

Free Fall: The Online Market’s Consumer Preference Disconnect

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INTRODUCTION

Do Internet users “pay” for online products and services with personal data?¹ The common analogy between online data collection for behaviorally targeted advertising and payment for purchases is seriously misleading. There is no functioning market based on exchanges of personal information for access to online products and services. In a functioning market, payment of a given price signals consumer demand for particular goods and services, transmitting consumer preferences to producers. Data collection would serve as “payment” in that critical sense only if its transfer from users to collectors adequately signaled user preferences for online goods and services. It does not. Indeed, the behavioral advertising business model leads to a failed online market and erects barriers to entry for no-data-collection alternatives. The market failure is due in part to the intertwined nature of personal information and involves collective action problems that cannot be solved by consent-

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¹ See, for example, Omer Tene and Jules Polonetsky, *To Track or “Do Not Track”: Advancing Transparency and Individual Control in Online Behavioral Advertising*, 13 Minn J L Sci & Tech 281, 335 (2012) (“Personal data have become a primary feature of the value exchange in almost any online transaction.”); Giacomo Luchetta, *Is the Google Platform A Two-Sided Market?* *19 (LUISS and Center of European Policy Studies Apr 2012), online at <http://ssrn.com/abstract=2048683> (visited Sept 15, 2013) (arguing that Google’s “behavior in the market for personal information comes closer to that of a retailer”); Adam Thierer and Berin Szoka, *Targeted Online Advertising: What’s the Harm & Where Are We Heading*, 16 The Progress & Freedom Foundation, Progress on Point 1, 5–6 (June 2009), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1348246 (visited Sept 15, 2013).

based approaches to single transactions. A “Do Not Track” approach would overcome some of these problems but may well fail if not backed up by regulation.

This Article begins by exploring three main reasons that data collection does not perform payment’s signaling function in making markets work. First, the online market is complicated by the ubiquity of business models bundling advertising with products and services offered to consumers at zero monetary price. Advertisers, not users, are these businesses’ customers. Their offerings reflect user preferences only indirectly, as refracted through the preferences of advertisers. This type of bundling (and preference distortion) is familiar from the broadcast media but raises new issues in the online behavioral advertising context. In the broadcast context, consumers are reasonably able to predict the marginal disutility (or benefit) they will incur from viewing advertising and thus to signal their preferences for particular bundles of advertising and broadcast content through their viewing and listening choices. The behavioral advertising model introduces an additional type of consumer cost: the potential disutility from data collection.

Second, Internet users do not know the “prices” they are paying for products and services supported by behavioral advertising because they cannot reasonably estimate the marginal disutility that particular instances of data collection impose on them. They thus are unable to select among products and services based on cost and thereby express their preferences. Online products and services bundled with data collection are essentially “credence goods”; their qualities cannot be assessed by consumers either before or after purchase.²

Finally, the online data collection and aggregation associated with the behavioral advertising business model create collective action problems for consumers, impeding them from expressing their preferences about data collection in individual transactions. Those collective action problems, in turn, erect barriers to entry for online businesses employing paid or contextual advertising business models. As a result of these factors, the online market is likely to be stuck in a failed

² See Michael R. Darby and Edi Karni, *Free Competition and the Optimal Amount of Fraud*, 16 J L & Econ 67, 68–72, 82 (1973); Uwe Dulleck and Rudolf Kerschbamer, *On Doctors, Mechanics, and Computer Specialists: The Economics of Credence Goods*, 44 J Econ Lit 5, 5–6 (2006).

state in which products and services are tailored to advertiser preferences for data extraction, rather than to consumer preferences. There is good reason to suspect that this state is not optimal for society.

The flaws in the analogy of data collection to payment matter because of the way the analogy is deployed to support particular policy conclusions. If the analogy between data collection and payment made in a voluntary market exchange is persuasive, then information privacy regulation must be judged in light of the risk that it will disrupt this functioning market. Fear of disrupting this supposed market justifies reliance on self-regulatory approaches and bolsters industry arguments that government intervention will “kill the Internet.”³ If, as argued here, the behavioral advertising ecosystem turns online products and services into credence goods,⁴ the implications are radically different. Credence goods, which include medical treatments, legal services, and so forth, are natural subjects of regulation, especially when effective screening and signaling methods are not available. If, in addition, collective action problems thwart the emergence of alternative business models that might avoid the credence good problem, the policy arguments in favor of trusting the market are thoroughly deflated.

Part I of this Article defines what I mean by a “behavioral advertising business model” and explains how that model differs from the paid and “contextual advertising” business models.⁵

³ See, for example, Berin Szoka, *Privacy Polls v. Real-World Trade-Offs*, 5 The Progress & Freedom Foundation, Progress Snapshot 1, 4–5 (Nov 2009); Adam Thierer, *Unappreciated Benefits of Advertising & Commercial Speech* *2–3 (Mercatus Center George Mason University No 86 Jan 2011), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1741245 (visited Sept 15, 2013); Adam Thierer and Berin Szoka, *Targeted Online Advertising: What’s the Harm & Where Are We Heading*, 16 The Progress & Freedom Foundation, Progress on Point 1, 5–8 (June 2009), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1348246 (visited Sept 15, 2013).

⁴ See George A. Akerlof, *The Market for “Lemons”: Quality Uncertainty and the Market Mechanism*, 84 Q J Econ 488, 488 (1970). See also Joseph E. Stiglitz, *Information and the Change in the Paradigm in Economics, Part 1*, 47 Am Econ 6, 21–22 (2003) (discussing “signaling” and “screening” as potential market-based remedies to problems of quality uncertainty). See generally Joseph E. Stiglitz, *Information and the Change in the Paradigm in Economics, Part II*, 48 Am Econ 17 (2004).

⁵ Throughout this Article, I use “behavioral advertising” as a shorthand to describe advertising that is targeted to individuals based on data about their characteristics and behavior. The “behavioral advertising business model” refers to a business model in which revenue comes from the sale of behavioral advertising. Similarly, “contextual advertising” is shorthand for advertising that is targeted based on the context that an individual is visiting online, and a “contextual advertising business model” is one in which revenue comes from the sale of contextual advertising.

Part II discusses how the behavioral advertising model relates to advertising-supported business models more generally and to the concept of a two-sided market. It argues that the behavioral advertising business model is likely to be far more distortive of the market's ability to process consumer preferences than either the broadcast or contextual advertising models. Part III explains how imperfect consumer information about the potential harms of data collection, company data practices, and means to mitigate data collection combine with the properties of information aggregation and with common behavioral economics concerns to undercut the market's responsiveness to consumer preferences. Part IV questions the notion that behavioral advertising is a necessary foundation for a vibrant Internet and pulls together the discussion in Parts II and III to explain why the behavioral advertising model is likely to persist even if consumers prefer other alternatives. Part V concludes by briefly discussing the policy implications of the analysis, especially in light of proposals for a browser-based "Do Not Track" option.

I. ONLINE BUSINESS MODELS

Companies take various approaches to generating revenue from their online activities.⁶ In what might be called an e-commerce approach, the Internet is used as a retail storefront (for example, harney.com or Amazon.com) or sometimes as an auction house or swap meet (for example, eBay.com). The goal of such e-commerce approaches is generally, as in traditional offline markets, to arrange the direct exchange of products or services for cash or, in some instances, for in-kind payment. This Article focuses on online advertising-based business models, in which, rather than facilitating such direct retail transactions, the Internet is used to deliver some kind of online product or service bundled with advertising, usually at zero cash price. In these business models, advertisers, rather than users, are the primary (or only) direct source of revenue for the company.

⁶ See David S. Evans, *The Online Advertising Industry: Economics, Evolution, and Privacy*, 23 J Econ Persp 37, 38–40 (2009); David S. Evans, *The Web Economy, Two-Sided Markets, and Competition Policy* *2–3 (University of Chicago and University College London Apr 2010), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1584363 (visited Sept 15, 2013).

Online advertising approaches can be divided into three basic types: undirected or “run-of-network,”⁷ contextual, and behavioral. Advertisers always seek to reach audiences that will be receptive to purchasing their products.⁸ Undirected, or run-of-network, ads aim at wide circulation, with the assumption that potential buyers will be among a large audience. Online “contextual advertising” is similar to traditional television or magazine advertising in that it assumes that purchase preferences can be correlated with interests in particular types of content. A contextual ad is placed on a website because the advertiser anticipates that visitors to that website are likely to be interested in the advertised product. Contextual ad placement often is automated, for example by using keyword matching, as in Google’s AdSense program. Whatever the specific ad placement algorithm, the basic idea is that the context attracts particular types of consumers who will, on average, be interested in predictable kinds of ads.

“Behavioral advertising,”⁹ on the other hand, is selected and displayed based on information about the individual user, rather than (or in addition to) information about the context. For obvious reasons, a behavioral advertising approach requires that the entity serving up the ad have access to a trove of information about particular Internet users. It also requires a mechanism for serving different ads to different users.

While I will discuss these models separately, many online businesses use mixtures of these basic approaches, and the line between them is somewhat fuzzy. Consider, for example, search-based advertising, which is the most lucrative segment of the online advertising market.¹⁰ It can be contextual, in the sense

⁷ Run-of-network advertising is placed on any website served by an online advertising network, without regard to the content of the website or the ad. See, for example, Bruce C. Brown, *How to Use the Internet to Advertise, Promote and Market Your Business Or Web Site: With Little Or No Money* 24 (2006); *Run-of-Network*, Marketing Terms, online at http://www.marketingterms.com/dictionary/run_of_network/ (visited Sept 15, 2013) (providing industry definitions).

⁸ See Joseph Turow, *The Daily You: How the New Advertising Industry is Defining Your Identity and Your Worth* 4, 88–89 (Yale 2012) (“*The Daily You*”).

⁹ As discussed in note 5, this term is used as a shorthand for “behaviorally targeted advertising.”

¹⁰ See Interactive Advertising Bureau, *IAB Internet Advertising Revenue Report, 2011 Full Year Results* *12 (Interactive Advertising Bureau Apr 2012), online at http://www.iab.net/media/file/IAB_Internet_Advertising_Revenue_Report_FY_2011.pdf (visited Sept 15, 2013).

that it is based only on the search queries entered by the user, or behaviorally targeted, in that it is based on data about the user accumulated at other times (earlier searches) or from other contexts (such as email or more general web-surfing). The critical distinction for the present analysis, and hence the way I will use these terms here, is that behavioral advertising depends on large-scale and long-term collection, storage, analysis, and, in some cases, sharing of data about Internet users, while contextual advertising does not.

A. The Market for Behavioral Advertising

There is a relative dearth of detailed public information about the amount of behavioral advertising online, its effectiveness for advertisers, and its implications for consumers. The Interactive Advertising Bureau (IAB) publishes some statistics about advertising revenue. On the whole, Internet advertising revenue increased approximately five-fold between 2002 and 2011.¹¹ Approximately 47 percent of online advertising revenue comes from search-related ads, which have dominated revenue since at least 2006, when they accounted for 40 percent of online advertising revenue. Google is responsible for a large share of this advertising revenue¹² (and a large share of Google's revenue comes from search advertising).¹³ Search advertising is a mixture of contextual and behavioral advertising.¹⁴ Display ads, which are a mixture of run-of-network, contextual, and behavioral ads, account for 22 percent of total revenues.¹⁵

A survey of online network advertising companies sponsored by IAB in 2009¹⁶ estimated that 18 percent of online advertising revenue was attributable to behavioral targeting and predicted that behavioral targeting would be responsible for

¹¹ See id at *10.

