The Search for Market Dominance

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Executive Summary

Google has become one of the most successful and innovative companies of the Internet Age. Founded less than fourteen years ago, the company is one of the largest in terms of market capital, exceeding the likes of Exxon, Merck, Comcast, Verizon and Amazon. It controls a sizable market share for many of its products and services, particularly its search engine (and related online advertising) services. The company continues to grow at a double-digit pace and it is highly profitable when compared to its direct rivals and other major firms.

Despite these market successes, policymakers and Federal agencies in the U.S., state attorneys general and international regulators are taking a closer look at the company, citing a series of problems involving market conduct – including privacy breaches, complaints of potential anticompetitive risks and other matters.

This study explores these potential problems in terms of market structure, conduct and performance, and finds:

- In terms of structure, Google so dominates its markets that rivals face barriers to entry that preclude competitive market rivalry.
- In terms of conduct, Google has had an ongoing string of alleged instances that are raising public concerns, including: the unauthorized collection of consumer passwords, emails and other personal information (Wi-Spy); knowingly advertising illegal online products; the bypassing of the iPhone privacy settings to collect online information on consumer without their knowledge or permission; as well as other issues.

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- In terms of performance, Google is very profitable – more so than its peers – but these high profits fail to encourage market entry, as typically found in competitive markets. This may be due to large artificial barriers to entry.
- Most troubling, however, are anecdotal and statistical data suggesting that Google is "self-dealing" – manipulating its search results to punish competitors, while favoring its own websites.

Based on our preliminary statistical analysis, this study finds the disparity in these search results to be statistically significant and warrant a comprehensive analysis. To this last point, while Yahoo and Bing cite each other and both cite Google in equal proportions, Google's search engine is twice as likely to cite itself and less likely to cite its competitors.

Since search is the first step used by online consumers – such as those making travel plans, finding maps, buying products online and finding other information – if Google's search engine is not a "fair search" then it can influence what we read, where we shop and ultimately what we pay online. If Google is manipulating its search rankings, consumers need to be told; and if Google is collecting unauthorized personal consumer information to give itself an unfair advantage, policymakers need to step in and protect consumer privacy and competition.

The risk of not stopping these breaches in market conduct is that it invites government intervention and potentially onerous regulations of the industry, even though the problems cited here are likely isolated to one company. Ironically, broad government regulations may do more to preserve Google's market dominance, because it can limit innovation and entry by would-be competitors.

From our preliminary analysis, it is no coincidence that the current issues involving Google's market conduct and performance correspond with its high market concentration. While further work is needed to confirm our findings, we believe there is enough evidence to call policymakers into immediate action, including a comprehensive antitrust investigation.

The competitive risks are high and, given the importance of the Internet, consumer privacy protection is paramount.

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Introduction: Structure, Conduct and Performance

Google is best known for its free web search engine, but it also offers many other free services to the public, including free reverse telephone service, free small business directory assistance, free Internet browsers, free maps, free navigation services, free email services, free websites, free translation, free online calendar and free games, as well as many other "seemingly" free services.[2]

To be clear, Google is not in the business of providing free services; its primary business is to find other businesses willing to pay for its online advertising programs. For Google, revenues are generated from the placement of ads on its search engine, as well as ad space on its other websites, like YouTube, and partnering with other website owners through a revenue-sharing arrangement. On Google's search engine, advertisers identify and bid in auctions for key words that determine the priority and placement of ads on Google's search engine. As consumers run online searches using various key words, they are exposed to advertisements. In turn, advertisers pay Google based on the auction price and volume of advertisements. To improve the matching of consumers and advertisements, Google collects online consumer information into consumer profiles, including the browsing history of online users, search terms and location information, thereby identifying attributes of those consumers most likely to click-through to specific advertiser's websites – a practice known as *behavioral advertising*. Because Google's free services work to aggregate online consumers, the volume of traffic attracts paying advertisers, who pass this advertising cost along to consumers in the form of higher prices.

Financially, Google's online advertising model has been very successful. Starting just fourteen years ago, the company's annual revenue reached $38 billion in 2011, mostly from

[2] As will be shown later, while some services appear free, they may actually come at a hidden cost – such as the loss of personal online information and/or higher prices.

advertising sales, which accounted for $36.5 billion.[3] Comparing the fourth quarter of 2011 to the fourth quarter of 2010, the company grew 25%,[4] and it appears to be growing at a pace of nearly 20% for 2012, which would result in company revenues of $45 billion by the year's end. In 2011, nearly half of its ad revenue came from U.S. companies.[5] In terms of profitability, Google's net income (as a percent of revenue) was much higher than most firms and nearly five times higher than the average profits of the major Internet Service Providers (ISPs) – and it accomplished this despite the economic slowdown.[6]

