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Teaching Case: Paid Search Wars

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Abstract:

This case analyzes the complex interactions between firms in the interrelated areas of search engines and portals after the dot com crash of 2000.

Overture, a 1998 start-up, had transformed the online advertising market through the innovation of paid search, in which advertisers bid for top position for search terms. These results were provided to the portals and appeared alongside organic search results when a search was done. But Overture became a victim of its own success as the portals used their audience control to gain a greater share of advertising revenues.

Google entered the paid search market in 2002 which ultimately led to Overture losing its independence and becoming a Yahoo subsidiary in 2003. As Google grew rapidly and expanded into other markets Yahoo and MSN attempted without success to counteract its influence. By February 2008 Google had been the clear winner of this rivalry, with Yahoo severely weakened. This culminated in an attempted Microsoft takeover of Yahoo with the main aim of stopping Google, a development Google was determined to prevent. This led to Google cooperating with Yahoo on paid search and Microsoft subsequently withdrawing its bid in May 2008.

I. INTRODUCTION

The emergence of the World Wide Web in the early 1990s produced a need for tools to search for information which led to start-ups such as Excite and Yahoo emerging in 1993 and 1994. The popularity of these Web sites ensured that they became lucrative advertising spaces as the dot com boom gathered pace.

Audience share was crucial to maintain appeal as an advertising space, leading to intense competition. Rindova and Kotha [2001] described how, in an effort to retain users, search engines would "morph" from being providers of navigational tools which directed users to other sites, first into destination sites that were visited for their own content and then again into portals—Web sites which offered a variety of services such as search, news, e-mail and messaging. Apart from Yahoo, other firms emerged in the portal market, in particular AOL, the leading provider of online services, and MSN, the Microsoft subsidiary. Initially, the portal model was highly lucrative with U.S. online advertising revenues increasing from $267 million in 1996 to more than $8 billion in 2000 [Interactive Advertising Bureau 2003].

However, the crash of 2000 led to online advertising revenues falling 25 percent by 2002 which severely affected the portals. A major new revenue stream then developed through the innovation of paid search introduced by a California based start-up Overture (originally known as GoTo.com), whereby keyword searches would trigger targeted text based adverts. These adverts featured alongside organic search results on the main portal sites and revived the online advertising market. However, while the large portals cooperated with Overture to maximize advertising revenues, they were competitors in the division of these revenues. To add to this complexity a new entrant to the organic search market, Google, offered direct competition to Overture in paid search. Overture, squeezed by both competitors and collaborators, attempted to strengthen its position but lost its independent status in 2003, becoming a Yahoo subsidiary. This left a complex web of relationships and initiated further rounds of competition as Google, Yahoo, and Microsoft maneuvered to protect their position. The competition between the three main players was characterized by innovation, acquisitions, and alliances — often as much to impact upon rivals' interests as to advance their own. By February 2008, Google had been the clear winner of this rivalry with Yahoo severely weakened. This culminated in an attempted Microsoft takeover of Yahoo at a cost of $44.6 billion with the main aim of stopping Google, a development Google was determined to prevent. Even though Microsoft increased its bid to $47.5 billion the Yahoo board refused to accept it which led Microsoft to withdraw its offer in May 2008, prompting falls in Yahoo's share price and leaving it with an uncertain future.

II. THE EVOLUTION OF SEARCH

Although the Internet originated in the 1960s, it was initially the domain of researchers and academics as commercial use was prohibited. Liberalization, along with increased investment, then enabled the number of computers connected to the Internet to grow from 1,000 in 1984 to 10,000 in 1987 and more than 100,000 in 1990. However, as Frana wrote, "The Internet, by the late 1980s, had become an exponentially growing mass of poorly classified data available mainly by using nonintuitive software" [2004, p22]. The first Internet search engines, known as Archie (1990) and Veronica (1992), emerged from student projects at U.S. universities and would seek to address this "access problem."

These tools, along with existing Internet applications, however, were seen by the non-expert as difficult to use. It was the emergence of the easy-to-use Web in 1990 that brought the benefits of the Internet to a much wider population. This in turn led to the first Web search engine appearing in 1993, the World Wide Web Wanderer (Wandex) developed at MIT, which was quickly followed by a variety of other engines.

Categorizing Search

Search is usually categorized into automated spiders and edited directories, although some view only the former as true search engines.

Spiders, also known by a variety of other names such as crawlers or bots, focus on automated search. They consist of three key elements [Sullivan 2007], that vary according to the specific search engine. First, the *spider* visits Web pages on a recurring basis, records certain information, and then uses the links on the page to visit other pages, repeating the process. Second, the *index* which stores the information that has been collected from the Web page, and finally the *search engine software* which tries to find relevant pages for a search. Google offers information on

how they carry out this process and other information at their Webmaster Help Center, www.google.com/support/webmasters.

This process presents major challenges including dealing with the volume and variety of content available. To place this in perspective, Google announced in 2005 that their index was one thousand times its original size. Because the original index had been reported as being 24 million items in 1996 [Battelle 2005], this indicates that the 2005 index had 24 billion items, which still only covered a limited amount of the entire Web. Presenting results in a few fractions of a second for hundreds of millions of searches per day is a further crucial issue which Google has solved using an estimated 450,000 distributed servers, developed in-house [Carr 2006].

How results are generated is clearly crucial to Web site owners, and this saw the emergence of an industry, search engine optimization. The algorithms (or rules) used to perform this ranking differ, and are never fully revealed, with early search engines including the frequency and position of key words. However, these ranking methods enabled manipulation of the search results and led to frustration for users.

Directories review Web sites using human editors and then organize suitable Web sites into hierarchical categories, for example Business, Shopping and Services, Toys, etc, through which users can browse or search using keywords. Well-known examples are the Yahoo directory, (http://dir.yahoo.com), which charges commercial sites for inclusion, and is maintained by its staff, and the Open Directory Project (ODP), (http://www.dmoz.org), which does not charge for inclusion, and is maintained by volunteer editors.

In the 1990s, the Yahoo directory was seen as delivering higher quality results than spider-based search. However, the growth in the size of the Web presented practical challenges and, along with the emergence of superior spider search through Google, led to the decreasing importance of directories.