¹² For this and additional information, see Trefis, *Google* (2013), online at <https://www.trefis.com/company#/GOOG> (visited Sept 15, 2013).

¹³ See id.

¹⁴ See, for example, *About Ads on Search, Gmail and across the Web*, Google Support (Google), online at <http://support.google.com/websearch/bin/answer.py?hl=en&answer=1634057> (visited Sept 15, 2013).

¹⁵ See Interactive Advertising Bureau, *IAB Internet Advertising Revenue Report* at *12 (cited in note 10).

¹⁶ Howard Beales, *The Value of Behavioral Targeting* 3, 22 (Network Advertising Initiative 2010), online at http://www.networkadvertising.org/pdfs/Beales_NAI_Study.pdf (visited Sept 15, 2013).

9 percent of total (online and offline) advertising spending in 2012. The 2009 IAB study estimated that rates charged for behavioral advertising were about 2.7 times the rates for run-of-network advertising but did not compare them to rates for contextual advertising.¹⁷ Since run-of-network advertising is placed without attempting to match ad to context, one would expect that it would be cheaper than contextual advertising. It is thus reasonable to assume that contextual advertising rates fall somewhere between those for run-of-network and behavioral advertising.

Despite the growth in online advertising revenue, rates for online ads remain low relative to TV advertising and are declining. For example, in 2012, the average CPM, or cost-per-thousand-views, for online advertising was estimated at only \$2.66 for an online display ad compared to \$24.68 for a TV ad.¹⁸ Joseph Turow, in a recent book providing a detailed look at online advertising, describes how advertisers have been relatively slow to move into online advertising because of concerns about its effectiveness.¹⁹ Those concerns provided one impetus for extensive data collection from visitors to online sites, which was aimed at demonstrating ad effectiveness.²⁰

There is little public data available comparing contextual advertising to behavioral advertising. Many discussions of online advertising conflate the two approaches and, in fact, they are often combined in practice. One 2006 industry-sponsored study reportedly found that consumers were more likely to respond to contextual advertising than to behavioral advertising;²¹ however, an industry-sponsored study in 2007 came to the opposite conclusion.²² A 2012 study sponsored by

¹⁷ See id.

¹⁸ See Dan Mitchell, *Online Ad Revenues Soar, But That's No Reason to Cheer*, CNN Money (CNN Dec 19, 2012), online at <http://tech.fortune.cnn.com/2012/12/19/online-ad-revenues-soar-but-thats-no-reason-to-cheer> (visited Sept 15, 2013); Rebecca Greenfield, *The Decline of Google (and the Internet's) Ad Business*, The Atlantic Wire (July 20, 2012), online at <http://www.theatlanticwire.com/technology/2012/07/decline-google-and-internets-ad-business/54835> (visited Sept 15, 2013).

¹⁹ Turow, *The Daily You* at 36 (cited in note 8).

²⁰ See id at 50–58.

²¹ See Dawn Anfaso, *Contextual vs. Behavioral Targeting*, iMedia Connection (Mar 31, 2006), online at <http://www.imediainconnection.com/content/8863.asp> (visited Sept 15, 2013).

²² See *Behaviorally Targeted Online Advertising Gets Better Reception than Contextual*, Marketing Charts (Sept 12, 2007), online at <http://www.marketingcharts.com>.

Google surveyed purchasers of online advertising and found that 82 percent of them used contextual advertising, while 71 percent used behavioral advertising.²³ Various other percentages used demographic, geographical, and retargeting strategies. The majority of advertising buyers surveyed believed that behavioral targeting would expand, while only 15 percent agreed that behavioral targeting might be overhyped, though an additional 20 percent had not formed an opinion on that question.²⁴

There are many ways of charging for online advertising, and the costs depend on many factors. On top of that, it is difficult to measure the effectiveness of online advertising. Perhaps for this reason, there seems to be no definitive answer as to whether contextual or behavioral advertising gives advertisers a better return on investment. Varied opinions on this subject abound on marketing blogs and in newsletters.²⁵

B. The Effectiveness of Behavioral Advertising

There are few direct studies of the effectiveness of behavioral advertising, though its higher price certainly suggests that advertisers value it more than run-of-network advertising. The IAB 2009 study compared the conversion rates (meaning the percentage of ad clicks that resulted in a sale) for behavioral advertising with those of run-of-network ads, finding (though with caveats in light of limited data) that the conversion

com/interactive/behaviorally-targeted-online-ads-get-better-reception-than-contextual-1604/ (visited Sept 15, 2013).

²³ See Forrester Consulting, *Display Media Buyers Value Audience in Context*, Think With Google (Sept 2012), online at <http://www.thinkwithgoogle.com/insights/library/studies/display-buyers-value-audience-in-context/> (visited Sept 15, 2013).

²⁴ Id.

²⁵ See, for example, Tessa Wegert, *Contextual and Behavioral Targeting: Worth a Try* (ClickZ July 22, 2004), online at <http://www.clickz.com/clickz/column/1696140/contextual-behavioral-targeting-worth-try> (visited Sept 15, 2013); *Targeting Is The New Killer App For Ad Networks* (LucidMedia), online at <http://www.lucidmedia.com/blog/2008/09/22/targeting-the-new-killer-app-for-ad-networks/> (visited Sept 15, 2013); K.C. Jones, *Online Behavioral Ads Beat Contextual Ads, Survey Says*, (Information Week September 13, 2007), online at <http://www.informationweek.com/online-behavioral-ads-beat-contextual-ad/201806110> (visited Sept 15, 2013); *Marketers Peg Search, Behavioral as Best ROI Deliverers* (Marketing Vox Feb 15, 2008), online at <http://www.marketingvox.com/marketers-peg-search-behavioral-as-best-roi-deliverers-036658/> (visited Sept 15, 2013); *Contextual Targeting Yields Highest Return for Brand Advertisers* (LucidMedia), online at <http://www.lucidmedia.com/blog/2008/04/23/contextual-targeting-highest-return-for-brands/> (visited Sept 15, 2013).

rates for behaviorally targeted ads were nearly twice as high.²⁶ Again, no data for contextual advertising was available.

Avi Goldfarb and Catherine Tucker used a large dataset of industry survey data in an attempt to quantify the effects of behavioral targeting on ad effectiveness.²⁷ The industry survey had measured ad effectiveness by asking Internet users about the effects of viewing an online ad (versus a placebo ad) on their expressed willingness to purchase. To attempt to disentangle the specific impact of behavioral targeting, Goldfarb and Tucker looked for changes in advertising effectiveness, as measured by the survey, before and after the implementation of the European Union (EU) Data Protection Directive, which was adopted in 2002 and implemented thereafter at various times in various countries.²⁸ They assumed, but did not demonstrate, that behavioral targeting decreased after the Directive's adoption. They concluded from regression analysis that the effectiveness of online advertising declined by about 65 percent after the adoption of the Data Protection Directive.²⁹ The overall impact of the ads was small both before and after enactment, corresponding to about a 2.5 percent increase in expressed willingness to purchase.³⁰ Without knowing to what extent behavioral targeting actually decreased after the Directive was adopted, it is a bit difficult to know what to make of these results, though the authors attempted to rule out various confounding factors.³¹ Goldfarb and Tucker also found that the decrease in effectiveness before and after the regulation was mitigated for more context-specific ads, for multimedia ads, and

²⁶ See Interactive Advertising Bureau, *LAB Internet Advertising Revenue Report* at *12 (cited in note 10).

²⁷ See generally Avi Goldfarb and Catherine Tucker, *Privacy Regulation and Online Advertising* (2010), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1600259 (visited Sept 15, 2013).

²⁸ European Parliament and Council Directive 95/46/EC on the protection of individuals with regard to the processing of personal data and on the free movement of such data [1995] *OJ L 281, 23/11 P. 0031-0050* ("Directive 95/46/EC").

²⁹ Goldfarb and Tucker, *Privacy Regulation and Online Advertising* at 18 (cited in note 27).

³⁰ *Id* at 19.

³¹ *Id* at 21-27 (considering the effects of, for example, varying ad effectiveness metrics, double exposure to the test ad, timing of each European country's implementation of the Directive, country income, varying assumptions about timing of the law's influence on advertisers, and attempting to rule out factors such as changes in consumers' attitudes about online advertising).

for larger ads.³² Thus, even if there was a causative chain leading from the EU Directive to decreased behavioral targeting to less effective advertising, the Goldfarb and Tucker study also shows that there are alternatives to behavioral tracking that companies might employ to improve ad effectiveness.³³

A study by Jun Yan, et al, examined data collected by a commercial search engine to investigate the potential effectiveness of behavioral targeting.³⁴ That study is widely quoted for its conclusion that “Click-Through Rate (CTR) of an ad can be averagely improved as high as 670% by properly segmenting users for behavioral targeted advertising in a sponsored search.”³⁵ The study’s more detailed conclusions are rarely mentioned, yet they call into question any general inference about the effectiveness of behavioral targeting.

Yan, et al, investigated several approaches to targeting. They compared “short term” targeting based on one day of search queries with “long term” targeting based on one week’s worth of queries.³⁶ Interestingly, the most effective targeting relied only on search queries collected over the one-day period. Thus, Yan, et al, concluded that “user search behavior, i.e. user search queries, can perform several times better than user browsing behavior” and that “only tracking the short term user behaviors [is] more effective than tracking the long term user behaviors.”³⁷ Notably, the widely-quoted 670 percent improvement they observed was for targeting based on short term collection of search queries. They predicted only about a 300 percent improvement when long-term tracking of search queries was used.³⁸ In other words, tracking users for longer

³² Id at 29–30.

³³ See Goldfarb and Tucker, *Privacy Regulation and Online Advertising* at 33 (cited in note 27).

³⁴ See generally Jun Yan, et al, *How Much Can Behavioral Targeting Help Online Advertising?* *261–62 (WWW Conference Proceedings 2009 Madrid), online at <http://www.wwwconference.org/www2009/proceedings/pdf/p261.pdf> (visited Sept 15, 2013).

³⁵ Id at *261.

³⁶ Id at *262, *267–68, *270.

³⁷ Id at *262.

³⁸ Yan, et al, *How Much Can Behavioral Targeting Help Online Advertising?* , at*266, Figure 1 (cited in note 34) (showing that short term tracking based on search query (labeled SQ) significantly outperformed long term tracking based on search query (labeled LQ)).

periods made targeting worse, perhaps because users' purchasing interests change rapidly.³⁹

Rather than providing support for the ubiquitous and long-term data collection that is normally contemplated in discussions of behavioral advertising, the Yan study suggests that the most effective advertising is based on a user's search queries over a relatively short period of time. From the perspective of this article, advertising based on such short-term tracking of search queries is essentially contextual.

