

Trademarks as Search-Engine Keywords: Who, What, When?

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Most Internet searches result in unpaid (organic or algorithmic) results, and paid ads. The specific ads that are displayed are dictated by the user's search terms ("keywords"). In 2004, Google began offering trademarks for use as keywords on an unrestricted basis, followed in due course by other search engines. Once that happened, any entity (including sellers of competing products) could have their ads appear in response to a search for the trademarked product. Trademark owners responded by filing more than 100 lawsuits in the United States and Europe, making the dispute the hottest controversy in the history of trademark law. Litigation has focused on purchases by competitors—giving the impression that competitors account for a large portion of such purchases. We find that competitors account for a relatively small percentage of keyword purchases, and many trademark owners purchase their own marks as keywords. We also find a high degree of fluctuation in the number of paid ads and the domain names to which those ads are linked. We conclude that the risk of widespread abuse is low. Trademark owners' objections seem to have more to do with objections to free riding than with the zone of interests currently protected by U.S. trademark law.

I. Introduction

Most Internet searches result in unpaid (organic or algorithmic) results, along with paid ads. The specific ads that appear are dictated by the user's search terms ("keywords"). A search for "hotel in Miami" will return ads from individual hotels, travel websites (e.g., Orbitz and Expedia), and consolidators. A search for a product or service will return ads for that product, as well as complementary and competing products and services. The advertisers pay the search engine when their ad is clicked, even if no sale ever results.¹

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1. See *Cost-Per-Click Bidding*, GOOGLE, <http://support.google.com/adwords/bin/answer.py?hl=en&answer=2464960&topic=1713914&path=1713956-1713909&ctx=leftnav>.

In 2004, Google began offering trademarks for use as keywords on an unrestricted basis, followed in due course by other search engines. Once that happened, any entity (including sellers of competing products) could have their ads appear in response to a search for the trademarked product. So, an Internet search for “Mercedes” predictably returns ads for Mercedes dealers and auto repair shops, but it may also return ads for Mercedes’ competitors, such as BMW and Infiniti. Trademark owners responded by filing more than 100 lawsuits in the United States and Europe, making the dispute the hottest controversy in the history of trademark law.²

In a previous article, we studied consumers’ goals and expectations when using trademarks as search terms, and assessed whether there was a likelihood of confusion (which is the touchstone for trademark infringement) resulting from those purchases.³ In this Article, we report on the entities that are purchasing trademarks for use as keywords, and consider the economic significance of the reported patterns.

Past litigation over the use of trademarks as keywords has focused almost entirely on the purchase of trademarks for use as keywords by entities that were competitors of the trademark owner.⁴ By definition, all of these “uses” of the trademark were without the permission of the trademark owner.⁵ This fact pattern in the litigated cases has given the impression that competitors account for a large portion of trademark-keyword purchases and use. We find, however, that competitors account for a relatively small percentage of keyword purchases. We also find a high degree of fluctuation

2. A list of the filed cases we have been able to identify as of June 2012 is available from the authors on request.

3. David J. Franklyn & David A. Hyman, *Trademarks as Search Engine Keywords: Much Ado About Something?*, 26 HARV. J.L. & TECH. 481 (2013).

4. See *id.* at 497 (“[M]ost of the litigation involving trademarks as search engine keywords features competitors who are selling similar goods to those bearing the trademark . . .”). Much of the litigation involved the trademark owner suing the entity that purchased the trademark for use as a keyword for trademark infringement. See *id.* at 497–98. But, some plaintiffs also sued Google, alleging direct infringement, contributory infringement, and in some instances, trademark dilution. See, e.g., *Rosetta Stone Ltd. v. Google Inc.*, 730 F. Supp. 2d 531, 550–52 (E.D. Va. 2010), *aff’d in part, vacated in part*, 676 F.3d 144, 167–73 (4th Cir. 2012) (vacating the lower court’s granting of summary judgment against trademark dilution).

5. Pun intended. We are alluding to the fact that early cases involved a pitched battle over whether the use of trademarks as keywords constituted a “use” in commerce. Franklyn & Hyman, *supra* note 3, at 504 (“Much of this work focuses on the ‘trademark use’ controversy hotly debated at the outset of keyword litigation. As that issue has waned in significance, articles and notes have increasingly focused on whether the initial interest confusion doctrine fits the online world.” (citation omitted)); see also *Rescuecom Corp. v. Google Inc.*, 562 F.3d 123, 130–31 (2d Cir. 2009) (reversing dismissal of a claim that Google’s use of Rescuecom’s mark constituted an unauthorized use in commerce of that mark due to its likelihood of confusion to consumers). Rescuecom subsequently dropped the suit against Google—perhaps because it had purchased “Geek Squad” as a keyword, triggering a lawsuit against it by Best Buy. Tom Krazik, *Rescuecom Drops Trademark Suit Against Google*, CNET TECH CULTURE (Mar. 5, 2010, 10:44 AM), <http://www.cnet.com/news/rescuecom-drops-trademark-suit-against-google/>.

in the number of paid ads and the domain names to which those ads are linked. We conclude that the risk of widespread abuse is low.

We also find that many trademark owners purchase their own marks as keywords—presumably in an attempt to ensure that their ads appear as prominently as possible. Trademark owners are apparently unwilling to rely solely on Google’s algorithmic search to ensure prominent placement on the search-results page. Trademark owners may also be purchasing their own trademarks for defensive reasons—to keep competitors from doing so entirely, or raising their competitors’ costs if they persist.

Search engines obviously profit when trademarks are purchased as keywords, whether those purchases are by competitors or are defensive purchases by trademark owners. Given the low incidence of purchases of keywords by competitors and the likelihood that famous brand owners are likely to appear prominently in algorithmic-search results, our results raise questions about the cost-effectiveness of defensive keyword purchases by trademark owners.

Part II provides some background on search engines, keyword searches, and the litigation over the use of trademarks as keywords. Part III presents details on our methodology. Part IV presents our results. Part V discusses our findings. Part VI concludes.

II. Background on the Issues

A. Overview

Google began selling ads based on users’ search term (i.e., keywords) in 2000.⁶ In 2002, the system (known as AdWords) took its current form (i.e., payment-per-click).⁷ In 2004, Google significantly loosened its policy on the purchase of trademarks as keywords.⁸

We describe the Adwords program in detail in an earlier article but provide a brief summary here.⁹ Advertisers place bids, seeking to have their ads displayed when particular keywords are used as search terms.¹⁰

6. Press Release, Google, Google Launches Self-Service Advertising Program (Oct. 23, 2000), *available at* <http://www.google.com/press/pressrel/pressrelease39.html>.

7. Press Release, Google, Google Introduces New Pricing for Popular Self-Service Online Advertising Program (Feb. 20, 2002), *available at* <http://www.google.com/press/pressrel/select.html>.

8. Greg Lastowka, *Google’s Law*, 73 BROOK. L. REV. 1327, 1359–60 (2008). Prior to 2004, Google allowed trademarks to be used as keywords but would remove such ads if trademark owners complained. After 2004, Google no longer responded to complaints regarding the use of trademarks as keywords, meaning that their use was unrestricted. *See id.* at 1360.

9. Franklyn & Hyman, *supra* note 3, at 490–92.

10. JIM JANSEN, UNDERSTANDING SPONSORED SEARCH: CORE ELEMENTS OF KEYWORD ADVERTISING 177 (2011); Peter O’Connor, *Trademark Infringement in Pay-Per-Click Adver-*

Whether a particular ad is displayed depends on various search-specific and bid-specific factors.¹¹ When users click on an ad, the advertiser pays Google the amount it bid, whether a sale results or not.¹²

AdWords is responsible for most of Google's advertising revenue, which in 2012 totaled more than \$43 billion.¹³ Bing and Yahoo use an analogous Payment-Per-Click model.¹⁴ In 2004, 7% of Google's total revenue was "driven by" trademarked keywords.¹⁵ In 2009, Google estimated that allowing the unrestricted use of trademarks in ad text would result in at least \$100 million in increased annual revenues¹⁶—small potatoes in terms of Google's overall revenue in that year (\$23.65 billion), but still a significant amount of money.¹⁷

tising, in CONTEMPORARY RESEARCH IN E-BRANDING 148, 149 (Subir Bandyopadhyay ed., 2009).