III. THE EMERGENCE OF THE MAIN PORTALS

The dominant portals in 2000 — Yahoo, AOL and MSN — differed in their origins and consequently in their revenue streams. They can be summarized as follows.

Yahoo

Yahoo emerged in 1994 as a hobby of Ph.D students at Stanford University, Jerry Yang and David Filo, who had wanted to find a way to organize their favorite Web sites. After obtaining funding from Sequoia Capital, the famous venture capital firm, this became a business reliant on advertising.

Because of the rapid growth of the Web, Yahoo also supplemented its directory results with those from spiders. This use of third parties gave an early taste of a *coopetition* style environment, to use the terminology of Brandenburger and Nalebuff [1995], as Yahoo competed for users with its own suppliers, and terminated a contract with one, Alta Vista, when it believed that it was encroaching on Yahoo territory [Sullivan 1998].

Search engines, however, had a fundamental problem as advertising spaces; they led people away from the search engine's Web site! Yahoo thus diversified into a portal, acquiring other Web sites, such as the e-mail provider Four11, to speed such development. This approach was highly successful in the 1990s with annual revenue growing from $23.8 million in 1996 to more than $1.1 billion in 2000 of which nearly 90 percent came from advertising [Yahoo 2001].

AOL

In contrast to Yahoo, AOL's fundamental business lay in providing access to online services which can be traced back to 1985. However, AOL faced threats from the growth of Internet Service Providers who offered flat-rate monthly subscriptions and the growth of free content on the World Wide Web, that contrasted with AOL's "walled garden" approach, with its e-mail service and content being only available to subscribers. AOL successfully responded to this challenge by ending its hourly charges for members, integrating Web access into its service via a dedicated browser, and through aggressive marketing [Burgelman and Meza 2003]. By 2000, AOL, had 23 million subscribers, making it easily the largest provider of online access, which generated $6.9 billion, 64 percent of its total revenue. AOL was also successful in keeping its users inside the walled garden which enabled a further $2 billion to be generated through advertising and e-commerce revenues in 2000 as vendors would pay for access to its audience [AOL 2001; Burgelman and Meza 2003]. These revenues were seen as increasingly important as online access became seen as a commodity.

MSN

The development of MSN, which originally stood for the Microsoft Network, reflected Microsoft's initially negative approach to the Internet. It was launched in 1995 as a proprietary alternative to the Internet, but met with little success and as part of Microsoft's general embrace of the Internet MSN was refocused as an ISP. It offered a combination of a "walled garden" only available to its subscribers, with a collection of open-portal-style sites to attract more users. Challenging the entrenched AOL in ISP provision was difficult, but through an advertising campaign and price competition MSN grew its subscriber base. It also added new functionality to its free portal site such as search via the search engine supplier Inktomi and free Web-based e-mail through the acquisition of Hotmail. Viewing a major portal presence as vital to its long-term strategy, Microsoft was prepared to accept large losses at MSN until it achieved profitability in 2003 [Hu and Olsen 2003].

The Portal Rollercoaster

Online advertising revenues had boomed in the 1990s, reaching more than $8 billion in the United States in 2000, and were heavily concentrated among the large portals [Interactive Advertising Bureau 2001]. While the portals competed for advertising, it was a sellers' market as advertisers were desperate to gain access to the growing Internet audience and would bid up prices. The portal market had large entry barriers because of the costs of acquiring the necessary content and functionality and the large audiences controlled by the main firms in the market.

2000 saw the valuations of technology firms reaching astronomic levels. In January 2000, AOL had a market capitalization of $163 billion [Burgelman and Meza 2003] and Yahoo $128 billion [Elgin 2001], with enormous price-to-earnings ratios. AOL used their valuation to merge with Time Warner on highly favorable terms, a deal which seemed to confirm the dominance of the portal in the media sphere. However, April 2000 saw the start of an inevitable market correction which led to bankruptcy for many dot coms and large falls in share prices across the whole technology sector. This in turn led to a collapse of online advertising between 2000 and 2002, as many of the major advertisers had been dot coms, and, as the general economic environment worsened, budgets among conventional firms were also cut back. Advertisers had also lost faith in Web-based advertising as research indicated that most users simply ignored the dominant banner ads [Urban 2004]. This severely affected the portals, and by January 2002 the merged AOL-Time Warner had lost 50 percent of its peak-market value. Along with falling subscriptions to its dial-up Internet service and regulatory probes, this led the AOL-Time Warner board to remove AOL from the merged entity's name. Yahoo, even more exposed to an advertising downturn, saw its share price fall by more than 90 percent. MSN was more sheltered as part of a highly profitable group, but Microsoft's share price had suffered due to ongoing legal action.

The crash also led to a fundamental reassessment of how the portals would operate, which resulted in an increased emphasis on diversification into non-advertising areas such as shopping and charging for subscription-based services [Lucas et al. 2001].

Search: The Necessary Evil?

"As long as we're 80 percent as good as our competitors, that's good enough. Our users don't really care about search." (Portal CEO's quote to Google's founders in 1998 [Google 2007a])

By 2000, the portals were not really competing in the area of search. While it was an integral part of portals' operation, it was not seen as a source of differentiation. Indeed, in 1999, AOL, Yahoo, and MSN were paying the same company, Inktomi, to provide search engine functionality via their Web sites.

Search engines, however, were fundamental for users and had become even more important because the Web was growing rapidly in size [Gordon and Pathak 1999]. Moreover, from the perspective of Web sites, search engines were a growing source of new customers and great effort was placed in appearing at the top of the search results.

The only direct revenue (as opposed to the indirect fees from advertising) obtained through offering search was the initial registration fee charged by some providers, such as Yahoo. In 1999, Yahoo introduced an optional fee, charged to commercial Web sites, that ensured a Web site would be reviewed more quickly than normal, although it did not actually guarantee inclusion in the Yahoo directory. However, for a one-off fee of between $200 and $300 this was an extremely cheap way for Web sites to gain potentially enormous amounts of traffic [Sullivan 2002a]. Yahoo moved to exploit this revenue stream by first making the fee compulsory for new commercial sites in 2000 and then in 2002 charging an annual fee. A further method of gaining revenue from search which developed is known as *paid inclusion*, where, for a fee, spiders would guarantee to visit the pages of a Web site at certain time intervals.

