Self-Regulating Public Servant, Profitable Internet Innovator, 
Or Rapacious Monopoly: Assessing Google, Thinking About the Possibility of Regulation

Eric K. Clemons 
clemons@wharton.upenn.edu

Steve Barnett 
Bardo Consulting

Rajiv Gokal 
The Wharton School

Karl Hu 
The Wharton School

Nehal Madhani 
U. of PA Law School

Abstract

Google is a powerful company with enormous market share in its core businesses of search and sponsored search. It is using this base to develop other online businesses, in areas ranging from map search and search for images to mobile cell phone operating systems and office support systems. It is using some of these systems to go head-to-head with Microsoft in calendar and email, document services, and, with Acer’s announcement that it will use Google’s Android OS in its computers, in operating systems as well. Google is becoming bolder, responding to complaints about possible trademark infringements by dropping almost all restrictions on the sale of trademarks. Although the company remains enormously popular, it is starting to suffer setbacks and reversals in the courts and debates about regulation are surfacing. The paper addresses four questions that will be essential when considering the regulation of Google, breakup, or other judicial remedies.

1. Introduction

Google is certainly an internet success story, with 60% or more of the US market for internet search1, with profit margins sometimes estimated in the neighborhood of 80% for this one line of business, and with its expansion into a range of semi-related and unrelated activities now largely an established fact. Google is not only one of the most profitable companies on the net, but it is one of the most admired companies in America, having done a marvelous job of managing its public image. It has found a business model that allows it to provide a product to one set of customers (users searching) without charge, while truly forcing another set of customers to pay very high prices (companies desiring to be found) to subsidize the services offered to the others, adding to its popularity among searchers.

Google’s model is working: Simple financials provide one indication. With gross profits of $13.17 billion on sales of $22.12 billion, with profit margins of 19.63% and return on equity of 16.03%, and with a cash horde of $17.78 billion, Google truly is the successful giant among search engines. The equivalent figures for Yahoo, Google’s closest competitor in search, are gross profits of $4.19 billion on sales of $6.97 billion, profit margins of 0.07% and a return on equity of 0.05%, and cash on hand of $3.45 billion2.

Google is now attracting unwanted attention from a range of sources. Some authors are beginning to question the legitimacy of Google’s business model, from the legality and practicality of misappropriating content and basing all profits on some form of advertising or corporate payment to Google (e.g., [15, 18]), to its declining success in attracting ad revenues (e.g., [17]), and even considering the power of community content eventually to replace much of Google’s online advertising [8, 9, 13]. The general tone of press coverage now regularly addresses the risks facing the company from antitrust litigation (e.g., [11, 19, 23, 30]), and the anger of corporate participants in Google’s auctions (e.g., [22, 29]). Google is starting to face legal challenges as well, including potential antitrust litigation, and is being sued over a range of issues including a class action lawsuit for trademark abuse. With the recent Rescuecom decision3 it has recently suffered one of its first significant legal setbacks [31]4. Rescuecom

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2 Source is Yahoo finance, Key Statistics, entries as of 27 May 2009.

3 Cases in this article are cited in accordance with the format adopted in the legal profession. The citation includes information about the reporter as well as the court and the date. For example, in the case, Rescuecom Corp. v. Google Inc., the citation will read: Rescuecom Corp. v. Google Inc., 562 F.3d 123 (2d Cir. 2009). The case name Rescuecom Corp. v. Google is italicized and followed by the reporter information, 562 F.3d 123. Here, 562 is the volume number of the reporter, F.3d represents the federal reporter (as this was a case in a lower federal court), and 123 is the page number in volume 562 of the federal reporter.

4 The case is interesting and complex, and in some sense remains unresolved. Trademark protection forbids the use of another firm’s trademark “in commerce” in a manner likely to cause confusion, or to deceive as to the affiliation of goods services, although fair use does permit the use of another firm’s trademark in other contexts. Google’s selling of a trademark to a competitor of the trademark owner is indeed commercial use, but it may not constitute...
has sued Google for use of its trademark in sponsored search, and the appellate court has reversed the district court decision and found for Rescuecom. Trademarks are protected from “use in commerce” by other than the mark’s owner. The appellate court held that Google’s use of trademarks met the requisite standard for “use in commerce” because: (1) Google is recommending and selling to its advertisers Rescuecom’s trademark; and (2) Google encourages the purchase of Rescuecom’s mark through its Keyword Suggestion Tool. Rescuecom Corp., 562 F.3d at 129.