11. See, e.g., *Actual Cost-Per-Click (CPC)*, GOOGLE, <http://support.google.com/adwords/answer/6297> (detailing how much a bidder will be charged per click, taking into account the Quality Score and the Ad Rank); *Ad Position*, GOOGLE, <https://support.google.com/adwords/answer/6300?hl=en> (indicating that ad position depends on a combination of a bidder's Quality Score and bid amount); *Check and Understand Quality Score*, GOOGLE, <http://support.google.com/adwords/answer/2454010> (defining "Quality Score," which attempts to calculate the relevance of an ad, keyword, and landing page to a person viewing them, and includes past click-through rates and performance in targeted markets and devices in its calculation); *Using Keyword Matching Options*, GOOGLE, <https://support.google.com/adwords/answer/2497836?hl=en&topic=16083&ctx=topic> (explaining how to broaden or narrow keyword matches).

12. *Cost-Per-Click Bidding*, *supra* note 1. Google also has a program that allows bids based on conversion to actual sales, known as cost-per-acquisition bidding. *Cost-Per-Acquisition (CPA) Bidding*, GOOGLE, <http://support.google.com/adwords/answer/2472713>.

13. *2013 Financial Tables*, GOOGLE, <http://investor.google.com/financial/tables.html>. See also Franklyn & Hyman, *supra* note 3, at 483 ("These lofty market capitalizations are almost entirely attributable to the income generated by the advertising that accompanies search results."); Steven Levy, *Secret of Googlenomics: Data-Fueled Recipe Brews Profitability*, WIRED, June 2009, at 108, 113, available at http://www.wired.com/culture/culturereviews/magazine/17-06/nep_googlenomics (quoting then-Google CEO Eric Schmidt that after the implementation of a new version of AdWords, "[a]ll of a sudden we realized we were in the auction business.").

14. Franklyn & Hyman, *supra* note 3, at 492 (citing *Bing Ads*, BING, http://advertise.bingads.microsoft.com/en-us/bing-ads-how-it-works?tab=costs&s_cid=us_smb_a_product_costs).

15. Joint Appendix Vol. IX, Tab 41 - Ex. 6 - Google Three Ad Policy Changes at 4265, *Rosetta Stone Ltd. v. Google, Inc.*, 676 F.3d 144 (4th Cir. 2012) (No. 10-2007), available at <http://digitalcommons.law.scu.edu/appendix/33>. This figure would likely have been higher if Google had not been honoring requests from trademark owners to disable the use of trademarks in keywords and ad text. *Id.* at 4263.

16. Franklyn & Hyman, *supra* note 3, at 492 (citing Joint Appendix Vol. IX, Tab 41 - Ex. 17 - E-mail from Baris Gultekin (Google Product Manager Director) at 4382-83, *Rosetta Stone Ltd. v. Google, Inc.*, 676 F.3d 144 (4th Cir. 2012) (No. 10-2007), available at <http://digitalcommons.law.scu.edu/appendix/55>).

17. Press Release, Google, Google Announces Fourth Quarter and Fiscal Year 2009 Results (Jan. 21, 2010), https://investor.google.com/pdf/2009Q4_earnings_google.pdf.

B. Search Engine Policies Regarding Trademark Usage

We describe search engine policies regarding trademarks in detail in an earlier article,¹⁸ so we simply summarize those matters here. The three major search engines (Google, Bing, and Yahoo) have comprehensive policies regarding trademark usage and infringement. Bing and Yahoo's policies are identical because of a search-alliance agreement.¹⁹ Google expanded its policy in 2009, allowing advertisers in more than 190 countries to purchase trademark keywords.²⁰ None of the three search engines actively police the use of trademarks *ex ante*; instead, all three use an approach analogous to the "notice and takedown" system in the Digital Millennium Copyright Act.²¹ However, search engines will only respond to complaints by trademark owners when the offending use meets the requirements set by the search engines.²²

As noted above, Google has allowed unrestricted purchase of trademarks for use as keywords since 2004.²³ Bing and Yahoo formally adopted a similar policy in 2011.²⁴

C. Academic Scholarship: Legal and Empirical

The use of trademarks as keywords has attracted considerable attention from legal academics and the trademark bar.²⁵ Attention initially focused

18. Franklyn & Hyman, *supra* note 3, at 492–95.

19. Franklyn & Hyman, *supra* note 3, at 492 (citing Dylan Benton, *What Every PPC Advertiser Needs to Know about the Yahoo! Bing Search Alliance*, TRIMARK (July 26, 2010), <http://www.trimarksolutions.com/inside/yahoo-bing-merger/what-every-ppc-advertiser-needs-to-know-about-the-yahoo-bing-search-alliance> and Pamela Parker, *Bing & Yahoo Align with Google's Trademark Rules for Search Ads*, SEARCH ENGINE LAND (Feb. 15, 2011, 5:15 PM), <http://www.searchengineland.com/bing-yahoo-align-with-googles-trademark-rules-64902>).

20. David Naffziger, *Google Modifies Global AdWords Trademark Policy*, BRANDVERITY (May 5, 2009), <http://blog.brandverity.com/228/google-modifies-global-adwords-trademark-policy>; Barry Schwartz, *Google AdWords Opens up Trademarked Bidding to Most Countries*, SEARCH ENGINE LAND (May 5, 2009, 4:34 PM), <http://searchengineland.com/google-adwords-opens-up-trademarked-bidding-to-most-countries-18628>.

21. See 17 U.S.C. § 512(c)(1)(A)(iii) (2012) (prohibiting liability for service providers for copyright infringement from holding copyrighted information on a system or network if the service provider expeditiously removes or restricts access to the material upon learning of the infringement).

22. E.g., *AdWords Trademark Policy*, GOOGLE, <http://support.google.com/adwordspolicy/bin/answer.py?hl=en&answer=6118> ("If a trademark owner files a complaint with Google about the use of their trademark in AdWords ads, Google will investigate and may enforce certain restrictions on the use of that trademark in AdWords text ads."); Hortensia Lopez-Nakano, *Tips from the adCenter Editorial Team: Intellectual Property Policy for the Trademark Owner*, BING ADS (Dec. 1, 2011), <http://advertise.bingads.microsoft.com/en-us/blogpost/105655/bing-ads-blog>.

23. See *supra* note 8 and accompanying text; see also *Rosetta Stone Ltd. v. Google, Inc.*, 676 F.3d 144, 151 (4th Cir. 2012).

24. See Eric Goldman, *Microsoft Adopts Google-Style Trademark Policy for Keyword Advertising*, TECH. & MARKETING L. BLOG (Feb. 15, 2011), http://blog.ericgoldman.org/archives/2011/02/microsoft_adopt.htm.

on the “trademark use” issue,²⁶ but articles have increasingly focused on whether the “initial interest confusion” doctrine should be applied to the online world.²⁷

We have found very little empirical work on the use of trademarks as keywords. O’Connor studied ninety trademarks for hotels throughout the world, and found that “abuse is rampant,” with a majority of searches including ads for third-party websites.²⁸ However, Rosso and Jansen analyzed the same issue using 100 prominent trademarks and found that only 2.7%–6.4% were competitors’ “piggybacking” ads.²⁹ Rosso and Jansen concluded that “competitive piggybacking does not appear to be a . . . widespread phenomenon.”³⁰

25. A list of more than fifty articles on the subject is available from the authors on request. Our earlier work references a number of these articles as well. Franklyn & Hyman, *supra* note 3, at 504–06.

26. The debate was over whether the defendant-advertisers and search engines were using plaintiff’s mark *as a trademark*. E.g., Stacey L. Dogan & Mark A. Lemley, *Trademarks and Consumer Search Costs on the Internet*, 41 HOUS. L. REV. 777, 779–84 (2004). That controversy has largely subsided, with virtually all courts holding that the sale of trademarks as keywords may be actionable, as long as infringement in the form of confusion or dilution is shown. See, e.g., *Rescuecom Corp. v. Google Inc.*, 562 F.3d 123, 130–31 (2d Cir. 2009).

27. See, e.g., Daniel C. Glazer & Dev R. Dhamija, *Revisiting Initial Interest Confusion on the Internet*, 95 TRADEMARK REP. 952, 953 (2005) (asserting that the expansion of initial interest confusion on the Internet is unnecessary); Eric Goldman, *Deregulating Relevancy in Internet Trademark Law*, 54 EMORY L.J. 507, 565 (2005) [hereinafter Goldman, *Deregulating Relevancy*] (arguing that initial interest confusion doctrine is “predicated on multiple mistaken and empirically unsupported assumptions about searcher behavior”); David M. Klein & Daniel C. Glazer, *Reconsidering Initial Interest Confusion on the Internet*, 93 TRADEMARK REP. 1035, 1035 (2003) (contending that the initial interest confusion doctrine is unnecessary in the context of the Internet); Jennifer E. Rothman, *Initial Interest Confusion: Standing at the Crossroads of Trademark Law*, 27 CARDOZO L. REV. 105, 169 (2005) (noting that many judges lack familiarity with Internet technology and therefore courts are unable to assess a reasonable consumer’s experience on the Internet); cf. Eric Goldman, *Brand Spillovers*, 22 HARV. J.L. & TECH. 381, 397 (2009) (arguing that redirection of consumers to competing brands is widely accepted by courts in an offline-retail context).