However, Google's advance has not been solely due to natural growth. Over its short-lived years of operation, Google has executed over 100 acquisitions, providing it the means to dominate the online search market, as well as helping it branch into new markets, including online travel, navigation, smart phones, mapping and so on.[7] Some allege that Google's size, profitability, and ability to direct web traffic raises antitrust concerns.[8] In fact, a number of governmental probes have been initiated involving Google's alleged market conduct, market power, online privacy breaches and the use of consumer online information. These actions and probes have included most state attorneys general, the U.S. Congress, various U.S. federal agencies and international governments.[9]

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[3] Annual Report, Google, 2011, p. 30.
[4] Ibid, p. 38.
[5] Ibid, p. 31.
[6] Ibid, p. 29. Comparisons to ISP average included Comcast, Time Warner Cable, AT&T and Verizon for 2011.
[7] One list totals 113 acquisitions by Google – see http://en.wikipedia.org/wiki/List_of_acquisitions_by_Google – (downloaded on July 3, 2012).
[8] For example, see Scott Cleland, "Google's Earnings Spotlight Its Antitrust Liabilities, *Forbes*, Oct. 14, 2011, http://www.forbes.com/sites/scottcleland/2011/10/14/googles-earnings-spotlight-its-antitrust-liabilities/;
[9] "36 State Attorneys General Contact Google Chief about Privacy Policy," *MetroWest Daily News*, Feb. 22, 2012,http://www.metrowestdailynews.com/news/x565044710/36-state-attorneys-general-contact-Google-chief-about-privacy-policy; Michael Liedtke, "Google May Pay $500 Million after Ad Probe by the Justice Department," *Associated Press*, May 11, 2011, Huffington Post's website at http://www.huffingtonpost.com/2011/05/11/google-ad-justice-department-investigation_n_860429.html; Jeff Bliss, "Google Said to be Possible Target of Antitrust Probe by FTC," *Bloomberg*, April 5, 2011, http://www.bloomberg.com/news/2011-04-05/google-said-to-be-possible-target-of-antitrust-probe-after-ita-acquisition.html; "FCC Fines Google $25,000 over Street View Probe," *Associated Press*, April 16, 2012, on KSL TV's website at http://www.ksl.com/?sid=20014544&nid=1014&title=fcc-fines-google-25000-over-street-view-probe&s_cid=queue-14; "Markey Calls for Congressional Hearing on Google Street View Privacy Breach," News Release from Congressman Markey's website, April 17, 2012, http://markey.house.gov/press-release/markey-calls-congressional-hearing-google-street-view-privacy-breach; Edward Berridge, "Canada Launches Legal Probe into Google," *The Inquirer*, June 2, 2010, http://www.theinquirer.net/inquirer/news/1652043/canada-launches-legal-probe-google; and Aoife White,

The best way to evaluate these concerns is to look at Google's market structure, conduct and performance to determine the extent to which Google exhibits market power and poses an anticompetitive risk. As background, market structure (typically measured as market concentration) was traditionally considered an indicator of potential market risks, but today it is considered insufficient for determining whether market power exists or whether consumers are harmed. Indeed, there are many examples of where a market with very few competitors – including cases of duopolies – can produce competitive market outcomes.[10] In fact, when significant economies of scale and scope exist in an industry, a market with very few firms can outperform an atomistic market, thereby producing lower prices, increasing quantity demanded and maximizing consumer welfare.

As an example, concentration in various information technology industries seems to fit this characterization, as exemplified by the large capital costs required by Internet services providers, as well as the automation and scale necessary to mass produce laptop computers, smart phones, computer chips and other manufactured technology devices. Therefore, while market structure was once thought to determine market conduct and performance (notably profitability), modern economic thought concludes that this causality is often reversed – namely, that market conduct and performance are more likely determinants of market structure. As such, when presented with strong evidence of anticompetitive conduct and market power, the presence of high market concentration can be no coincidence.

With this in mind, the next sections will investigate the market structure, conduct and performance of Google to determine whether it exhibits market power and poses anticompetitive risks or whether Google is just another large firm, as typical of the information technology sector.

"Google Given Weeks to Submit Remedies in EU Antitrust Probe," *Bloomberg*, May 21, 2012, http://www.bloomberg.com/news/2012-05-21/google-given-a-matter-of-weeks-to-submit-remedies-in-eu-probe.html.

[10] Blackstone, Erwin A., Darby, Larry F. and Fuhr, Joseph P. Jr., "The Case of Duopoly: Industry Structure is not a Sufficient Basis for Imposing Regulation," *Regulation*, Cato Institute, Winter 2011-12, pp. 12-17.

Market Structure and "Tipping"

As mentioned earlier, dominant market share does not necessitate market power, and some will aver that Google's success is a reflection of consumer approval, not harm. However, Google's rise to size and market dominance was not all due to growth in demand, but significant accretion – namely through acquisitions. For example, about one year after its IPO, Google's search engine market share reached 36.9%, and by June 2006 its share rose to 44.7%.[11] While several acquisitions helped Google expand its search advertising market in 2006, its acquisition of DoubleClick in 2007 and AdMob in 2009, provided the company significant gains. Its purchase of YouTube in 2006, gave the Google additional traffic as well. The result of these key acquisitions has helped Google's develop a significant market presence beyond those of its competitors.