Google has announced its intention to defend itself against any and all litigation2 6 7. And rather than back down on the sensitive issue of trademark abuse, Google has announced that it intends to extend its policy on allowing companies to bid for the right to use other companies’ trademarks in its AdSense and AdWords auctions8. As of 29 May, a search for the set of words {google extends trademark policy may 2009} produced 463,000 page references on Google and over 4 million on Yahoo9. Bloggers noted that this action seemed to defy its critics and those who had started litigation against it:

“Despite facing multiple lawsuits over the sale of trademarked keywords on its web-dominating ad machine, Google has expanded the use of trademarks by US advertisers.” 10

The market clearly appreciates this aggressiveness; at the end of August, despite antitrust discussions and legal setbacks on keyword auctions, Google’s stock closed at 464.75, up 60% from its 6-month low of 290.89.

This paper attempts to address the following questions, in light of the current situation surrounding Google:

• How popular is Google? Political pressures will, to some extent, influence whether or not litigation proceeds.
• Is Google a monopoly under any reasonable definition of monopoly?
• If Google does have monopoly power, is it abusing this monopoly power and are consumers harmed by its power?
• Is Google providing superior service, which would make regulation risky or damaging to the consumers who rely upon it? If Google is found to exercise a monopoly, it would be essential to know whether remedial action would themselves prove harmful.

The authors had two objectives when writing this paper. The first was to understand the prospects for antitrust action against Google, given its behavior and performance, and its contributions to consumers and to firms for which they search. The second was to understand how the legal concepts of relevant market, essential facilities, tying and bundling may need to be revised in light of electronic online distribution companies such as Google. This is of interest when assessing the future of Google, but it also affects the entire range of future electronic distribution companies, mobile advertisers, and services not yet under development.

The structure of the paper is as follows: Section 2 very quickly reviews some of Google’s principal operations. Each of the four questions above is then addressed in sections 3 through 6 below. Section 7 summarizes our initial conclusions, reviews the limitations of our research to date, and provides suggestions for future research.

2. Google’s Main Areas of Operations

2.1. Online “advertising” — AdWords and AdSense

Google’s revenues presently are derived primarily from only two of their operations: AdSense and AdWords (which bring in approximately $6.7 billion and $14 billion in revenue, respectively, each year). Its AdSense online advertising program puts advertisements at the sides of other parties’ web pages; the owners of these ads are compensated for the amount of clicks they draw in. Its AdWords online customer acquisition program, which we do not classify purely as advertising, derives its success from the popularity of Google’s free online search engine, since it operates partly through the “Sponsored Links” section of Google’s search results. Google will display paid links that are triggered by the user’s search and are in some sense relevant to what the user is attempting to find. Google’s huge number of users therefore sees the paid or sponsored links, and sees them above and before the organic or natural results of their searches. More specifically, when users search for something, say “biochemistry” or
“Marriot Philadelphia” using Google, they receive all of the “organic” search results found using Google’s search algorithm, but directly above those results are normally other links, labeled “Sponsored Links”, in a yellow box\(^1\). Advertisers do not necessarily have to bid the highest price to win the top sponsored-link spot, but instead, Google weighs both a bidder’s quality and bid price into its decision. For example, Marriot may not have to be the highest bidder in order to have its link at the top of sponsored search results. However, Marriott needs to pay “enough” in relation to other bidders, without knowing how much enough actually is. This bidding mechanism implies that Google is sensible enough to realize that the “authentic” company (in our example, Marriott) should be the preferred claimant to its trademark in Google search results.

While Google publicly acknowledges that this benefits customers by placing companies they are more likely to want higher in the sponsored search list, it is also true that this earns far more money for Google. Companies in the top spots receive far more clicks, and it would be foolish for Google or its competitors to waste top real estate on companies and their URLs if they are unlikely to receive an adequate number of hits to pay Google adequately for occupying valuable space. Although Google calls this service “AdWords” and labels it an advertising service, the Sponsored Link section does not list ads in the traditional sense.

### 2.2. Other Business Activities

Google has a wide range of other business activities, not all related to search, which can be viewed on its website (www.google.com/options/).

- Twenty three of these are related to search beyond its traditional search engine, including commercial (Checkout), scholarly (Scholar), image-focused (Images) and map-based (Maps, Earth) and special purpose (finance, patent). Google now offers its own browser under this category as well (Chrome).
- Another fourteen are aimed at communications and sharing. These are largely free to their users.
- Three more are aimed at mobile users.

The value to Google of these applications comes largely from Google’s expectation that the information it obtains on customers will allow it to offer targeted advertisements based on user profile and time-sensitive context [9].