28. Peter O’Connor, *Pay-per-Click Search Engine Advertising: Are Hotel Trademarks Being Abused?*, 50 CORNELL HOSPITALITY Q. 232, 240 (2009) (finding that ads appeared in the vast majority of searches and that third parties accounted for the majority of the ads).

29. Mark A. Rosso & Bernard J. Jansen, *Brand Names as Keywords in Sponsored Search Advertising*, 27 COMM. ASS’N FOR INFO. SYS. 81, 88 (2010). The most common forms of piggybacking are resellers’ promotion of the brand or other functions that assist in selling the product, such as coupons or free samples. Such promotional piggybacking accounted for 55%–78% of ads, depending on the search engine. *Id.* Orthogonal piggybacking, the results of which usually included informational websites about the brand or the underlying company, accounted for 16%–42% of ads, depending on the search engine. *Id.* Rosso and Jansen note that the use of trademarked terms by competitors is extremely low. See *id.* at 89 (“[The] six competitive piggybacking ad occurrences are the result of just two ads . . .”).

30. *Id.* at 81.

Finally, Blake, Nosko, and Tadelis recently conducted a controlled study of the impact of ad purchases on eBay sales.³¹ They found “new and infrequent users are positively influenced by ads but that more frequent users, whose purchasing behavior is not influenced by ads account for most of the advertising expenses, resulting in average returns that are negative.”³² If these results are generalizable, they call into question the cost-effectiveness of defensive purchases of trademarks as keywords by trademark owners.³³

III. Methods

We obtained a list of well-known trademarks from the International Trademark Association (INTA).³⁴ According to an INTA representative, the list was compiled based on the frequency of inquiries to the INTA Trademark Hotline regarding active U.S. registered trademarks.³⁵ After excluding duplicate trademarks used in different lines of business (e.g., Agree is used for shampoo and conditioner, but also for agricultural insecticide), we were left with a total of 2,474 unique trademarks.³⁶

We hired a programmer to develop a computer program that would run an Internet search for each trademark in the full INTA list, using each of the three specified search engines. For each trademark–search engine combination, the program captured a count of the number of unpaid and paid

31. Thomas Blake et al., Consumer Heterogeneity and Paid Search Effectiveness: A Large Scale Field Experiment (Apr. 8, 2014) (unpublished manuscript), *available at* <http://faculty.haas.berkeley.edu/stadelis/Tadelis.pdf> (“[W]e show that returns from paid search are a fraction of conventional non-experimental estimates. As an extreme case, we show that brand-keyword ads have no measurable short-term benefits.”).

32. *Id.*

33. The results may not be generalizable because of factors unique to eBay’s market position. eBay is likely to rank highly in algorithmic search, independent of purchased ads; the same may not be true for other entities. *Id.* at 20–22. Alternatively, the results may not be generalizable because eBay’s advertising strategy is poorly targeted. See Larry Kim, *Dear eBay, Your Ads Don’t Work Because They Suck*, WORDSTREAM BLOG (Mar. 13, 2013), <http://www.wordstream.com/blog/ws/2013/03/13/dear-ebay-its-not-adwords-its-you> (criticizing eBay’s use of Dynamic Keyword Insertion, a process that dynamically inserts the user’s query into an ad’s headline; “For the last 10 years or so, they’ve been running ads on the most ridiculous things including stuff that doesn’t exist . . .”).

34. *Trademark Checklist*, INT’L TRADEMARK ASS’N, http://applications.inta.org/apps/trademark_checklist/.

35. E-mail from Randi J. Mustello, Dir. of Publ’g, INTA, to author (July 13, 2010, 11:33 CDT) (on file with authors).

36. INTA flags “duplicate” trademarks by adding the number “1” after the trademark name. So, the INTA database includes both “Agree” for agricultural insecticide, and “Agree1” for shampoo and conditioner. Coding was based on the better known use of the trademark (as determined by both authors), regardless of whether INTA had coded the better known use as the primary or secondary trademark. So, we coded Agree as shampoo and conditioner, rather than agricultural insecticide, even though INTA had classified the agricultural-insecticide use as the primary trademark.

links, the URLs associated with each of those links, and a PDF of the primary search results. The program also captured a PDF of the web page at each of the first ten unpaid and paid links. The program excluded social-networking sites, news, maps, and pictures from its definition of paid and unpaid links. For mysterious reasons the program repeatedly crashed on a dozen specific trademarks, leaving us with 2,462 trademarks (hereinafter, the “full INTA list”). During fall 2010, using multiple Apple computers in Champaign and Chicago, we ran all 2,462 trademarks twice, with a two-month gap between the first and second run.

We developed a standardized coding protocol for classifying unpaid and paid links and applied that protocol to code the first five paid and unpaid links in each trademark–search engine combination. McCarthy Institute research fellows from the University of San Francisco were responsible for coding the search output from the first run of the full INTA list. The coding protocol was refined over time to reflect feedback from the research fellows and to capture the full range of search output. We had multiple meetings with the research fellows to validate the coding categories and to ensure that there was consistency in coding across research fellows. Coding was conducted throughout fall 2010 and was completed by January 2011. In the end, the coding protocol had the following eleven specific categories for classifying the entity behind the link:

- Trademark owner;
- Vendor selling trademarked goods only;
- Vendor selling the trademarked goods as well as competing goods;
- Vendor selling competing goods only;
- Vendor of complementary goods and services;
- Employment website;
- Collateral information/sales opportunity vendor;³⁷
- Collateral information provider;
- Coupon website;
- Generic usage;
- Other.

Because it was extremely time-consuming to collect and code PDFs for all of the linked webpages, only the first run was analyzed in this fashion. However, we did conduct a second run of the full INTA data set in February 2011 and analyzed the results at a higher level of generality.

37. A collateral information/sales opportunity vendor would be a web site like price grabber.com or eBay.

Using selected trademarks from the full INTA list, we also assessed the degree of volatility in our results using two different strategies. First, we randomly selected 600 trademarks from the full INTA list and ran them through the same program 34 times during three two-week periods during October, November, and December 2011.³⁸

Then, during winter 2012, we asked six people (one of whom was one of the authors) to identify the top 10% of the trademarks in the full INTA list, judged by which trademarks were the most popular/prominent/recognizable.³⁹ After aggregating votes, we identified the 182 most popular trademarks (hereinafter, the “Big Brands”), and ran them through the same program 22 times during a two-week period during February–March 2012.

IV. Results

A. Overview

We begin with some simple descriptive statistics. Table 1 analyzes the number of mean and median paid links and the percentage of trademarks with no paid links, broken down by search engine, for the first run of our full data set (totaling approximately 2,500 trademarks).

Table 1: Paid Links Statistics - Full INTA List

Paid links	Search Engine		
	Bing	Google	Yahoo
Mean	2.2	2.7	7.1
Median	1	2	8
No paid links	48%	29%	15%

Mean and median number of paid links, and percent of trademarks with no paid links, broken out by search engine for full INTA list, first run (2,462 trademarks).

As Table 1 reflects, we find substantial differences across search engines. For example, Bing and Google have similar mean paid links (2.2 and 2.7, respectively), while Yahoo has almost three times as many mean paid links (7.1). We find the same pattern with median paid links (1 for Bing, 2 for Google, and 8 for Yahoo). However, Bing had a substantially higher number of trademarks with no paid links (48%)—almost twice as many as Google (29%), and three times as many as Yahoo (15%). We now turn to the question of what types of entities are purchasing these paid links.

38. A list of these trademarks is available from the authors on request.

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B. Who's Buying Paid Links?

As noted previously, most of the litigation involving the use of trademarks as keywords has involved the purchase of trademarks by competitors.⁴⁰ But is that actually representative of the universe of transactions? Table 2 shows what type of entities are purchasing trademarks as keywords for the first five paid and unpaid links.⁴¹ The third column in Table 2 shows the difference in the percentages for paid and unpaid links. We present the results for unpaid search results as a control, indicating the frequency of various types of links absent the profit motive provided by keyword sales.

40. See *supra* note 4 and accompanying text.

41. Table 2 and all subsequent tables use the number of returned paid links as the denominator for computing percentages—so search results with zero paid links drop out of the analysis.

