

**Regulation of Digital Businesses with Natural Monopolies
Or Third Party Payment Business Models:
Antitrust Lessons from the Analysis of Google**

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Draft JMIS 8.11

29 June 2010

Abstract

Some digital business models may be so innovative that they overwhelm existing regulatory mechanisms, both legislation and historical jurisprudence, and require extension to or modification of antitrust law. Regulatory policies that were developed in response to 19th or 20th century antitrust concerns dealt principally with economies of scale leading to monopoly power, and may not be well suited to the issues of network effects or third-party payer online business models like sponsored search. From the perspective of information systems economics we investigate if such third party payer digital systems require intervention as profound as the Government's innovative approach to the problems posed by AT&T in the 1913 Kingsbury Commitment, establishing the first private regulated monopoly. Google provides an example of a company whose innovative digital business model is difficult to fit into current regulatory frameworks, and may provide examples of the issues that might require an extension to regulatory policy.

Keywords: Digital Business Strategies, Search, Sponsored Search, Keyword Auctions, Antitrust, Contestability, Relevant Market Share, Essential Facilities Doctrine, Bundling and Tying, Deterred Market Entry, Digital Business Strategies, Google

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Introduction

Objectives of the Paper

This paper addresses the regulatory prospects facing any truly successful firm in an age of Internet technology, “*winner take all*” economics [43], and integrated platform-based competition. The major issue addressed in the paper how well suited American legal practice, especially commercial and antitrust statutes and jurisprudence, are for dealing with modern digital business strategies.

American commercial and regulatory legal practice was largely formulated during an industrial era, when the dangers of monopoly market power were associated with manufacturing giants. Of course, the courts have creatively constructed the present antitrust doctrine to keep it as relevant as possible, and much of what is applied to cases today is the result of the courts’ interpretations of the Sherman Act rather than the Sherman Act itself. Still, the courts are always to some extent constrained by the original legislation that defines the issues before them and by the history of jurisprudence, which itself often lags behind industrial practices. Manufacturers note that the courts are much better at regulating them than they are at regulating giant retailers like Wal-Mart and Home Depot; of course, at the time that the Sherman Act was drafted, antitrust was far more concerned with the very real prospect of giant manufacturing trusts than it was with the then-unimaginable problems caused by giant retailers.

This leads us to ask how appropriate existing regulatory frameworks are to competition among businesses with modern, post-industrial digital business models. Inevitably, attempting to apply existing law to these businesses will need to deal with issues never anticipated either when legislation was drafted or when it was interpreted over decades of jurisprudence. Inevitably, there will be disputes, and this paper addresses where they will arise. We also ask when commercial and regulatory legal practice might actually fail to address the new competitive environment and thus need to be explicitly altered and updated. We believe that extensions to antitrust will be required, that to some extent extensions can be addressed through additional flexibility and reinterpretation by the courts, and that to some extent legislative change will be required. We use the perspective of information economics to address limitations, and to guide extensions. We believe that technology determines what it is possible for firms to do, and the interaction of economics and technology guides the behavior of profit maximizing firms. When the behavior of these firms is not consistent with public policy objectives, technology, economics, and profit maximizing behavior are largely outside society’s control, but the laws and regulations that guide the firms are not.

We believe that the implications of current technology are so far outside of what was anticipated when most of our regulatory frameworks were constructed that these frameworks may fail to provide socially desirable outcomes when firms rationally adopt newly available business models. Although we are writing for an information systems readership, we have felt it necessary to provide a significant number of legal

citations. First, these citations take the debate out of the domain of mere opinion, and provide the basis for our analyses. Second, and more importantly, if our information systems colleagues are to extend our work, they should not need to reproduce our legal research, but rather can begin their own analyses with a firm understanding of the legal jurisprudence upon which the current legal debates are going to be based.

To illustrate this last point, the need to clarify, extend, or modify current legal practice, we take an example from Google's history, where the courts have been attempting to rule on a current business practice that was not anticipated when relevant legislation was drafted, and where the courts have specifically requested that Congress provide more explicit guidance. We use this example merely to illustrate the need for additional regulatory clarity; we will not stress this example in the body of this paper. The intent of the Lanham Act (also known informally as the Trademark Act) was clear: (1) to prevent consumer confusion by restricting the use of brands and trademarks to their legitimate owners and (2) to increase the quality of products offered to consumers by providing incentives for companies to invest in their brands. The Trademark Act is very specific about the protections it affords a brand, providing that no company can use another company's trademark for commercial purposes in a way that confuses or misguides consumers; the exact wording, about using a competitor's trademark for commercial gain, is less clear today than was believed when the Act was originally drafted.¹ In other words, it's clear from the statute that a company cannot put a Coke label on a can of Pepsi or even on a machine that sells Pepsi and not Coke. Unfortunately, with today's online business models, with sale of trademarks and optimization of search engine relative positioning, there are many opportunities to use trademarks in ways that were not anticipated and thus now much about the bill that is no longer clear.

How does this act inform us in assessing whether or not a search engine operator's sale of keywords is or should be legitimate? By selling trademarks it does not own in a keyword auction search engines are certainly using the trademarks of other companies for their own commercial gain, although in a way not anticipated by the framers of the Trademark Act. As certainly, by selling a company's trademark to a competitor for use in the competitor's marketing efforts, may in some sense be the equivalent of putting Coke logo's on a Pepsi machine that it operates, but again it was acting in a way that was not anticipated by the drafters of the Trademark Act. This may be like misdirecting Coke's customers to a Pepsi machine, but in general properly labeling the machine when the customers actually arrive. At present it is unclear if this is the legal equivalent of mislabeling the vending machine, or indeed if it should be.

So does sale of registered trademarks as search terms violate the Trademark Act? The courts initially decided it did not in the *Rescuecom* case [87], but in Google's first major legal setback this was reversed by the Second Circuit Court of Appeals. The Court claimed that this practice could not have been endorsed by the framers of the Act; as importantly, they requested more clear and more modern and relevant guidance from Congress. Google has lost trademark cases in Europe [59] and, more recently, has won

cases as well [72]. The issue is further complicated by the fact that Rescuecom has subsequently dropped its suit against Google [52], so resolution of ambiguity will not come from the Rescuecom case.

When we need a specific instance we focus on Google in this study, largely for the same reasons that the authors of previous cases focused on Capital One in the case study of screening mechanisms in banking as a test of the newly vulnerable markets hypothesis [32], on McKesson Drug in the case study of the strategic necessity hypothesis in drug distribution [31], or the case study of the London Stock Exchange after its automation made it the first major securities market to abandon its trading floor [33]. These were important early exemplars of emerging trends, trends with lessons beyond the individual company studied, and indeed beyond the industry in which these exemplars competed. Google is the search engine with the largest market share, has been involved in more litigation, and is facing more discussion of regulation. It is, indeed, the best example we could find for assessing the future of American regulation of digital businesses.

Google has announced its intention to defend itself against any and all litigation. In fact, Google's 10-K filing for 2008 indicates that their general and administrative expenses increased from \$1.279.3 billion in 2007 to \$1.802.6 billion in 2008. As they note, "This increase was primarily related to an increase in professional services of \$243.0 million, the majority of which were related to legal costs ..." [46]. For instance, rather than concede on the sensitive issue of trademark abuse, Google has announced that it intends to extend its policy (as described on its website) on allowing companies to bid for the right to use other companies' trademarks in its AdSense and AdWords auctions [92]. It is clear that Google is prepared to challenge ambiguities and anachronisms in commercial jurisprudence, making this an ideal way to approach an understanding of the strengths and possible limitations of current regulatory practice. It is equally clear that regulators and legislators need to respond with a clear understanding of the economics of digital businesses and the risks and benefits to consumers implicit in new digital strategies.

Specific Issues Addressed in Our Research

We address the following five areas, informed by legal doctrine, but from the perspective of information economics:

1. **Presence of Monopoly:** When is a new digital business model an extension to previous products or services competing with them for share of an existing market, and when is it radical enough to represent a business in its own right, and not a substitute for other companies' historical offerings?
2. **Presence of Monopoly Power:** When do you know that you have monopoly power and a monopoly ability to set prices?
3. **Abuse of Monopoly Power:** How can you tell when monopoly power has been abused, causing harm to consumers, competitors, or to the very process of

competition?

4. **Applicability and Efficacy of Existing Legal Remedies:** When can monopoly power be limited through the legal system? Traditionally, monopoly power has been prosecuted only when it is obtained illegally, in order to reward entrepreneurial creativity; monopoly power obtained through innovation and excellence has generally been held to be legal. In rare instances, monopoly power was considered to be a fundamental property of an industry, as it was with 19th and 20th century telephony, prior to easy interconnectivity among competing service providers; in that case the concept of a regulated natural monopoly was introduced.
5. **Need for Fundamental Regulatory Change:** Do third party payer digital business models, as exemplified by paid search, require intervention as profound as the Justice Department's intervention against AT&T in The Kingsbury Commitment? We believe that each of these questions is best addressed from the perspective of information economics, and indeed, information economics will be necessary to guide and inform the development of appropriate law.