### 3. How popular is Google as a Company?

Some evidence of Google’s popularity can be gathered from the Fortune lists of the World’s 50 Most Admired Companies and the Fortune lists of the 100 Best Companies to Work for in America and the Forbes list of Most Admired companies in America. While not previously on the list of most admired companies, in 2009 Google earned fourth spot on Fortune’s list of most admired companies. Similarly, while not previously on the list of best companies to work for, Google entered the list at number 1 in 2007, in part based on extraordinary benefits and, of course, in part based on extraordinary non-salary compensation, and in 2008 and 2009 continued to enjoy the fourth spot. Clearly, by any measure, this is a popular company, and Google believes that this may help deter or soften antitrust action.

### 4. Is Google a Monopoly?

With some estimates of only approximately 60% of the market for online search in the United States, Google would not appear to have a monopoly in search\(^12\). Likewise, if Google search is no more than another form of advertising, then advertisers can advertise in the New York Times, in Fortune, on Television, or with Yahoo and MSN.

The claim that Google is a monopoly is based on two assertions:

- In electronic distribution, it is not necessary to be a monopoly to have monopoly power.
- Google is not principally an advertising company, but principally is a distribution company, which has brilliantly chosen to misrepresent itself as an advertising company.

### 4.1. Distribution or Advertising?

Travel agents, Orbitz, and travel agent distribution systems like Amadeus and Galileo (formerly Sabre and Apollo) do not advertise flights, they book them. Similarly, it’s difficult for anyone but an ardent Google defender to argue that Google strengthens any brand when it sells trademarks like Holiday Inn or Dove; rather, they are directing distribution services, based on brands created through

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\(^{11}\) The history of acquisition through misdirection certainly predates the age of electronic marketing [2].

\(^{12}\) Google is actually quite close to the threshold for considering a company to have monopoly market share. The threshold is usually 70%, with numbers in the range of 40-70% being deemed worthy of attention. As Google’s share continues to grow it may surpass the 70% threshold. In *HDC Medical, Inc. v. Minntech Corp.*, the court held that if a defendant that has so large a market share as to constitute a predominant share, a rebuttable presumption of monopolization applies. 411 F.Supp.2d 1096, 1103 (D.Minn. 2006) (citing *SmithKline Corp. v. Eli Lilly & Co.*, 575 F.2d 1056, 1063 (3d Cir.1978)).
product innovation, quality of service, and advertising, through distribution services available to any bidder. An ad in the New York Times may strengthen a brand, but even this does not help the trademark holder, if Google directs a searcher to a competing brand.\(^13\)\(^14\)

Monopoly power in electronic distribution channels is often difficult to assess since the relationship between market share and market power may be deceptive, even counter-intuitive. Two historical examples that were subjects of my earlier research provide the best way to begin the analysis, because their economic implications are now very clear [6, 7, 10, 12].

In the mid 1980s American Airlines’ Sabre and United Airlines’ Apollo computerized reservations systems (CRSs) dominated the market for travel agency reservations systems, with 43% and 27% market share respectively. At the time 80% of air travel bookings were made through travel agencies. Thus, while neither Sabre nor Apollo accounted for a majority of any airline’s bookings, even the smaller of the two controlled access to approximately 20% of every airline’s potential customers and therefore approximately 20% of every airline’s sales.

The historical record makes it clear that the CRSs had market power at the time. When Apollo dropped Frontier from its reservations systems, Frontier was forced to file for bankruptcy protection under Chapter 11; it reemerged, regained listings in Apollo, and continues to fly. When Sabre, which was larger than Apollo, dropped Braniff, Braniff ended up in liquidation and no longer operates. Clearly market power was present and clearly this power became evident to all airlines even if it was not perceived by passengers or even by agencies. Ultimately, both American and United were earning more from booking flights on other airlines than from their own operations, and at one point American was earning more from booking passengers on Delta’s flights than Delta was earning by operating them.

Neither Sabre nor Apollo had a monopoly of the market for reservations services, but together each had a parallel monopoly on the share of the market that they served through their agency customers. This should be clear from figure 1 below.