C. Consumer Perspectives on Behavioral Advertising

Information about the value of behaviorally targeted advertising to consumers is also hard to come by. A well-known survey by Turow, et al,⁴⁰ found that 66 percent of respondents did not want to receive ads tailored to their interests, while even larger percentages did not want ads to be tailored based on their activities on the websites they were visiting (73 percent), what they did on other websites (84 percent), or what they did offline (86 percent).⁴¹ A somewhat smaller fraction of respondents (66 percent) objected to receiving discounts based on their activities on the websites they were currently visiting, but 81 percent objected even to discounts if they were based on their activities on other websites.⁴² While younger respondents objected somewhat less than older respondents to these forms of targeting, the differences were not large.⁴³

A 2010 survey by Aleecia McDonald and Lorrie Cranor found that 18 percent of respondents were "glad to have relevant advertisements about things I am interested in instead of random advertisements," while 64 percent agreed that "someone keeping track of my activities online is invasive" and 40 percent said they would be more careful online if they knew advertisers were collecting data.⁴⁴ A recent interview-based study of

³⁹ Id at *266.

⁴⁰ Joseph Turow, et al, *Contrary to What Marketers Say, Americans Reject Tailored Advertising and Three Activities that Enable It* *15 New York Times (NY Times Sept 2009), online at http://graphics8.nytimes.com/packages/pdf/business/20090929-Tailored_Advertising.pdf (visited Sept 15, 2013).

⁴¹ Id at *15, Tables 2 and 3.

⁴² Id at *18.

⁴³ Id at *17.

⁴⁴ Aleecia McDonald and Lorrie F. Cranor, *Beliefs and Behaviors: Internet Users' Understanding of Behavioral Advertising* *21 (TPRC Aug 2010), online at

consumer perceptions of online advertising found that consumers thought that “non-obtrusive contextual ads were particularly useful” but did not generally understand when the advertising they were seeing was contextual and when it was behaviorally targeted.⁴⁵ A 2010 study by Chris Hoofnagle, et al, suggests that Internet users take some steps to protect their privacy in response to behavioral advertising.⁴⁶ Fifty percent of survey respondents reported reading privacy policies “often” or “sometimes,” 63 percent reported erasing cookies “often” or “sometimes,” and 56 percent reported having changed their minds about one or more online purchases because of privacy or security concerns.⁴⁷

Despite their concerns about online data collection, few Internet users respond by eschewing advertising-supported online products and services. In the McDonald and Cranor study, for example, only 15 percent of respondents reported that behavioral advertising would stop them from using a site.⁴⁸ Surveys reporting strong concern about privacy among consumers have been criticized on several grounds, including that they do not reflect the tradeoffs that consumers are willing to make in exchange for free access to online products and services.⁴⁹ The fact that users continue to subject themselves to online tracking despite expressing discomfort about it is one basis for the argument that users accept online data collection as a price paid for access to online products and services.

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1989092### (visited Sept 15, 2013).

⁴⁵ Blasé Ur, et al, *Smart, Useful, Scary, Creepy: Perceptions of Online Behavioral Advertising* *5 (CyLab Carnegie Mellon University July 2012), online at http://cups.cs.cmu.edu/soups/2012/proceedings/a4_Ur (visited Sept 15, 2013).

⁴⁶ Chris Hoofnagle, et al, *How Different Are Young Adults from Older Adults When it Comes to Information Privacy Attitudes and Policies?* *13 Tables 6–8 (Federal Trade Commission Apr 14, 2010), online at http://www.ftc.gov/os/comments/privacy_roundtable/544506-00125.pdf (visited Sept 15, 2013) (“How Different Are Young Adults from Older Adults”).

⁴⁷ Id.

⁴⁸ McDonald and Cranor, *Beliefs and Behaviors* at *22 (cited in note 44).

⁴⁹ See, for example, Szoka, *Privacy Polls v. Real-World Tradeoffs* at *5–7 (cited in note 3); Thierer, *Unappreciated Benefits of Advertising & Commercial Speech* at *2–3 (cited in note 3).

II. CONSUMER PREFERENCES AND ADVERTISING BASED BUSINESS MODELS

The most common normative justification for a market economy rests on the basic idea that payments signal preferences. Consumers' willingness to pay particular prices signals their preferences for particular products and services and, if all goes well, the market responds by producing products and services responsive to those preferences. Notably, payment of a particular price functions as a preference signal only because the transfer of money from consumer to producer ties greater consumer willingness to pay to higher producer revenue. In other words, what motivates sellers to meet consumer preferences is not that consumers will *pay* more (consumer disutility) for products they prefer, but that sellers will *receive* more for offering preferred products.

The story often told about zero-price advertising-based business models (in the online or offline world) is that consumers "pay" something other than money for the content or services they receive. So, for example, the traditional broadcast advertising-based approach is sometimes modeled as one in which consumers pay for television or radio content with "attention" to advertising. The assumption underlying such models is that content recipients experience some disutility from being subjected to broadcast advertising⁵⁰ but are willing to incur that cost because it is outweighed by the expected benefit of the programming itself.

The casual analogy between "payment" and costs incurred by consumers subjected to advertising does not go very far, however. Free advertising-supported business models sacrifice the direct connection between consumer payment and producer revenue that ordinarily makes the market responsive to consumer preferences. An advertising-supported company's

⁵⁰ See, for example, Simon Anderson and Stephen Coate, *Market Provision of Broadcasting: A Welfare Analysis*, 72 Rev Econ Stud 947, 950–52 (2005). It is also possible to model the situation as one in which consumers receive positive utility from advertising. See, for example, David Godes, Ellie Ofek, and Miklos Sarvary, *Content vs. Advertising: The Impact of Competition on Media Firm Strategy*, 28 Marketing Sci 20, 31–33 (2009). I will return to this possibility a bit in Part II, but, for the most part, I make the more plausible assumption that broadcast advertising is experienced by consumers mostly as a disutility or cost. This assumption is strongly supported by the empirical fact that consumers go to great lengths to avoid broadcast advertising, at least in the television context.

revenue comes, by definition, from the monetary price that advertisers are willing to pay, which provides a direct signal of advertiser preferences. Consumer preferences are signaled to providers only indirectly and only to the extent that advertisers' preferences are accurate proxies for consumer preferences. The price that an advertiser is willing to pay to advertise its products in conjunction with a "free" offering depends on how many additional sales it expects the advertising to generate. There is only a loose connection between advertiser willingness to pay and the strength of consumer preferences for the "free" offering. Because they break the direct connection between price and consumer preferences, the social value of business models bundling advertising with unrelated goods and services must be explained.

Arguments for the social value of advertising-supported business models are primarily of three kinds. The first type of argument contends that advertising itself is beneficial to consumers because it lowers the costs of searching for transaction partners.⁵¹ The second asserts that bundling advertising with a particular product or service solves some kind of failure in the market for that product or service.⁵² The third, commonly heard from industry advocates, contends that free products and services are positive externalities associated with advertising.⁵³ This Part discusses the effects of broadcast, online contextual, and behaviorally targeted ad-supported business models on consumer markets.

A. The Basic Economics of Advertising-Based Business Models

The economics of advertising is a complicated, and incompletely understood, subject, and I certainly make no

⁵¹ See generally George J. Stigler, *The Economics of Information*, 69 J Pol Econ 213 (1961) (offering a classic statement of this argument).

⁵² See, for example, J.H. Snider, *The Myth of "Free" TV* *13–14 (New America Foundation Spectrum Series Working Paper #5 June 2002), online at http://www.newamerica.net/files/nafmigration/Pub_File_877_1.pdf (visited Sept 15, 2013) (describing how free TV started as an "economic necessity" for broadcasters).

⁵³ See, for example, Michael R. Hammock and Paul H. Rubin, *Applications Want to be Free: Privacy Against Information*, 7 Competition Pol Intl 41, 48–49 (2011); IAB Europe, *Consumers Driving the Digital Uptake* *11, *19 (IAB Europe Sept 2010), online at http://www.iabeurope.eu/media/95855/white_paper_consumers_driving_the_digital_uptake.pdf (visited Sept 15, 2013).

attempt to do it complete justice here.⁵⁴ Instead, this section draws out aspects of the subject relevant to the point of this Article, which is that the behavioral advertising business model that is becoming the norm online is problematic not only from the perspective of privacy, but also because of its effects on the basic functioning of the market in responding to consumer preferences.

1. Theories of the function of advertising.

There are a variety of theories of the role of advertising in the marketplace.⁵⁵ One influential thread of analysis views advertising as primarily informational and takes an economic perspective.⁵⁶ The neoclassical theory of the market begins by assuming that all players have perfect information in the following sense: all producers of goods are presumed to have perfect information about the aggregate preferences of consumers (as represented generally by a demand curve), while all consumers are presumed to have perfect information about the characteristics of the goods offered for sale and their prices. The theory also assumes, often implicitly, that consumers have perfect information about where to purchase the available goods. Under these highly idealized conditions, a competitive market will lead to a good with particular characteristics being offered to consumers at a single market-clearing price equal to the marginal cost of producing the good.⁵⁷ The fact that neither consumers nor producers have this kind of perfect information throws a monkey wrench into neoclassical theory.⁵⁸

⁵⁴ For a review of the economic literature, see generally Kyle Bagwell, *The Economic Analysis of Advertising* (Columbia University Dept of Econ Discussion Paper Series Aug 2005), online at http://www.stanford.edu/~kbagwell/Bagwell_Web/adchapterPost082605.pdf (visited Sept 15, 2013). See also Jess Benhabib and Alberto Bisin, *Social Construction of Preferences: Advertising*, 1 Handbook of Soc Econ 201 (2011); Justin P. Johnson and David P. Myatt, *On the Simple Economics of Advertising, Marketing, and Product Design*, 96 Am Econ Rev 756 (2006). For an overview in the online context, see generally Evans, 23 J Econ Persp 37 (cited in note 6).

⁵⁵ For an overview, see Bagwell, *The Economic Analysis of Advertising* at 6–24 (cited in note 54).

⁵⁶ See generally Stigler, *The Economics of Information* (cited in note 51).

⁵⁷ See, for example, E. Roy Weintraub, *Neoclassical Economics* (The Concise Encyclopedia of Economics), online at <http://www.econlib.org/library/Enc1/NeoclassicalEconomics.html> (visited on May 12, 2013); Joseph E. Stiglitz, *Information* (The Concise Encyclopedia of Economics), online at <http://www.econlib.org/library/Enc/Information.html> (visited on May 12, 2013).

⁵⁸ See Stiglitz, 47 Am Econ at 8–9 (cited in note 4); Stiglitz, 48 Am Econ at 17–18

The lack of perfect market information means, among other things, that the information necessary to match buyers and sellers and to allow for price competition is costly for both buyers and sellers to obtain, adding transaction cost friction to the operation of the market. One way to view advertising, as discussed in the seminal work of George Stigler, is as a mechanism for reducing search costs by providing information to consumers about the characteristics and prices of goods available from various sellers.⁵⁹ By reducing search costs, advertising facilitates both transaction matchmaking and price competition. Related theories about the function of advertising (and, more specifically, of brand recognition or seller reputation) in markets for experience goods (goods whose qualities can be evaluated only after purchase) and credence goods (goods whose qualities consumers are unable to evaluate even after purchase) hold that advertising may serve to lower search costs by informing consumers that a product is available from a trustworthy seller.⁶⁰

There are, of course, other theories of advertising, which can be grouped under the rubric of advertising as persuasion.⁶¹ Under these theories, the purpose of advertising is to shift consumer demand by persuading consumers to buy a particular product with particular characteristics, rather than to reduce the transaction costs of matching consumers to those selling products that fit their pre-existing preferences.⁶²

At one extreme, some commentators view persuasive advertising as manipulating and overriding consumers' preferences using various tactics such as associating the advertised goods with desirable experiences or traits such as

(cited in note 4). See generally Kenneth J. Arrow, *Limited Knowledge and Economic Analysis*, 64 *Econ Rev* 1 (1974).