IV. JUMPING THE QUEUE—THE INNOVATION OF PAID SEARCH

In 1998 a California-based start-up Goto.com (later renamed as Overture) emerged, rejecting the idea that search was a "loss leader" for portals. Moreover, it did not seek to retain users and offered a streamlined site which would enable people to find the Web sites they wanted as quickly as possible. While the other search engines' results were based on some measurement of how relevant the results were, in the GoTo model advertisers would bid for position in ongoing auctions.

When users then searched on GoTo's site, the results would be listed according to the current bids in the auction. Initially, Overture operated using the first-price auction method, meaning advertisers would pay the price they had bid each time users clicked on paid search links; for example, if a financial services firm bid $1 to be in the first position for the term "credit card," it would then pay $1 each time someone clicked on the term. However, after instability in its auctions, in 2002 Overture moved to adopt a variant of the second-price auction model, where the bidder paid one cent more than the amount of the next bid in the auction.

Terms would emerge to describe this method such as "paid search," "pay-for-performance (an Overture trademark)," "pay per click," "paid listings," and eventually the industry standard "sponsored search." This case uses paid search as it most accurately captures the commercial nature of the activity. For clarity of distinction non-paid search will from now on be described using the industry standard term, *organic search*.

Some commentators condemned paid search as "selling out" and said it would not work. They cited the example of the search engine Open Text that had sold positions in 1996 but quickly ended this method after complaints. However, GoTo compared their service to the Yellow Pages, seen as useful despite being commercially oriented [Olsen 2003a]. To ensure advertisers were bidding for relevant terms, submissions were also reviewed by GoTo staff before they could appear in the results.

GoTo developed awareness of their site through an effective campaign, and by November 1998 announced that they were attracting more than 4 million monthly visitors. While this was small in comparison to the audiences commanded by the major portals, it represented monthly growth of 64 percent [GoTo 1998]. Advertisers were drawn by this audience growth and the low risk method of advertising which allowed them to change their bids or withdraw from the auction. GoTo's method also met their desire to pay on the basis of audience response to Web adverts, known as the click-through rate (CTR), as advertisers only paid when someone clicked on an advert. Initially, however, the main portals did not embrace this approach because it was felt users would not trust the results and that GoTo would have little impact [Olsen 2003a]. But smaller Web sites were attracted by the revenue potential of paid search, a factor that became more pertinent after the dot com crash.

This led to agreements with smaller Web sites to offer GoTo paid search results on their Web sites, with revenue being split. The popularity of this approach was shown by the rapid growth in GoTo's revenue, from $822,000 in 1998 to $26.8 million in 1999 [Nerney 2000].

From GoTo to Overture

This revenue growth persuaded GoTo to make a major strategy change in 2000. Instead of aiming to attract audiences to its own site, it decided to solely concentrate on supplying its results to other sites and to signify this renamed itself as Overture. The heavyweight portals all signed agreements with Overture–AOL (September 2000), MSN (July 2001), and Yahoo (November 2001) with paid results appearing alongside the organic search results.

Through these deals with the main portals, paid search became a significant online advertising method. However, managing paid search was complex. Some organizations used hundreds or thousands of keywords; as this was a dynamic market with changing bids, manual monitoring of the process was not enough. A major problem that emerged was known as the *bid gap*, where advertisers would pay a certain amount to secure their desired positions but then other bids would fall meaning they were paying more than they needed to. In response to these types of problems, tools became available from Overture and third parties to choose keywords, manage bids, and also track leads from paid search so that the return from paid search could be measured. Overture also enabled the integration of their bid-management tools into third-party software through the release of APIs so that advertisers, or their agencies, could manage paid-search campaigns across different platforms [Newcomb 2005]. In 2003, Overture acquired a Web analytics firm, Keylime, which enabled them to offer more sophisticated tracking facilities to their customers. This became particularly important as a further problem known as "click fraud," clicking on a paid search advert solely to make the advertiser pay, emerged.

Overture's Dominance

The involvement of the major portals gave Overture access to the attention of the largest potential audiences and enabled revenue to grow to $667 million in 2002 [SEC 2003]. Overture had an effective monopoly of the paid search market in the United States. It was expanding with the introduction of contextual search, where paid search terms were placed on content Web sites (for example, an advert for loans would appear on a personal finance page) and into international markets. While imitators in paid search had emerged, such as FindWhat, none were able to mount a serious challenge. Overture's market dominance was based on its paid search model and the reach it had developed with 73,000 advertisers and its network of Web site partners. Paid search was a powerful antidote to memories of the dot com excesses as it delivered results to advertisers, and profit to Overture's partners. Indeed, revenues derived from the Overture relationship were credited with bringing Yahoo back into profitability in 2002 [Olsen 2003a]. Potential problems still existed, however, as the big three portals accounted for the vast majority of Overtures' revenue, which ensured that they had a strong bargaining position in contract negotiations. If Overture was not cooperative enough Yahoo and MSN certainly had the technical expertise to create an in-house paid search program, and MSN eventually did so.

V. GOOGLE CHANGES THE RULES OF THE GAME

Overture's domination was to be eventually broken by Google, the start-up founded in 1998 by Stanford Ph.D students, Sergey Brin and Larry Page. They had been frustrated at the inability of search engines to provide quality information in the face of the growth of the Web and its increasing commercialism and manipulation of search results by websites. The founders originally worked together as students on a search engine known as BackRub, named because of its ability to analyze the links to a Web page [Brin and Page 1998]. From this, they would develop PageRank^{TM} which ranked Web pages by analyzing the quality and quantity of inbound links. PageRank^{TM}, along with analysis of the content of the relevant Web page and Web pages linking to it, then formed the basis of Google's search results.