At approximately the same time Philadelphia National Bank (PNB) acquired Cash Stream, signed Provident as a customer bank, and consolidated the position of MAC as the sole ATM service provider for the Philadelphia region. Interestingly, even with 100% of the market for inter-bank ATM switching services, PNB lacked monopoly power, was unable to charge excessive fees to its member banks, and never represented a competitive threat to the other banks in Philadelphia. This can be seen from figure 2.

\[^13\] This distinction be crucial to any future antitrust litigation against Google. If Google is a form of electronic distribution, and if electronic distribution can provide monopoly power even with market share below 1/3 of the market, then Google may be shown to have monopoly power, just as travel agent CRSs were ruled by the Civil Aviation Board to have monopoly power in 1984 and as confirmed by the courts in 1985 *United Air Lines, Inc. v. C.A.B.*, 766 F.2d 1107, 1121-22 (7th Cir. 1985). Specifically, the court stated, “Though no airline has a monopoly market share, that is not required by section 411.” *Id.* at 1114.

\[^14\] The definition of Google’s product and hence of the relevant market for examination of monopoly power both remain contested. This was key both in *Person v. Google*, No. C 06-7297 JF (RS) WL 1831111, at *5 (N.D.Cal. June 25, 2007), and in *Kinderstart v. Google*, No. C 06-2057 JF (RS) 2007 WL 831806, at *5-6 (N.D.Cal. March 16, 2007). Neither decision is published or binding on other courts.
communications with MAC. Therefore the banks were able to forge an alliance — if PNB attempted to compete unfairly against any one of them, they would simply implement bilateral switching among themselves and cut MAC out entirely.

Again, even with 100% market share, there were no complaints of abuse lodged against MAC. In contrast, there were significant complaints lodged against the operators of the CRSs and, ultimately, rule changes from the Civil Aeronautics Board (whose responsibility was later transferred to the Department of Transportation after the CAB was eliminated in 1984), severely limited the power of the CRS operators. These rule changes were subsequently confirmed by the 7th Circuit Court in United Air Lines, Inc., 766 F.2d 1107, 1121-22.

As shown in figure 3, the geometry of the diagram looks strikingly similar to that of the airline reservations systems, with portals (AOL, etc.) in the position of travel agents, search engines in the position of CRSs, and sellers in the position that corresponds to airlines.

![Figure 3.—Geometry of Airlines, Search Engines, and General Portals.](image)

Google’s market share for sponsored search and for search generally is larger than the share Sabre or Apollo enjoyed. The conditions are right for Google to enjoy enormous market power over service providers, who feel they must bid for positions in Google’s sponsored search keyword auctions.

Offsetting the fact that Google’s market share advantage in search is greater than that which Sabre and Apollo once enjoyed is the fact that alternative routes into hotel reservations systems exist. Customers can call the hotel or the chain’s reservations systems, or can use the hotel’s website, the chain’s website, or other third party websites.

4.2. Relevant Market Share in Distribution and Contestability

The concept of relevant market share, which was a critical part of the Microsoft antitrust litigation, is likely to be relevant here as well in assessing how important Google search is to hotels’ access to their customers.

As Schmalensee notes [28], following Areeda and Turner [1] “judgements [sic] about the presence or absence of market power often turn on the definition of the ‘relevant market,’ especially in U.S. antitrust cases.” While Schmalensee defines this in terms of collusion, more intuitive definitions are possible. Attorney David Boies, when arguing The Department of Justice’s position in Microsoft antitrust litigation, preferred to argue in terms of direct substitutes, consistent with earlier Supreme Court decisions.

Microsoft argued that the relevant market was the market for all software, while the DoJ argued that the relevant market was the market for all operating systems software for Intel platform computers. While Microsoft’s share of the global software market may be quite small, its share of personal computer software is larger, and its share of operating systems sales for machines based on the Intel platform was at the time nearly 100%. Indeed, based on these statistics, Microsoft and its witnesses were very reluctant to see any definition of relevant markets accepted during the trial; in his first 65 pages of testimony Dean Schmalensee refused to accept the utility or importance of the concept in this trial, and argued that virtually any piece of software might ultimately emerge as a viable competitor for Microsoft’s OS.

Relevant market share concentration alone does not demonstrate presence of or abuse of monopoly power. The economist William Baumol and his colleagues have developed the concept of contestability, which argues that even in the presence of monopoly concentration, the concentration can sometimes be explained by the lack of profitability, due perhaps to the lack of barriers to entry, to the presence of effective substitutes, or to other factors.

analyzing monopoly power as direct proof of such power is rarely available. Under this approach, courts infer monopoly power from a firm’s possession of a dominant share of a relevant market that is protected by entry barriers. United States v. Microsoft, 253 F.3d 34, 51 (2d Cir. 2001) (citing Rebel Oil Co. v. Atl. Richfield Co., 51 F.3d 1421, 1434 (9th Cir. 1995)). The principal Supreme Court case outlining the requirements for defining the relevant product defined the relevant market as that which includes all products “reasonably interchangeable by consumers for the same purposes. United States v. E.I. DuPont, 351 U.S. 377, 395 (1956).