⁵⁹ See Stigler, *The Economics of Information* (cited in note 51); Randal C. Picker, *Online Advertising, Identity, and Privacy* *9–10, *18 (U Chi Law & Econ Olin Working Paper No 475 June 2009), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1428065 (visited Sept 15, 2013).

⁶⁰ See, for example, Bagwell, *The Economic Analysis of Advertising* at 18–19 (cited in note 54); P. Nelson, *Advertising as Information*, 82 *J Pol Econ* 729, 732, 752 (1974); P. Nelson, *Information and Consumer Behavior*, 78 *J Pol Econ* 311, 327 (1970).

⁶¹ See generally Laura R. Bradford, *Emotion, Dilution, and the Trademark Consumer*, 23 *Berkeley Tech L J* 1227 (2008) (providing a recent review); Johnson and Myatt, 96 *Am Econ Rev* 756 (cited in note 54); Bagwell, *The Economic Analysis of Advertising* (cited in note 54).

⁶² See Bagwell, *The Economic Analysis of Advertising* at 13 (cited in note 54); Johnson and Myatt, 96 *Am Econ Rev* at 756–57 (cited in note 54).

freedom, adventure, or sexuality or promoting misleading (if still legal) impressions about the quality of the goods or the effects they are likely to have on the lives of consumers.⁶³ Persuasive advertising is also viewed more benignly by some theorists. They argue, for example, that the emotional connection with a product promoted by persuasive advertising increases consumer utility or that persuasive advertising assists consumers in realigning their preferences when new products become available. Those who prefer not to speak of shifting consumer preferences may contend that persuasive advertising helps consumers to understand that a new product aligns with their pre-existing preferences.⁶⁴ The latter view blurs into the search cost theory.

There is a debate about the extent to which the information provided by advertising provides net social benefits. Some commentators argue that much of the money expended on advertising is devoted to artificial product differentiation in service of a rent-seeking quest to grab market share from other sellers.⁶⁵ Some also argue that advertising raises consumer prices.⁶⁶

Of course, neither buyers nor sellers will want to invest time or money in advertising that does not succeed in facilitating desirable market transactions. If consumers are subjected to advertising that does not inform them about products of interest or persuade them to make purchases they are happy to have made, they will incur costs in terms of wasted attention, disruption, displeasure, and in some circumstances, regret at having made undesirable purchases. Consumers even may incur costs when they receive advertising for products they intend to purchase if, for example, they are sufficiently familiar with those products that the advertising provides no reduction in their transaction costs.

⁶³ See generally Bagwell, *The Economic Analysis of Advertising* at 10, 24–25 (cited in note 54); Bradford, *Emotion, Dilution, and the Trademark Consumer* at 1253–54 (cited in note 61).

⁶⁴ See generally Bagwell *The Economic Analysis of Advertising* at 20–23 (cited in note 54); Bradford, *Emotion, Dilution, and the Trademark Consumer* at 1255–59 (cited in note 61);

⁶⁵ Compare Benhabib and Bisin, 1 *Handbook of Soc Econ* at 210 (cited in note 54) and Bagwell, *The Economic Analysis of Advertising* at *6 (cited in note 54), with Picker, *Online Advertising, Identity, and Privacy* at *19–20 (cited in note 59).

⁶⁶ See Bagwell, *The Economic Analysis of Advertising* at *6 (cited in note 54).

To summarize, without taking sides in the persuasion versus search cost debate, we can expect that advertisers' and consumers' interests are aligned at least to the extent that both consumers and advertisers are interested in 1) reducing transaction costs by delivery of product information to consumers and 2) making better "matches" between the advertising consumers receive and the products and services they are interested in buying. It is equally clear, however, that consumers' and advertisers' interests are not perfectly aligned. In particular, advertisers will be less sensitive than consumers to the disutility imposed on consumers by ads that do not facilitate the satisfaction of their preferences. Those who find the persuasion theory convincing (which certainly seems to include advertising industry players) might argue further that consumers' and advertisers' interests are misaligned to the extent that advertising persuades consumers either to purchase items that do not increase their utility or to adapt their preferences in sub-optimal ways. Thus, persuasion theorists might argue that consumers incur costs when advertising persuades them to spend money on cigarettes, gambling, pornography, penis enlargements, sub-prime mortgages, or anything else that they regret purchasing or that otherwise decreases their utility. Advertisers do not internalize such consumer costs.

2. Advertising-based business models and "two-sided markets."

From the search cost perspective, advertising is valuable to both producers and consumers, and, in principle, both producers and consumers should be willing to invest in intermediaries that target advertisements to those who are likely to be interested in them.⁶⁷ One way that an intermediary can do that is to aggregate advertisements from sellers of related goods in one platform, so that interested consumers know where to look. A simple example of such a platform is a bulletin board in an apartment building on which residents post information about their interest in buying or selling services or goods likely to be

⁶⁷ But see Mark Patterson, *On the Impossibility of Information Intermediaries* (Fordham Law and Economics Research Paper No 13 July 2001), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=276968 (visited Sept 15, 2013) (exploring the issues raised by information intermediaries).

relevant to other residents. Pennysaver publications have served a similar role in local communities for years. Craigslist.com is an updated version of such a platform.

Markets involving intermediaries that reduce the costs of transactions between two groups are commonly described as “two-sided markets” or “two-sided platforms.”⁶⁸ In a canonical two-sided market, the intermediary serves the interdependent needs of two groups of customers. In the offline world, shopping malls and swap meets are two-sided market intermediaries. Online auction sites such as eBay.com, job sites, such as monster.com, literal matchmaking sites, such as match.com, and restaurant delivery and reservation sites, such as seamless.com and opentable.com, are more contemporary examples. Two-sided market intermediaries are responsive (though not necessarily equally responsive) to the preferences of both types of customers, who have a mutual interest in reducing the transaction costs of their interactions.⁶⁹ A simple platform for matching buyers and sellers, such as the Pennysaver or craigslist.com, is a two-sided market intermediary for advertising.

The typical advertising-supported business is not a simple two-sided market intermediary for matching buyers and sellers, however. While there are some similar features, something else is going on. The majority of these businesses bundle advertising from a group of sellers with another product or service, which this Article will call the “associated good.” Common examples of associated goods are entertainment or news content or, in the online context, search or social networking services. In most cases, it is the associated good, not the advertising, that consumers want. Thus, the ad-supported business is not serving as an intermediary reducing transaction costs for two parties with interdependent preferences.

⁶⁸ See, for example, Anderson and Coate, 72 Rev Econ Studies at 955 (cited in note 50); David S. Evans, *Two-Sided Platforms and Analysis of Single-Firm Conduct* *2–4 (FTC Sept 2006), online at <http://ftc.gov/os/comments/section2hearings/522292-00012.pdf> (visited Sept 15, 2013); Markus Reisinger, *Platform Competition for Advertisers and Users in Media Markets* *1–5 (Otto Beisheim School of Management, CESifo May 29, 2011), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1855287&download=yes (visited Sept 15, 2013); Glen E. Weyl, *A Price Theory of Multi-Sided Platforms*, 100 Am Econ Rev 1642, 1644–45 (2010); Jean-Charles Rochet and Jean Tirole, *Platform Competition in Two-Sided Markets*, 1 J Eur Econ Assoc 990, 991–93 (2003).

⁶⁹ See David S. Evans, *The Antitrust Economics of Multi-Sided Platform Markets*, 20 Yale J Reg 325, 339–44 (2003).

Bundled advertising-based business models can be divided into two types. In one type, which includes newspapers and magazines, both consumers and advertisers pay the producer of the bundle.⁷⁰ Advertisers (who generally pay more) pay to have their advertisements delivered to consumers in a format that gets attention from prospective purchasers. Consumers pay to receive the bundle, generally because they value the associated good. Consumer attitudes toward the advertisements may vary, however, with some valuing the advertising and being willing to pay more for the bundle than they would for the associated good alone and others perceiving the advertising as a cost and being willing to pay somewhat less for the bundle than they would for the associated good alone. In the second type, which includes broadcast media and many online advertising-supported businesses, advertisers pay the full cost of the bundle while consumers receive access to it for a zero monetary price.

Price asymmetries in two-sided markets often are explained by two common features of such markets: 1) differences in the extent to which the two types of customers value the services provided by the intermediary and in their elasticity of demand and 2) the fact that the two groups of customers place different values on attracting customers of the other sort.⁷¹ In essence, if one group of customers is willing to subsidize the participation of the other group, providers of intermediary services may be able to increase their total profits by arbitraging their costs between the two groups, charging the first group more than the marginal costs associated with serving them and the second group less.

Similar factors are at work in the bundled advertising-based business model, in that advertisers are interested enough in reaching consumers that they are willing to foot the bill for the associated good. Thus, for example, traditional broadcast advertisers strongly prefer that their ads reach large numbers of consumers. They generally face fixed costs from designing and placing an ad, while their net revenue from advertising-influenced purchases increases with the number of “eyeballs” exposed to the ad. For this reason, advertisers are willing to pay

⁷⁰ See, for example, *id.* at 337 (giving examples of sources of platform revenue).

⁷¹ See *id.* at 342–45 (describing how price is determined in a two-sided market); Evans, *Two-Sided Platforms and Analysis of Single-Firm Conduct* at *4–5 (cited in note 68) (same).

an extra amount per consumer so that broadcasters can lower the price consumers pay, thus increasing their numbers. Indeed, advertisers apparently are willing to pay enough to subsidize the production of broadcast content to attract consumers to the platform.

Another way to look at asymmetric pricing in both canonical two-sided markets and advertising-supported business models is that each of the intermediary's customers bases its willingness to pay for the intermediary's services on the package the intermediary delivers to it. Thus, advertisers see, and are willing to pay for, the package of potential customers reached by the advertisements. The intermediary's bundle of advertising and content can improve the package of potential buyers both by increasing the raw numbers of eyeballs and by targeting consumers who are likely to purchase the advertised products. Consumers, on the other hand, see the intermediary as offering a package of content and advertising. Their willingness to pay (in money and in time) reflects the composition of the package. Consumers' demand for the bundle increases when the associated content meets their preferences and decreases if there are too many ads or if they do not find the ads useful.

An advertising intermediary tries to balance all of these factors in setting its prices to advertisers and consumers. The bundling strategy allows the intermediary to offer the associated content to consumers for a lower price, thus increasing consumer demand (as long as consumers do not find the advertising too distasteful) for the bundle of content and advertising. Higher consumer demand makes advertisers happy because their advertisements are received by more consumers. The supramarginal cost price to advertisers also decreases advertiser demand, thus making consumers happier (assuming they do not want too many ads bundled with their content). At some combination of content, advertising, and prices, the intermediary maximizes its expected profits.