Throughout this paper we will use the term economics to mean micro-economics and the analysis of the decisions of consumers who are maximizing their welfare and firms that are maximizing their profits. Consumers decide how much to work and at what jobs, and what to purchase and how much to purchase of the goods and services on offer. Firms decide what to produce, how to produce it, and what quantities to offer, based on their assessment of the decisions of consumers and of other firms.

Overview of Principal Areas of Legal Doctrine Used in Our Analyses

The principal legal issues we use to support our information economic analyses are listed below. This short introduction is not intended to detail the logic or to present either current statutes or jurisprudence and litigation history. It is intended to guide the reader through what will follow and to allow the reader who is less familiar with antitrust or with legal reasoning to impose some structure on the paper as he or she reads through the text:

- **Relevant Market Share** — How would you know if you were dealing with a monopoly? You start by determining what the relevant market is, and then examine the company's share of that market. For example, is Google just another advertising company or is it the dominant player in search? Similarly, the Department of Justice (DoJ) needed to determine if Microsoft was just another software firm or if it was the dominant player in operating systems for Intel-based personal computers? This is essential to determining if a company has monopoly power.
- **Electronic Distribution and the Essential Facilities Doctrine** — Is search a form of advertising, or is it better viewed as a form of electronic distribution, with its own economics and business model, quite separate from advertising? Is search

an essential facility, one that indeed not only can augment advertising but in a real sense can trump it by redirect customers away from one well-advertised brand and to competitors? Does control over search confer enormous and perhaps irresistible market power and pricing power in the sale of keywords? Does this power even survive the presence of viable competitors, allowing the formation of “*parallel monopolies*”, each with monopoly pricing power? Does the seller of an essential facility have monopoly power even if the price is set through a market auction? Alternatively, perhaps none of these questions is relevant. Does essential facilities doctrine even apply, since historically it has been used to regulate transactions between competitors: The doctrine may have been applicable in disputes between MCI and AT&T or between airlines and the reservations systems owned by competing airlines, but is it applicable in disputes between Google and its bidders, which are firms in very different industries? This is essential to determining if a company has monopoly power even in the absence of monopoly market share. It is also relevant to determining if a company has been behaving as a monopolist.

- **Bundling, Subsidies, and the Potential Stifling of Competition** — Is the giving away of products, bundled (as Internet Explorer was with Windows) or stand-alone (as Gmail is with search) necessarily a form of predatory pricing, does it stifle competition, and is it always associated with a potentially predatory monopoly? While giving products away without charge is not illegal, giving products away to develop a monopoly position to be exploited later is indeed illegal. When foreign firms engage in this practice within the United States it is called *dumping* and it is indeed prosecuted. While the tight interaction of products and services is beneficial to consumers, bundling, tying, and cross-subsidies may harm future competition, even if no present competitor and no present consumer can demonstrate harm. Antitrust law does indeed permit prosecution of actions that harm the competitive process, even if no consumers and no firms have yet been directly harmed.ⁱⁱ This is useful when determining if a company has been behaving as a monopolist or is positioning itself to behave as a monopolist in the future, or both.
- **Separation of Payer and User in a Platform that Constitutes an Essential Facility** — Third party payer business models did not originate with the Internet, but they may so thoroughly decouple pricing from the discipline of the market, and they may now become so prevalent among Internet firms, as to require a change in regulatory philosophy. Google’s business model is only the latest example of a *third party payer* platform; earlier examples included Sabre and Apollo as computerized travel agent reservation systems. In the third-party payer model, the provider of the platform (party one) provides an essential service to the user community (party two) without charge, while charging a third party for participation (party three), in this instance charging searchers nothing to search while charging the third party fees in order to be present and thus in

order to be found. Are the economics and channel power implications of this model such that these businesses must inevitably create severe competitive risks in the absence of regulatory oversight? Before their regulation the largest reservations systems, Sabre and Apollo, enjoyed enormous freedom in setting their fees because they were able to charge airlines rather than travel agencies. Google today likewise enjoys enormous latitude in setting its prices for keywords, in large measure because searchers never pay or even see those prices. Because users search with Google, companies must participate in Google search and they must pay enough to participate. Does this structure inherently harm the competitive process? Most importantly, does this new business model now require an explicit extension to the Sherman (Antitrust) Act, much as AT&T's natural monopoly in telecommunications in the early part of the 20th century did?

The paper advances the following legal arguments:

- Google may enjoy monopoly power in search, which is the **relevant market** for consideration, and not advertising.
- Search may be a form of electronic distribution, like travel agent reservations systems, and search may be an **essential facility**, one to which companies must have access if their business requires that they can be found by consumers.
- Search engines' third party payer business model may free their keyword auctions from the effective discipline of the market; that is, prices in the auction may be limited by the value of the contact to the firm bidding for auction terms, not by the value of search to the consumer if the consumer is not paying. Owners of such essential facilities may enjoy monopoly pricing power in the presence of parallel monopolies, rather than pure monopolies, because if some consumers only use Google then it is essential to be present in Google, even if Yahoo were available at a lower price.
- And if the above are true, and if Google uses even a small portion of its monopoly profits to provide incentives to consumers to remain with Google, then this business model will remain stable even if prices charged to corporations are extraordinarily high, further increasing consumers' reliance upon Google. Again, if consumers are induced to stay, and consumers are not the ones paying for search, there is no discipline imposed upon the price of search by the market.
- Finally, if the above are true, and if Google uses a significant portion of its monopoly profits to underwrite other ventures, it may be able to engage in *subsidized preemptive line extensions*, increasing consumer choice initially but restricting future competition.

The rest of the paper provides some context on search engine providers, and on Google specifically, and then examines the legal arguments that would need to be used to assess each of the points above.

Essential Disclaimers

It is essential to note the following disclaimers while reading this paper.

- We are not describing why Google **should face** antitrust litigation
- We are not describing why Google **should lose** antitrust litigation
- We are not describing or seeking to quantify the precise economic damages that may be caused by Google
- We are describing what the central issues in any litigation **may** entail, within the context of current antitrust jurisprudence, **if** indeed such litigation occurs, to highlight the areas where regulatory change may be necessary.

Most importantly, we are describing specific areas in which current jurisprudence **may** prove inadequate, leading to groundbreaking disputes over appropriate extensions.

Indeed, Google also believes that the issues raised here are those that they will face in court, if indeed, this ever goes to court. Like any firm that is responsible to interests of their investors, they are preemptively attempting to put the best possible spin on them, through press releases (e.g., [50]) and meetings with major newspapers (e.g., Burns, [13]). Not surprisingly, they also have an extensive lobbying budget [55]. The analysis presented here can help provide an understanding of why antitrust litigation will or will not be brought against Google, and can help provide an understanding of the arguments that will unfold and the decisions that will need to be made if such antitrust proceedings commence.

Many of these issues are still in flux, like the explicit meanings of and limits to applicability of bundling and tying or essential facilities doctrine, with the courts continuing to redefine, clarify, and alter interpretations. Litigation is likely not only to be shaped by decades of legal history on the issues mentioned in our review of specific issues above, but also is likely to shape antitrust regulation and jurisprudence for next several decades as well. For that reason the views of those of us who study information economics, business strategy, and modern competition may suddenly and at least briefly now be as relevant as the views of antitrust lawyers in the shaping of America's antitrust policies.

When the issue of economics is addressed by litigators, it is usually in the context of quantifying damages, which is usually based on some form of accounting, cost accounting, or *but-for* analysis. (*But-for* analysis" is a means of assessing how the world would have been, *but-for* a specific action, in order to assess whether or not harm has occurred and the extent of any resulting harm. In general, concrete econometrics or simulation modeling is required, and fanciful analyses are generally not permitted, such as for "*For want of a nail the shoe was lost, for want of a shoe the horse was lost, for want of a horse the rider was lost ...*," which try to blame the blacksmith for the fall of a kingdom.) Rather, the discussion of economics here is intended to highlight that economics drives business strategy, which is constrained or channeled by law, to achieve broad social

goals. As technology changes economics, changing the range of profitable alternatives available to business, the law may need to be changed as well. At no point in this paper do we attempt either to determine the presence of harm or to provide estimates of damages that might result should harm be determined to have been caused.

Structure of The Paper

The structure of this paper is as follows:

- We first explain our interest in Google as the most successful example of a third party payer digital business, and presents a quick review of the company and its business model.
- We next explain the concept of relevant market share, essential to the DoJ's case against Microsoft, and likely to be central to any DoJ action involving Google.
- We examine electronic distribution in the context of the essential facilities doctrine and asks if the regulation of essential facilities needs to be rethought or extended in order to deal explicitly with electronic distribution channels.
- We examine whether there is any evidence that Google has monopoly power or is exploiting monopoly power: (1) What are Google's current business practices, can it set its own prices for search terms, and does it bias search in a way that damages consumers? (2) Does it have extraordinary market power? (3) Does its ability to provide for cross-subsidies for other lines of business strengthen the argument for monopoly power? (4) Do these cross subsidies help or harm competition by increasing or decreasing consumer choice? (5) Do these cross subsidies violate prohibitions bundling and tying or any other existing legal doctrines?
- We consider whether or not there is sufficient possibility of consumer harm to justify the Department of Justice's considering bringing an antitrust case against Google. We examine both **current** harm, due to consumer confusion, inferior purchases, or higher prices, and **future** harm, due to harm to the competitive process and reduction in future choice, reduction in future innovation, or higher prices in the future. It concludes by considering if it appears that these cross subsidies harm competition and that the monopoly power that created them was obtained legally, is it necessary to provide new regulatory guidance or will the existing legal framework prove adequate to provide judicial relief?
- Finally, we present our conclusions regarding the five issues raised in the review of specific issues above, examines limitations of this work and directions for future research.