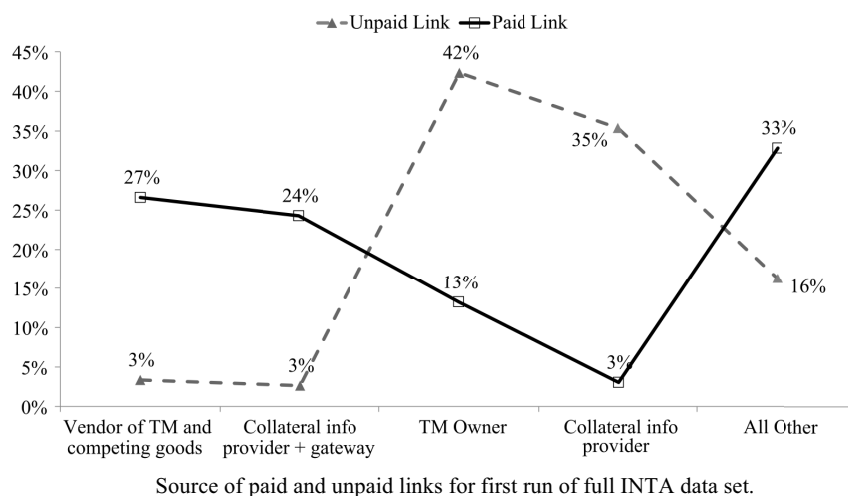
Table 2: Frequency of Link Type—First Five Paid and Unpaid Links

Type of Link	% of Links		
	Paid	Unpaid	(Paid–Unpaid)
Vendor of TM products and competing products	26.6%	3.3%	23.3%
Collateral information and sales opportunity vendor	24.3%	2.6%	21.7%
TM owner	13.2%	42.3%	–29.1%
Vendor of TM products only	6.0%	3.3%	2.7%
Vendor of competing products only	6.2%	2.9%	3.2%
Generic use	6.0%	6.0%	0.0%
Other	5.8%	2.4%	3.4%
Vendor of collateral or complementary goods and services	4.9%	1.3%	3.7%
Collateral information provider	3.0%	35.4%	–32.3%
Employment website	2.1%	0.2%	1.9%
Coupon website	1.8%	0.2%	1.6%

Coding results for 2,462 trademarks, totaling 18,733 paid links (3,982 for Google, 5,396 for Bing, and 9,355 for Yahoo) and 36,945 unpaid links from the first run of full INTA list.

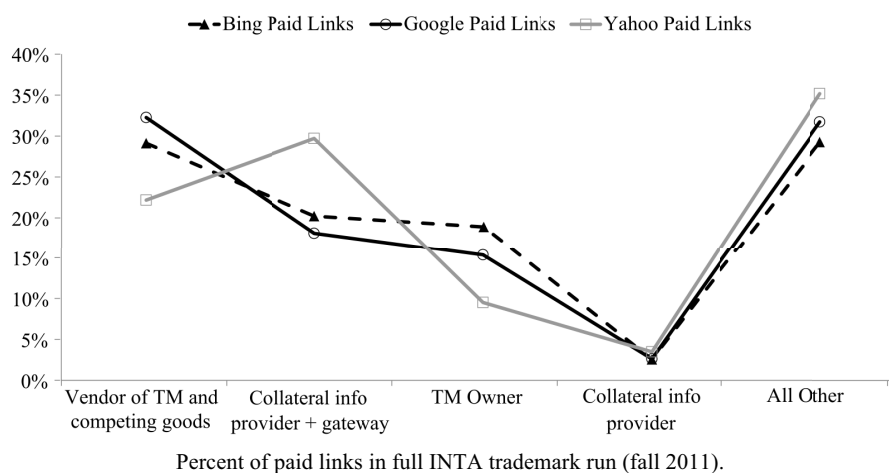
As Table 2 makes clear, there are substantial differences in link type when we compare paid and unpaid links. However, competitor-only links accounted for only 6.2% of paid links and 2.9% of unpaid links—comparable to, or less than the figures accounted for by generic use of the trademark (6.0% for both paid and unpaid links). In absolute terms, the largest differences are observed in four categories: vendor of trademarked product and competing products; collateral information provider/sales opportunity vendor; trademark owner; and collateral information provider. To make direct comparison of the results for these four categories easier, Figure 1 plots the results for paid and unpaid links for each category and a combined “all other” category, rounded to the nearest percent.

Figure 1: Source of Links for Full INTA



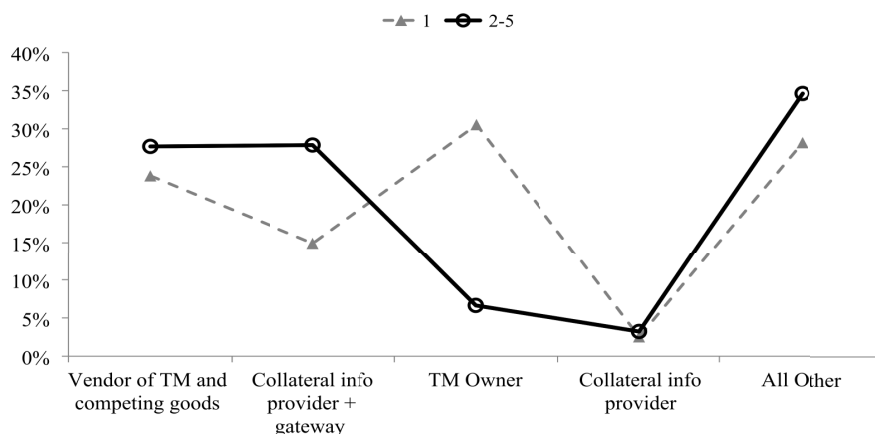
Do these patterns vary by search engine? We found little evidence of variation (at least, as judged by coding category) in the unpaid links returned by each of the three search engines. Each search engine had a peak for trademark owners of 39%–45%, and a peak for collateral information providers of 32%–35%. Similarly, competitors were consistently 3% of unpaid links, regardless of the search engine.

We find somewhat more variation (again judging by coding category) in the paid links returned by each of the three search engines. Figure 2 provides detail on the source of paid ads using the same categories as in Figure 1, but this time broken down by search engine.

Figure 2: Source of Paid Links for Full INTA Search by Search Engine

As Figure 2 indicates, all three search engines had roughly the same combined total for vendors of the trademarked product and competing goods and for collateral information/sales opportunity vendors, but Yahoo had far fewer of the former and more of the latter, while Google had the opposite pattern. The peak for trademark owner ranged from 10% (Yahoo) to 19% (Bing).

So far, our analysis has aggregated the first five paid links. But, does search position make a difference in our results? Figure 3 presents the results when we disaggregate our findings by link position, comparing coded categories for the first and second through fifth paid links.

Figure 3: Source of Paid Links by Link Position

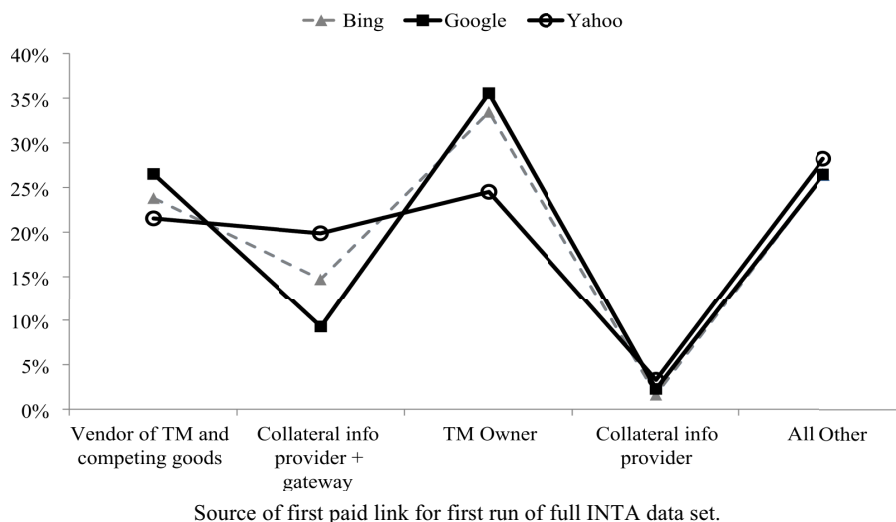
Percentage source of paid links for first run of full INTA data set, broken out by link position (first and second through fifth).

Figure 3 makes it clear that link position matters in understanding the patterns of who is purchasing trademarks as keywords. Trademark owners are responsible for only 13% of all paid links, but if we limit the analysis to the first paid-link position, trademark owners account for almost one-third (31%) of paid links. As link position increases, trademark owners steadily disappear from the mix: accounting for 11% of the second paid-link position, 6% of the third paid-link position, 5% of the fourth paid-link position, and 4% of the fifth paid-link position.