While there are similarities between advertising-supported businesses and two-sided market intermediaries, the bundling of advertising with an associated good complicates things, as already mentioned. While the social benefits are clear when a two-sided market intermediary reduces transaction costs for two groups seeking to satisfy interdependent preferences, the social benefits of bundling advertising with an associated good are less evident. While buyers and sellers may have interdependent

preferences for advertising's role in reducing their transaction costs, the same is not true for associated goods, such as media content. There is no general reason why these associated goods could not be sold independently in an ordinary paid market. The social value of the advertising-based business model must be assessed in comparison to the social value of separate markets for advertising and for the associated good.⁷²

The proliferation of free-to-consumer advertising-supported business models also needs further explanation. While price asymmetry may be expected, a price of zero is not inevitable. Indeed, advertising-based print media traditionally have not settled on a price to consumers of zero. On average, at least as reported in 2003, consumers provided 20 percent of print media revenue.⁷³ As already mentioned, there also are some advertising platforms that do not involve an associated good. For consumers, the bundling of advertising with an associated good model reflects a tradeoff: a paid market provides associated goods more responsive to consumer preferences and subjects them to fewer undesirable ads, while the free ad-supported business model gives them lower priced associated goods but subjects them to more advertising. The fact that most consumer goods are not sold via free advertising-supported businesses suggests a need to explain why and when the tradeoff will favor the advertising-supported business model.

3. The consumer tradeoff in the broadcast context.

Prior to the rise of the online businesses that are the focus of this Article, the zero-price advertising-supported business model was associated primarily with the delivery of broadcast entertainment and news "content."⁷⁴ Broadcast content has several special features that explain its historical association with the zero-price advertising-based approach. Most importantly, the market for broadcast content suffers from a free rider problem. Though the marginal costs of distributing

⁷² See generally Luchetta, *Is the Google Platform a Two-Sided Market?* (cited in note 1) (making a similar point).

⁷³ See Evans, 20 Yale J Reg at 337 (cited in note 69) (noting approximately 80 percent of newspaper revenue comes from advertisers).

⁷⁴ See, for example, Snider, *The Myth of "Free" TV* at *13–14 (cited in note 52) (describing how free TV started as an "economic necessity" for broadcasters). See also Turow, *The Daily You* at 21, 114, 163 (cited in note 8).

broadcast content are low, the fixed costs of producing it are high. The usual response to such free rider problems is intellectual property, which gives producers exclusive rights so that they can charge supramarginal cost prices. In the broadcast context, however, the transaction costs of collecting revenue from viewers of broadcast media would be prohibitive even if viewers were willing to pay enough to cover the fixed costs of producing content. Programs broadcast over the airwaves can be tapped by anyone with the proper equipment. There is no easy way for broadcasters to trace the recipients of their broadcasts and bill them for the particular programming they access. The zero-price advertising-based model solves this free rider problem. Advertisers value “eyeballs” enough to be willing to absorb the fixed costs of producing the content that is broadcast with their advertising. To the extent that audience preferences for content predict their interest in particular products, advertising and content can be coordinated so as to improve the targeting of advertising. The model provides consumers with content that they are willing to watch, even though it is not directly responsive to their preferences and they may incur some disutility from the advertising.⁷⁵

The advertising-supported model is far from a perfect means of meeting consumer preferences for entertainment, however.⁷⁶ Advertisers prefer whatever bundle of content and advertising results in the highest revenue from purchases of their advertised goods. Advertisers have two basic strategies for increasing advertising’s impact on their net revenue—targeting the bundled content to those consumers most likely to purchase the advertisers’ goods and increasing the sheer numbers of consumers exposed to the ads. The broadcast industry invests heavily in measuring and defining the audiences for particular programming and optimizing the bundle of content and ads.⁷⁷ Nonetheless, the free broadcast advertising-based business

⁷⁵ The social utility of this tradeoff has been the subject of considerable debate. See, for example, Edwin C. Baker, *Giving the Audience What it Wants*, 58 Ohio St L J 311, 316–18 (1997); Edwin C. Baker, *The Media that Citizens Need*, 147 U Pa L Rev 317, 377–80 (1998). See generally Ellen P. Goodman, *Stealth Marketing and Editorial Integrity*, 85 Tex L Rev 83 (2006). See also Snider, *The Myth of “Free” TV* at *16–18 (cited in note 52) (arguing that network TV is actually highly subsidized by government).

⁷⁶ See, for example, Picker, *Online Advertising, Identity, and Privacy* at *21–22 (cited in note 59).

⁷⁷ For an extensive discussion of these strategies, see Turow, *The Daily You* at 21–30 (cited in note 8).

model is relatively constrained in its ability to employ the targeting strategy, in part because the limited number of broadcast channels favors the strategy of increasing audience size. To attract a large number of viewers, a television program must appeal to a wide swath of viewers, meaning that products advertised can be expected to be relatively generic and associated content can be expected to have broad, mainstream, appeal.⁷⁸ Content demanded by broadcast advertisers will not satisfy the preferences of consumers who would prefer to pay directly (even at intellectual property-based supramarginal prices) for more specialized or higher quality content.

Broadcast media also are less than perfect advertising intermediaries from the consumer perspective. Broadcast advertising is delivered to many consumers who are not interested in receiving it. Many of those consumers take costly steps to avoid advertising by using simple mechanisms, such as going to the kitchen for popcorn during commercial breaks or switching radio stations or, more recently, by investing in ad-skipping technologies, such as remote controls, VCRs, and DVRs.⁷⁹ In response, broadcasters and advertisers have tried to maximize ad effectiveness by adjusting the lengths and timing of commercials and commercial breaks. In 1965, a commercial break consisted of one or two sixty-second commercials.⁸⁰ Over time, sixty-second commercials were largely replaced by thirty-second and fifteen-second spots.⁸¹ The lengths of commercial breaks, now incorporating several spots, stretched from sixty seconds in 1965 to three or four minutes in 2007–2008.⁸² Brand appearances were incorporated into programming.⁸³ The total

⁷⁸ See Edwin C. Baker, *An Economic Critique of Free Trade in Media Products*, 78 NC L Rev 1357, 1381–84 (2000) (discussing, in the international context, the trade-offs between wide appeal and local appeal).

⁷⁹ See, for example, Kenneth C. Wilbur, *How the Digital Video Recorder (DVR) Changes Traditional Television Advertising*, 37 J Advertising 143, 143–44 (2008).

⁸⁰ Television Bureau of Advertising, *TV Basics* *17 (TVB July 2012), online at http://www.tvb.org/media/file/TV_Basics.pdf (visited Sept 15, 2013).

⁸¹ *Id.*

⁸² See David A. Schweidel and Robert J. Kent, *Predictors of the Gap Between Program and Commercial Audiences: An Investigation Using Live Tuning Data*, 74 J Marketing 18, 24 (2010).

⁸³ See, for example, Kantar Media Reports, *U.S. Advertising Expenditures Increased 6.5 Percent in 2010*, Press Release (Mar 17, 2011), online at <http://kantarmediana.com/intelligence/press/us-advertising-expenditures-increased-65-percent-2010> (visited Sept 15, 2013).

amount of time devoted to advertising increased from nine minutes per hour in the 1960s to an average of about twenty-two minutes per hour in 2010.⁸⁴

Advertisers also have experimented with various methods to subvert viewer ad avoidance, such as interspersing advertisements at intervals so that consumers have to make more effort to avoid them, making ads short so that avoiding them is less worthwhile, and making commercial breaks longer so that fast forwarding of recorded programs is less effective.⁸⁵ Though some of these efforts by advertisers have independent social value (the entertainment value of some television commercials comes to mind), for the most part the costs of this arms race between advertisers and viewers are a socially wasteful side effect of the bundling of content with advertising.

A broadcast market that offers only bundled advertising and content thus has social costs. Excess advertising is imposed on some consumers who would prefer to get their advertising elsewhere (or not at all). Broadcast content offerings are distorted by the imperfect alignment between advertiser demand and consumer preferences.⁸⁶

Technological changes have made the shortcomings of the bundled product of advertising and broadcast content evident. New delivery methods have reduced the transaction costs of selling media content directly to consumers. Many consumers are willing to pay for ad-free (or ad-light) content via subscription models or, increasingly, via purchases of individual programs, using intermediaries such as HBO, Showtime, Netflix, and Amazon. While some purchased programs are simply ad-free or ad-light versions of broadcast programming,⁸⁷ a significant amount of paid content is substantively different

⁸⁴ Id.

⁸⁵ See, for example, Wilbur, 37 *J Advertising* at 144–46 (cited in note 79); Daniel Franker, *The End of the 2-Minute Commercial Break*, *The Wrap* (June 17, 2009), online at http://www.thewrap.com/tv/article/standard-ad-pods-disappearing-tv_3733 (visited Sept 15, 2013); Herbert Rotfeld, *Understanding Advertising Clutter and the Real Solution to Declining Audience Attention to Mass Media Commercial Messages*, 23 *J Consumer Marketing* 180 (2006).

⁸⁶ Commentators, such as Baker, 58 *Ohio St L J* at 319 (cited in note 78), have also pointed to other problems with the model from a social perspective, but those are not my focus here.

⁸⁷ Amazon and Netflix, for example, make single episodes of many popular network television shows available for purchase.

from broadcast content⁸⁸ and presumably reflects the preferences of paying viewers better than the free advertising-supported broadcast content does. Technology also has made it possible for television to deliver a greater variety of specialized content and for content providers both to monitor the viewing habits of consumers and to send them more specifically targeted ads.⁸⁹ Of course, even today, enough consumers watch the traditional broadcast bundle of content and advertising to make investment in the broadcast bundle worth advertisers' while.⁹⁰ Nonetheless, there is heated debate about the future of broadcast advertising-supported television in light of these pressures from both sides.⁹¹

The fact that a paid market for content better reflects the preferences of paying consumers does not, of course, tell us which model is socially preferable. The paid model restricts access by comparison to a free ad-supported model. There is longstanding debate in the intellectual property context about the need to balance the social benefits of using exclusive rights to incentivize the production of content against the social costs of restricting access to information goods that could be distributed at nearly zero marginal cost.⁹² The zero-price, broadcast-advertising-based business model solves the free rider problem without restricting access but reduces responsiveness to consumer preferences for content and imposes disutility associated with advertising.

⁸⁸ Premium cable stations, such as HBO and Showtime, offer ad-free programming by subscription, some of which is later sold in single episode format by Amazon and Netflix.

⁸⁹ Turow, *The Daily You* at 30–32 (cited in note 8).

⁹⁰ See Interactive Advertising Bureau, *IAB Internet Advertising Revenue Report* at *20 (cited in note 10) (noting that broadcast television maintains highest advertising revenue of all advertising supported media); *TV Basics* at *2, *4 (cited in note 80).

⁹¹ See, for example, John Osborn, *The Next Business Model for Ad-Supported TV?*, AdAge Media (AdAge Feb 20, 2009), online at <http://adage.com/article/media/business-model-advertising-supported-tv/134746> (visited Sept 15, 2013); Tess Vigeland, *The Future of TV: A Pay-Per-Network Model?*, Marketplace Tech (Marketplace Nov 9, 2012), online at <http://www.marketplace.org/topics/tech/future-tv-pay-network-model> (visited Sept 15, 2013); Julia Boorstin, *What Do "Cable Nevers" Mean for TV's Future?*, CNBC Media and Entertainment Reporter (CNBC Jan 8, 2013), online at http://www.cnbc.com/id/100362995/What_Do_039Cable_Nevers039_Mean_for_TV039s_Future (visited Sept 15, 2013); Brian Barrett, *The Future of TV May Not Be Worth It*, Gizmodo (Gizmodo Jan 2, 2013), online at <http://gizmodo.com/5972517/the-future-of-tv-may-not-be-worth-it> (visited Sept 15, 2013).