This paper does not explicitly consider the possibility of private antitrust lawsuits, brought either by competitors or by customers. We had considered customer lawsuits unlikely because of the oft-stated fear of retaliation by Google or by costs associated with such litigation, until we recently became aware of *Tradecom.net.com v. Google* [75].

The requirements for a private suit would be different with respect to standing and to a degree would be more difficult to satisfy,ⁱⁱⁱ but the essential logic needed to support the litigation would be similar to that which we expect would be pursued by the Department of Justice, and the problems interpreting current law and legal practice likewise would be similar.

An Overview of Google and its Business Model

Google is certainly an Internet success story, with 60% or more of the US market for Internet search; recent estimates range from a low of 67% to a high of 77% [22], [45], [68], and do not appear to be dropping significantly since the launch of Microsoft's Bing. The company does not break out profit margins by lines of business, but with an operating margin in excess of 35% for the company as a whole [93], and with virtually all profits coming from search, profit margins from search are extraordinarily high. Likewise, profits from search have funded its expansion into a range of semi-related and unrelated activities. 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 performing search) without charge, while having another set of customers to pay very high prices (companies desiring to be found) to subsidize the services offered to the searchers, adding to the firm's popularity.

Google's model is working: Simple financials provide one indication. With gross profits of \$13.17 billion on sales of \$23.65 billion, with profit margins of 27.57% and return on equity of 20.30%, and with a cash horde of \$24.48 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 \$6.46 billion, profit margins of 9.26% and a return on equity of 5.04%, and cash on hand of \$3.29 billion [93].

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.

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.

Google's users are extraordinarily loyal and vocal [70]:

- *"Government touches google= we revolt... this is sacred ground people!"*
- *"What if GOOGLE broke up the GOVERNMENT, would be a more interesting story"*
- *"Don't you dare touch Google? It's personal."*
- *"I don't think that GOOGLE should be worried about the GOVERNMENT ... now vice versa..."*
- *"They can take my Google when they pry the keyboard from my cold, dead hands."*

Clearly, by any measure, this is a popular company, and Google believes that this may help deter or soften antitrust action.

Whether despite or because of its popularity, Google is now attracting unwanted attention from a range of sources. Some authors are beginning to question the stability of a business based on attracting online ad revenues (e.g., [53]), and some even consider the possibility that online community content may eventually replace much of Google's online advertising [24], [25], [27], [39]. Moreover, the general tone of press coverage now regularly addresses the risks facing the company from antitrust litigation (e.g., [18], [21], [57], [65], [70]), and the anger of corporate participants in Google's auctions (e.g., [18], [64], [69]), and even concerns over Google's appropriating the content of others without compensation [64].

Relevant Market Share

The Concept of Relevant Market

Relevant market share is assessed by first determining what the market for a product or service product is, and then by determining what percentage of that market that product or service has captured. This sounds unambiguous, but determining the set of alternatives, direct competitor and substitute products, can be quite complex. One local New York or Philadelphia national network affiliate is probably clearly substitutable for another as venues for advertising. However, the substitutability of *The New York Times*, *The Philadelphia Inquirer*, and the *Wall Street Journal*, of *Fortune Magazine*, *Time Magazine*, and *The Economist*, or of the History Channel, The Golf Channel, and The Food Channel is less clear; indeed, these latter alternatives to a television network affiliate probably need to be arrayed in a two dimensional space, with one axis indicating the target audience and another axis indicating the degree of substitutability.

The experience of Microsoft indicates the importance of determination of the relevant market and of relevant market share. Microsoft represents only a small portion of the

global economy. It is a larger portion of the technology sector, a larger portion still of computing hardware and software, and an even larger portion of the market for all software. Most importantly, it is a huge portion of the Intel operating system market. During trial, Microsoft tried to argue it was about 3% of the software market; opposing them, the DoJ and David Boies argued that it was closer to 90% of the relevant market, the market at the time for operating systems for Intel-based machines.

The concept of relevant market share was so critical in Microsoft antitrust litigation that it is nearly certain to be relevant here as well in assessing how important Google search is to firms' access to their customers^{iv}. As Schmalensee notes [67], 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 including *Eastman Kodak Co. v. Image Technical Services, Inc.* which defined relevant market as the choice available to consumers ([40] at 481-82). 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% ([78] at 74).

While Microsoft argued that the relevant market was the market for all software, 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 Professor 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 [76]. We can expect similar resistance from Google to the definition of online search as the relevant market for online search, and a similar need for clarification of what constitutes advertising and what does not in an era of digital acquisition of information before shopping.

The Lessons of Share of Relevant Market from The Microsoft Trial

Just as Microsoft represents only a small portion of the global economy, Google is a small portion of the global economy. It is, of course, a larger portion of the Internet economy, and it is a huge portion of the market for Internet search. Google is now trying to argue it is less than 3% of the advertising market [50]; however, if it were shown that search is not a form of advertising, that advertising is not substitutable for participation in search, and indeed that keyword auctions can trump or devalue traditional advertising, then the relevant market will not be seen as all of advertising. Consequently, if Google is subject to antitrust action, the DoJ will almost certainly have

to argue that the relevant market is online search, and that Google possesses between 60% and 70% of this relevant market. Google accepts the importance of this distinction, and while it acknowledges that it currently captures 72% of the revenue for search advertising, it represents only 30% of online advertising and less than 3% of all advertising revenues. This information is taken with permission from Google's presentations at The Wharton School on 1 March 2010.

Sponsored search exemplifies the complexity of identifying relevant markets when assessing new products and services, especially when these new offerings can be framed in terms of more traditional predecessors. We are not suggesting that Google calls its business a form of advertising to deceive either consumers or the courts. Initially, its customers, companies that could be induced to bid for keywords, understood advertising and had budgets for advertising; there could not have been a better way to position the business for initial adoption by corporate bidders.

Is Search Just Advertising?

Google calls its profitable businesses *Adwords* and *AdSense*. Why aren't these just forms of advertising, and why isn't relevant market just advertising in all its forms and utilizing all available media?

But we know what advertising is. Advertising presents material to you while you are doing something else, such as presenting an ad on the lower half of the printed while you are reading the *Times*, making you navigate through a screen you encounter before you enter *Forbes's* online website, or interrupting with a TV a commercial you view while watching the Super Bowl. Advertising creates a desire to buy now, or a sense of trust in a brand that leads to buying later [24], [25]. The best advertising leaves you with a clear and memorable image of the firm that sponsored it, like "*We love to fly and it shows (American Airlines)*," or "*Smart. Very Smart! (Holiday Inn Express)*" or "*Just do it! (Nike)*".

These ads are much less useful if the customers search for a product after seeing the companies' ad, only to be redirected and to end up at a competitor's website. We believe that advertising is not a substitute for search, anymore than a personal computer owner can substitute Photoshop or SAP in place of Vista or Windows. Search is thus different from advertising [24], and not an alternative for advertising, but a means of rendering advertising less important, perhaps even irrelevant [25]. Paid search allows a company to *take temporary possession* of a competitor's brand, so that if a user searches on Marriott Marquis or InterContinental London they can send the user to a bidder for keywords like "Marriott", "Marquis", or "InterContinental", not necessarily the owner of the brand. The distinction between search and advertising in the definition of the relevant market may be crucial to any future antitrust litigation against Google. If search is a form of electronic distribution, and if electronic distribution can provide monopoly power even with market share below one third 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 [62]. Specifically, the court stated, “Though no airline has a monopoly market share, that is not required by section 411” ([77] at 1114.)

The definition of Google’s product — whether or not it is a form of advertising — remains contested, and resolving this will again be crucial to the decision in any future antitrust trial of search engine providers. This will continue to be debated, since redirection, and even misdirection, as alternative forms of customer acquisition are simply too powerful for the courts to ignore. The history of acquisition through misdirection certainly predates the age of electronic marketing [10]. Needless to say, the British courts did not view this example, which involved using false lighthouses as signals to redirect ships onto reefs where they could be plundered, as advertising, or as any other legitimate form of business.

Google, of course, sees things differently, and argues that placing an ad for a sponsored product above the product for which the consumer is searching is little different from placing a store branded mouthwash next to Listerine, in a bottle size, shape, and color as much like Listerine’s as possible. In *Rescuecom*, Google argued that “use of the Rescuecom trademark is no different from that of a retail vendor who uses “product placement” to allow one vendor to benefit from a competitors’ name recognition [49]. An example of product placement occurs when a store-brand generic product is placed next to a trademarked product to induce a customer who specifically sought out the trademarked product to consider the typically less expensive, generic brand as an alternative.” Little in the history of advertising or of more traditional physical product placement prepares the courts to address this issue.