The Supreme Court explained in Eastman Kodak Co. v. Image Technical Services, Inc. that the relevant market is determined by the choice available to consumers. 504 U.S. 451, 481-82 (1992). This view of relevant markets was critical in the Government’s antitrust case against Microsoft in which Microsoft’s market share in the relevant market was found to exceed 95%. United States v. Microsoft Corp., 253 F.3d at 74.

Many American cities are currently reduced to only a single newspaper, and while this is a source of considerable concern, no one is arguing that newspapers are earning monopoly profits [21, 33]. Baumol’s test for the presence or absence of contestability is the firm’s ability to earn enough in one industry to subsidize others. This demonstrates the presence of market power by demonstrating the presence of monopoly prices, evidenced by the ability to generate subsidies, and demonstrates anticompetitive behavior by demonstrating the use of these subsidies to deter entry by competitors18.

We learned in the Microsoft trial that if a company is earning so much in operating systems that it can afford to subsidize web browsers, then the company is both enjoying monopoly power in operating systems and overcharging for them, and it is reducing consumer choice. We believe the same arguments can be established in any antitrust litigation involving Google:

- Google is earning enough from sponsored search to subsidize almost all of other businesses, including Gmail, Google Office, Latitude, gDrive, and others. It can therefore be presumed to enjoy monopoly pricing power in its core search business.
- Google is indeed subsidizing these other businesses, deterring entry and, ultimately, allowing them to charge monopoly prices later.

5. Is Google Abusing Monopoly Power and are Consumers Harmed?

It is not strictly necessary to demonstrate consumer harm in an antitrust action.19 Arguments against Google would have more political traction, and appropriate relief could be more readily determined if it were established who had been harmed and to what degree.

There seem to be at least four avenues to examine when looking for evidence of harm:

- Corporations may have been have been overcharged for Google’s services as a result of Google’s monopoly power and monopoly pricing, resulting in directly higher prices paid by consumers for the goods and services they purchased. Our analysis in the previous section showed that at least for the class of corporations marked by high fixed costs and by limited consumer loyalty, such as leisure hotels and airlines with a large number of infrequent non-corporate travelers, Google enjoys the power to force a corporation potentially into bankruptcy.
- Consumers may have been confused by sponsored search and consequently may have purchased inferior goods. Consumer confusion will continue to be central to litigation against Google. Consumer confusion was the basis of American Airlines complaint against Google. Complaint, American Airlines, Inc. v. Google, Inc., No. 4:2007cv00487 (N.D. Tex. Filed Aug. 16, 2007), which Google settled. Likewise, the concept of consumer confusion and the prospect of consumer mistakes will be central to the retrial of Rescuecom’s litigation (Rescuecom Corp., 562 F.3d at 130).
- Consumers may have been confused by sponsored search and consequently may have unwittingly purchased goods and services through a channel that significantly adds to the costs of the provider of the goods and services, and hence ultimately increases the prices paid by consumers.
- Cross subsidies may have blocked entry in a range of markets, from text-based voice mail to online videos, reducing innovation and consumer choice, and ultimately enabling additional monopolies going forward.

5.1 Corporate Harm

The lack of contestability and the presence of prices high enough to sustain cross subsidies satisfies Baumol’s conditions for establishing that Google has been charging monopoly prices. Are these higher prices always passed through to consumers, and if not, should we care about Google’s charges? That is, are higher prices to corporations grounds for antitrust actions? It’s clear that consumers do not buy steel or aluminum in bulk commodity form, and yet antitrust litigation has been used to protect competition (e.g., United States v. Aluminum Co. of America, 148 F.2d 416 (1945)).

Injuries in antitrust litigation do not require demonstrating that competitors have been harmed; it is sufficient to demonstrate that competition has been...
harmed (e.g., CBC Companies, Inc. v. Equifax, Inc., 561 F.3d 569, 571 (6th Cir. 2009)). In Fisherman v. Estate of Wirtz, the court stated, “The antitrust laws are concerned with the competitive process, and their application does not depend in each particular case upon the ultimate demonstrable consumer effect. A healthy and unimpaired competitive process is presumed to be in the consumer interest.” 807 F.2d 520, 536 (7th Cir. 1986). In United States v. Microsoft, the court similarly defined anticompetitive conduct as that which harms the competitive process and thereby harms consumers. Microsoft Corp., 253 F.3d at 58.