We find the opposite pattern when we focus on collateral information provider/purchasing gateway, which is more likely to occupy the second paid-link position (and far more likely to occupy the third through fifth paid-link position) than the first paid-link position. We find similar, but less dramatic results for vendors of trademarked and competing goods, which are more likely to occupy the second through fifth paid-link position, as compared to the first paid-link position.

To summarize, when trademark owners purchase paid links, they gravitate toward the top spot. Since trademark owners do not seem to want to appear in lower ranked paid-link positions, these spots are snapped up by other entities—with a disproportionate share purchased by websites offering information and a link to a website where one can purchase the branded good, or the branded good and other competing goods.

Figure 4 breaks out the results in Figure 3 by search engine for the first paid-link position.

Figure 4: Source of First Paid Link by Search Engine

As Figure 4 demonstrates, the 31% overall trademark-owner share of the first paid link position⁴² results from averaging divergent results for Yahoo (25%), Bing (33%), and Google (36%). We find similar divergence for collateral information provider/purchasing gateway; the 15% overall share of the first paid link position⁴³ results from averaging divergent results for Yahoo (20%), Bing (15%), and Google (9%).

C. Volatility

Our findings to this point are based on a snapshot of search results. But, are these findings stable over time? We now turn to that issue.

As a first cut at determining that issue, we replicated the initial search during February 2011—this time on a smaller number of computers in Champaign, Illinois. As before, for each trademark–search engine combination, the program captured a count of the number of unpaid and paid links and a PDF of the primary search results. However, we did not grab PDFs of unpaid and paid websites, because we did not plan to recode the results. Instead, our goal was to determine whether the number of paid links remained reasonably stable, and, to the extent possible, whether we could match up the coding results from our earlier analysis.

42. See *supra* Figure 3.

43. See *supra* Figure 3.

As Table 3 reflects, we found substantial differences in the number of paid links between our first and second searches.

Table 3: Comparison of First and Second Run

Paid Links	Run	Search Engine		
		Bing	Google	Yahoo
Mean	1 st	2.2	2.7	7.1
	2 nd	0.6	1.1	1
Median	1 st	1	2	8
	2 nd	0	0	0
None	1 st	48%	29%	15%
	2 nd	72%	53%	71%

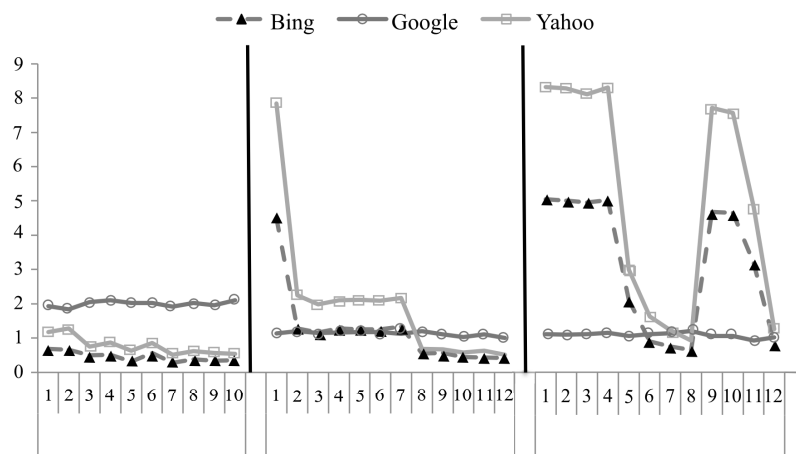
Mean and median number of paid links, and percent of trademarks with no paid links, broken out by search engine for full INTA list, first and second runs (2,462 trademarks).

The second run had lower mean and median paid links across all three search engines than the first run. During the second run, Google and Yahoo had roughly the same number of mean paid links (1.1 and 1, respectively), while Bing had roughly half as many (0.6). All three search engines had the same median number of paid links (0) during the second run. Bing and Yahoo have a very high percentage of trademarks with no paid links—at a level well above that observed in the first run for any search engine (72% and 71%, respectively). The disjunction between the results from the first and second runs suggests that paid search results may be quite volatile. But, are we capturing a one-time blip, a long-term trend, or simple volatility?

To analyze that issue, we selected a random sample of 600 trademarks, drawn from the trademarks used in the earlier searches.⁴⁴ During fall 2011, we ran these 600 trademarks through all three search engines a total of 34 times during three two-week periods in October (10 runs), November (12 runs), and December 2011 (12 runs).⁴⁵ To minimize the influence of external factors, all searches were run on the same Apple computer in Champaign, Illinois. Figure 5 shows the mean paid links for each search engine for each of the 34 runs of the 600 trademark data set.

44. A list of the 600 trademarks is obtainable from the authors on request.

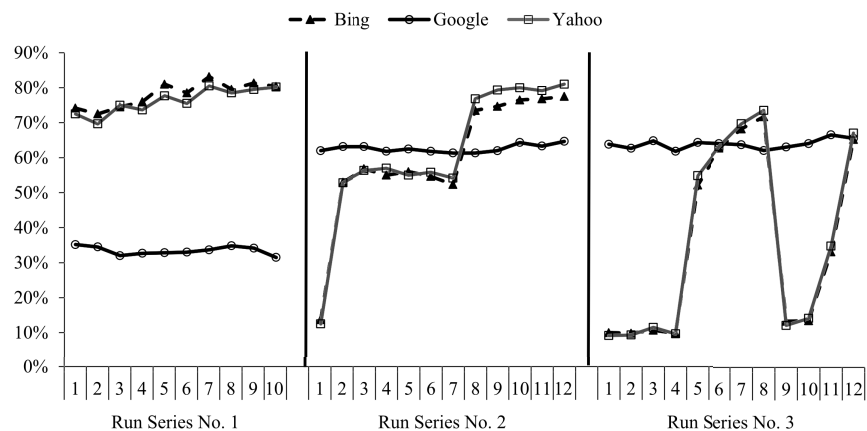
45. The October runs were conducted from October 13, 2011 until October 27, 2011. The November runs were conducted from November 10, 2011 until November 23, 2011. The December runs were conducted from December 13, 2011 until December 28, 2011.

Figure 5: Mean Paid Links Per Trademark (600 TM Runs)

Mean paid links in sequential runs of 600 trademarks during October, November, and December 2011.

As Figure 5 indicates, the frequency of paid links varies substantially over time. During the first two-week period (October 2011), the number of paid links was stable, with Google averaging two paid links per trademark, and Bing and Yahoo averaging less than one paid link per trademark. During the second two-week period (November 2011), the initial run had a far higher number of paid links for Yahoo and Bing (7.8 and 4.5 paid links per trademark, respectively), but both trended downward dramatically thereafter and ended at roughly the same level that prevailed during the first two-week period. Google had a different pattern, with lower paid links throughout the second two-week period than during the first two-week period. During the third two-week period (December 2011), Google remained at the level that had prevailed during the second two-week period, while Yahoo and Bing spiked and remained elevated for four runs until dropping back to the level that had prevailed during the first two-week period.

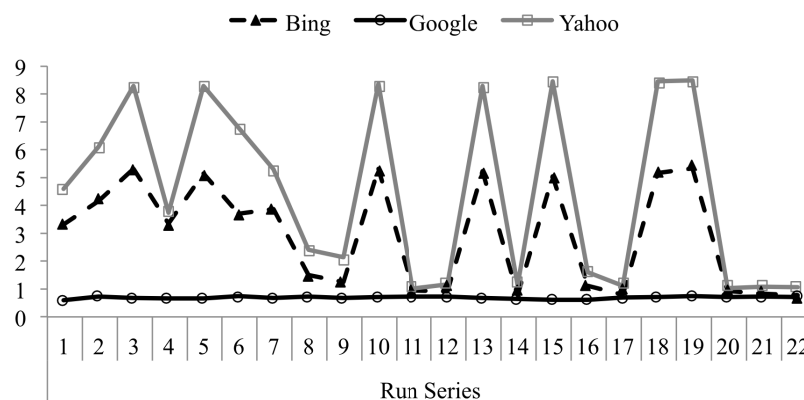
What about the percentage of trademarks that had zero paid links? How did that vary by search engine and over time? Figure 6 analyzes that issue.

Figure 6: Trademarks with No Paid Links (600 TM Sequential Runs)

Percentage of 600 trademarks that had no paid links during any given run.

As Figure 6 demonstrates, we find relatively little volatility in the number of trademarks with zero paid links in the first two-week period, but we find substantially more volatility in the second and third two-week periods for Bing and Yahoo. Google averaged around 35% of trademarks with zero paid links in the first run versus roughly 65% in the second and third runs. We also find that the share of zero paid links in Bing and Yahoo closely track one another.