Direction, Misdirection, and Redirection Explained

What does it mean to say the searcher “gets sent somewhere else”? Definitions of several terms may help (numbers in the text correspond to the numbered arrows in figure 1, which follows):

- **Organic Search (1)** — The results of a search returned because Google’s algorithms suggest that these are the most relevant item for the user, based on the terms in his or her search.
- **Sponsored Search (2)** — The result of a search returned because a sponsor bid enough for key words that appeared in the user’s search sequence. These terms may be generic (e.g., London, hotel), obviously brand names (e.g., Marriott), or more ambiguous (e.g., Holiday, Inn). The term may appear because the sponsor was the highest bidder, or, increasingly, because the sponsor bid enough, and Google determined that this is the company that the user would have wanted to see, even in the absence of bidding. It may not always be obvious to the user that these are sponsored search results.
- **Map Ads (3)** — These are the URLs that appear next to a map returned in response to the user’s search.

- **Ads (4)** — These are terms that appear off to the right of the organic and sponsored search results. Most users are easily able to identify these as ads. Like sponsored search, these results appear because companies purchased keywords, and these keywords were used in a user's search string, triggering the appearance of the ad.
- **Scam Ads (Not shown)** — This term is poorly defined, but the concept has some industry participants very concerned [69]. Basically, a scam ad (or *scads*) appears to be a URL sponsored by the trademark owner, but is actually the sponsored URL for a different company, either a competitor, or a third party reseller that sells many competing brands and may or may not actually represent the owner of the trademark. These can appear among sponsored search results, map ads, or ads.

The screenshot displays search results for 'Marriott Marquis New York'. At the top left, a sponsored link for 'Marriott Marquis New York' is shown with a 'Sponsored Link' label. Below it is a map of Times Square with a pin on the Marriott Marquis hotel. To the right of the map is a sponsored link for 'New York Marriott Marquis: The View Lounge' with details like '1535 Broadway, New York, NY 10036' and '195 reviews'. On the far right, a 'Sponsored Links' section lists several other hotel-related links, including 'Marriott Marquis Times Sq', 'Hotel Marquis, New York', and 'The M. MARQUIS Hotel NYC'. At the bottom, organic search results are visible, including 'New York City & Midtown NYC Hotels | New York Marriott Marquis ...' and 'Broadway Restaurants | New York Marriott Marquis - Restaurants ...'. Four arrows labeled 1, 2, 3, and 4 originate from a central point and point to the search result snippet, the map ad, the 'New York Marriott Marquis: The View Lounge' link, and the 'Marriott Marquis Times Sq' link, respectively.

Figure 1.—The results of a search for Marriott Marquis New York

As a consequence of sponsored search, map ads, and outright deceptive scam ads, even if the user is searching for a specific company or a specific product, using the relevant brand name as a keyword, he or she may end up clicking on someone else's URL unless the firm that owns the brand has chosen pay and to participate in Google's keyword auction.

Both Google and its supporters argue that the presence of sponsored search and ads greatly increases consumer choice by suggesting items consumers may not have known existed, thus making consumers aware of numerous additional alternatives; increasing consumer choice, it is argued, improves the consumer shopping experience. This argument has some value, but it is both simplistic and, itself, misleading. Many firms offer suggestion facilities. Amazon, for example, has a recommender system that is fair

and honest, based on collaborative filtering, and requires no expensive bidding; Amazon's system also is clear and not misleading, and its suggestions are obviously labeled as recommendations, not as alternatives that appear above the item that the customer requested. It is clear by comparison with Amazon that this model would be far less profitable for Google, but it would be far less expensive for corporations and for consumers who ultimately pay the increased costs of Google search that are passed through as higher consumer prices. Obviously, neither Google nor any other search engine has any incentive to provide a free recommender service, but it is useful to note that recommender services and paid search are not equivalent.

Electronic Distribution and Essential Facilities

Introduction to the Essential Facilities Doctrine

The essential facilities doctrine provides that a monopolist or a near monopolist that controls a facility that cannot be duplicated by competitors must provide access to the facility if it is feasible to do so ([58] at 1132). "Specifically, four elements must be satisfied to establish liability under the essential facilities: (1) control of the essential facility by the monopolist; (2) competitor's inability practically or reasonably to duplicate the essential facility; (3) unjustified denial of the use of the facility to a competitor; and (4) feasibility of providing the facility [58]. The essential facilities doctrine has evolved through legal history and jurisprudence and it is a matter of common law rather than the result of specific legislation. For a more detailed treatment see [37]. The Supreme Court has never recognized the essential facilities doctrine although discussions of the doctrine in Supreme Court decisions seem to suggest that it is still a viable part of antitrust jurisprudence. For example, in *Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko, LLP*, the Supreme Court stated, "[w]e have never recognized such a doctrine, and we find no need either to recognize it or to repudiate it here" [89]. This was also addressed in *Pacific Bell Telephone Co. v. Linkline Communications, Inc.* [60]. We will return to this in our exploration of the uncertain future of the essential facilities doctrine, below.

Overview of Electronic Distribution as An Essential Facility

If search is not a form of advertising, what is it? We believe that Google's business model is a form of electronic distribution, or a form of paying for customer access, and we believe that this form of electronic distribution and customer access is an essential facility. Indeed, the argument we will present in our review of prior experience with electronic distribution suggest that this business model is largely analogous to that of the travel agent reservations systems in the 1980s.

- When United Airlines wanted to take over Denver as its new domestic southwestern hub it redirected passengers away from Frontier and towards its own flights, using its travel agent reservations system, Apollo.
- When American Airlines wanted to take over Dallas / Fort Worth as its new domestic southwestern hub it redirected passengers away from Braniff and

towards its own flights, using its travel agent reservations system, Sabre.

- Both Frontier and Braniff filed for bankruptcy, United captured its Denver hub and American acquired Dallas Fort Worth. The power of these reservations systems was also then clear to other airlines, allowing Sabre and Apollo enormous freedom in pricing their CRS services.

Prior Experience with Electronic Distribution as an Essential Facility

Travel agents, Orbitz, and travel agent distribution systems like Amadeus and Galileo (formerly Sabre and Apollo) do not advertise airlines, they book flights. Similarly, it's difficult to argue that search engines strengthen any brand when they sell trademarks like Holiday Inn or Dove. Rather, search engines direct customers, selling access, and acting more like a distribution service. Brands are created and strengthened through product innovation, quality of service, and advertising. Quite orthogonal to that, brands may now acquire distribution and customers 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 much, if search directs a searcher to a competing brand.

Monopoly power in electronic distribution channels is often difficult to assess since the relationship between market share and market power may be deceptive, and even counter-intuitive. Two historical examples that were subjects of much earlier research provide the best way to begin the analysis, because their economic implications are now very clear [23], [26], [29].

In the early 1980s American Airlines' Sabre and United Airlines' Apollo computerized reservations systems (CRSs) already dominated the market for travel agency reservations systems, with 43% and 27% market share respectively [36]. 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 also filed for bankruptcy and no longer operates. Clearly, Sabre and Apollo enjoyed considerable market power and clearly this power became evident to all airlines even if it was not immediately 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 2 below. Moreover, this arrangement subsequently became stable in ways that are not apparent from the diagram. Both Sabre and Apollo paid travel agents to use their system, ensuring the continuation of their market share, and ensuring the continuation of their ability to charge competitors for participation in their systems. These were not bribes, but were termed *overrides* in the industry.

At approximately the same time Philadelphia National Bank (PNB), signed Provident as a customer bank for its MAC network, acquired Cash Stream, 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 3. The analysis for figures 2 and 3 is largely derived from our earlier work [22]. These figures first appeared in the Financial Times in 2006 and were reused in TechCrunch [26], [30].

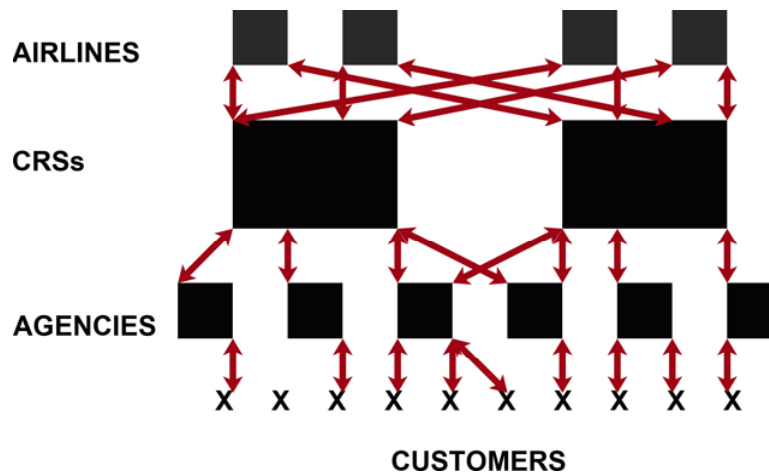


Figure 2.—Geometry of Airlines, Travel Agents, and CRSs in the 1980s.