Most troubling, however, are recent events suggesting that rivalry in the search engine and search advertising markets has waned altogether. Not only are many of the early search engine rivals gone, but most of the remaining competitors are using Google's search capability to some extent or through revenue-sharing deals. For example, for years now, AOL has been using Google's search engine and, consequently, Google's advertising program. Similarly, Ask.com downsized its staff several years ago and signed a five-year multi-billion dollar deal to use Google's advertising/sponsored links program. More recently, both AOL and Ask.com have reaffirmed their dependence on Google.[12] As recently as last October, there are reports that Google was looking to finance a deal for others to buyout Yahoo.[13] Bing continues to sustain billions of dollars in losses and single-digit market share worldwide.[14] Google has locked into

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[11] ComScore, IR, July 18, 2006

[12] Nicholas Carlson, "AOL and Google Renew Search Deal Through 2015," *Business Insider*, September 2010, http://articles.businessinsider.com/2010-09-02/tech/29987558_1_exclusive-search-provider-google-mobile-search; and Loren Baker, "Ask.com & Google Sign $3.5 Billion Search Advertising Deal," *Search Engine Journal*, November 6, 2007, http://www.searchenginejournal.com/askcom-google-sign-35-billion-search-advertising-deal/5951/.

[13] Paul Sakuma, "Google May Finance Deal for Yahoo Buyout: Report," Associated Press, in the Chicago Sun-Times, Oct. 22, 2011, http://www.suntimes.com/business/8362453-420/google-may-finance-deal-for-yahoo-report.html.

[14] Bill Rigby and Andre Grenon, "Microsoft Redesigns Bing, Plays up Facebook Link," Reuters, May 10, 2012, http://www.reuters.com/article/2012/05/10/us-microsoft-bing-idUSBRE84918720120510; and "Microsoft Stung by Web Woes," Shira Ovide, *Wall Street Journal*, July 3, 2012, p. B1.

exclusive deals with various providers, making it the default search engine on many online web devices. By all indications, competitors are waning, rivals are using Google's own services, and not even Microsoft can make a profitable dent into the market. It appears that the market has tipped to Google, which funnels much of the web's traffic to and from its websites and partner websites.

As a result of these activities, Google's online search market share has substantially increased. ComScore reports Google to have a 71.2% market share in the U.S. – 66.7% directly through Google's search engine, as well as indirectly through deals with Ask Network (3.0%) and AOL (1.5%).[15] Google's Global share is reportedly higher, accounting for 82% overall and 92% for mobile devices and tablets.[16] Advertisers logically pay Google more for its services, since their advertising dollars can reach the vast majority of the market, whereas Google's competitors have a single-digit reach worldwide. Why would advertisers want to duplicate their ads on another search engine when they can get nearly full exposure via Google's online search engine and partners? For this reason, it appears that in the future it would be difficult for smaller search engines to challenge Google's dominance.

Since Google commands a large share of the market and advertisers are apt to be drawn to Google's advertising services, it can command higher prices than its competitors can. In fact, some claim that Google's ads earn nearly twice as much as other advertising programs, which means that Google's actual market share (based on revenue) is higher than commonly reported (based on the number of searches).[17]

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[15] "ComScore Releases May 2012 U.S. Search Engine Rankings," ComScore Press Release, Reston, VA, June 13, 2012.

[16] Global search engine market share is available on Stat Owl at www.statowl.com for April 2012 and www.Marketshare.hitslink.com (including desktop and mobile devices) for May 2012. The data shown here were downloaded on June 19, 2012.

[17] For example, see "PPC Platform Competition and Google's *May Not Copy* Restriction," Benedelman, June 27, 2008, at http://www.benedelman.org/news/062708-1.html; and Benjamin G. Edelman, "Google-Yahoo Ad Deal is Bad for Online Advertising," *Working Knowledge*, Harvard Business School, August 12, 2008, at http://hbswk.hbs.edu/cgi-bin/print?id=5995. If Google can charge twice as high as its competitors, then a 71% domestic search share is actually 83% in terms of revenue share; and an 82% global market share is actually 90% in terms of revenue share.

What this means for consumers is simple – Internet searches are the most common activity on the web. Google can influence what consumers see in terms of advertising and search ranking, which leads consumers to "click ahead" in ways that benefit Google, its advertisers and its sponsors. That dominance makes it harder for small firms to enter the market and differentiate themselves to gain web traffic and succeed. In fact, even larger industry players, such as ISPs, wireless providers and Microsoft are being pushed to the sidelines. In the end, what consumers lose is choice, differentiation and innovation.

To summarize this problem is to understand "market tipping." In network economics, "market tipping" can occur when one very dominant firm achieves increased market share and consumers perceive this increase as an increase in the value of the network. Said differently, an increase in market share leads to "increasing returns to consumption" and bestows value upon the dominant firm – a value that does not accrue to its rivals. Once the market tips, a dominant firm has an advantage over its would-be competitors – an advantage that is difficult to overcome. The advantage becomes a barrier to entry for would-be competitors. When the market tips, the dominant firm will have market power, enabling it to raise prices and reap excessive profits, much like any monopolist would. This poses an anticompetitive risk for consumers.