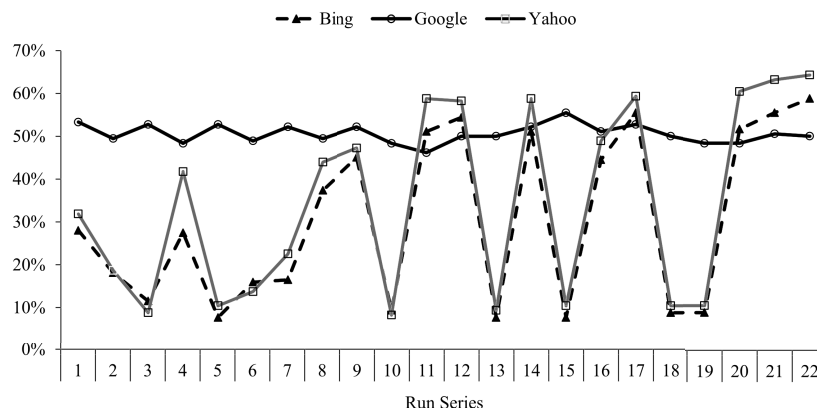
Finally, we repeatedly ran our sample of 182 Big Brands over a two-week period in February and March 2012. Figure 7 shows the mean number of paid links, broken out by search engine.

Figure 7: Mean Paid Links (Big Brands Sequential Run Runs)

Mean paid links for 182 Big Brands in 22 sequential runs from February 21, 2012–March 5, 2012.

Figure 7 shows that Bing and Yahoo have a high degree of volatility in the mean number of paid links compared to Google. Yahoo consistently has the most paid links, and Google consistently has the least. The pattern for Bing generally tracks that of Yahoo, although the peaks are lower.

Figure 8 analyzes the percentage of the Big Brands for which there were zero paid links in each of these sequential runs, again broken out by search engine.

Figure 8: Percentage of Zero Paid Links (Big Brands Sequential Runs)

Percentage of 182 Big Brands with zero paid links in 22 sequential runs from February 21, 2012–March 5, 2012.

As Figure 8 demonstrates, roughly half of the Big Brand trademarks had no paid links whatsoever when run through Google, with volatile but generally lower percentages for Bing and Yahoo.

D. Meta Comparisons

We also compared the domain names associated with the first five paid and unpaid links for each of the three data sets we employed (full INTA list, 600 trademark list, and Big Brands list). Table 4 presents the results of that analysis.

Table 4: Domain Source of Paid and Unpaid Links

	Full INTA		600 TM		Big Brands	
	Paid	Un-paid	Paid	Un-paid	Paid	Un-paid
.com	94.5%	80.4%	96.5%	81.9%	95.4%	86.0%
.org	1.2%	11.9%	1.2%	11.9%	1.1%	10.6%
.net	3.3%	2.3%	1.4%	1.8%	2.8%	0.6%
.edu	0.1%	1.1%	0.2%	0.8%	0.0%	0.6%
Other	0.9%	4.3%	0.8%	3.5%	0.6%	2.2%

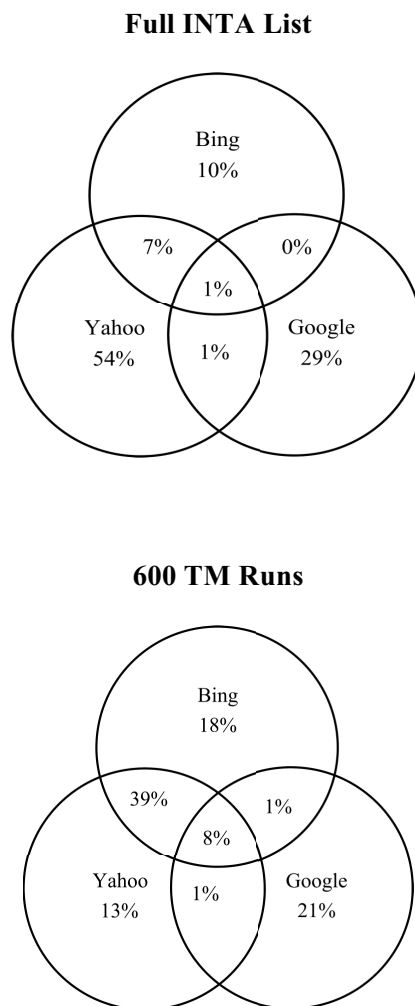
Percent of domains by paid and unpaid links and by runs. Any domain with <1% across all run-link combinations was treated as “other.”

As Table 4 indicates, the “.com” domain accounts for approximately 96% of paid links for all three data sets, but a somewhat more modest share (80.4%–86%) of unpaid links. Conversely, the “.org” domain accounts for only 1% of paid links and 10.6%–11.9% of unpaid links. We find only modest differences when we compare different data sets, compared to the differences between paid and unpaid links. When we examined the breakdown of link types within each domain, we found that job-search websites were heavily skewed toward the “.net” domain, but otherwise found no consistent patterns.

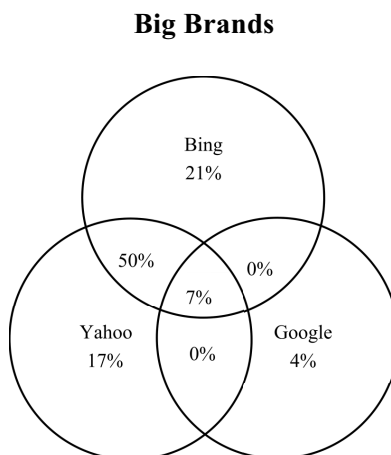
We next analyzed the issue of “advertiser overlap.” Are search engines selling keywords to the same entities, or does each search engine present unique paid content? Using the domain name for each paid ad, we calculated the extent to which each search engine had unique versus common advertisers for each trademark. To do so, we computed the degree of overlap for each trademark, and then averaged those results across all

trademarks within each data set.⁴⁶ Figure 9 shows the results of that analysis.

Figure 9: Sponsor Overlap Between Search Engine



46. For example, assume that for a given trademark, the Bing search resulted in two ads (by A and B); the Google search resulted in two ads (C and D); and the Yahoo search resulted in four ads (A, C, E, and F). Bing and Google would each have one-sixth unique ads, and Yahoo would have one-third unique ads. Bing and Google would have common ads of one-sixth, as would Google and Yahoo. There would be no ads common to all three search engines, nor to Bing and Google. This process would be repeated for all trademarks in the data set, and then the trademark-specific results would be averaged to arrive at the percentages reported in Figure 9.



Sponsor overlap between search engines using domain name to calculate overlap. Overlap is computed for each trademark, and then averaged across all trademarks within each data set. For multiple runs (600 Trademark and Big Brands), we compute per-trademark results, and then average across all trademarks in the data set.

As Figure 9 indicates, we find a high percentage of unique advertisers (as measured by the domain name of the advertiser) in the largest data set, but as the data set shrinks (particularly when we focus on Big Brands), the degree of shared advertisers rises dramatically, particularly for Bing and Yahoo.

E. Drilling Down on the Risk of Diversion/Infringement

Next, we examined these risks of diversion at a trademark-specific level. Even if competitor-only links account for only 6.2% of paid links, they might account for a much higher percentage of the paid links for a specific group of trademarks. The owners of trademarks that attract mostly competitor-only ads might have a very different view of the merits than trademark owners who are not on the receiving end of such ads. The presence of competitor-only links in organic search results complicates matters further; if Bing, Google, and Yahoo “think” that a competitor-only link is a good response to a particular search query when they are not being paid to reach that determination, it is far from clear that we should condemn the sale and purchase of trademarks as keywords, even when direct competitors are involved.⁴⁷

47. As noted above, we are implicitly treating organic search results as the “control” for the paid ads. Thus, to the extent organic search results include competitor-only links, we would expect to find them in paid ads. It is only their incremental presence in paid ads compared to organic search results that is noteworthy. For a very different take on this issue, see Lisa

Table 5 provides a first cut at this issue, with a simple four-cell box, indicating how many trademarks have or don't have any competitor-only links, broken out for organic search and paid ads.

Table 5: Distribution of Competitor-Only Links

		Links for Competitor Only (Paid Ads)		
		No	Yes	All
Links for Competitor Only (Organic Search)	No	1819 (73.7%)	378 (15.3%)	2197 (89%)
	Yes	139 (5.6%)	131 (5.3%)	270 (10.9%)
	All	1958 79.4%	509 20.6%	2467 100%

As Table 5 indicates, almost 74% of trademarks have no competitor-only links—and an additional 5.6% of trademarks have competitor-only links in organic search results but not in paid ads. Thus, only 20.6% of trademarks have competitor-only links in paid ads only, or in both paid ads and organic search results.