Initially, Brin and Page looked to sell this technology but could not find any buyers, a reflection of the indifference toward search at the time. However, they did not give up, and with funding from angel investors and then venture capital firms including Sequoia Capital (the original funder of Yahoo) and Kleiner Perkins, they were able to grow. Google was marketed as an infrastructure company which would earn revenue by licensing its technology to other websites in the same way as Inktomi operated. Google signed a number of deals with portals, most notably with Yahoo in 2000, which enabled it to grow its revenues from $220,000 in 1999 to $19.1 million in 2001 [SEC 2004]. Intriguingly, when Yahoo awarded the contract to Google in 2000, it acquired a $10 million stake in the company, thereby taking on the role of investor as well as customer. These deals gave Google exposure and through its highly relevant results, media coverage, and word of mouth it grew in importance as a site in its own right. In its emergence, Google had turned conventional wisdom on its head, as it originally offered what appeared in the portal context to be an inferior search-only product lacking the features that would make users stay at portals.

Google the Convert

"Advertising funded search engines will be inherently biased towards the advertisers and away from the needs of the consumers" [Brin and Page 1998, p17].

Google originally had no advertisements. However, with pressure from its funders Google needed to increase its revenues, and its growth in traffic offered an easy opportunity. In 2000, Google made a dramatic turnabout, accepting advertising on its own site in the form of text adverts which it managed in-house alongside the search results. As with Overture, these adverts were based on users' queries, but initially pricing was based on the number of users who viewed the advert, the traditional cost-per-thousand impressions (CPM), which restricted the program to larger advertisers. Nevertheless, this took off and with the launch of an automated service, known as Google AdWords, enabled Google to increase revenue from $19.1 million in 2000 to $86.4 million in 2001 and move into profit [SEC 2004].

Google versus Overture

After the appointment of an experienced CEO in 2001, Eric Schmidt, Google moved into direct competition with Overture. In February 2002, the AdWords CPM advertising model was modified to cost per click with Overture-style auctions being run for advertisers.

Google's system was fully automated allowing adverts to go live immediately compared to Overture's three-to-five-day wait. However, Google's system was not simply "highest bid" as its ranking formula also considered how often paid ads were clicked on. This method was seen as confusing and led to uncertainty for advertisers because they could not guarantee certain positions as with the Overture model [Sullivan 2002b]. However, it made the results

more relevant and also created a higher revenue model than Overture's as adverts with high click-through rates were listed higher in the Google model.

As with Overture, tools were available (internal and from third parties) for bid management and keyword selection. A useful tool offered by Google was the ad discounter where bids were automatically adjusted down, so that an advertiser paid one cent more than the next bid, to address the bid-gap problem.

The mere announcement of Google's move to a cost-per-click model led to a 10 percent fall in Overture's share price, showing the potential threat Google posed [Bowman 2002]. Overture responded by filing a lawsuit for patent infringement. This legal action did not prevent Google's market entry but was eventually settled in 2004 with Google transferring shares to Yahoo (who by then were Overture's owner).

Google had easy entry into the paid-search market, because they owned substantial and growing traffic. To grow further, Google offered paid search results to other Web sites, known as the Google Network, and directly targeted the customers of Overture. This led to a period of intense turmoil for Overture, with head-on competition with Google and dynamic and complex interactions involving the portals. Overture's reliance on large customers gave Google clear targets to aim at; Earthlink, Ask Jeeves, and most significantly, AOL, were poached through an aggressive approach undercutting the revenue split Overture had with partner sites. The AOL deal further added to the cross-ownership in the area with AOL being awarded a warrant to purchase 7.4 million Google preferred shares at $3 per share. This warrant was exercised in 2004 before Google's IPO, and the shares were sold at the IPO and in 2005 for more than $1 billion [SEC 2006].

The competitive threat from Google and its dependence on the large portals combined to squeeze Overture and its traffic acquisition costs—the percentage of the advertising revenue they shared with their partners—increased from 51 percent of revenue in 2001 to 62 percent in 2002 [Olsen 2003b]. MSN and Yahoo had the upper hand in the relationship and were able to take even more of the revenue split, because they controlled the audiences advertisers wanted to reach and generated the vast majority of Overture's revenue. This had been clearly illustrated by the 36 percent fall in Overture's share price on the day the loss of the AOL deal to Google was announced [Kane 2002].

It was also not forgotten by the portals and search engines that paid search was a product only possible as a result of offering organic search. Google had the advantage here because of its ability to offer portals high-quality organic search results—which had given it access to the leading portals—as well as paid search. The fear of AOL had been that without the quality and brand of Google's organic search results users would defect. Google also had the cushion of revenue from their own Web site while they started to target the wider market. They could act without the threat of retaliation into their organic search market from Overture, who lacked such capabilities.

Overture responded by acquiring two firms who offered organic search, Alta Vista and FAST, for a combined total of $240 million [Olsen 2003a]. This enabled Overture to compete more effectively against Google in supplying organic search results alongside paid search. However, Google was also expanding and launched a contextual advertising program in 2003, which added further revenue. To develop this, it acquired Applied Semantics, an important supplier of Overture, which had the added benefit of hurting Overture. In yet another demonstration of Overture's vulnerability, this led to a fall in the share price of 27 percent on the day of the announcement.

Consolidation

To complicate matters, Yahoo was growing in dependence on Overture, with Overture generating 20 percent of its first quarter revenue in 2003 [Elgin 2003]. Furthermore, Overture's main rival in paid search, Google, had become a major threat to its investor Yahoo in the area of organic search, where it was a Yahoo supplier, and was taking away audience and thus advertising revenue. Furthermore, Google was encroaching on Yahoo's territory by developing portal-style capabilities such as news and a comparison-shopping service. Yahoo subsequently moved to bring organic search technologies in-house with the purchase of the search engine Inktomi in December 2002 for $235 million, which enabled it to eventually dispense with Google as its partner [Elgin 2003]. In a further twist of this complex game, MSN was now dependent on Yahoo as Inktomi was their supplier of organic search.

Yahoo announced in July 2003 that it was purchasing Overture for $1.6 billion [Yahoo 2003]. This enabled Yahoo to control paid-search technology but was also a defensive move which prevented MSN from acquiring such an important supplier. From Overture's perspective, it ended the volatility of its share price and guaranteed its future, for as part of Yahoo it would have what it had not had in its battle against Google: its own guaranteed traffic.