Market Conduct and Performance

Google is highly profitable, more so than it peers. There have been numerous historical comparisons between Google's profits and those of other industries (including other tech companies) which have found Google to be several times more profitable than other firms, including Exxon, Merck, AT&T and Time Warner.[18] In 2011, Google achieved gross profits of 65% (as a percent of revenue) and net income of 26%.[19] For that year, Google's net income as a

[18] For a few examples, see "A Cost/Benefit Look at Internet Regulations," *ConsumerGram*, The American Consumer Institute, Dec. 2010; "Financial Performance, Consumer Welfare and Two-Sided Internet Markets," *ConsumerGram*, The American Consumer Institute, June 2008.
[19] Downloaded on July 17, 2012 from Yahoo Finance at www.yahoo.com.

percent of revenue was nearly five times that of the largest four ISPs.[20] Google also outperformed large blue chip companies in terms of profit margins, return on invested capital and return on assets.[21] The combination of sustained high profits and high concentration suggest market power, particularly in light of a long list of issues concerning Google's market conduct.

A. Self-Dealing

Searching is the most important means for online consumers to find goods and services, news and information on the web. If Google can manipulate its search rankings, it can direct traffic to various websites and away from its competitors. In fact, some have suggested that Google is intentionally altering its search rankings to undermine its competition. For instance, ad competitor SearchKing claimed its website's Google ranking dropped to zero,[22] and search competitor Kinderstart claimed its traffic dropped 70% when Google reset its ranking to zero.[23] These examples suggest that Google may be manipulating its search rank to its advantage and at the detriment of its competitors.

There may also be evidence that Google is manipulating the placement of its ads, not just to disadvantage competitors, but to affect public policy. Google can direct traffic to policy positions favorable to Google's position. For example, Google banned U.S. Senator Susan Collins' ads that were intended to defend her against attacks by a group sharing mutual policy interests with Google.[24] In addition, Google has admitted to taking certain search terms for itself and giving them to others for political ends. For example, *Multichannel News* reported that "Google's top Washington Lobbyist disclosed that the company had configured its search engine to return paid links that support Google's position on net neutrality after the entry of

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[20] Ibid.
[21] Data retrieved on June 11, 2012 from MSN Money at www.msn.com and covers the year 2011.
[22] For example, Dahlia Lithwich, "Google-Opoly: The Game No One but Google Can Play," *Slate*, Jan. 29, 2003, http://www.slate.com/articles/news_and_politics/jurisprudence/2003/01/googleopoly_the_game_no_one_but_google_can_play.html.
[23] "Website Sues over Google *Blacklist*," *Associated Press*, March 17, 2006, available on MSN at http://www.msnbc.msn.com/id/11883353/ns/technology_and_science-tech_and_gadgets/t/web-site-sues-over-google-blacklist/.
[24] Initially reported in the Washington Examiner on October 11, 2007.

certain keywords."[25] If Google were to take key words for its own use over auctioned words, it can override any keyword and any advertisement or its placement. This also means that Google can bid-up what it considers to be low auction prices, it can include the placement of ads that favor its public policy positions over paying advertisers, and it can use its market dominance to funnel traffic to its own websites. Google has the market power and incentive to act in these ways. But, does it?

B. Foundem and NextTag

Several online e-commerce websites have alleged that Google changed their search ranking, adversely affecting their web traffic and decreased their ability to compete in the search market. Foundem's traffic analysis was filed with the FCC, which suggested that Google penalizes rivals and favors its own services.[26] At a Senate Judiciary antitrust hearing, a number of online competitors have made similar allegations, including Yelp and NextTag.[27] Yelp's CEO has expressed concerns about Google's dominance and called for Google to stop using Yelp's "review" content without its permission – to which Google threatened to drop Yelp from its search indexing.[28] TripAdvisor, as well as WebMD and City Search, reported a similar unauthorized use of their content, and complained about Google's practice of "promoting links to Google's own websites above those of non-Google sites in the results of its search engine."[29]

These examples, similar to early ones involving Search King and Kinderstart, raise questions about Google's bias in its search ranking and how it directs online web traffic. Given Google's size, the contention is that it controls consumer access to information – specifically what consumers see and what they don't see. By manipulating search rankings and ad placement, Google has the power to affect the outcomes (successes) of new competitors; it can

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[25] "Google Web Search: Do No Evil," *Multichannel Newsday*, June 12, 2006.
[26] "Comments of Foundem," In the Matter of Preserving the Open Internet Broadband Industry Practices, GN Docket No. 09-191 and WC Docket No. 07-52, , filed with the Federal Communications Commission, Feb. 23, 2010, http://apps.fcc.gov/ecfs/document/view?id=7020389727.
[27] Scott Cleland, "Google's 'Bait & Switch' Deception Exposed at Hearing," *Forbes*, September 22, 2011.
[28] Jason Kincaid, "Stoppleman: 75% of Yelp's Traffic Comes from Google," *TechCrunch*, Sept. 21, 2011, at http://techcrunch.com/2011/09/21/stoppelman-75-of-yelps-traffic-comes-from-google/.
[29] Amir Efrati, "TripAdvisor Says Google Won't Stop Using Its Content," *Wall Street Journal*, January 21, 2011, at http://blogs.wsj.com/digits/2011/01/21/standoff-continues-between-google-other-sites/.

make or break reputations; it can suppress adversarial viewpoints in favor of its own positions; and it can do all of this while invading consumer privacy, leaving cookies that track consumer online browsing and scanning consumer emails – often without consumer consent and knowledge.