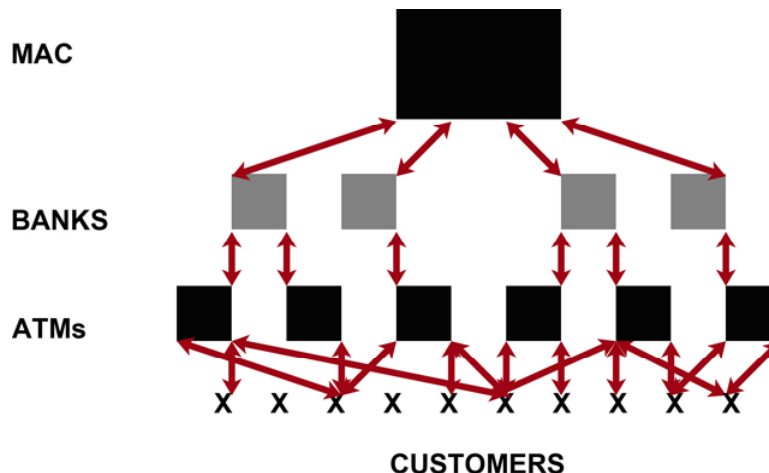


Figure 3.—Geometry of Banks, ATMs, and the MAC ATM driver in the 1980s.

From these pictures we see that the geometries of the two networks — CRS services and ATM services — are quite different. The CRSs are positioned between the airlines and their passengers. If one CRS drops an airline then all agencies that use the CRS and all of that agency's customers are denied access to one (and only one) airline. The agency may not care, and the customers may not even know. Moreover, bypass of the CRS at the time, before the presence of search engines and online booking, meant that the lost business was likely to be impossible to recapture as long as participation in the CRS was denied. Despite the high fees, no airline voluntarily removed itself from any CRS [36].

In contrast, each bank is positioned between its customers and the ATM network service provider MAC. If a bank is denied access to the network, at least its own cards will work on its own machines. Moreover, each bank used an identical interface in its 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 by member banks [29]. 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 [77]. The reasoning of the decision explicitly acknowledges the CRSs as essential facilities [36].

As shown in figure 4, 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. The principal difference, which turns out to be largely irrelevant to our argument, is that some users do go to Google.com or Yahoo.com to enter their search rather than use their home page search box when searching. Still, most users have a default search engine and most do not switch search engines.

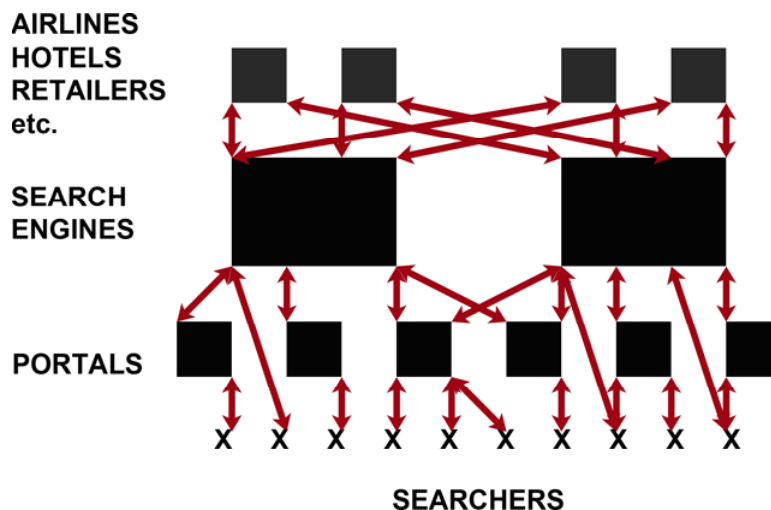


Figure 4.—Geometry of Airlines, Search Engines, and General Portals.

Perhaps the greatest mistake an airline could have made when dealing with Apollo and Sabre was thinking that they had a choice of whether or not to participate; they had to participate, and they had to pay whatever prices Sabre and Apollo demanded. And despite recommendations to consider your strategy carefully (see, for example, “What’s Your Google Strategy?” [47]) manufacturers, retailers, and service providers who need to be found by their customers do not need and indeed cannot have a strategy for dealing with Google in the sense described by the article’s authors; those that wish to survive will indeed continue to participate in Google and Yahoo’s keyword auctions.

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.

The Uncertain Future of the Essential Facilities Doctrine.

We are not sure that the essential facilities doctrine, as it is evolving, will even be seen to be relevant by the time a trial might occur. The Supreme Court has never recognized the essential facilities doctrine, although discussions of the doctrine in Supreme Court decisions seem to suggest that it is still a viable part of antitrust jurisprudence, as discussed above.

We do believe that some form of essential facilities doctrine will prove useful and valid. Redirection and misdirection give search engine providers enormous power, as travel agent reservations systems did before them. The decoupling of use by searchers from

payment by companies that wish to be found effectively removes this essential facility from the discipline of market pricing, as it likewise did for reservations systems vendors. Both regulators and the courts felt that reservations systems required regulation, and we believe that some form of essential facilities doctrine will provide the rationale for recoupling search engine vendors to the discipline of the markets.

As it is currently understood, there are four elements that must be satisfied in order to establish liability under the essential facilities doctrine:

1. Monopoly control of the essential facility, with what is currently understood as monopoly market share for the industry in question.
2. Competitor's inability practically or reasonably to duplicate the essential facility.
3. Unjustified denial of the use of the facility to a competitor.
4. Feasibility of providing the facility.

(*See e.g.*, [58] at 1132.)

Although the essential facilities framework is applied in analyzing "refusals to deal" between competitors, the following analysis shows how the current essential facilities doctrine might be applied to Google and to illustrate the shortcomings of essential facilities doctrine with respect to electronic distribution networks and paid search as the doctrine is currently understood:

1. There is no doubt that Google controls its search engine and certainly "guides" advertisers and competitors of trademarked brands in selecting those keywords.
2. As described above, what prevents companies that object to paying for Google search is in part a function of the third party payer model, and in part a function of the nature of search itself. No user wants a search engine from Marriott, and another from Hyatt, and another from Delta airlines, any more than a travel agent wanted a CRS from each airline that had a grievance with Sabre or Apollo; competition will only come from an alternative generic search engine with the full capabilities of Google. And no user has a strong incentive to leave Google as long as Google is "cheaper than free," any more than an agency had a reason to leave Sabre and Apollo when they were receiving large payments in the form of negative rents (again, called overrides in the industry) for using Sabre and Apollo.
3. Since Google does not deny access to search to any firm that is willing to pay the demanded price for keywords it may appear that the essential facilities doctrine does not apply. It is important to note that the same situation was present in the case of *MCI Commc'n Corp. v. American Tel. and Tel. Co.* cited above [58]. ATT did not deny MCI access to the wire into its customers' home, access to the local loop, frequently also called "access to the last mile", it merely demanded payment that MCI considered extortionist. The courts sided with MCI.

4. In the case of *MCI Commc'n Corp. v. American Tel. and Tel. Co.* the courts decided that AT&T could provide local loop access at lower rates than it was demanding [58]. The question remains whether Google would be required to provide its search service and keyword auctions at lower prices to companies that participate in its keyword auctions.

We examine this fourth point, the pricing of an essential facility and the possibility that Google could offer lower prices, in the examination of the possibility of predatory pricing, immediately following. Most importantly, essential facilities arguments were historically offered only when contesting firms where in the same industry. Both AT&T and MCI were telecommunications companies, and American and Braniff were both airlines. The use we are proposing for essential facilities adheres to the four points generally required, but remains novel since Google and the bidders for key words are not competitors. The courts could indeed decide that Google has no obligation to provide search terms (that is, access to the facility of search) at lower prices. We explore this, and the possible need for novel antitrust jurisprudence below, when we ask “Is New Legal Doctrine Required to Permit Action?” and “Is Additional Regulation Actually Needed?”. This has recently become more ambiguous, since the preliminary probe launched by the European Commission “into its dominant position in online browsing and digital advertising following allegations that it demotes competing websites” in search results listings; in other words, that it denies competitors access to an essential facility [21].

Again, we are aware that we are going beyond traditional and generally accepted use of essential facilities doctrine. For instance, Areeda & Turner caution that the doctrine should “at most” extend to “facilities that are a natural monopoly, facilities whose duplication is forbidden by law, and perhaps those that are publicly subsidized and thus could not practicably be built privately” ([5], ¶ 736.2b at 680-81). While Google is not a natural monopoly and its market share is less than the near-100% of local loop access that AT&T controlled, it is significantly higher than the share that Sabre or Apollo enjoyed. And again, we will argue in below that the parallel monopoly construct present in electronic distribution and the decoupling of search term prices from the discipline of the market, may require extensions to regulatory structures, much as the introduction of the now accepted concept of natural monopoly did when it was required to deal with the emergence of AT&T. Once again, the courts could indeed decide that a parallel monopoly is no monopoly at all, that third party payer models are irrelevant, and that if present search providers’ prices are too high any or all bidders could abandon them.

Google should, and will, argue that paid search does not constitute an essential facility; users can find anything they want through organic search, or by calling an organization after finding it in the yellow pages. Airlines argued similarly that a traveler could make a hotel or airline reservation by bypassing their travel agencies and calling the company’s toll-free phone number, or in the case of hotels, by calling individual properties directly. Most did not. While the courts will be the final arbiters of any

change in antitrust policy to accommodate search and third party payer models, we feel that information economists are ideally suited to surface the critical new economic issues, and to provide guidance in this unfamiliar territory.