Table 6 continues the analysis, focusing on the number of trademarks that have a specific number of competitor-only links in paid-ad and organic search results.

Larrimore Oullette, *The Google Shortcut to Trademark Law*, 102 CALIF. L. REV. 351, 354–55 (2014) (proposing that courts should use the presence of alleged infringer-competitors in organic search results as a measure of the likelihood of confusion).

Table 6: Distribution of Competitor-Only Links by Trademark

Number of Competitor Only Links	Paid Ads		Organic Search	
	Number of TMs	Percent of TMs	Number of TMs	Percent of TMs
0	1958	79.4%	2197	89.1%
1	255	10.3%	81	3.3%
2	114	4.6%	51	2.1%
3	57	2.3%	33	1.3%
4	30	1.2%	22	0.9%
5+	59	2.2%	83	3.4%
All	2495	100%	2495	100%

Since we coded up to fifteen paid ads, a naïve interpretation of Table 6 would be that competitor-only links rarely account for a majority of paid ads. But, not all trademarks obtained fifteen paid ads (although all but one had fifteen organic search results). Accordingly, in Table 7 we compute the “market share” of competitor-only links relative to paid-ad and organic search results.

Table 7: Distribution of Competitor-Only Links by Trademark

Number of Competitor Only Links	Paid Ads		Organic Search	
	Number of TMs	Percent of TMs	Number of TMs	Percent of TMs
0%	1731	70.2%	2196	89.0%
0–10%	132	5.4%	81	3.3%
10–20%	164	6.6%	84	3.4%
20–30%	52	2.1%	22	0.9%
30–40%	64	2.6%	34	1.4%
40–50%	26	1.1%	9	0.4%
50%+	69	2.8%	40	1.6%
No links	229	9.2%	1	0.0%
All	2467	100%	2467	100.0%

As Table 7 reflects, for only 69 trademarks (2.8% of all trademarks) do we find competitor-only links account for 50% or more of paid ads. Most of these trademarks attract relatively few paid ads; of the 69 trademarks, the mean number of paid ads for all three search engines combined is 6.8. If we limit the analysis to trademarks where competitor-only links accounted for 100% of paid ads, the mean number of paid ads for all three search engines combined is 2.5. And, some of these 69 trademarks have competitor-only links in organic search results, which should be subtracted from the reported percentages to arrive at the “true” market share of competitor-only links in paid ads. Finally, because a competitor can engage in nominative fair use, the fact that a link is competitor-only does not necessarily establish trademark infringement. Thus, 2.8% represents a ceiling, rather than a point estimate of the frequency of trademark infringement.

F. Who Is the Big Dog?

If competitor-only links do not dominate the paid-ad space, who does? Which entities are most likely to purchase a specific trademark as a keyword? To evaluate that issue, we focused on the 38 trademarks that were included in both the second and third data sets. These trademarks were run a total of 56 times through each search engine. For each trademark–search engine combination, we identified the domain names that appeared most frequently. Table 8 provides the results of this analysis for fourteen trademarks, which are illustrative of the observed patterns.⁴⁸

48. We selected these fourteen trademarks because they reflected the various patterns of domain names we observed in the full data set of thirty-eight trademarks that were run fifty-six times. Results for the remaining trademarks are obtainable from the authors on request.

Table 8: Top Paid Link Across All Searches

Name of TM	Search Engine	Most Frequent Paid Ad (Domain Name)	No. of Ads
Adidas	Bing	shopadidas.com	78
	Google	shopadidas.com	26
	Yahoo	jcpenny.com	35
American Airlines	Bing	aa.com	50
	Google	None	0
	Yahoo	aa.com	51
Apple	Bing	store.apple.com	72
	Google	store.apple.com	56
	Yahoo	store.apple.com	91
Baskin-Robbins	Bing	go-get-coupons.com	17
	Google	baskinrobbins.com	22
	Yahoo	go-get-coupons.com	37
Budweiser	Bing	budshop.com	38
	Google	facebook.com	12
	Yahoo	budshop.com	85
Clinique	Bing	clinique.com	90
	Google	nordstrom.com	10
	Yahoo	lancome-usa.com	72
Frito-Lay	Bing	fritolay.jobsradar.com	25
	Google	bright.com	9
	Yahoo	indeed.com	33
Froot Loops	Bing	music-oasis.com	14
	Google	download-fruity-loops.com	7
	Yahoo	music-oasis.com	40
Gatorade	Bing	gatorade.com	91
	Google	expresstools.com gatorade.com	22
	Yahoo	gatorade.com	56
Harley-Davidson	Bing	amazon.com	16
	Google	harley-davidson.com	17
	Yahoo	calibex.com	36
Michelob	Bing	everything-neon.com	8
	Google	michelobultra.com	54
	Yahoo	everything-neon.com	21
Nabisco	Bing	couponsponge.com	18
	Google	kraftrecipes.com keebler.com	1
	Yahoo	couponsponge.com	32
Revlon	Bing	revlon.com	38
	Google	drugstore.com	24
	Yahoo	revlon.buymebeauty.com	44
Toyota	Bing	toyota.com	62
	Google	toyota.dealersclearinglots.com	36
	Yahoo	toyota.reply.com	55

Table 8 demonstrates that trademark owners routinely purchase their own trademarks for use as keywords—and in some instances are the sole purchasing entity (e.g., American Airlines and Apple).⁴⁹ We also find a mix of other purchaser types, including entities selling the branded product or complementary products, coupon sites, price-aggregation sites, and occasional oddities. Direct competitors are conspicuous by their absence.⁵⁰

G. Regression Analysis

We conducted extensive regression analysis of our results, using both ordinary least squares (OLS) and Poisson regression. The results were unimpressive.⁵¹ As expected, Google had fewer paid links than Bing and Yahoo, and Yahoo had more paid links than Bing. We found no evidence that trademarks with more unpaid links (which we assumed correlated with greater visibility and consumer demand) had more paid ads. The absolute number of paid ads was higher when the trademark owner purchased at least one paid ad.

V. Discussion

Our findings provide useful context for the ongoing dispute over the use of trademarks as keywords, as well as for some larger issues.

A. Trademarks as Keywords: Much Ado About Something?

Litigation over the use of trademarks as keywords has been the hottest issue in trademark law during the past few years,⁵² but the litigated cases give a deeply misleading picture of the issue. Very few trademarks are being purchased as keywords by direct competitors of the branded product.⁵³ Instead, the most frequent purchasers are those selling the

49. Google does not include any paid ads for American Airlines, presumably reflecting the settlement of the 2004 lawsuit between American Airlines and Google. *But see* Eric Goldman, *American Airlines and Google Settle Keyword Advertising Lawsuit*, TECH. & MARKETING L. BLOG (July 19, 2008), http://blog.ericgoldman.org/archives/2008/07/american_airlin_1.htm (“Based on this data, my initial hypothesis is that Google did not make any special concessions to American Airlines to block keyword ads on their trademarks.”).

50. *Cf.* ARTHUR CONAN DOYLE, *Silver Blaze*, in MEMOIRS OF SHERLOCK HOLMES 1, 22 (Book-of-the-Month Club Inc. 1994). While investigating a murder, Sherlock Holmes observed:

‘Is there any point to which you would wish to draw my attention?’

‘To the curious incident of the dog in the night-time.’

‘The dog did nothing in the night-time.’

‘That was the curious incident,’ remarked Sherlock Holmes.

Id.

51. Regression results are available from the authors on request.

52. *See supra* notes 4–5 and accompanying text.

53. Our findings are consistent with an earlier and much smaller study of high-profile trademarks. Rosso & Jansen, *supra* note 29, at 93. Of course, it is possible that competitors are not buying trademarks as keywords because of the legal risks associated with doing so. We do not

trademarked good, or selling complementary goods and services. Trademark owners are more than twice as likely as competitors to purchase any given trademark as a keyword. Competitor-only links usually do not account for a material share of paid ads. And competitor-only links also turn up in organic search results.

These patterns mean that the overall risk of diversion and/or confusion is actually quite low. And a blanket ban on the sale of trademarks as keywords would either close down or dramatically curtail a market channel that can provide real benefits to consumers. Finally, the risk of consumer harm seems rather remote. We believe that trademark owners have challenged these practices for reasons that have little to do with the interests trademark law is intended to protect. As we noted in an earlier article:

Trademark owners have a Lockean rights-based claim to profit from (and, to a reasonable extent, control) the property they have created, including the right to profit from the collateral value of their marks when used as Internet search terms. At the same time, Google has created and popularized the platform that makes the same trademarks valuable as search terms, and therefore has its own competing Lockean rights-based claim to profit from the sale of any and all search terms on that platform. Finally, consumers have diverse preferences and goals. Markets, together with the institutions that enable them, are typically best justified as means by which such preferences can be maximized. Some consumers that use a trademark as a search term prefer to be able to choose from a diverse range of goods and services. The ads that accompany search results benefit them by supporting Google's free search services, and allowing them the opportunity to buy products that they were not necessarily thinking about, but were at least open to. Other consumers are only interested in products bearing the specific trademark they entered as a search term. They too benefit from the free search services that Google provides, and they can only be diverted if they click on the "wrong" paid ad.