⁹² See generally Amy Kapczynski, *The Cost of Price: Why and How to Get Beyond Intellectual Property Internalism*, 59 UCLA L Rev 970 (2012).

In theory, a complete switch to a paid model for content delivery might also leave unmet demand for an advertising intermediary, though in the current technological context, there seems to be little standing in the way of the development of stand-alone platforms for matching advertising to consumers if there is a demand for them.⁹³

The future may well be a mixed market, in which consumers choose between paid programming and advertising-supported programming according to their preferences and their pocketbooks. In this sense, consumer disutility from advertising and from lower quality content (in the sense that it is less responsive to consumer preferences) is price-like, in that it determines the point at which consumers will switch to paid programming. Though consumer disutility from advertising is not transferred to broadcast media providers as a payment, it signals their preferences to the extent that advertiser willingness to pay reflects how successfully advertising-supported content competes with paid content in attracting audiences.

The indirect signal of consumer preferences is a reasonably good one in the broadcast context because consumers can estimate their expected net utility from the bundle of advertising and content fairly accurately. They have plenty of experience with commercials and thus can estimate the expected disutility imposed by commercial breaks. They can compare the extent to which paid and broadcast offerings meet their preferences for content. They can also estimate the costs and benefits of advertising-avoidance strategies (and technologies) reasonably well. Consumers may underestimate the indirect costs of advertising, such as the potential for regret following an advertising-induced purchase or undesirable molding of preferences, but their extensive previous experience with advertising, along with existing consumer protection regulation, limits those effects.

⁹³ In addition to Craigslist, something like this is offered at sites like hotels.com, bizrate.com, techbargains.com, and a host of others. Such sites may be less popular with advertisers than platforms that allow them exclusive access to a group of consumers, but they foster price competition between brands while reducing consumer search costs, thus coming closer to the ideal of the search costs theory of advertising.

B. The Contextual Advertising Business Model for Online Products and Services

The online environment changes the calculus in five important ways. First, the Internet and other digital technologies have decreased the costs of producing and delivering content significantly, at least in some cases. Second, the interactivity of the online context facilitates the delivery of a wide variety of online products and services, only some of which are content in the traditional sense of broadcast media. Third, the online environment greatly decreases the costs to consumers of searching for content and for other products and services, whether those products and services are digital or not. These three factors underlie the online contextual advertising business model, which is discussed in this section. Fourth, the interactivity of the online context makes it technically feasible (through various means, such as cookies) to serve different advertisements to different consumers alongside the same product or service.⁹⁴ This feature makes possible the behavioral advertising business model, which is discussed in the next section. Finally, the interactivity of the online digital context means that paid business models are technically feasible alternatives to advertising-based business models, just as in the emerging market for paid media content.

Because of its lower production and delivery costs and interactivity, the online environment has produced an explosion of “channels” of specialized content and services (websites, blogs, and so forth), much of which is produced by Internet users.⁹⁵ This content-based segmentation of users opens the door for specialized advertising keyed to the particular audiences each online product attracts. The proliferation and dynamic evolution of niche websites produces two new issues, however. First, the transaction costs of matching specialized advertising to specialized content on the Internet may be significant. Second, even relatively specialized advertisers will want to spread the costs of creating their ads over as many potential purchasers as possible and so will probably want to post their ads on more

⁹⁴ For a detailed discussion of means for tailoring and serving advertising, see Turow, *The Daily You* at 47–53 (cited in note 8).

⁹⁵ See Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* 50–58 (Yale 2006).

than one website. These factors led to the rise of a new kind of advertising intermediary. Rather than producing content to be bundled with advertising, these companies use computer algorithms, often based on keywords, to match online content and services to advertisers.⁹⁶

Contextual advertising intermediaries can accommodate many more, and more specialized, advertisers than broadcast content providers can accommodate because they need not invest in producing the content that surrounds the advertising slots they sell. Instead, contextual advertising intermediaries match advertisers to the wide variety of website contexts available on the Internet, acting as canonical two-sided market intermediaries for advertisers and websites. These intermediaries' investments in developing matching strategies can be recouped with revenue from advertising spread across hundreds or thousands of diverse, and frequently specialized, "channels."

Contextual advertising intermediaries are incentivized to invest in matching ads accurately to consumer interests by revenue models such as "pay per click," in which advertisers pay according to the number of "clicks" their ads receive. "Pay per click" and similar models presumably couple intermediary revenues more closely to the effectiveness of their ad targeting than does payment based only on ad placement.

Like all advertising-supported business models, the contextual advertising model does not reflect consumer preferences directly. Nonetheless, the associated products and services supported by the online contextual advertising-based business model may be more closely tied to Internet user preferences than the content supported by the broadcast model for several reasons. First, the ability to serve specialized ads in a large number of specialized contexts, coupled with the relatively low costs of producing many online products and services, should lead to a wider variety of ad-supported "channels" online than in

⁹⁶ See, for example, Evans, 23 J Econ Persp at 41–43 (cited in note 6) (describing the difference between the traditional approach, involving content creation, and the online contextual advertising approach); Turow, *The Daily You* (cited in note 8) (describing Google's AdSense contextual advertising program); Andrew Hatch, Abraham Bagherjeiran, and Adwait Ratnaparkhi, *Clickable Terms for Online Contextual Advertising* (ADKDD July 10, 2010), online at http://users.cis.fiu.edu/~lzhen001/activities/KDD_USB_key_2010/workshops/W08%20ADKDD10/15.pdf (visited Sept 15, 2013) (discussing algorithms for determining the relevance of an ad to a particular online site).

the broadcast context. The profile of ad-supported online offerings thus should reflect a more diverse palette of consumer preferences even if it is determined solely by a drive to maximize advertising revenue. Second, the low cost of producing online products and services attracts many producers who are motivated primarily by their desire to reach a particular audience, rather than primarily by a desire for advertising revenue. Depending on how popular their offerings are, such producers may attract some advertising but resist tailoring their online offerings closely to advertiser preferences. In sum, while contextual-advertising supported offerings may not reflect consumer preferences as well as the offerings in a paid market would, they may, in principle, do much better than the offerings supported by broadcast advertising.

Online contextual advertising, much like broadcast advertising, is salient to consumers, and consumers can make reasonable estimates of any disutility they expect from its intrusion into their use of an associated online product or service. In the online context, however, paid alternatives for many online products and services have yet to emerge, so it may be difficult for consumers to assess the extent to which the advertising-supported model's susceptibility to advertiser preferences distorts the offerings available to them. Possibly, the relative dearth of paid alternatives reflects lower consumer aversion to online advertising. Or perhaps consumers are particularly susceptible to zero-price bias in the online environment.⁹⁷ If and when paid alternatives do emerge, one would expect consumers to be able to make reasonably informed estimates of the costs and benefits of paid and contextual advertising-supported products and services, just as they are able to do with broadcast content.⁹⁸

⁹⁷ See Kristina Shampanier, Nina Mazar, and Dan Ariely, *Zero as a Special Price: The True Value of Free Products*, 26 *Marketing Sci* 742, 743 (2007) (finding experimentally that consumers overreact to zero price in ways that are not explained by transaction costs and discussing hypotheses as to why this may be the case).

⁹⁸ An additional complication, however, is that many popular online products and services involve significant network effects and entry barriers due to the importance of accumulated data to the quality of the products. This effect is distinct from the effects of data accumulated for behaviorally targeted advertising, which are discussed below, and would affect competition for some types of online products and services even if only paid business models were involved.

C. Online Behavioral Advertising and Advertiser Demand for Data Extracting Apps

The behavioral advertising business model is based on two technical features of the Internet: the possibility of placing different ads in a given online context depending on the identity of the user who is visiting the site and the ability to track Internet users as they roam the online world. The assumption behind this business model is that behaviorally targeted ads will be more effective than contextual ads.⁹⁹ The behavioral advertising business model incentivizes comprehensive data collection because it is natural to assume that accumulating more data will make for more effective ad personalization. Moreover, because data storage is relatively cheap and research on targeting algorithms is ongoing, the assumption that more data is better need not be examined too carefully by advertising intermediaries.

1. The quest for effective behavioral advertising drives data collection.

Behavioral advertising is more valuable to advertisers than contextual advertising only if it motivates enough additional purchases to cover its higher costs. In many situations, however, behavioral targeting may have little impact on purchasing propensity. Because of the diversity of contexts available on the Internet and the fact that each Internet user visits those contexts in proportion to her interests, contextual advertising can, in the aggregate, provide reasonably well-tailored advertising exposure. Moreover, search-based advertising, which is far and away the dominant form of online advertising, is a form of contextual advertising for present purposes because it does not require substantial data collection. Search-based advertising is particularly powerful because it relates to what the consumer is looking for at the moment the ad is displayed. (Recall the findings of Yan, et al, that targeting based on one day's search queries was more effective than targeting based on a week's search queries.)¹⁰⁰

⁹⁹ See, for example, Howard Beales, *The Value of Behavioral Targeting* at 11–13 (cited in note 16).

¹⁰⁰ See text accompanying note 34.

To outdo the aggregate effect of contextual advertising, designers of behavioral advertising have to do one of four things: 1) combine information about an individual's online travels to different sites in a synergistic way; 2) use information gleaned from visits to specialized websites to target advertising to more generic sites; 3) incorporate information gleaned from offline behavior; or 4) incorporate information from visits to Internet contexts that do not serve ads.

To be worthwhile, behavioral targeting has to increase people's exposure to particular ads enough to have a significant effect on their propensity to purchase. That may not be easy. Companies whose likely customers tend to visit specialized websites may not stand to gain much from behavioral targeting. Consider, for example, a company that sells a device that doctors use for treating a particular disease. The company currently places contextual ads on websites frequented by doctors who treat that particular disease. To deploy behavioral targeting, an advertising intermediary would first establish that a particular individual is a doctor who treats the disease in question by observing her website trail. It would then serve the doctor ads for the device when she visits non-specialized websites, such as netflix.com, tripadvisor.com, or even webmd.com. This doctor already sees the company's contextual ads, which are placed on sites that we know she visits (because that is how the ad intermediary figured out that she is a doctor who treats the disease in question). She may not be in the mood to purchase a medical instrument while visiting netflix.com or tripadvisor.com, so the ad on [webmd](http://webmd.com) is most likely to have some positive impact. But is it likely to make her significantly more willing to purchase the device?

Companies that produce truly mass market products, such as AA batteries, may have essentially the opposite problem. Since virtually everyone is a potential purchaser, an individual's profile is of little use in assessing whether an ad would increase purchase propensity. These companies may benefit most from means for figuring out when, rather than whether, a given individual is potentially interested in purchasing their products, which leads us back to context (and especially to search).

Behavioral targeting thus is attractive to advertisers only when they expect that a consumer's pattern of website visits will reveal significantly more information about the propensity to purchase a given product than visits to individual websites and

online searches would reveal. Necessarily, these basic economic facts drive behavioral advertising providers to seek the broadest possible surveillance, both of consumers' behavior and of the correlation of that behavior with purchases, as they seek to demonstrate the existence of and uncover such patterns.