The Possibility of Predatory Pricing and The Possible Anti-Competitive Uses of Any Resulting Profits

Google's Current Business Practices

Google has argued that its business practices are legitimate for three reasons:

1. because the best seller is generally ranked highest among sponsored search results
2. because by definition sellers do not have to pay "too much" for the use of their own brands as search terms, because if they did they would refuse to pay and resort to other forms of advertising; their participation indicates that prices are fair and competitive
3. because Google does not actually set prices for keywords, which are set by the market in an open auction; obviously, prices set in an open auction are not set by Google and thus again by definition cannot reflect monopoly power and the ability to set prices

As Greg Burns of the Chicago Tribune reported in his blog after a visit from a team of Google spokespeople:

"We don't really think there are serious antitrust concerns," said Matthew Bye, competition counsel at Google. *"If you're doing things that benefit your users, it's hard to find an antitrust problem."* To hear Bye tell it, those questions all have legitimate answers. The idea that airlines and hotels pay too much because of anti-competitive practices is a nonstarter, he said. *"We don't really perceive any issue"* In its keyword auctions, he said, *"We don't really set prices."* [16], [17]

Google chief economist Hal Varian likewise argues that prices for brands are not set through monopoly pricing but through auctions, so prices cannot be too high or firms would not pay them. He also argues that companies with strong brands usually aren't paying very much for the use of their own brand names as keywords in their ads, because their ads are highly relevant to consumers and Google gives them a high quality score, allowing them to win even with lower bids. (The best source for this at the time we finished our paper was a YouTube posting, in which Dr. Varian described Google's auctions of search terms.)

The third point in the list above, that Google does not set prices and therefore by definition does not have monopoly power, seems inaccurate in a way that will prove critical to the future not only of Google but also to the future of antitrust regulation of third party payer mechanisms. If consumers were to spontaneously make the transition to an alternative search engine that ranked search results in the order implied by

Google's internal measure of URL quality, consumers would be no worse off and the market price for search terms would be precisely zero. Setting the price of search terms, or of any other essential facility, through competitive auction does not indicate the absence of monopoly pricing power. Although all analogies are dangerously imprecise, the sole vendor of life jackets on a sinking ocean liner may not strictly set prices unilaterally if he auctions them off, but these prices most definitely do reflect monopoly power. Likewise, if there are numerous vendors, each with franchises that give them sole rights to sell life jackets on different sinking ships, then their market power is not diminished by the number of such vendors that exist throughout the Atlantic. Again, analogies are imprecise, but multiple vendors of essential facilities can enjoy parallel monopolies and can be effectively divorced from the discipline of the market.

Google's policies do demonstrate sound business and economic analysis. Google has moved from "rank by bid", which places the highest bidder on top, to "rank by revenue," which places the bidder most profitable for Google on top, usually the highest quality bidder, provided that bidder pays "enough" for the use of his own trademark as a search term (see, for example, Varian [88] for an explanation of rank by revenue). Indeed, rank-by-revenue has been universally adopted, not only by Google but also by competitors such as Yahoo and Bing.

In brief, Google most frequently places the items that they know users truly want atop the sponsored search list, ahead of the highest bidders, because this practice generates more clicks and more revenue for Google. That doesn't mean that the superior seller is always placed at the head of the sponsored search list; the superior seller does have to bid what Google terms to be *enough*. This suggests (1) that in part Google does have the power to set prices and (2) Google does know enough to provide an alternative recommender system, if indeed it chose to do so in place of a sponsored search business.

Google's move to rank-by-revenue is beneficial for Google precisely because it is better for consumers than rank-by-bid. Consumers are more likely to find what they want than if Google still used rank-by-revenue, and are more likely to be satisfied with the URLs on which they click. This generates adequate consumer satisfaction. As importantly, consistently providing consumers with high-bidding but poor quality sponsored search results would signal to consumers that the top spot may be weak and that perhaps sponsored search should be ignored entirely. Since consumers deserting sponsored search would destroy Google's business model, it is not surprising that Google has found a way to maximize its revenue, maximize consumer satisfaction, and avoid discrediting its own business.

Google now returns search results largely in the order that you would get from free and natural organic search, while still charging companies billions of dollars for the use of search terms. It is hard to ignore the argument that receiving so much revenue, at such extraordinary margins, with such limited value added, is not at least suggestive of monopoly market power. This alone does not establish the presence of consumer harm,

or indeed of any form of harm. Where stable business models combined with consumer satisfaction and clever revenue maximization ends, and where exploitive monopoly pricing begins, is quite beyond the analytical abilities of the present authors, and indeed is an issue that is likely to confront the courts repeatedly in litigation over digital commerce models.

Possibility of Harm Enabled by Over-Charging in a Non-Contestable Market

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 [11], [12], [13]. 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 (see, e.g., [61], [91]). Baumol's test for the presence or absence of contestability is the firm's ability to earn enough in one market 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 competitors.^v

It might be argued that since electronic businesses have no barriers to entry, contestability cannot be applicable. We prefer to use contestability as Baumol proposed; we look at Google, we see extraordinary margins sufficient to provide massive subsidies in unrelated lines of business, and we seek an explanation for the absence of contestability these subsidies imply. Despite spending hundreds of millions of dollars on development, and an additional \$100 million on advertising, Microsoft has not yet been able to provide search that is fully comparable to Google's. Microsoft readily admits that Bing is not yet fully able to match Google with respect to certain categories of search [34]. In a recent blog post by Dave Heiner, Microsoft admitted that it is having difficulty catching up to Google because of Google's superior "long tail" search, coupled with other network effects.

Additionally, we learned in the Microsoft trial that absence of contestability may lead to consumer harm. 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 ultimately reducing consumer choice in other areas.^{vi} While *subsidized preemptive line extensions* may increase consumer choice initially, they force other firms out of the market or deter entry, and ultimately reduce future consumer options.

We believe the same arguments will need to be established in any antitrust litigation involving Google, and there are several areas that will need to be explored, both in understanding Google's actions and indeed in assessing the actions of any company with a similar digital business strategy:

- Is Google over-charging consumers or harming consumers in other ways?
- Are corporations harmed by the market power provided by a third party payer system, which frees Google from many marketplace restraints and does, as we have seen, allow Google considerable latitude in setting keyword auction prices?
- Is Google earning enough from sponsored search to subsidize almost all of other businesses, including gMail, Google Office, Latitude, gDrive, and others? If so, by Baumol's contestability argument, it can therefore be presumed to enjoy monopoly pricing power in its core search business. But is Google indeed intentionally subsidizing these other businesses, deterring entry and, ultimately, allowing them to charge monopoly prices later, either for these offerings or for search going forward? Is the competitive process likely to be harmed?

Consumer Confusion and the Purchase of Inferior Products and Services

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 [90].

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 [39].

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 our discussion of essential facilities and distribution above [35].

"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."

Consumer confusion will continue to be central to litigation against Google. Consumer confusion was the basis of American Airlines complaint against Google, which Google settled [35]. Likewise, the concept of consumer confusion and the prospect of consumer

mistakes will be central to the retrial of Rescuecom's litigation ([62] at 130). In the past consumers appeared to have been more confused about the nature of sponsored search than they are at present: 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 or to what extent it is shared by the general population outside the ranks of students in highly technical business school courses.

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. 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. The aggregator then charges a 15% premium on bookings of Marriot 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 $60\% \times 1/3 = 20\%$ 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 losses due to Google are $= 20\% \times 15\%$, or 3% of room revenues. 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".

The conditions of this hypothetical appear to be very sensitive to the time at which the queries are generated. For whatever reason, abusive search results that we described in March of 2009 had vanished by May of 2009, making estimates of consumer harm a moving target and difficult to compute. But the website used in this example is not hypothetical. Arlingtonhotels.com actually does exist, and is one of over 50 aggregator websites in the family otels.com.

Collectively, the two sections above suggest the possibility of harm due to abuse of trademarks and the misdirection of consumers more generally. Although this is a possibility, we have not yet been able to measure it, provide a metric for it, or prove significant harm.

**Corporate Harm, Present and Future:
The Possibility of Harm Due to Excessive Prices**

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 (see eg., [78]). As noted previously, Google's third party payer business model allows it enormous freedom in the pricing of keywords, and the issue of indirect consumer harm due to excessive corporate costs will be an increasingly important consideration in the regulation of digital businesses. Fortunately for the short term prospects of regulation of digital businesses, antitrust litigation does not require the demonstration that corporate competitors or corporate customers have already been harmed, that consumers have already been harmed, or indeed that any current harm has occurred, if the prospects for future harm appear sufficiently dangerous. Of course, however, the type of harm that is required for antitrust prosecution is dependent on multiple factors, including (i) the plaintiff, (ii) the legal theory for prosecution and (iii) the relief sought.^{vii}

Injuries in antitrust litigation do not require demonstrating that competitors have been harmed; it is sufficient to demonstrate that **competition** has been harmed.^{viii} 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" ([62] 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.