C. Evidence on Search Bias

Senators Lee and Kohl have called on the FTC to investigate Google's alleged use of its search tool to direct traffic away from its competitors to Google's own websites and services.[30] If this search bias exists then it will increase Google's profit, harm its competitors and limit consumer choice – and it could explain, in part, why Google's search market shares are so high.

To test these allegations, we selected 50 key technology words and ran searches using the three top search engines – Google, Yahoo and Bing.[31] The results were tabulated to see how often a search term would generate a result pointing to the website affiliated with a particular search engine. The hypothesis is that Google searches would produce organic search results that favor Google's websites over its search competitors. **Table 1** shows the tally for the first (organic) search result for each key word, and the tally appears to support the Congressional concern that Google favors its own websites over its competitors:

Table 1: Search Engine Provider's Propensity to Cite Themselves[32]
(Based on a Sample of 50 Key Words)

1st Organic Result	**Yahoo Search**	**Bing Search**	**Google Search**
Yahoo websites	6	5	2
Bing websites	1	0	0
Google websites	11	13	25

[30] Eric Savitz, "Sens. Kohl, Lee Seek FTC Antitrust Probe on Google," *Forbes*, Dec. 19, 2011, http://www.forbes.com/sites/ericsavitz/2011/12/19/sens-kohl-lee-seek-ftc-antitrust-probe-on-google/.
[31] The key words are listed at the end of this paper in the appendix. The analysis included only organic search results, excluding advertisements.
[32] The count includes the results for affiliated websites. For example, Google count includes results for YouTube and the Bing count includes results for MSN and Microsoft.

Comparing the first search result for each of the fifty key words, the results show that Yahoo tends to favor its own websites (6 times) to roughly the same degree as Bing favors Yahoo's websites (5 times), and Bing tends to favor its own websites (0 times) to roughly the same degree as Yahoo favors Bing's websites (1 time). Similarly, Yahoo finds Google as the first search result in 11 of the 50 key words, while Bing finds Google 13 times. This suggests that there is no obvious favoritism between Bing and Yahoo with respect to any of the three search engine providers. However, Google searches find Bing and Yahoo less often, while finding its own websites at more than twice the rate, suggesting that Google may be favoring its own websites over its competitors.

To take this analysis a step further, a statistical test was employed. Using a similar comparison, the sample was expanded to consider the top five search results for the fifty key search words. The analysis appeared to produce similar results, with Google finding Google websites 83 times, while finding its competitors only 19 times. Alternatively, the competitors found Google 40.5 times (on average), while finding its own websites 26 times. Again, Google search engine is twice as likely to bring up its websites within the first 5 search entries, compared to its rivals, and it is less likely to find search results that click to its rivals. Using a simple two-by-two contingency, the Chi-square value for this distribution is 8.6, indicating that Google's tendency to direct its search results to itself is statistically significant for the key words selected. Based on this statistical test, we conclude that it is highly unlikely that the results could have happened by pure chance (a 0.003 probability in fact), meaning that there appears to be a bias in Google's search engine that favors its own websites over its competitors. If true, Google can use its size to drive traffic away from its smaller competitors. Since this analysis only looked at 50 key words, further research and statistical testing is recommended to provide evidence to substantiate these results.

D. <u>Book Search</u>

Google had attempted to get an exclusive court-approved deal to put books online, including the free use of all orphaned works. This attempt began when Google illegally copied

libraries of works and put them online. The deal was rejected by the judge hearing the case, which would have allowed Google to dominate the book search market. The deal would also have given Google a monopoly in book search advertising, permitted Google free use of orphaned works, and made it impossible for would-be competitors to obtain better terms than Google's deal.[33] The bypassing of intellectual property rights could have consequences on authors, who could find their works online with a search and accompanying advertisements. Besides the loss of intellectual property and potentially lost revenue from online book sales, authors might see their works alongside paid-for ads that they did not authorize nor endorse. Google will profit directly from use of the copyrighted material while authors may not. Germany has proposed legislation that search engines and news aggregators that are profiting from other's works should pay for them.[34]