Given declining online advertising rates, the quest for effective behavioral advertising thus drives increasingly ubiquitous collection of data about consumers' online (and offline) behavior. Given the relatively low cost of data storage, there is the real possibility of a vicious cycle of data collection. If behaviorally targeted advertising is under-performing expectations, advertising intermediaries may be driven to collect ever more data, on the theory that more data can be used, perhaps in conjunction with improved algorithms, to make targeting more effective. Moreover, because behavioral targeting algorithms use statistical models to categorize Internet users and predict their responses to advertising, companies are incentivized to collect data about as many individuals as possible, including those who never respond to a single ad, so that advertisers can avoid wasting money targeting ads to those individuals.¹⁰¹

2. Behavioral advertising and consumer preferences.

Because behavioral targeting is usually combined with contextual elements, behavioral advertising, like contextual advertising, may support a range of specialized online products and services. However, the behavioral advertising model drives an important wedge between advertiser and consumer preferences for online products and services. Advertiser demand for user data will skew the design of online products and services toward data extraction. In addition, while contextual advertising intermediaries are matchmakers for advertisers and websites, and have little interest in influencing the characteristics of online goods and services, behavioral targeting intermediaries have incentives to produce (or acquire) consumer products and services tailored to extracting as much data from as many identified users as possible. Moreover, they may be expected to focus on collecting information that cannot be

¹⁰¹ See Turow, *The Daily You* at 88–110 (cited in note 8) (providing a discussion of the drive to identify particular consumers as “Waste”).

gleaned from user visits to ad-supported websites, since collecting such information is an important way to make behavioral advertising more effective than contextual advertising.

The business models of the companies that dominate the Internet are consistent with this analysis. For example, David Evans collected data in 2009 about the top twenty online services (in terms of page views) and the information products they provided to consumers.¹⁰² Five of the top six (and nine in all) provided platform services such as search, email, and social networking.¹⁰³ Platform services such as these have the features one would expect (in hindsight at this point, of course) in a behavioral advertising business model. They are attractive to a wide range of consumers (and often have network effects for consumers), are designed to draw out personal information from consumers in various ways, and do not require that the platform provider make large investments in creating content.

As with other free advertising-supported business models, consumer preferences are reflected only indirectly in the behavioral advertising business model by consumers' decisions to use particular online products and services. Some of the tradeoffs imposed on consumers by the model are the same as those they face in dealing with the contextual and broadcast advertising business models. Consumers must weigh the benefits of access to the product or service against the costs imposed by viewing advertising. To the extent that behavioral advertising is more useful to consumers than contextual advertising (rather than just more persuasive), consumers presumably will be more likely to find the tradeoff worthwhile.

What makes behavioral advertising worse from a consumer perspective is that, as acknowledged by the privacy as price analogy, data collection imposes additional costs on consumers, due both to direct harms due to data collection and to distortions of the market's provision of goods and services away from consumer preferences and toward data extraction. If, as argued in the next Part, consumers cannot reasonably estimate those

¹⁰² Evans, 23 *J Econ Persp* at 45 (cited in note 6). Two others (eBay.com and Amazon.com) were online retail aggregators. Most of the others were major producers of broadcast content (seven out of twenty). See *id.*

¹⁰³ *Id.* at Table 2. The other seven provided more traditional entertainment content (and included mostly media giants, such as Comcast, Viacom, Time Warner, Disney, and ESPN). *Id.*

potential costs, their use of online products and services will not accurately signal their preferences. In addition, as argued below, the interconnected nature of personal information puts up barriers to the entry of paid business models through which consumers could signal nuanced preferences for particular online products and services.

D. Summary of Advertising-Based Business Models

We can now summarize the comparison of advertising-supported business models. The broadcast advertising business model responded to failures in the market for broadcast content and transaction costs in matching consumers to advertising. Broadcasters respond directly to advertiser demand by producing content tailored to attracting large numbers of consumers and exposing them to broadcast advertising. The broadcast advertising model thus biases content production toward average, rather than specialized, interests and toward content designed to appeal to those who will (or can be persuaded to) purchase mainstream products. Consumer preferences are reflected imperfectly, as evidenced by the fact that, as technology has changed, consumers have turned to other sources of entertainment content, including paid business models. Consumers are reasonably capable of estimating the direct disutility imposed by unwanted broadcast advertising and, now that paid alternatives are technically feasible, of assessing the disutility imposed by the distortion of broadcast content to meet advertiser preferences. The market for broadcast content appears to be able to support a mixture of paid and advertising-supported business models in response to diverse consumer preferences.

The online contextual advertising business model developed in response to the explosion of online “channels” for content, products, and services. Automated methods match ads for a more diverse range of products to the diverse and changing contexts available online. Contextual advertising-supported offerings thus can reach farther into the “long tail” of specialized consumer preferences than broadcast advertising-supported offerings. The array of ad-supported offerings remains somewhat distorted away from consumer preferences by advertisers’ preferences for contexts that are good proxies for consumer purchasing behavior. Consumers are capable of estimating the

direct disutility imposed by advertising and of assessing the tradeoffs between paid and contextual advertising-based business models. Paid alternatives have not emerged online to the extent they have in the broadcast arena. As discussed below, the data collection associated with behavioral advertising erects barriers to entry to paid business models online. If those barriers could be eliminated, there appears to be no reason that paid and contextual advertising business could not co-exist in the online market.

The behavioral advertising business model has much in common with the contextual advertising model, but there is a critical difference. To improve on contextual advertising, behavioral advertising intermediaries will focus on extracting as much data from as many individuals as possible, skewing the design of online products and services toward data extractors. Consumers are not well-equipped to take the costs of data collection into account, however, as the next Part explains. As a result, demand for contextual advertising and paid business models is likely to be artificially low.

III. THE MYTH OF PAYING FOR APPS WITH DATA

Internet users' interactions with the behavioral advertising model are not analogous to purchase decisions in which they rationally estimate the expected costs of data collection as compared to the benefits of online products and services. First, Internet users face essentially insurmountable information deficits and bounded rationality issues related to online data collection. This point is certainly not news, having been emphasized by commentators and privacy advocates both recently and early in the Internet era.¹⁰⁴ Yet the particular

¹⁰⁴ See, for example, Jeff Sovern, *Opting In, Opting Out, or No Options at All: The Fight for Control of Personal Information*, 74 Wash L Rev 1033, 1072–74 (1999) (discussing the problems consumers face in assessing the costs of data collection). See generally Daniel J. Solove, *Privacy Self-Management and the Consent Paradox*, 126 Harv L Rev *1 (2013), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2171018&download=yes (visited Sept 15, 2013) (summarizing many of the issues consumers face in assessing privacy risks and the difficulties with the privacy self-management paradigm); James P. Nehf, *Open Book: The Failed Promise of Information Privacy in America* 191 (CreateSpace 2012) (discussing reasons for failure of the self-policing model for privacy); James P. Nehf, *Shopping for Privacy Online: Consumer Decision Making Strategies and the Emerging Market for Information Privacy*, 2005 U Ill J L Tech & Pol 1, 6; Richard Warner, *Undermined Norms: The Corrosive Effect of Information Processing Technology on Informational Privacy*, 55 St Louis L J 1047, 1084–86 (2011) (raising questions about

consequence emphasized here, which is that Internet users cannot make reasonable estimates of their expected disutility from online data collection and thus cannot participate effectively in a market for products and services supported by behaviorally targeted advertising, has received less attention. Most importantly, the debate has virtually ignored the fact that it is nearly impossible for a consumer to estimate the increment in expected harm associated with a given instance of data collection. Perhaps that is because the issue has been framed for the most part in terms of “privacy protection” rather than “market failure.”¹⁰⁵

Second, unlike the payment of money in an ordinary retail transaction or the disutility imposed by broadcast or contextual advertising, data collection does not occur at a “point of purchase.” In fact, there is no salient exchange transaction. Rather, Internet users are subjected to ongoing and silent data collection in connection with their ongoing use of online products and services. The hidden aspect of data collection triggers additional concerns.

A. Consumers Cannot Make Meaningful Estimates of Expected Disutility from Particular Instances of Data Collection

Consumers’ ability to assess the expected costs of a purportedly free online service is undermined by imperfect information in a way that is quite unfamiliar from other market transactions over products and services. In the ordinary case, consumers may be concerned that they do not have the information that they need to assess the value of the things they are purchasing, especially if the goods on sale are so-called “experience goods,” (such as, for example, theater performances or restaurant meals) the qualities of which consumers can assess only after purchase, or “credence goods,” such as medical or legal services, the qualities of which consumers have difficulty assessing even after purchase.¹⁰⁶

the viability of using consent to limit mass surveillance); Tal Zarsky, *Mine Your Own Business*, 5 Yale J L & Tech 1, 33 (2002–2003).

¹⁰⁵ For an exception, see generally Jan Whittington and Chris J. Hoofnagle, *Social Networks and the Law: Unpacking Privacy’s Price*, 90 NC L Rev 1327 (2012) (analyzing consumer interactions with a social networking site from the perspective of transaction cost economics).

¹⁰⁶ See, for example, Darby and Karni, 16 J L & Econ at 68–72 (cited in note 2); Dulleck and Kerschbamer, 44 J Econ Lit at 5–6 (cited in note 2).

In ordinary sales transactions, however, consumers have very good (though perhaps not perfect) information about how much disutility they will incur by turning over their “payment.” When they pay with money, consumers can rely on extensive market experience to estimate the disutility they will incur when they hand over a particular sum. In ordinary barter transactions, consumers are trading away items that they own and, therefore, can assess fairly accurately what they will lose parting with them. As already noted, much the same is true in the context of broadcast or contextual advertising. Consumers have the information and experience that they need to determine whether to subject themselves to advertising in exchange for broadcast content or an online product or service.

In the behavioral advertising context, everything is different. Significantly, while a consumer who barter away the harvest of her vegetable garden to a neighbor must estimate the expected value of the uses she herself might make of the vegetables in order to decide whether to make the trade, she knows what vegetables she has traded away and does not much care what the neighbor does with them. The information needed to assess the expected disutility from a “payment” in data is of a different order. An Internet user’s potential disutility from data collection is almost entirely due to future uses or misuses of the data to which the actions of the data recipient, in combination with the actions of unknown others, might expose the user. Internet users do not know, and often cannot know, the likelihood or magnitude of various potential disutilities that might result from a particular stream of data collection. They do not know, and generally cannot know, sufficient detail about what data is collected by the companies with which they interact, how it will be secured, and what uses eventually will be made of it. If user data is a “payment” for online services, one might call it a “credence payment,” since users cannot determine the price they are paying either before or after they have paid it.

Internet users lack reasonable access to at least three kinds of information they would need in order to make reasonable estimates of the expected disutility of online data collection.¹⁰⁷

¹⁰⁷ For similar discussions of the information problems confronting consumers seeking to assess the potential harm of data collection, see Solove, 126 Harv L Rev at *13 (cited in note 104); Nehf, *Open Book* at 186–256 (cited in note 104); Nehf, 2005 U Ill J L Tech and Pol at 23–27 (cited in note 104).

First, users lack information about the types of harms that may arise from data collection, the prevalence of those harms, and their costs. Second, users lack detailed and useful information about company practices involving data collection, storage, and use. Third, users lack information about how any given instance of data collection fits into the data about them that is already flowing in the online ecosystem. Without these three types of information, Internet users cannot make meaningful assessments of the marginal expected disutility of any given use of an online product or service. Even if they had the necessary information, bounded capacity for information processing and bounded rationality would interfere with their ability to assess their expected disutility and compare it to the expected utility of a given online product or service.