Moreover, in Rebel Oil Co. v. Atlantic Richfield Co., the court stated, “An act is deemed anticompetitive under the Sherman Act only when it harms both allocative efficiency and raises the prices of goods above competitive levels or diminishes their quality.” 51 F.3d at 1434. Thus, if firms are spending more on defending their key words than would be optimal and the quality of search is inferior or more expensive than it otherwise would be, it should be possible to demonstrate a violation of the Sherman Act.

5.2. Consumer Confusion and the Purchase of Inferior Goods

Confusion matters. Consumers may be purchasing inferior goods from an inferior supplier because the preferred or legitimate supplier was not capable of matching fraudulent bids. Simple comparison of costs will suffice to show that an illegitimate attacker will often outbid the legitimate owner of a trademark. This is not solely a hypothetical argument defended with simple computational models, but is also defensible on theoretical terms. Modeling shows, not surprisingly, that “the intermediary’s profit-maximizing design choice, by attributing a positive weight to the firms' bids, tends to obfuscate search results and reduce overall consumer surplus compared to the socially optimal design of fully transparent results ranked purely on product performance.” In other words, the use of paid search reduces consumer welfare [32].

And yet it is obvious from inspection that the firm in the top paid search location is not always inferior. Again, by charging the trademark owner just enough and granting the trademark owner top the spot in sponsored search, Google maximizes its own revenue [14].

In its complaint against Google, American airlines argued both that Google was creating confusion and that this confusion allowed Google to force American to bid, supporting both the argument of confusion and the argument of channel power from section 4. Complaint at 33-34, American Airlines, Inc., 4:07-cv-00487.

“In fact, because of the dominant role of Google’s search engine in consumers’ Internet usage and habits, Google effectively forces American Airlines to purchase the ‘rights’ to have the official American Airlines advertisements appear when Internet users search the web for the American Airlines Marks. In other words, Google has set up a system wherein American Airlines and others, are, de facto, forced to pay Google to reduce the likelihood that consumers will be confused by Google’s own practices.”

In the past consumers appeared to have been confused about the nature of sponsored search: Some consumers do not appear to notice that the top lines are labeled “sponsored links”, and some did not appear to understand that these are different from organic search results. We conducted a small real-time polling of 150 students at the first session of their undergraduate Wharton courses, assessing their beliefs about sponsored search. We found a much higher degree of understanding than we saw in previous years. For example, less than 5% believed that the top line was selected to be the best, while the others were roughly split between believing it was usually sponsored or usually most popular. We are not yet sure what the implications of this change in awareness might be.

5.3. Consumer Confusion and Purchase Through Higher Cost Channels

Consumers may be misdirected to inappropriate or higher cost channels for the goods and services that they seek to buy. Consider the following small hypothetical exercise, assuming the following hypothetical market conditions [20]. Assume that users search for “Marriott Hotels Arlington”, and that Google misdirects 1/3 of its searchers to an aggregator website such as Arlingtonhotels.com [21]. The aggregator then charges a 15% premium on bookings of Marriott rooms. That is, 15% of the room rate goes not to the individual Marriott hotel but to the aggregator as a fee for directing traffic to the hotel; this is true even though the traffic actually began by searching for this specific Marriott hotel. Because Google has 60% market share of the internet search market, we would calculate that 60%*1/3 = 20% of all searches are being misdirected to the aggregator rather than directly to Marriott. Furthermore, since 20% of consumers pay 15% less to Marriott than they otherwise would, Marriott’s

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[20] The conditions for this hypothetical appear to be very sensitive to the time at which the queries are generated. For whatever reason, abusive search results that we observed in March of 2009 had vanished by May of 2009, making estimates of consumer harm difficult to compute.

[21] This is not a hypothetical website. Arlingtonhotels.com actually does exist, and is one of over 50 aggregator websites in the family otels.com.
losses due to Google are = 20% * 15%, or 3%. An expense like this, like a tax or other cost of doing business, is passed on to consumers, so that, on average, consumer prices for hotel rooms are 3% higher solely due to Google’s allowing a third party to pay for affiliation with “Marriott” searches and allowing the third party to show up in sponsored searches for “Marriott”.