**Corporate Harm, Present and Future:
Cross-Subsidies and Denial of Future Entry**

Bundling and tying are the most obvious ways of exploiting cross subsidies. *Bundling* occurs when a monopoly seller either provides a second product with the purchase of the first monopoly offering "without charge to consumers" without charge; this is considered dangerous because ultimately, having driven out competitors to the second offering the monopolist can now charge monopoly prices for the second product as well. Tying occurs when the monopolist producer of a product sells it while requiring that the purchaser also pay for a second product, for which the monopolist can now charge whatever it wants. The applicability of bundling and tying would be much more clear and much more obvious if Google actually bundled YouTube or Google Office with search and with GPS services; this would allow the same logic used to attack Microsoft's bundling of Internet Explorer. There may already be some form of bundling in the interaction among Google mail, search, and advertising. The applicability of bundling and tying may indeed be more clear after examination of the

bundling of features into Google's new phone.

In American antitrust jurisprudence, the courts have found cross subsidies in certain cases to be an antitrust violation. 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 ([83] at 51-54); however, this ruling was subsequently reversed on appeal (technically, vacated and remanded for further proceedings). In the end, tying was not proved, further complicating analysis ([82] at 50). In yet another famous case, *Image Technical Services, Inc.*, the court found sufficient evidence of a tying arrangement between Kodak's services and its parts ([40] at 464). The issue of cross-subsidiaries often arises in actions alleging monopoly leveraging, in which a firm utilizes its dominant market position as a lever to create, or to attempt to create, a monopoly in another market.^{ix}

The courts may see Google's subsidies for services like YouTube and text-based voice mail or their most recent innovation of super-high speed ISP access as damaging to other firms that compete in these markets, using *subsidized preemptive line extensions* to deter market entry by other firms [44], [48]. The courts generally view deterring entry as ultimately reducing consumer choice, and harming competition. Although readers who are not familiar with legal argument may see this as the interjection of personal bias from the authors, it is in fact a serious concern of the Department of Justice. One of the problems with cross subsidies is 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.

In fact, a cursory review of Google's products and services reveals over thirty products that are provided free to consumers, and analysts see this as contributing to Google's popularity and profitability [18]. These innovations may be provided as gifts to consumers and thus part of Google's philosophy of "*don't be evil*", or they may represent *subsidized preemptive line extensions*, ensuring additional monopoly markets later. These are not strictly tied purchases, but cross subsidies and the possibility of reduced competition and future monopoly pricing will probably be investigated.^x

In *Kodak v. Image Technical Services*, Kodak took actions to prevent independent service organizations from serving Kodak products ([40] at 481). Specifically, Kodak adopted a policy of selling parts for its equipment only to customers that serviced their own products or used Kodak for their repair services. After the Supreme Court defined the relevant market and determined that Kodak did in fact have monopoly power, the

court's inquiry focused on whether Kodak's actions were taken to "foreclose competition, to gain a competitive advantage, or to destroy a competitor" ([40] at 482-83). Alternatively, if Kodak's actions could be explained by "valid business reasons," then Kodak could not be held liable ([40] at 483). Similarly, any analysis of monopolization claims against Google will focus on this crucial distinction: whether its provision of free services is truly an embodiment of its motto, "*don't be evil*" or whether it is a means of entrenching its position as a distribution company by making its products seem *freer than free*, as indeed the travel agent reservations systems also were after override payments from Sabre and Apollo.

Is Anything in these New Digital Businesses Really Subject to Litigation?

Is Google Really 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. However, Google is actually quite close to the threshold for considering a company to have monopoly market share, regardless of the establishment of harm, particularly if Google's estimation of its market share in search engine advertising of 72% is accepted. 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 ([49] at 1103). Likewise, if Google search is no more than another form of advertising, then companies can advertise in *The New York Times*, in *Fortune*, on television, and of course with Yahoo and Bing.

The claim that Google is a monopoly, if some claim is made, will be based on some combination of the following assertions:

1. Google is not principally an advertising company, but principally is a distribution company, which has chosen to represent itself as an advertising company.
2. In electronic distribution, it is not necessary to be a monopoly to have monopoly power.
3. Google's pricing of electronic distribution, an essential facility, is anticompetitive.
4. Google's actions, especially tying and bundling, demonstrate monopoly pricing power.

What is a Monopoly?

Under section 2 of the Sherman Act, the inquiry of whether a defendant can be charged with monopolization begins with the threshold question of the relevant market. After the relevant market has been identified, it is necessary to assess whether the defendant

possesses “monopoly power” within the defined relevant market. “The offense of monopoly under § 2 of the Sherman Act has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident” ([80] at 570-71).

Note that nothing in the definition of monopoly or of monopoly power requires that the defendant be the only competitor in its industry, that it charge the highest possible prices, or that it charges its own profit maximizing price. Indeed, monopoly power is different from the offense of price fixing, and nothing in the definition of monopoly power even requires that the firm with monopoly power explicitly set prices itself.

Is Action Necessary or Justified?

However, the mere possession of monopoly power in a relevant market is not a violation of Sherman Act §2. “The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free market system. The opportunity to charge monopoly prices—at least for a short period—is what attracts ‘business acumen’ in the first place; it induces risk taking that produces innovation and economic growth. To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive conduct” ([89] at 407). Additionally, recent Supreme Court decisions seem to suggest a narrow construction of violations under section 2 of the Sherman Act, noting “as in *Trinko*, the defendant has no antitrust duty to deal with its rivals at wholesale” ([60] at 1119).

The crux of any claim of monopolization (after defining the relevant market) will focus on whether a firm truly engaged in anticompetitive behavior. Thus, in short, a monopolist will be found to violate §2 of the Sherman Act if it engages in exclusionary or predatory conduct without a valid business justification ([55] at 157). In more complex cases in which the allegedly monopolizing acts are not independently illegal, the courts have engaged in a more thorough review of whether the defendant has acquired or enhanced its monopoly power through means that are competitively unreasonable.^{xi}

Is New Legal Doctrine Required to Permit Action?

The regulatory regime of the Sherman Act was soon extended with concepts of a natural monopoly and of a regulated natural monopoly, as embodied in the Kingsbury Commitment. These were needed in order to deal with the market power of AT&T, due to the combination of (1) the clear benefits of interconnectivity, leading to massive positive network participation externalities, (2) the technical difficulties of interconnectivity of separate competing networks with existing hardware available at the time, and (3) the enormous costs associated with the construction of redundant networks. Consumer welfare and technology interacted in a way that demanded that AT&T be a monopoly, and that likewise demanded regulation of that monopoly.

Perhaps the tersest explanation of the Kingsbury Commitment's role in the emergence of AT&T as a regulated monopoly can still be found on AT&T's website: "For much of its history, AT&T and its Bell System functioned as a legally sanctioned, regulated monopoly. The fundamental principle, formulated by AT&T president Theodore Vail in 1907, was that the telephone by the nature of its technology would operate most efficiently as a monopoly providing universal service. Vail wrote in that year's AT&T Annual Report that government regulation, "*provided it is independent, intelligent, considerate, thorough and just,*" was an appropriate and acceptable substitute for the competitive marketplace. The United States government accepted this principle, initially in a 1913 agreement known as the Kingsbury Commitment.

It may be necessary once again to extend the regulatory regime of antitrust in order to deal with the market power obtained by Google, if it is felt that Google's power poses a sufficient threat and that both competition and welfare demand regulation. If Google does have power, this power does not arise, as some have said, because search is a natural monopoly [53], but rather because (1) search is an essential facility, needed both by consumers and by firms that offer goods and services to them, and (2) search engine companies' third party payer model effectively decouples the pricing of key words and of participation as the object of search from the regulation of the market, giving giant search companies such as Google effective monopoly power even in the absence of a formal monopoly, and (3) Google is demonstrably charging monopoly prices for keywords, as evidenced *inter alia* by cross subsidies and the contestability test of Baumol, and (4) as discussed above Google's use of these cross subsidies may be seen as *subsidized preemptive line extensions*, and they may at present or in the future harm competition.

Conclusions and Directions for Further Work

Conclusions Regarding Five Issues Studied

The first area we addressed was determining when you have a monopoly. The study of Google, like the prior antitrust case against Microsoft, underscores the importance of defining the relevant market before assessing market share. Any antitrust case against Google will begin by addressing whether paid search is a form of advertising or a form of distribution. While we believe that search is different from advertising, this will be hotly contested in any antitrust litigation concerning Google, and is likely to be hotly contested in future litigation, until case law effectively establishes when a new digital business model represents a new product or service.

The second area was determining when a firm has monopoly power and monopoly ability to set prices. We believe we have established that search is a form of distribution and that distribution is an essential facility with enormous power, and that this power comes even without monopoly share as traditionally defined. Likewise, we believe that we have established that monopoly pricing power is distinct from actually setting prices; that said, this may be seen as contingent on relevant market, and thus remains subject to interpretation by the courts. Contestability theory and the ability to price in

one market at levels high enough to subsidize numerous unrelated markets has been seen in other instances as evidence of monopoly pricing power, and supports our conclusions.