It was assumed that the Yahoo acquisition of Overture would lead MSN to terminate their contracts with Overture and Inktomi. They would be dependent on a rival portal for both organic search and paid search capabilities and would also be providing Yahoo with $350 million in annual revenues. MSN had anticipated such moves with the

inclusion of a get-out clause in their agreement with Overture in the event of a change of ownership which would involve a $50 million payment to MSN [Olsen 2003b]. However, MSN's options were limited, because they did not have the capabilities to immediately offer an in-house paid search service and Google—the obvious substitute for Overture and a rumored Microsoft takeover target in 2003—was now becoming a rival, something which would intensify as time went on. Thus MSN continued their arrangements with Overture and Inktomi, with a number of short-term extensions, that gave time to develop in-house capabilities. In 2005, organic search was brought in-house with the launch of MSN Search (later renamed Live Search) and a paid-search tool, MSN AdCenter, was developed which started to replace Overture across MSN's sites from 2006.

VI. GOOGLE'S SHOOTING STAR

Google's decision to float in 2004 brought its revenues into the spotlight and showed how large it had become, with 2003 revenues being more than double one published estimate of $700 million [Elgin 2003]. Figure 1 shows the growth in Google's revenue from 2002 to the end of 2007, with paid-search and related-contextual search revenues—Google do not break these down—accounting for 99 percent of their revenue in the period 2004-2007.
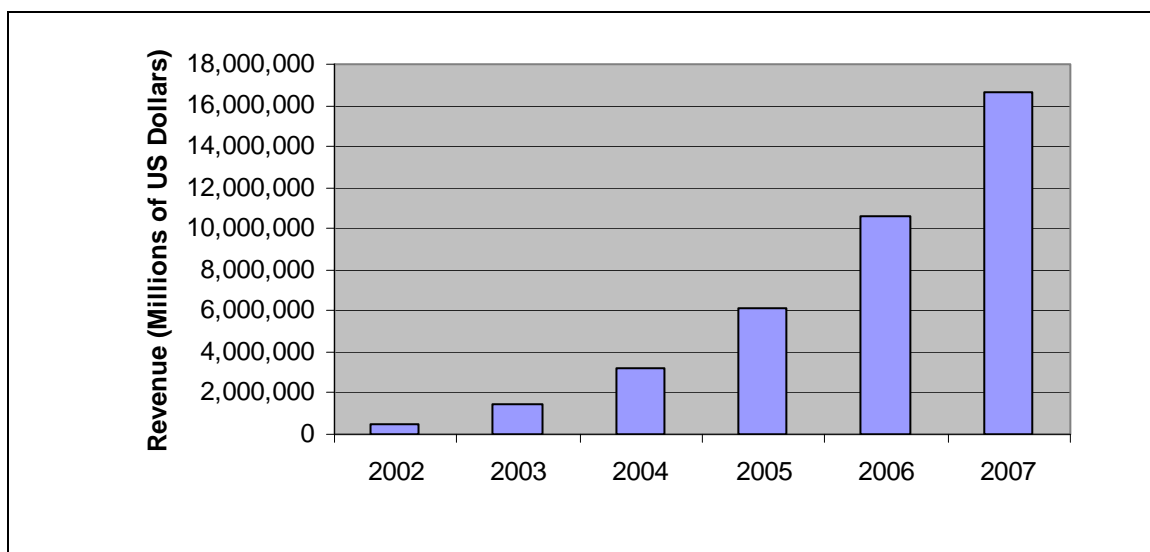
Figure 1. Google's Revenue 2002-2007 [Source: Developed using data from Google 2007b]

The Google IPO enabled a market capitalization of $23 billion, that many saw as the prelude to a sharp correction. However, revenue growth of over 90 percent in 2005 and 72 percent in 2006, with increased profitability (and of course investor speculation) led Google's market capitalization to reach over $225 billion in November 2007, making it the fifth largest company in the United States [Johnson 2007].

Yahoo had also managed to grow its revenues between 2004 and 2006 by 65 percent, which would be impressive for most industries; however, from having larger revenues than Google in 2004, it had only 65 percent of its arch rival's revenue in 2006. When it is considered that Yahoo has large revenues from display advertising and from fees, Google's dominance of search becomes even more apparent. This resulted in the exit of Yahoo's CEO Terry Semel and his replacement by Yahoo's co-founder Yang in 2007.

Google's dominance of paid search was based on its leadership of the organic search market. This is illustrated by Figure 2 which shows the share of searches in the U.S. in December 2007, which, when counting the Google powered AOL and its share of the "Other" category is more than 60 percent. Yahoo still had a significant share, though this had declined by 4 percent since May 2007, with Microsoft accounting for much of this fall.

The potential for success and the risk of failure had also stimulated innovation in organic search in an attempt to maximize audience share. The big three firms had introduced a wide variation in types of search; for example, personalized, local, image, news, toolbars, video, and mobile. A further initiative in the mobile field, announced by Google in 2007, was software that would run on mobile phones, an alternative to Microsoft's Windows Mobile Operation System.

Google had also grown internationally with 43 percent of revenue coming from outside the U.S. in 2006 [SEC 2008] Google was the clear market leader in organic search in Europe with an estimated 80 percent market share in the largest market, the UK, in May 2007 [Jarboe 2007] that generated 15 percent of its total income in 2006 [SEC 2008]. In Asia Yahoo was ahead of Google and dominated the Japanese market although Korea and China had domestic firms (NHN and Baidu respectively) as market leaders [CNN 2007; Einhorn 2007].