5.4. Cross Subsidies and Denial of Entry

The courts have repeatedly found cross subsidies to be illegal. The most extreme form of this is tying, where the purchase of one product is made contingent upon the purchase of a second product. However, these need not actually represent separate purchases, merely represent transfer of earnings from one market to establish dominance in another. For example, in the case of United States v. Microsoft, the court found that Microsoft’s bundling of its operating system and Internet web browser constituted an illegal tying arrangement. 84 F. Supp. 2d 9, 51-54 (D.D.C. 1999). In yet another famous case, Image Technical Services, Inc., the court found that sufficient evidence of a tying arrangement between Kodak’s services and its parts. 504 U.S. at 464. The issue of cross-subsidaries often arises in actions alleging monopoly leveraging, in which a firm utilizes its dominant market position as a lever to create, or attempt to create, a monopoly in another market. See e.g., Berkey Photo, Inc., 603 F.2d at 275-76. In AD/SAT, Div. of Skylight, Inc. v. Associated Press, AD/SAT, who engaged in delivering electronically transmitted advertisements to newspapers, accused the Associated Press of attempted monopolization, monopolization, and monopoly leveraging among other claims. 181 F.3d 216, 220-21. However, the Associated Press prevailed against claims of monopoly leveraging because AD/SAT failed to demonstrate that the service was subsidized by AP’s other activities. Id. at 231-32.

Google’s subsidies in services like YouTube and text voice mail may be seen as damaging to other firms that compete in these markets, reducing consumer choice, and harming competition. These are not strictly tied purchases, but cross subsidies and the possibility of reduced competition and future monopoly pricing will probably be investigated.

6. Is Google Providing Superior Service to Consumers?

It is not necessary to demonstrate that Google is providing inferior search products in order to justify regulation. At no point did the antitrust litigation against AT&T depend on arguing that AT&T provided inferior phone service, and, indeed, at the time of its breakup in 1984 AT&T provided the best phone service in the country. The arguments against AT&T’s monopoly did not depend on arguing that its service was inferior (See generally United States v. AT&T, 552 F.Supp. 131 (D.D.C. 1982)). Similarly, the break up of Standard Oil and the creation of a collection of separate companies never argued that Rockefeller’s Standard Oil provided inferior petroleum products. See generally Standard Oil Co. v. United States, 221 U.S. 1 (1911). Still, given the passion that Google seems to engender, it would be helpful to know if Google provides a superior product.

There is surprisingly little information available about the quality of Google’s search compared to the search engines of competitors. There are websites, like www.googleguy.de/google-yahoo/, which will allow you to enter a query once and compare Google’s responses to those of Yahoo side-by-side on a split screen. There are detailed, although unreferenced, studies that analyze the two search engines and offer detailed comparisons. There are numerous studies that attempt to answer questions about the quality of competing search engines by examining a range of criteria. Some attempt detailed comparisons of numerous search engines using several different types of queries, and find that Google is ahead in many but not all areas. Some have longer lists of areas where Yahoo excels. Some focus on a single area where one or the other excels. But we were unable to locate any scientific, refereed studies that attempted to assess the quality of work performed by users, working on serious research tasks, supported by either Google or Yahoo.

Given the lack of academic studies of search quality, we conducted a small laboratory study. Subjects were asked to perform a range of research tasks. Half of the subjects were required to use

22 This is not the interjection of personal bias, but a serious concern of the Department of Justice. One of the problems with cross subsidies as that while they may increase consumer choice initially, they tend to reduce consumer choice over the longer term by driving some innovators out of the market. Microsoft may have increased consumer choice with Word, Excel, and IE, but where are WordPerfect, 1-2-3, or Netscape today? The antitrust concerns with cross subsidies are based on the belief that subsidies (1) reflect monopoly power in the market that generates them and (2) generally reduce consumer choice in the market that receives them.

23 www.seobook.com/relevancy/
24 www.pcworld.com/article/130979/search_engine_shootout.html
25 www.marcandangel.com/2007/07/07/the-only-7-things-yahoo-does-better-than-google/
26 www.webanalyticsworld.net/2009/02/yahoo-analytics-better-than-google.html
27 www.macworld.com/article/139175/2009/03/yahoo.html
Google to get the information that they would need to answer the assigned questions, while the other half were required to use Yahoo. We did not ask the subjects which search engine they preferred but simply judged their work products.

Our null hypothesis was that Google and Yahoo were equivalent in terms of search quality; that is, there would be no discernable difference between the research reports drafted by students supported with Google and those performed by students using Yahoo. Students were given a range of tasks, including (1) a simple commercial search to find a hotel room that satisfied certain characteristics on price and location; (2) a more complex commercial search to find a camera that met a range of requirements while remaining below a specified price point; (3) and a more complex question based in geopolitics and history. The experiment was timed, and students were expected to face moderate time pressure. If subjects consistently generated better research results, when using Google or when using Yahoo, this difference would imply a difference in quality of search results due to inherent advantages of one search engine or the other.