E. Consumer Safety vs. Online Ads

There are also allegations that Google knowingly let its search engine direct consumers to purchase illegally imported pharmaceuticals. Last year, Google entered into a non-prosecution agreement with the Justice Department and paid $500 million for knowingly providing advertising and selling "Google AdWords" to an online Canadian pharmacy that sold and dispensed drugs to American's without a prescription.[35] Also, it is illegal to import pharmaceutical drugs into the United States. Thus, Google was promoting ads for illegal activities. Another concern was that even though the drugs were being promoted by a Canadian pharmacy there was no guarantee that the drugs were manufactured in Canada. The Justice Department stated that "Canadian pharmacies that ship prescription drugs to U.S. residents are not subject to Canadian regulatory authority, and many sell drugs obtained from countries other than Canada which lack adequate pharmacy regulations."[36] These drugs could

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[33] Steve Pociask, "Google's One Million Books," *Forbes*, Aug. 28, 2009, http://www.forbes.com/2009/08/27/google-book-copyright-opinions-contributors-steve-pociask.html.
[34] Cynthia Boris, "German News Producers Want Search Engines to Pay for Content," Marketing Pilgrim, Mar. 2012, http://www.marketingpilgrim.com/2012/03/germany-wants-search-engines-to-pay-for-content.html.
[35] Dianne Bartz, "Google to Pay $500 Million over Online Drug Ads," *Reuters*, Aug. 24, 2011, http://www.reuters.com/article/2011/08/24/us-google-idUSTRE77N4A220110824.
[36] Ibid.

be inferior to those produced in the U.S. and may even be counterfeit, leading to inferior health outcomes for many individuals.

F. Net Neutrality Policy

Google's market success has also met with regulatory success. Google has successfully led the way for the Federal Communications Commission to impose regulation to inhibit Internet Service Providers (ISPs) from competing with it. The regulation, due to be promulgated, will constrain ISPs from developing competing web content, as well as preventing ISPs from price differentiation and prioritizing traffic on its own network. In addition, the rules would also prevent a portion of Internet investment costs from being passed along to companies like Google, who profit handsomely from the generation of Internet traffic on networks owned by other companies. Many experts believe that these rules will raise consumer prices and impede investment, costing American jobs and reducing consumer welfare.[37]

G. Wireless Auctions and Policy

During one wireless auction proceeding, when Google committed to bid for wireless broadband spectrum, the FCC changed its spectrum bidding rules requiring winning bidders to open their network to Google's software and services.[38] Bidding only once, Google did not win a single wireless license, but it got regulations that favored its wireless platform of products. So, while the auction winners are now obliged to let Google's devices ride for free, Google has no obligation to invest in the network. Some experts believe that FCC deal cost the U.S.

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[37] For a collection of articles (filed with the FCC) on the adverse effects of these regulations on Consumers, see *The Consequences of Net Neutrality Regulations on Broadband Investment and Consumer Welfare*, The American Consumer Institute, Nov. 19, 2009, http://www.theamericanconsumer.org/wp-content/uploads/2009/11/final-consequences-of-net-neutrality.pdf.

[38] "Google Intends to Bid in Spectrum Auction if FCC Adopts Consumer Choice and Competition Requirements," News Release, Google, July 20, 2007, http://www.google.com/intl/en/press/pressrel/20070720_wireless.html.

Treasury billions of dollars.[39] In any case, Google currently has the highest market share in the wireless device market.[40]

H. Travel Market

Sixty percent of consumers start their travel planning with an online search.[41] So when Google acquired ITA software – the software running behind the flight searches for CheapTickets, Kayak, Orbitz, Hotwire, United Airlines, US Airways and many other travel and carrier-direct sales websites – there was great concern that Google might favor its travel search results over popular travel websites.[42] The risk is that Google's dominance over search will now send many consumers to its own travel deals, reducing competition among online travel companies and potentially raising consumer prices. In a settlement, the Department of Justice (DOJ) imposed safeguards to give competitors access to ITA's software and create a firewall to protect Google from using commercially sensitive information about its competitors. However, if Google's search engine directs customers to its own site, then its site will have a competitive advantage over its rivals.

Knowledge is Power

Microeconomic theory typically assumes perfect information, a market in which buyers and sellers have the same information to influence their choices of production, investment and consumption, thereby leading to efficient pricing of goods and services, as well as minimizing costs for factors of production. However, when imperfect information is present, it is possible that one-party (seller) is advantaged over another (buyer). Likewise, producers should have similar information about the market in order to effectively compete.

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[39] Anna-Maria Kovacs, "The Merits of Open and Competitive Spectrum Actions," *FierceWireless*, March 3, 2012, http://www.fiercewireless.com/story/merits-open-and-competitive-spectrum-auctions/2012-03-13.

[40] "ComScore Reports February 2012 U.S. Mobile Subscriber Market Share," Release, ComScore, April 3, 2012, http://www.comscore.com/Press_Events/Press_Releases/2012/4/comScore_Reports_February_2012_U.S._Mobile_Subscriber_Market_Share.

[41] Roger Yu, "Google Moves into Online Travel Business," *USA Today*, May 5, 2010, http://www.usatoday.com/money/industries/travel/2010-05-05-googletravel05_ST_N.htm.