Google was also able to generate more revenue from searches as its AdWords system gave higher position to listings with higher click-through rates. It was estimated that in 2006 Google was generating nearly twice as much revenue per search than Yahoo in the United States, which translated into a gap of billions of dollars [Holahan 2006].
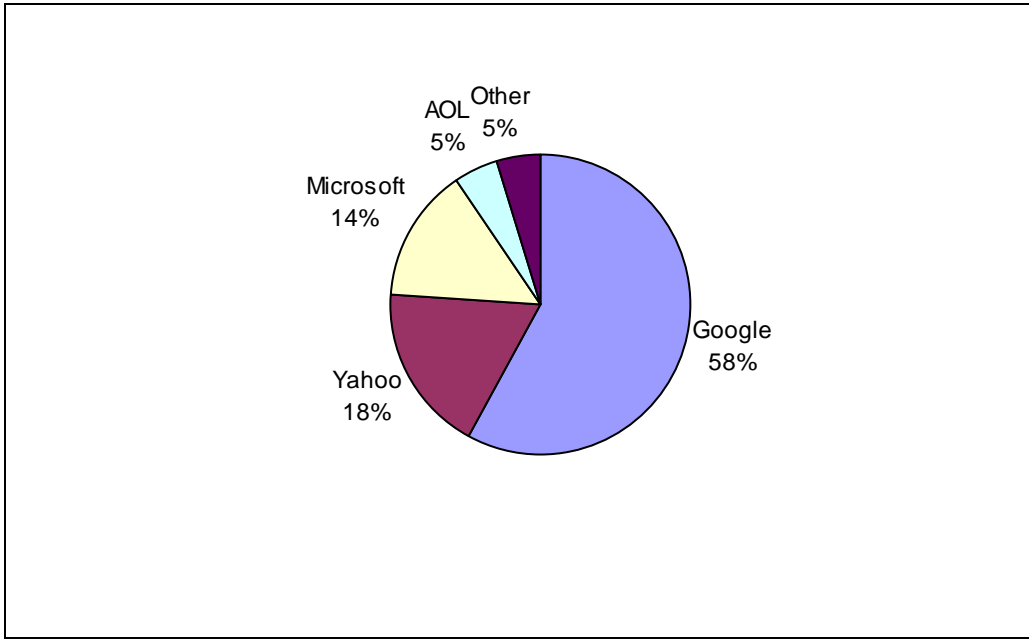
Figure 2. Share of Organic Searches in the United States, December 2007
[Source: Developed using data from Nielson NetRatings, 2008]

Google had a constant roll-out of initiatives online and offline as it sought to diversify outside paid search. Google launched software to search home PCs, the Google Desktop, acquired some of the components for an eventual alternative to MS Office, and had Google software preinstalled on Dell PCs, initiatives clearly aimed in the direction of Microsoft. In 2005, the Google Base, a marketplace, was opened, and in June 2006 the Google Checkout — an online payment system that represented an alternative for B2C payments to the eBay-owned PayPal — followed which enabled purchases generated via AdWords to be processed efficiently and cheaply. These were both moves into eBay's territory, but there was also cooperation with an agreement for Google to provide paid search for eBay's auction sites outside the United States.

Other alliances were made as Google looked to secure access to key Web audiences and add value to its customers. It guaranteed Fox Interactive $900 million to become its search provider — organic and paid — which was primarily to gain access to the users of MySpace, where it replaced Yahoo. In 2006, it started a partnership with Salesforce.com, the Application Service Provider (ASP) of CRM solutions, which specialized in serving small businesses. The partnership involved jointly developing a new product, Salesforce Group Edition, which enabled advertisers receiving click-throughs via AdWords to manage the sales process through the CRM software. The ASP model was the approach Google had taken with its Office-style products and was a direct threat to Microsoft's dominance of the software market.

Google, however, was increasingly facing the problems of success, as its revenues became the envy of its rivals. In 2005, AOL, which accounted for 12 percent of Google's revenue, was reported to be in talks with Microsoft, keen to hinder Google's operations, about how they could collaborate to gain more revenue from paid search [Acohido and Petrecca 2005]. This could have involved replacing Google as the paid-search supplier to AOL, a joint venture or a full MSN takeover. In any case this represented such a serious redrawing of the industry that Google, sitting on a

war chest of $4.1 billion from a secondary offering, made a successful counter-bid which involved it taking a 5 percent stake in AOL, its former investor.

A huge range of acquisitions were also made by Google, including Picasa, which enabled photos to be organized and shared, YouTube, the video sharing site, for $1.7 billion, and DoubleClick, who specialize in targeting advertising, for $3 billion. YouTube gave access to a large audience for paid search and also gave the potential for advertising to appear before popular clips, with revenue split between YouTube and the creator. DoubleClick offered an opportunity to expand into display advertising that had started to grow again as broadband enabled such adverts to load more quickly and their design and targeting became more efficient. The acquisition of DoubleClick was seen both as an offensive move, to expand into Yahoo's territory and achieve revenue growth outside of paid search, and as defensive, given that Microsoft had been a rival bidder and could have used DoubleClick's partnerships and reach to try to replace Google as the paid search provider on major Web sites such as MySpace [Holahan 2007]. DoubleClick also had profiles of Web users that matched with Google's own information could enable more effective targeting.

MSN and Yahoo Respond

Yahoo and MSN both had comparable Web audiences in the U.S. to Google and their users spent longer on their sites; Yahoo's users spent on average twice the time in comparison with Google's. Google's use, however, was concentrated heavily on revenue-generating search while Microsoft's and Yahoo's use focused on e-mail and other functions.

Yahoo reacted to Google's greater profitability by launching a new paid-search system, known as Panama, in 2007. This ended the highest-price system inherited from Overture and offered a similar system to Google's which considered click-through rates. The hope was that Yahoo's revenues per search would increase toward Google-type levels. It also offered enhanced geo-targeting and forecast the likely traffic from specified bids [Rodgers 2006]. Yahoo further looked to grow its paid-search network and in 2006 signed an agreement to provide results to eBay in the United States. In a wider move, eBay's PayPal was also introduced as an option on Yahoo's paid search in 2007 to match the introduction of Google Checkout and offer its users and merchants a more well-known brand. Obtaining a presence in the social networking field became a priority with Yahoo making a number of attempts to buy Facebook followed by rumors of a merger with (the Google-aligned) MySpace in 2007.

Microsoft's AdCenter paid-search product adopted a Google-style ranking method but was the first paid-search product to enable targeting by age and gender. This was achieved through using the profiles stored on Microsoft's millions of users and aided through the acquisition of DeepMetrix, a Web-analytics company. The early results for both these rivals to Google were encouraging with Yahoo's click-through rate increasing [Newcomb 2007] and AdCenter's clients seeing increased conversion rates [Bruemmer and Van Wagner 2007].

Microsoft and Yahoo also made acquisitions of advertising firms. Microsoft had been a rival bidder for DoubleClick and, ironically, raised competition concerns about Google's acquisition, and then made their own acquisition of aQuantive, a competitor to DoubleClick, for $6 billion in 2007. In 2007, Microsoft gained a foothold in the social-networking sphere, purchasing a small stake in Facebook for $240 million. Yahoo completed this sweep of activity by means of the acquisition of Right Media, a firm they owned a minority stake in already, which offered paid-search auctions for display advertising.