The subjects’ answers were independently judged for quality by a reviewer who did not know which search engine had been used. The analysis of their answers showed on average slightly lower scores for answers supported using Google in two of the three questions and on aggregate scoring. However, the variances of the grades were too high to support the existence of a difference with confidence. Therefore, we concluded that there is no statistically significant difference between the quality of Google and Yahoo search. The results are summarized in table 1.

<table>
<thead>
<tr>
<th>Question</th>
<th>Search Engine</th>
<th>Average Score</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1</td>
<td>Google</td>
<td>2.92</td>
<td>1.01</td>
</tr>
<tr>
<td></td>
<td>Yahoo</td>
<td>3.00</td>
<td>0.83</td>
</tr>
<tr>
<td>Question 2</td>
<td>Google</td>
<td>3.08</td>
<td>0.91</td>
</tr>
<tr>
<td></td>
<td>Yahoo</td>
<td>3.10</td>
<td>0.59</td>
</tr>
<tr>
<td>Question 3</td>
<td>Google</td>
<td>2.52</td>
<td>1.38</td>
</tr>
<tr>
<td></td>
<td>Yahoo</td>
<td>2.81</td>
<td>0.92</td>
</tr>
<tr>
<td>Total</td>
<td>Google</td>
<td>2.84</td>
<td>0.91</td>
</tr>
<tr>
<td></td>
<td>Yahoo</td>
<td>2.97</td>
<td>0.63</td>
</tr>
</tbody>
</table>

Table 1.—Comparison of research quality supported by Google and Yahoo search.

With a product that is not significantly different from those of its competitors, one must wonder why Google maintains such a large market share and high levels of earnings.

7. Conclusions

7.1. Summary of Work to Date

We believe that we have shown the following:

- Google enjoys monopoly power in electronic distribution.
- Google has used this monopoly power to charge excessive fees to service providers and while these fees are termed advertising this is a deliberate misnomer. Google does not enjoy monopoly power in advertising, but it does enjoy such power in electronic distribution, much as the airlines’ travel agent reservations systems did in earlier decades.
- Google has caused consumers to pay higher fees for hotels and for other goods and services.
- Google may have caused harm in other ways, by deterring market entry or damaging existing participants in other industries, but this is not yet established. Vimeo may not survive as a competitor to YouTube. Newspapers may not survive Google’s use of their content.

7.2. Limitations of the Current Work

The work suffers from three limitations: (1) The examination of consumer uncertainty and confusion concerning sponsored links is anecdotal and incomplete. (2) Our experiments on search engine performance have too small a sample size and each student’s work was scored by only a single reviewer. Both small sample size and the use of a single subjective assessment can increase variance, contributing to the lack of statistical significance. (3) Our work was done at a time of legal flux, when the Texas class action complaint had just been filed (See John Beck Amazing Profits, LLC v. Google Inc., 2:2009cv00151 (E.D. Tex. complaint filed May 14, 2009)) and before any federal litigation had begun.

7.3. Directions for Future Research

We anticipate developing more solid assessments of consumer confusion and consumer harm from Google’s sponsored search, if indeed there is any harm. We anticipate developing additional assessments of the quality of Google’s core search products, which would enable us to address the cost to consumers that might be expected from regulation of Google. A larger sample size and the use of two or more assessors to evaluate students’ work would reduce variance.

One alternative form of quality assessment is simply a blind taste test, like taking the Pepsi Challenge, in which consumers are asked which cola they prefer without actually knowing if they are drinking Pepsi or Coke. Similarly, a proxy server could enable users to search the web without knowing if they were using Google or Yahoo, and
allow researchers to assess which set of results generated greater user satisfaction.

Another form of quality assessment would be test precision and recall, terms from the earliest days of document retrieval [24, 25, 26]. Precision refers to the percentage of returned documents actually relevant to the users’ request and recall refers to the percentage of relevant documents retrieved. An additional test of search quality could involve picking a short list of topics, working with a set of experts in each area to determine which documents were most important, and then assessing each search engine on how many of them it finds and how high or low in list of results the critical documents appear.

Finally, we hope that our work will help in the analysis of essential facilities and of relevant markets when addressing electronic distribution systems more generally.

8. References


[22] Rosenzweig, L. “E-commerce leaders move to fight deceptive online ads: The Alliance Against Bait & Click is focused on keyword advertising”, ComputerWorld, August 2008.