Given the complex nature of these competing claims — pitting rights against rights, and rights against social utility — we should

know for certain what the purchasing patterns would look like if there were no legal risks associated with purchasing a competitor's trademarks. But, by 2012, when we did the Big Brands analysis, the drumbeat of litigation had slowed as it became increasingly apparent that it was difficult to win a keyword case. See Eric Goldman, *Another Google AdWords Advertiser Defeats Trademark Infringement Lawsuit*, FORBES (Nov. 8, 2012, 12:37 PM), <http://www.forbes.com/sites/ericgoldman/2012/11/08/another-google-adwords-advertiser-defeats-trademark-infringement-lawsuit> ("Over the last dozen years, there have been countless trademark lawsuits over competitive keyword advertising However, only a few of those cases—about a dozen, by my count—have reached a final outcome in a United States court Of those, trademark owners rarely win"). Table 8 indicates that even with these reduced legal risks, the most frequent purchasers of the Big Brands were, without exception, not direct competitors. See *supra* Table 8.

stop pretending that these disputes present a straightforward legal issue that only requires the parsing of a trademark statute or the application of a multi-factor likelihood of confusion test. Indeed, analyzing these issues within the boundaries set by existing trademark doctrine, whether consumer confusion or dilution, obscures the real choice that judges and legislators will have to make.⁵⁴

Those with a historical bent may note that the entire episode bears an uncomfortable similarity to the efforts by the movie studios to ban Sony's video-cassette recorders, rather than adapt their business model to technological change.⁵⁵

That said, we do find that a small number of trademarks receive a heavily disproportionate share of competitor-only paid ads, even after we take account of the presence of competitor-only links in organic search results. Further research will be necessary to determine whether actionable confusion results for this small number of trademarks. Regardless of the number of affected trademarks, our findings should not be taken as a license for competitors to engage in true trademark infringement, whether online or offline.

B. Search Engine Business Model(s)

Search engines participate in a multi-sided market. Users receive free search and provide information about their needs and interests.⁵⁶ Advertisers receive access to those users (and information about them), and provide paid ads.⁵⁷ Search engines obtain revenue by selling ads.⁵⁸

The results from the second and third data runs suggest that the three search engines we studied have adopted distinct business strategies. Google consistently has the fewest paid ads and the lowest percentage of trademarks with zero paid ads. Yahoo has the most ads and the highest percentage of trademarks with zero paid ads. Bing is somewhere in between—which is interesting, given that Bing took over Yahoo's back-

54. Franklyn & Hyman, *supra* note 3, at 540–41.

55. Derek Khanna, *A Look Back at How the Content Industry Almost Killed Blockbuster and Netflix (and the VCR)*, TECHCRUNCH (Dec. 27, 2013), <http://techcrunch.com/2013/12/27/how-the-content-industry-almost-killed-blockbuster-and-netflix/>. In his testimony before Congress in 1982, Jack Valenti, the head of the Motion Picture Association of America, gave a sense of the content industry's take on the issues: "I say to you that the VCR is to the American film producer and the American public as the Boston strangler is to the woman home alone." *Id.*

56. Rufus Pollock, *Is Google the Next Microsoft? Competition, Welfare and Regulation in Internet Search 2* (Cambridge Working Papers in Econ., Paper No. 0921, 2009), available at http://rufuspollock.org/papers/search_engines.pdf.

57. *Id.*

58. *Id.*

office search operations in 2009, more than a year before our first run.⁵⁹ It is also interesting that we find so many trademarks with zero ads, when selling ads is the primary revenue source for search engines.⁶⁰ And, ad listings in Bing and Yahoo are much more volatile than in Google, for reasons that are not obvious. It remains to be seen which of these three models is profit-maximizing in the long run, and the answer may well depend on the mix of users and advertisers served by each search engine. Our findings emphasize the dynamism of the search market, which complicates any firm conclusions about the optimal business model—even were that business model not subject to disruptive innovation by new entrants and existing competitors.

C. Why Do Trademark Owners Purchase Their Own Trademarks as Keywords?

Many trademark owners purchase their own trademarks as keywords. In some instances, trademark owners entirely (e.g., American Airlines and Apple) or largely (Gatorade) saturate the ad space. And, trademark owners have a clear preference for the first paid-ad space, accounting for fully 31% of first paid ads.

What is the logic of such purchases? Presumably, trademark owners wish to ensure their sites are prominently featured, and they are not willing to rely on algorithmic search to do so. They also may be motivated by a defensive desire to keep competitors from buying their marks as keywords—or raising their competitors' costs if they insist on doing so. Google and other search engines profit from such purchases.

Are such purchases cost-effective? The answer likely turns on a number of factors, including the visibility of the trademarked product in algorithmic search, the cost and effectiveness of the ads in question, and the identity and goals of the alternative purchasers of those ads. As we discuss above, one controlled study found that eBay's ad purchases were not cost-effective—but it is not clear how generalizable those findings actually are.⁶¹ And search engines have no incentive to de-bias trademark owners that fear the consequences if they fail to purchase such ads.

59. Peter Burrows, *Yahoo Gives In to Microsoft, Gives Up on Search*, BLOOMBERG BUSINESSWEEK (July 29, 2009), http://www.businessweek.com/technology/content/jul2009/tc20090728_826397.htm.

60. One possible explanation: each search engine might cut special deals with specific trademark owners, ensuring that no paid ads will appear. American Airlines may have agreed to settle its lawsuit against Google on this basis. *See supra* note 49. Regardless, it is unclear how common such agreements actually are, and we are doubtful that this fully explains the observed patterns.

61. *See supra* notes 31–33 and accompanying text.

The question is not a new one. A well-known 19th and 20th century retailer (John Wannamaker) famously observed that “half the money I spend on advertising is wasted, but I can never find out which half.”⁶² The question is ultimately an empirical one—but it is certainly plausible that such purchases may not be a cost-effective marketing strategy for the most prominent brands/trademark owners, given the likelihood they would be prominently featured in the algorithmic search results anyway and given the low frequency of keyword purchases by actual competitors. However, our data does not provide sufficient information with which to answer this question.

D. *The Perils of Casual Empiricism*

In our earlier article on the use of trademarks as keywords, we highlighted the perils of casual empiricism.⁶³ Our findings in this Article provide further evidence on the perils of casual empiricism. Intellectual property law should rest on a sounder footing. Casual empiricism may be an occupational hazard for lawyers, judges, and law professors, but enough already.

VI. Conclusion

Perceptions about the use of trademarks as keywords have been framed by litigation, with trademark owners suing direct competitors and search engines that sell the trademarks for use as keywords to direct competitors. That factual setting does occur but it is distinctly unrepresentative of the universe of transactions in which keywords are purchased. In the real world, the most frequent purchasers of keywords are those selling the trademarked goods and complementary goods and services, or trademark owners.

Why does it matter who is purchasing trademarks as keywords? Public policy has been framed in the shadow of the disputes over the use of trademarks as keywords. Casual empiricism led judges to make a number of important assumptions about the underlying issues—but they were doing so in the context of highly unrepresentative exemplars. And it is almost always a mistake to develop public policy based on such unrepresentative exemplars.⁶⁴

62. Blake et al., *supra* note 31, at 1.

63. Franklyn & Hyman, *supra* note 3, at 499–504.

64. See, e.g., David A. Hyman, *Lies, Damned Lies, and Narrative*, 73 IND. L.J. 797, 848 (1998) (“Significant adverse consequences can follow when laws are based on false-hoods, half-truths, and truths that are not generalizable . . .”); David A. Hyman, *Rescue Without Law: An Empirical Perspective on the Duty to Rescue*, 84 TEXAS L. REV. 653, 660 (2006) (“From a public policy perspective, context (i.e., how the mine-run of situations where rescue is necessary are

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handled) matters a great deal more than the facts—however bad they may be—of any given non-rescue matter in assessing the overall merits of the no-duty rule.”).

Law is replete with examples of unintended consequences flowing from judicial decisions, regulation, and legislation that are based on similar casual empiricism. Even if we ignore the complex substantive issues that arise from attempting to apply trademark law to the purchase of keywords, history counsels caution in the development of public policy in this space. If we fail to heed this warning, the future of intellectual property law on the Internet will be déjà vu all over again.