VII. MY ENEMY'S ENEMY IS MY FRIEND

Microsoft and Yahoo had both been unable to react effectively to Google's growth. Yahoo was in the weaker position, as while Microsoft had not made the progress it had hoped to in search, it still generated the vast majority of its revenues from its Windows and Office products where it was dominant. However, Microsoft was still threatened by Google's initiatives into these areas. Thus, both firms had a shared interest in hindering Google, and rumors about a merger or cooperation grew in 2006 and 2007.

In 2007, Yahoo had rejected such a possibility, but in February 2008, Microsoft offered to buy Yahoo for $44.6 billion [Parker et al. 2007]. Whether this would work was another question, as integrating two established and very different cultures while trying to take on Google would present a major challenge. Google was determined to prevent this deal, and in April 2008, Yahoo and Google began to cooperate again, with Google providing some of the paid-search results to Yahoo, initially in a two-week experiment. This development angered Microsoft, and after its increased bid of $47.5 billion was not accepted by the Yahoo board it withdrew its offer in May 2008. This prompted falls in Yahoo's share price and left it with an uncertain future.

Google appeared to be unstoppable in the whole area of search, but at some point expenditure in this area would inevitably level off. A fall of 30 percent from a peak-market capitalization from November 2007 to February 2008, caused by lower-than-expected profits growth and the general economic climate, showed that Google was not immune to market sentiment. Its future success would depend on how well it could integrate its acquisitions and enter new markets as well as running its core operations. It was launching new products in all types of online markets and trying to organize advertising for newspapers, television, and radio stations. Google's activities were becoming a source of concern among consumer and business groups for different reasons — privacy, copyright and its attempt to enter markets — that could lead to a major backlash at some point.

An example of this was the almost theatrical dispute between Google and eBay in June 2007 during eBay's annual convention, attended by its largest sellers, in Boston. Google wanted to grow the revenues for its Checkout payment system and had tried unsuccessfully to have it introduced as an accepted form of payment on eBay. While eBay's policy was that payment processors had to be well established, the generally held view was that eBay did not want to allow competition to its hugely profitable PayPal.

In an attempt to wield influence during the convention, Google invited eBay's sellers to a rival party to promote Checkout. In response, eBay removed its paid-search ads from Google in the United States, officially as an experiment, although it appeared to be more of a punishment. This had the desired impact as Google cancelled the party.

The boycott was potentially a risky move for eBay because, while it was Google's largest advertiser, Google was its largest source of traffic. However, a week later eBay stated that the boycott had shown that it was less dependent on Google's AdWords than had been thought and that, while it would resume advertising on Google, it would place more emphasis on Yahoo and MSN [Richards 2007].

Conclusion

In 2008, paid search was approaching its 10th birthday. Its first decade had seen it revive online advertising and initiate coopetition style situations between Overture and the main portals. Paid search also gave Google the revenues to become one of the largest companies in the world through leveraging its prowess in organic search. In turn, Google's continued growth had led to further industry restructuring which culminated in Microsoft's aborted attempt to acquire Yahoo in 2008.

In the space of only 10 years, paid search has seen levels of upheaval that in other industries took place over decades. However, while the short history of paid search had shown the danger of predicting the future, some things were certain: continuous innovation, flexible principles, and the ability to "play the game" would be required to survive.

ACKNOWLEDGMENTS

REFERENCES

Editor's Note: The following reference list contains hyperlinks to World Wide Web pages. Readers who have the ability to access the Web directly from their word processor or are reading the paper on the Web, can gain direct access to these linked references. Readers are warned, however, that:

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Acohido, B. and L. Petrecca. (2005). "Time Warner, Microsoft Talk of Joint AOL-MSN Search Project," http://www.usatoday.com/tech/news/2005-09-15-msft-aol_x.htm (current Sept. 15, 2005).

AOL., (2001). "AOL Annual Report 2000," http://web.archive.org/web/20051016051631/ http://ir.timewarner.com/downloads/aol2000.pdf (current Sept, 2000).

Battelle, J. (2005). "The Search: How Google and Its Rivals Rewrote the Rules of Business and Transformed Our Culture," Boston/London: Nicholas Brealey.

Bowman L. (2002). "Google Unveils New Pay-for-Play Plan," http://news.com.com/2100-1023-841348.html (current Feb. 20, 2002).

Brandenburger, A. M. and B. J. Nalebuff. (1995). "The Right Game: Use Game Theory to Shape Strategy, " *Harvard Business Review* 76(3), pp. 57-71.

Brin, S. and L. Page. (1998). "The anatomy of a Large-Scale Hypertextual Web Search Engine," *Computer Networks and ISDN Systems* 30(1-7), pp. 107–117.

Bruemmer, P. J. and M. Van Wagner. (2007). "Panama vs. MSN: Another Search Smackdown", http://www.imediaconnection.com/content/15217.asp (current June 7, 2007).

Burgelman, R. A. and P. Meza. (2003). "AOL: The Emergence of an Internet Media Company, Case SM 75," https://gsbapps.stanford.edu/cases/documents/SM75.pdf (current Sept. 3, 2003).

Carr, D. F. (2006). "How Google Works," http://www.baselinemag.com/c/a/Projects-Networks-and-Storage/How-Google-Works-%5B1%5D (current July 6, 2006).

CNN. (2007). "South Korea's Top Web Portal Looking to Expand," http://web.archive.org/web/20070605143326/http://edition.cnn.com/2007/TECH/internet/05/24/skorea.internet.ap/index.html (current May 24, 2007).

Einhorn, B. (2007). "Baidu Thinks It Can Play in Japan," http://www.businessweek.com/globalbiz/content/feb2007/gb20070215_649662.htm (current Feb. 15, 2007).

Elgin, B. (2001). "Inside Yahoo!" http://www.businessweek.com/magazine/content/01_21/b3733001.htm (current May 21, 2001).

Elgin, B. (2003). "Yahoo! Act Two," http://www.businessweek.com/magazine/content/03_22/b3835001_mz001.htm (current June 2, 2003).