[42] "Lee Calls for Antitrust Oversight Hearings on Google," Press Release, March 11, 2011, includes a Letter from Senator Lee to Senate Judiciary Chairman Kohl dated March 10, 2011. See, http://www.lee.senate.gov/record.cfm?id=331843.

Search advertising becomes more valuable when the search engine is able to match online consumers with more relevant ads. For this reason, search companies tend to collect and use consumer online browsing and search history to develop consumer profiles. This behavioral advertising can be beneficial to consumers looking for information and shopping, and it can be very profitable for advertisers seeking to sell their goods and services. When you use a search service, your search is tied to your computer's IP address, and that online history is used, tracked and stored. Google's various online services store your calendar events, SMS messages, location and other information. The recent Google announcement that it will combine consumer profiles across its nearly 60 services, giving it even better information over its rivals.[43]

When one company dominates search, they have clear advantage in developing a better and more comprehensive profiles on individuals, whereas smaller search engines have fewer potential observations and sometimes incomplete information. However, beyond Google's competitive size, its aggressive and controversial attempts to collect online consumer information provide it with better market information than its competitors, thus presenting a further disadvantage to rivals. This advantage allows Google to better target consumers with its advertisements than its competitors, which allows Google to command higher prices and/or take higher market share. This advantage means that information is power in the search advertising market.

In economics, asymmetric information is sometimes considered a market failure. When one company has better market information than its competitors, it could pose anticompetitive risks if this information is collected through privacy breaches, online hacking, eavesdropping and other unscrupulous activities. As the remaining portion of this section will show, Google may have collected and used data in questionable ways, which may provide it a competitive

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[43] Google recently announced that it will combine its user information for roughly 60 of its services. See, Hayley Tsukayama, "FAQ: Google's New Privacy Policy," Washington Post, January 24, 2011, at http://www.washingtonpost.com/business/technology/faq-googles-new-privacy-policy/2012/01/24/gIQArw8GOQ_story.html.

edge over its rivals. Much of these data collection has been done without consumer knowledge and consent.

A. Safari-Work Around

As Apple's iPhone users opted to use Safari browser's *Do-Not-Track* option, little did they know that Google found a work-around in Safari's software, collecting information without Safari's, Apple's or consumers' knowledge.[44] In other words, consumers felt they had opted-out of online tracking, only to later discover that Google figured out a way around Safari's protections. There is a pending Federal Trade Commission decision on this security breach, including a potential fine to be levied on Google.

B. Street View/Wi-Spy

Dozens of state attorneys general announced that are investigating Google Street View, suggesting that, among other things, Google collected private consumer information from encrypted Wi-Fi networks. Affecting a number of countries, including the U.S., Google's unauthorized collection of information included downloading consumer passwords, emails, medical records and other sensitive personal information.[45] European authorities have particularly questioned Google's privacy breaches, including Street View pictures in Denmark and YouTube in Italy and other potential privacy problems.[46]

C. Location Tracking

Completely undercutting Garmin and other navigation device companies, Google's Android phone gives away its navigation app for free, but at a hidden cost. In the process, Google has collected mobile phone device identifiers (called media access control addresses or

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[44] Heather Perlberg and Brian Womack, "Google Violated Apple Users' Privacy, Stanford Study Finds," *Bloomberg News*, February 21, 2012, available on Business Week's website at http://www.businessweek.com/news/2012-02-21/google-violated-apple-users-privacy-stanford-study-finds.html.

[45] Josh Halliday, "Google Street View Broke Canada's Privacy Law with Wi-Fi Capture," *Guardian*, Oct. 20, 2010, http://www.guardian.co.uk/technology/2010/oct/19/google-street-view-privacy-canada.

[46] Bas van den Beld, "Avoiding Google's European Privacy Gaffes," *Search Engine Land*, May 30, 2010, at http://searchengineland.com/avoiding-googles-european-privacy-gaffes-38887.

MAC addressees) on devices like smart phones and Internet devices, thereby allowing them to track your physical location as you travel shop, work and go home.

D. Doodle-for-Google

Google's online art contest required children to provide their birth city, date and social security numbers.[47] Google says that it did not intend to do anything inappropriate with the information.

E. Gmail

By using free Gmail accounts, your messages are scanned so that Google can better target you with web advertisements. However, it is contended that those consumers who are not Gmail users, but merely respond to a Gmail message, are also getting their emails scanned without their consent.[48] These emails are collecting key words that go into your profile and are used to target consumers with advertisements.

F. Google Buzz

This controversy stems from the fact that Google did not notify its "Gmail" users that Google Buzz would use and potentially expose their email account information. Many users complained when they were caught off guard. Jon Leibowitz, Chairman of the FTC had this to say – *"When companies make privacy pledges, they need to honor them. This is a tough settlement that ensures that Google will honor its commitments to consumers and build strong privacy protections into all of its operations."* [49] The FTC's ruling could subject Google to fines of $16,000 per day per violation for future deceptive practices.