The third area was how to determine whether consumers, corporations, and the competitive process has been harmed, focusing on Google. We have not established either measures for this or the presence of harm, and it remains a direction for future research, by academics, by companies that feel harmed, and by the courts.

We ask if monopoly abuses by digital businesses can be addressed by current regulatory practices, and conclude that this may be quite difficult. For example, we cannot determine if Google obtained its power legally or not, and under current legal doctrine intent to monopolize and monopoly power obtained illegally are essential for prosecution. If Google is found to have monopoly power, and found to have caused harm, and can be shown to have obtained power legally without intent to monopolize, then we may have an instance in which current legal remedies are clearly inadequate.

Finally, we asked if additional regulation might be needed, if for example search were found to be an essential facility **and** if the essential facilities doctrine were found to hold only when the owner of the facility and the harmed party were direct competitors in the same industry. More generally, as explored next, third party payer business models combined with electronic distribution may create a need for new regulation.

Is Additional Regulation Actually Needed?

If there is harm it would appear that some action will be required to stop it, for three reasons that were explored above:

1. Google's pricing is decoupled from market discipline because the user and the payer are not the same, and hence high prices charged do not alter user behavior. Thus, third party payer monopolies may be stable. Again, in the specific instance of Google, even if Google were found to be an expensive monopolist, no one is in a position to offer search that consumers believe is cheaper. This is because it search could not be cheaper for consumers: Consumers think it is already cheaper than free, since it costs them nothing, and they are provided with a wide range free ancillary services.
2. And, if search is found to be an essential facility and if use of Google is the stable search engine decision of most consumers, then this is the search engine where corporations have to appear. Bidders will continue to bid, and if there is harm, then harm will continue to occur.
3. Moreover, since keyword auctions and sponsored search provide Google with the revenue stream it currently enjoys, then the ability to misdirect consumers and the ability to stifle competition in a range of markets that Google subsidizes both will remain.

Again, we use Google merely as the most recent and currently most successful of a third

party payer distribution system. As explored above, it is not clear if or how litigation will proceed in the case of Google, whether harm has occurred, or whether additional legislative or regulatory guidance is required in this instance. More generally, we do feel that third party payer distribution systems are a fundamental departure from the sorts of issues faced when the Sherman Act was drafted or litigated in the past, and indeed that new digital business models will require new regulatory regimes.

Directions for Future Research

If additional regulation of Google is required it is not clear that current antitrust jurisprudence is prepared to address the regulation of third party payer digital businesses, any more than the Sherman Act was able to address natural monopolies. This did not mean that the Sherman Act needed to be scrapped, or even formally amended. Rather, when society wanted the benefits of inter-operability that a monopoly telecommunications provider offered in the early 1900s, and also wanted protection from the potential abuses of a monopoly, a solution outside the remedies of the Sherman Act was required. The result was the Kingsbury Commitment, which led to the first sanctioned, state-regulated, corporate monopoly. Society may want both winner take all businesses and the illusion of cost-free service that comes from third party payer business models; it may also need to be protected from the potential abuses of monopoly that this may create. There is a clear need for future research at the intersection of business strategy, regulatory economics, information economics, and the law.

We have addressed the possible need for regulation if harm has been demonstrated. But is there really consumer harm or harm to competition? This needs to be more carefully assessed. We believe that we have shown the *possibility* of harm due to consumer confusion, the possibility of harm due to stifling of competition, and the possibility of abusive monopoly pricing of an essential facility. We have not yet established that such harm exists, let alone provided a metric for it or a measure of it. Future research is necessary to address both deficiencies in the current work.

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ⁱ This distinction is particularly emphasized in the Second Circuit's recent decision in *Rescuecom Corp. v Google, Inc.* in which the Court stated, “[A] defendant must do more than use another's mark in commerce to violate the Lanham Act. The gist of a Lanham Act violation is an unauthorized use, which “is likely to cause confusion, or to cause mistake, or to deceive as to the affiliation, ... or as to the origin, sponsorship, or approval of ... goods [or] services” ([63] at 131, citing [1]; [41] at 1508-09). Legal cases in these endnotes 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.

With the recent Rescucom decision it has recently suffered one of its first significant legal setbacks [52]. Rescucom has sued Google for use of its trademark in sponsored search, and the appellate court has reversed the district court decision and found for Rescucom. 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 Rescucom’s trademark; and (2) Google encourages the purchase of Rescucom’s mark through its Keyword Suggestion Tool. ([63] at 129). The Rescucom 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 “commercial use” in the sense originally intended by the Lanham Act. (*See e.g.*, [63]at 130-31).

ⁱⁱ In *Microsoft*, the D.C. Circuit articulated a general definition and test of monopolizing conduct: “To be condemned as exclusionary, a monopolist’s act must have an ‘anticompetitive effect.’ That is, it must harm the competitive process and thereby harm consumers. In contrast, harm to one or more competitors will not suffice... In considering whether the monopolist’s conduct on balance harms competition and is therefore condemned as exclusionary for purposes of §2, our focus is upon the effect of that conduct, not upon the intent behind it. Evidence of the intent behind the conduct of a monopolist is relevant only to the extent it helps us understand the likely effect of the monopolist’s conduct ([81] at 58-59).

ⁱⁱⁱ Specifically, courts limit cases in which plaintiffs have antitrust standing to cases that do not “avoid burdening the courts with speculative or remote claims ([8] at 545; *see also* [74] at 1448 (“Antitrust standing is best understood in a general sense as a search for the proper plaintiff to enforce the antitrust laws.”)); [4]. Courts, as a threshold concern, require that the plaintiff be able to show “antitrust injury of the type the antitrust laws were intended to prevent.” [9] at 334; [19] at 109-10; [15] at 489.

^{iv} The concept of relevant markets has been integral in 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 ([81] at 51 (citing [62] at 1434)). 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 ([79] at 395).

^v More stringent tests are possible. Based on the Supreme Court’s view of the “vice” of tying in *Times-Picayune Publishing Co. v. United States* [85] as “the use of economic power in one market to restrict competition on the merits in another,” courts have held that a firm may not utilize its dominant market position as a lever to create, or attempt to create, a monopoly in another market. However, courts are divided as to what is sufficient anticompetitive conduct in the leveraged market to constitute a violation of Section 2 of the Sherman Act.

^{vi} [83] (stating “[d]espite the fact that it did not charge for Internet Explorer, Microsoft could still defray the massive costs it was undertaking to maximize usage share with the vast profits earned licensing Windows. Because Netscape did not have that luxury, it could ill afford the dramatic drop in revenues from Navigator, much less to pay for the inefficient modes of distribution to which Microsoft had consigned it. The financial constraints also deterred Netscape from undertaking technical innovations that it might otherwise have implemented in Navigator.”)

^{vii} The Supreme Court has held that Congress did not intend to afford a remedy to everyone injured by an antitrust violation simply on a showing of causation ([8] at 535). Specifically, the 9th Circuit summarized the factors in establishing antitrust standing as follows: “(1) the nature of the plaintiff’s alleged injury; that is, whether it was the type the antitrust laws were intended to forestall; (2) the directness of the injury; (3) the speculative measure of the harm; (4) the risk of duplicative recovery; and (5) the complexity in apportioning damages” ([51] at 987, citing [3] at 1054-55).

^{viii} *See, e.g.*, ([20] at 571). 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” ([42] at 536). In *United States v. Microsoft*, the court similarly defined anticompetitive conduct as that which harms the competitive process and thereby harms consumers ([81] at 58).

^{ix} 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 ([2] at 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 ([2] at 231-32).

^x This is not to suggest that below cost pricing is itself illegal. In order for this to be actionable, American antitrust jurisprudence requires a likelihood that the below cost pricing will ultimately result in prices above the competitive level and these prices would be sufficient to recoup the losses from below cost pricing. (See [14], holding that a charge of predatory pricing under the Sherman Act requires pricing “below an appropriate measure of [the defendant’s] costs and that the market forces are such that there is a dangerous probability of recouping its investment in below-cost pricing.”)

Although giving away products or services without charge is not illegal, it can be evidence of anticompetitive behavior when it is coupled with “a willingness to forsake short-term profits to achieve” and “distinctly anticompetitive bent.”^x This is, of course, a very fact-intensive inquiry and one in which the distinctions between competitive and anticompetitive behavior are not so clear. In fact, the Supreme Court struggled with this very question in its most recent antitrust cases (*See e.g.*, [40]; [88]; [60]).

^{xi} In more complex cases in which the allegedly monopolizing acts are not independently illegal, the courts have engaged in a more thorough review of whether the defendant has acquired or enhanced its monopoly power through means that are competitively unreasonable (*See e.g.*, [7]) (employing a balancing test that asked whether the challenged conduct had “impaired competition in an unnecessarily restrictive way” by attempting to “exclude rivals on some basis other than efficiency” and whether the conduct’s “effect . . . on consumers, on [the defendant’s] smaller rival, and on [the defendant] itself.”); [40] (asking “whether ‘valid business reasons’ . . . explain [the defendant’s] actions”); ([88] at 399) (reviewing the defendant’s actions to see if it had engaged in anticompetitive conduct manifesting “a willingness to forsake short-term profits to achieve an anticompetitive end” and “a distinctly anticompetitive bent.”).