail*, results in cheaper niche markets that can operate alongside the more expensive mainstream markets, which were already served by the large portals. For example, the phrase "Bed and Breakfast Cornwall" (Cornwall being a U.K. county) was available on Overture's U.K. website for only £0.28 in February 2006. In addition to the appeal of low risk levels and the ability to set daily budget limits, smaller advertisers appreciate this method in that they can use it flexibly without heavy levels of commitment. A related initiative in the SME area is the development of local paid search products by both Overture/Yahoo and Google, targeting the $22 billion spent on local advertising annually (Olsen, 2004a).

6. Managing paid search: A user's guide

Having outlined the development of paid search and its market structure, this article now offers suggestions for managers contemplating its use. Although each paid search provider operates in a slightly different manner, the suggestions put forth represent key general principles in the use of paid search, and are drawn from websites of major providers and agencies that specialize in this area.

6.1. Keyword selection

Clearly, a critical decision in paid search involves selecting the terms on which to bid. It is necessary to consider terms that searchers themselves would actually use, rather than those employed by industry professionals. To this end, Overture supplies a keyword selector tool (www.inventory.overture.com), which suggests up to 100 alternatives and provides the estimated number of searches during the previous month for each term. For example, Overture suggestions for the term *loan* in June 2006 included highly popular broad terms such as (unsurprisingly) "loan," and more specialized terms such as "loan motorcycle" and "government loan." Software is also available from other paid search providers and from specialized agencies, which enables keyword management (and other features discussed below) over numerous paid search platforms.

6.2. Bidding strategy

Bidding strategies should consider which measures of success are to be used (e.g., high ranking on search engine results, volume of visitors to the website, conversion rates) and how much the organization is prepared to pay to meet these objectives (e.g., acceptable acquisition cost per customer). The prevailing price in the auction market also needs to be considered as, for example, a rival firm may aim to maximize the number of visitors on a short-term basis without regard for cost or to increase other organizations' bidding costs.

6.3. Bid management

Once a bidding strategy has been set, bid management software can be used to automate bidding using a wide variety of rules. Common criteria include maintenance of a certain position (e.g., number 1 listing, top 3 ranking), variation of the position over the course of the day, and desire to always rank higher than a rival firm. Bid Rank (www.bidrank) offers an example of a company whose best customers are typically online between the hours of 4 p.m. and 9 p.m. Logically, this firm would aim to obtain a high position during this period, and would accept a lower ranking at other times to make best use of their resources.

6.4. Managing and monitoring performance

Monitoring the behavior of click-throughs via paid search is essential, as this enables precise measurement of how successful the advertising method has been in terms of achieving the objectives set. Table 3 provides an illustration of monitoring paid search performance. Data collected from such tracking should then be fed back into the process to make performance more effective. It may be, for example, that poor quality leads are being attracted (perhaps through the use of the wrong keywords) or that clicks from certain sources work better than others. Further, monitoring can be used to ensure that a firm is not paying too much for clicks; for instance, being in position 2 or 3 may generate as much business as being in position 1. Ensuring that customers are taken to an appropriate landing page is also seen as crucial: a searcher clicking on a paid search link for "loans" should be taken directly to the loans page, rather than having to navigate their way through from the advertiser's home page.

Table 3 Monitoring the returns from paid search

Beyond the Invisible is a London-based company which plans and installs home technology systems, from entertainment to energy. In 2004, the company ran a paid search campaign using Google in an attempt to generate interest in their services. The campaign generated 5351 clicks and 64 "good" inquiries. These inquiries were considered of good quality because they generated £200,000 worth of business while the total campaign cost ran only £4500, representing a huge return on investment. Beyond the Invisible contrasted this with their use of print advertising: here, their experience was of a quarter page advertisement in a monthly local magazine costing £500, but which only generated a couple of leads.

Source: Google.com

6.5. Beware click fraud!

Click fraud (i.e., clicking on a paid search solely to make the advertiser pay) has emerged as a high profile issue facing firms in this industry. It has been estimated that click fraud accounts for 5%–20% of total revenues generated and has grown as paid listing programs have been licensed on a much larger and global basis, making them harder to police (Olsen, 2004b). Click fraud can be driven by a variety of factors: dishonest websites trying to generate revenue from ads they display, competitors draining the advertising budgets of rival firms, or malicious activity against an organization, perhaps by disgruntled ex-employees or protesters. Solutions that have been put forth to quell the problem of click fraud include using technology capable of examining where clicks originate, employing fraud teams, and pursuing legal action. Click fraud is no small matter, a fact of which Google must be well aware: the issue prompted the company to refund $90 million to advertisers in March 2006.

6.6. Integrating paid search with other forms of online marketing

A fundamental question involves how strategies in paid search and organic search should be coordinated. Earlier discussion examined conflicting research on the varying click-through rates for both approaches. In order to ensure maximum reach and connect with those who gravitate toward or away from paid search, integrating paid search with other forms of online marketing is a key issue for organizations. Interestingly, a study by iProspect found major differences in behavior between users of different search engines with, for example, Google users least likely to click on paid search results and MSN users most likely to do so (Greenspan, 2004). This could be the result of the higher prominence MSN gives to paid search, but is perhaps also due to the differing abilities of users to identify adverts and block them out. Whatever the cause, these behavioral differences have major implications for advertisers. They would seem to suggest, for example, that more emphasis should be placed on organic search engine optimization on Google and Yahoo, while paid search should be given higher priority on MSN. Despite the benefits of combining advertising methods, according to the aforementioned iProspect study, the management of organic search and paid search are not integrated in many organizations.

It is also important to note that while paid search is clearly effective at targeting those who are aware of products (demonstrated by their search terms), it may not be as effective in generating awareness of unknown products. Further, paid search cannot, of course, reach those who do not use the Internet. These weaknesses suggest an ongoing need for other advertising methods, both online and offline.

7. Final thoughts

This article has examined the emergence of paid search as the dominant form of online advertising and has put forth practical guidance regarding its usage. Paid search emerged at an opportune moment, providing commercial benefits from search at a time when websites were desperate for new revenue streams and when advertisers sought low risk techniques following the excesses of the dot com boom. The method offers many opportunities, but is also a complex and dynamic form of advertising. As more organizations come to use paid search, prices will continue to be bid up. As such, it will be essential for managers to carefully and thoughtfully manage the process in order to maximize its potential benefits.

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