Frana, P. L. (2004). "Before the Web There Was Gopher," *IEEE Annals of the History of Computing* 26(1), pp. 20-41.

Google. (2007a). "Corporate Information, Google Milestones," http://www.google.com/corporate/history.html (no date given).

Google. (2007b). "Investor Relations—Financial Tables," http://investor.google.com/fin_data.html (no date given).

Gordon, M. and P. Pathak. (1999). "Finding Information on the World Wide Web: The Retrieval Effectiveness of Search Engines," *Information Processing and Management* 35, pp. 141-180.

GoTo. (1998). "GoTo.Com Vaults 64 Percent to 24th Most Trafficked Web Site with 4.2 Million Unique Visitors," GoTo Press Release, Nov. 19, 1998.

Holahan, C. (2006). "Why Yahoo's Panama Won't Be Enough," http://www.businessweek.com/technology/content/dec2006/tc20061226_633699.htm (current Dec. 26, 2006).

Holahan, C. (2007) "Google's DoubleClick Strategic Move," http://www.businessweek.com/technology/content/apr2007/tc20070414_675511.htm?campaign_id=rss_daily (current Apr. 14, 2007).

Hu J. and S. Olsen. (2003). "Does MSN Get the Message?" http://beta.news.com.com/Does+MSN+get+the+message/2100-1038_3-5108285.html (current Nov. 18, 2003).

Interactive Advertising Bureau. (2001). "IAB Internet Advertising Revenue Report 2000," http://www.iab.net/media/file/IAB_PwC_004_2000.pdf (current Apr., 2001).

Interactive Advertising Bureau. (2003). "IAB Interactive Advertising Revenue Report 2002," http://www.iab.net/media/file/resources_adrevenue_pdf_IAB_PwC_2002final.pdf (current, June, 2003).

Jarboe, G. (2007). "Stats Show Google Dominates the International Search Landscape," http://searchenginewatch.com/showPage.html?page=3625072 (current Feb. 22, 2007).

Johnson, B. (2007). "Google Casts Its Net over Mobile Phone Market—But Steers Clear of Handsets," http://www.guardian.co.uk/technology/2007/nov/06/google.mobilephones (current Nov. 6, 2007)

Kane, M. (2002). "Overture Bows to Google in AOL Deal," http://beta.news.com.com/2100-1023-896152.html (current May 1, 2002).

Lucas, W., W. Schiano, and K. Crosett. (2001). "The Present and Future of Internet Search," *Communications of the Association for Information Systems* 5 Article 8.

Nerney, C. (2000). "GoTo.com Tries to Reverse Slide," http://www.internetnews.com/bus-news/article.php/328091 (current Mar. 27, 2000)

Newcomb, K. (2005). "SEMs Welcome Google to API Club," http://www.clickz.com/showPage.html?page=3465471 (current Jan. 27, 2005).

Newcomb, K. (2007). "Early Returns Encouraging for Panama," http://searchenginewatch.com/showPage.html?page=3625185 (current Mar. 7, 2007).

Nielson NetRatings. (2008). "Nielsen Online Announces December U.S. Search Share Rankings," http://www.nielsen-netratings.com/pr/pr_080118.pdf (current Jan. 18, 2008)

Olsen, S. (2003a). "New Direction for Overture," http://www.news.com/New-direction-for-Overture/2100-1024_3-986178.html, (current Feb. 26, 2003).

Olsen, S. (2003b), "Yahoo Finds Itself in Search Spotlight," http://beta.news.com.com/Yahoo+finds+itself+in+search+spotlight/2100-1024_3-1025725.html (current July 14, 2003).

Parker, A., A. Edgecliffe-Johnson, and M. Palmer. (2007)M "Microsoft offers $44.6bn for Yahoo," http://www.ft.com/cms/s/0/c074487c-d0bb-11dc-953a-0000779fd2ac.html?nclick_check=1 (current Feb. 1, 2008).

Richards, J. (2007). "eBay Ends Tiff with Google," http://technology.timesonline.co.uk/tol/news/tech_and_web/article1983126.ece (current June 25, 2007).

Rindova, V. P. and S. Kotha. (2001). "Continuous "Morphing": Competing through Dynamic Capabilities, Form and Function," *Academy of Management Journal* 44(6), pp. 1263-1280.

Rodgers, Z. (2006). "Yahoo Details Search Platform Revamp," http://www.clickz.com/showPage.html?page=3604356 (current May 8, 2006).

SEC. (2003). "Overture Form 10-K," www.sec.gov/Archives/edgar/data/1060439/000095014803000429/v88074e10vk.htm (not dated).

SEC. (2004). "Google S1 Filing," http://www.sec.gov/Archives/edgar/data/1288776/000119312504073639/ds1.htm (current Apr. 29, 2004).

SEC. (2006). "Time Warner Form 10-K," http://sec.edgar-online.com/2006/09/13/0000950144-06-008743/Section6.asp (current Feb. 27, 2006).

SEC. (2008). "Google Form 10-K," http://www.sec.gov/Archives/edgar/data/1288776/000119312508032690/d10k.htm (current Feb. 15, 2008).

Sullivan, D. (1998). "Inktomi Picked by Yahoo, Snap," http://searchenginewatch.com/sereport/article.php/2166221 (current June 3, 1998).

Sullivan, D. (2002a). "The Impact of Yahoo!'s Annual Listing Fee," http://www.clickz.com/experts/search/opt/article.php/959631 (current Jan. 23, 2002).

Sullivan, D. (2002b) "Up Close With Google AdWords," http://searchenginewatch.com/showPage.html?page=2164591 (current Mar. 4, 2002)

Sullivan, D. (2007). "How Search Engines Work," http://searchenginewatch.com/showPage.html?page=2168031 (current Mar. 14, 2007).

Urban, G. L. (2004). "The Emerging Era of Customer Advocacy," *MIT Sloan Management Review* 45(2), pp. 77-82.

Yahoo. (2001). "Yahoo Annual Report 2000," http://docs.yahoo.com/info/investor/ar00/yahoo_10k2000.pdf (not dated).

Yahoo. (2003). "Press Releases Yahoo! to Acquire Overture," http://yhoo.client.shareholder.com/ReleaseDetail.cfm?ReleaseID=113537 (current July 14, 2003).

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