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[47] Chris Matyszczyk, "Why did Google Ask for Kid's Social Security Numbers?" *CNET*, Feb 2, 2011, http://news.cnet.com/8301-17852_3-20035164-71.html.
[48] Abby Ellin, "Lawsuit: Gmail, Yahoo Email Invade Privacy, Even Non-Users'," *ABC News*, July 2, 2012, http://abcnews.go.com/Business/lawsuit-gmail-yahoo-invade-privacy-email-account/story?id=16680463.
[49] Byron Acohido, "FTC Slaps Google with Audits over Buzz," *USA Today*, March 31, 2011, http://www.usatoday.com/tech/news/2011-03-30-google-ftc-settlement.htm.

Companies have a responsibility to respect the privacy of consumers who use and trust their products. Under this settlement, the FTC will now conduct biennial reviews of Google's practices to ensure they can no longer say one thing and do another.

G. Browser

Some allegations emerged that an early version of Chrome, Google's web browser, recorded all of the keystrokes of online consumers and stored them on its servers, much like viruses referred to as *key loggers*. Concerning this allegation, Google responded that it would stop storing this consumer information.[50]

The list of examples above shows Google's attempt to collect, track and store consumer information, often without consumer knowledge. These examples go beyond tracking consumer web browsing history. They include the collection of consumer information from calendars and emails, as well as collecting consumer information by intercepting wireless communications and hacking Safari's Do-Not-Track option. If knowledge is power, consumer online information is a key to achieving and maintaining online market dominance. The ability of Google to gain better information through these questionable means creates imperfect information in online markets and may constitute a market failure.

The government's reaction to Google's market conduct has, so far, been inconsequential. Mergers are being approved, investigations are being dropped or settled, and the FCC has leveled an insignificantly small $25,000 fine as a result of Google's refusal to cooperate with an investigation.[51] It also does not hurt that Google has former staff in key positions in the White House, Federal Trade Commission, Federal Communications Commission and Department of Justice.

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[50] Gregg Keizer, "Google Bends Chrome Privacy Criticism," *PCWorld*, Sept. 9, 2008, at http://www.pcworld.com/businesscenter/article/150860/google_bends_to_chrome_privacy_criticism.html.

[51] Andrea Chang, "FCC Fines Google $25,000 for Impeding Data-Collection Probe," *Los Angeles Times*, April 15, 2012, http://articles.latimes.com/2012/apr/15/business/la-fi-tn-google-fine-20120415.

These examples demonstrate that Google's market structure is supported by its ongoing market conduct, which together explains the high and sustained profitability of the business. This analysis suggests anticompetitive risks that cannot be self-corrected.

Conclusions and Recommendations

Google has become one of the most successful companies in modern times, both in terms of growth, market capitalization and enormous profits. That success, to a large degree, reflects the fact that it dominates the search advertising market. Even several of Google's competitors now use Google's own search engine. This means that Google now controls a basic input of several of its competitors, which could raise antitrust concerns.

Google has a dominant market position and has often used questionable market conduct to maintain that position. This suggests that the market may have well tipped to Google, thereby creating barriers to entry and perpetuating a lack of competition. Furthermore, with Google recording and archiving the personal browsing history of the vast majority of online consumers (as well as collecting unauthorized personal information of consumers), it is very difficult for any firm to enter the market and produce better targeted online ads. In other words, market rivalry has all but ended and Google's dominance will be difficult to reverse.

What does this means for consumers? Evidence presented in this paper suggests that Google may be manipulating its search results in ways that punish its competitors and favors its own websites. In fact, if Google's search algorithm favors its own websites as evidence suggests, then Google is in a position to pick winners and losers in the marketplace -- influencing the books and news you read online, as well as the products you shop and prices you pay for travel and online products. Google's dominance means that it can shut out its competition and funnel traffic to its websites and those of its advertisers.

Based on this questionable conduct, there needs to be an extensive investigation into these antitrust concerns, the risks that Google's dominance poses to the industry and consumers, and the extent to which remedies are needed to mitigate these anticompetitive risks. The research presented in this paper is incomplete and limited in scope. However, while more research is needed to verify and quantify these risks, the sheer number of incidences should be a concern to policymakers.

The problems cited in this study appear to be isolated to one company and are not an industry-wide problem. As such, broad government intervention and potentially onerous regulations of the industry would seem excessive and could ironically preserve Google's market dominance and inhibit market entry. Therefore, it is important to focus this issue on Google, the potential sources of these problems, and correct actions.

APPENDIX:

50 Key Words Used to Compare Results from the Top Three Search Engines

academic papers
airline search
apps
article search
blog search
blogs
book search
bookmarks
books
browser
calendar
customized search
discussion groups
documents
email
finance
flight search
game search
instant messaging
location
map search
maps
market
mobile search
movie search
movies
music
music search
navigation
net neutrality
news
news feeds
online documents
optimize your website
patent search
photo search
photos
presentations
product search
searchable email
share photos
spreadsheets
translate
travel search
video search
videos
voice
voice mail
web search
website trends