1. Imperfect information about potential sources of disutility.

The potential disutility of online data collection by advertising-supported businesses arises from numerous sources,¹⁰⁸ including the risk of identity theft and other potential harms from accidental data breaches and the activities of black-hat hackers;¹⁰⁹ the risk of adverse effects from data access by employers, insurers, government agencies, law enforcement, and others; disutility associated with the “creepiness” of data surveillance and resulting chilling effects or other impositions on autonomy; and harms imposed by unscrupulous insiders (such as stalkers or con artists) who make nefarious use of their legitimate access to the data. Nearly all of these potential costs of data collection are probabilistic and, with the exception of identity fraud, there is little statistical information available about the prevalence or severity of these harms. Even for identity fraud, readily available statistical information gives a general idea of its average costs (\$18 billion or \$60 per person per year in the US) and prevalence (about 5 percent of Americans annually) but no way to determine how these

¹⁰⁸ See, for example, Nehf, *Open Book* at 7–29, 159–70 (cited in note 104); Solove, 126 Harv L Rev at *13 (cited in note 104).

¹⁰⁹ See Techopedia, *Black Hat Hacker* (Janalta Interactive 2013), online at <http://www.techopedia.com/definition/26342/black-hat-hacker> (visited Sept 15, 2013) (“A black hat hacker is a person who attempts to find computer security vulnerabilities and exploit them for personal financial gain or other malicious reasons.”)

statistics relate to particular collection practices on the part of particular companies.¹¹⁰ Available information thus is limited and not particularly well suited to the task of estimating expected disutility of particular online activities.

Moreover, the costs of mass surveillance are not merely individual but also social.¹¹¹ Individuals' decisions about data collection thus have implications for other members of society. In particular, mass surveillance of online behavior may have particularly important ramifications for members of disfavored social or political groups.¹¹²

a) Price discrimination as a source of consumer disutility from data collection. One emerging concern, which is worth discussing in some detail, is that data accumulated for behavioral targeting of advertisements can be (and is) used not only to target ads for particular products to particular consumers but also to facilitate price discrimination, by quoting different prices to different consumers and by offering discounts and special deals to some consumers and not to others.¹¹³

¹¹⁰ See Javelin Strategy and Research, *2012 Identity Fraud Report: Consumers Taking Control to Reduce their Risk of Fraud* *6 (Javelin Strategy & Research Feb 2012), online at <https://www.javelinstrategy.com/brochure/240> (visited Sept 15, 2013); Lynn Langton and Michael Planty, *Victims of Identity Theft, 2008, National Crime Victimization Survey Supplement*, Bureau of Justice Statistics *3 (DOJ Dec 2010), online at <http://bjs.gov/content/pub/pdf/vit08.pdf> (visited Sept 15, 2013); Lynn Langton, *Identity Theft Reported by Households, 2005–2010*, Bureau of Justice Statistics *1–5 (DOJ Nov 2011), online at <http://bjs.gov/content/pub/pdf/itrh0510.pdf> (visited Sept 15, 2013).

¹¹¹ See Solove, 126 Harv L Rev at *1 (cited in note 104) (collecting sources).

¹¹² See generally Linda E. Fisher, *Guilt by Expressive Association: Political Profiling, Surveillance and the Privacy of Groups*, 46 Ariz L Rev 621 (2004) (considering the impact of surveillance on disfavored political and religious groups); Michael Kosinski, et al, *Private Traits and Attributes are Predictable from Digital Records of Human Behavior*, PNAS 2013 (Mar 11, 2013), online at <http://www.pnas.org/content/early/2013/03/06/1218772110> (visited Sept 15, 2013) (describing empirical study of the extent to which traits such as sexual orientation and political party are predictable from Facebook information).

¹¹³ See, for example, Dana Mattioli, *On Orbitz, Mac Users Steered to Pricier Hotels* (Wall St J June 26, 2012), online at <http://on.wsj.com/LwTnPH> (visited Sept 15, 2013); Jennifer Valentino-Devries, et al, *Websites Vary Prices, Deals Based on Users* (Wall St J, Dec 23, 2012), online at <http://on.wsj.com/Tj1W2V> (visited Sept 15, 2013); Stephanie Clifford, *Web Coupons Know Lots About You, and They Tell*, NY Times (NY Times Apr 16, 2010), online at http://www.nytimes.com/2010/04/17/business/media/17coupon.html?pagewanted=all&_r=0 (visited Sept 15, 2013). For extensive critical discussions of online price discrimination, see Turow, *The Daily You* at 143–46 (cited in note 8); Nathan Newman, *The Cost of Lost Privacy: Consumer Harm and Rising Economic Inequality in the Age of Google*, online at <http://ssrn.com/abstract=2310146> (visited October 10, 2013). See also Andrew M. Odlyzko, *Privacy, economics, and price discrimination on the Internet*, in N. Sadeh, ed, *ICEC2003: Fifth International Conference on Electronic Commerce* 355–66 (ACM 2003) (arguing that the online

Indeed, the potential to enhance profits through price discrimination may be far greater than the potential to do so through targeted advertising per se.¹¹⁴

The economics of price discrimination are complex.¹¹⁵ In the textbook case, known as “first-degree price discrimination,” a monopolist producer is assumed to have perfect knowledge of consumer willingness to pay and to be able to charge each consumer a price equal to her maximum willingness to pay.¹¹⁶ In this stylized situation, price discrimination increases total social welfare in cases involving significant fixed costs.¹¹⁷ The picture is less rosy from a consumer perspective, however, since the producer extracts the entire surplus from each transaction, leaving no consumer surplus.¹¹⁸ First degree price discrimination has not been an issue of much practical importance because it depends on the producer having perfect knowledge of each consumer’s willingness to pay and being able, as a monopolist, to extract the maximum price.¹¹⁹

environment will incentivize and facilitate price discrimination at the expense of privacy).

¹¹⁴ See Odlzyko, *Privacy, economics, and price discrimination on the Internet* at 2 (cited in note 113).

¹¹⁵ For overviews of the economics of price discrimination, see Hal R. Varian, *Differential Pricing and Efficiency*, First Monday 1 (August 5, 1996), online at <http://firstmonday.org/ojs/index.php/fm/rt/printerFriendly/473/394> (visited Sept 15, 2013); L.A. Stole, *Price Discrimination and Competition*, in M. Armstrong and R. Porter, eds, *Handbook of Industrial Organization, Volume 3*, 2221–99 (North-Holland 2007), online at <http://faculty.chicagobooth.edu/lars.stole/papers/pdce.pdf> (visited Sept 15, 2013); M. Armstrong, *Recent Developments in the Economics of Price Discrimination*, in R. Blundell, W. Newey, and T. Persson, eds, *Advances in Economics and Econometrics: Theory and Applications, Ninth World Congress of the Econometric Society, Volume 2*, 97–141 (Cambridge 2006), online at <http://eprints.ucl.ac.uk/14558/1/14558.pdf> (visited Sept 15, 2013); Kathleen Carroll and Dennis Coates, *Teaching Price Discrimination: Some Clarification*, 66 S Econ J 466 (1999); Akiva Miller, *What Do We Worry About When We Worry About Price Discrimination? Ethical Considerations in the Use of Personal Information in Pricing* (working paper on file with author).

¹¹⁶ See Armstrong, *Recent Developments in the Economics of Price Discrimination* at 3 (cited in note 115). See also Carroll and Coates, 66 Southern Econ J at 470 (cited in note 115) (critiquing the failure of economics textbooks to distinguish between pure monopolistic price discrimination and other versions).

¹¹⁷ See Varian, *Differential Pricing and Efficiency* at 2–3 (cited in note 115); Carroll and Coates, 66 S Econ J at 472–76; Armstrong, *Recent Developments in the Economics of Price Discrimination* at 36–38 (cited in note 115).

¹¹⁸ See Armstrong, *Recent Developments in the Economics of Price Discrimination* at 7 (cited in note 115) (“[T]he benefits of allowing first-degree price discrimination depend on the chosen welfare standard: with a total welfare standard such discrimination is beneficial whereas with a consumer standard it is not.”).

¹¹⁹ Id at 3 (“In its purest form, the information needed for first-degree price discrimination makes it more of a theoretical benchmark than a realistic business

Because, at least until recently, producers have not had detailed information about individual consumers' willingness to pay, they have deployed other pricing strategies, often based on product versioning or group pricing, to align price roughly with willingness to pay.¹²⁰ In one approach to what is termed "second-degree price discrimination," for example, a company offers a menu of differently priced variations of a basic good, inducing consumers to sort themselves according to willingness to pay.¹²¹ "Third-degree price discrimination," on the other hand, uses identifiable consumer characteristics as a rough proxy for willingness to pay.¹²² For example, movie theaters often offer different prices for exactly the same theater experience to adults, senior citizens, students, and children. Economic predictions of the welfare and distributive impacts of these forms of price discrimination depend on specifics.¹²³ For example, efforts to create sufficiently differentiated product versions to support second degree price discrimination can lead producers to offer inefficiently low quality goods to consumers with low willingness to pay.¹²⁴

Competition, which must be imperfect to make price discrimination feasible,¹²⁵ generally reduces the extent to which producers can match price to maximum consumer willingness to pay and hence limits their ability to drain consumer surplus.¹²⁶

strategy.”).

¹²⁰ See Varian, *Differential Pricing and Efficiency* at 5–7 (cited in note 115); Carroll and Coates, 66 S Econ J at 468–70 (cited in note 115); Armstrong, *Recent Developments in the Economics of Price Discrimination* at 2–5, 8 (cited in note 115).

¹²¹ See Varian, *Differential Pricing and Efficiency* at 5 (cited in note 115); Carroll and Coates, 66 S Econ J at 469 (cited in note 115). Note that there are a variety of possible second-degree price discrimination strategies. Their common feature is that the offerings are structured to induce consumers to reveal their willingness to pay by choosing among differently priced options.

¹²² Carroll and Coates 66 S Econ J at 469–70 (cited in note 115); Varian, *Differential Pricing and Efficiency* at 4 (cited in note 115).

¹²³ Armstrong, *Recent Developments in the Economics of Price Discrimination* at 10–11 (cited in note 115); Carroll and Coates, 66 Southern Econ J at 472–73 (cited in note 115).

¹²⁴ Varian, *Differential Pricing and Efficiency* at 5–6 (cited in note 115).

¹²⁵ Carroll and Coates, 66 S Econ J at 470–71 (cited in note 115) (noting that price discriminating firm must have some degree of market power and cannot be a price taker). In a perfectly competitive market with full information, price would equal marginal cost. Carroll and Coates identify three basic prerequisites for price discrimination: 1) some degree of market power; 2) means to prevent arbitrage; and 3) differences between consumers' price elasticities of demand. *Id.*

¹²⁶ Armstrong, *Recent Developments in the Economics of Price Discrimination* at 8

It also introduces an additional motive for price discrimination—business stealing. Companies' efforts to tempt one another's customers by offering them lower prices can reduce prices overall to the benefit of consumers.¹²⁷ Economic predictions of the net impact of these competing effects on welfare and distribution of surplus also depend on specifics.¹²⁸

Despite the complexities of the economic models, one can make some generally applicable statements. Price discrimination can increase total welfare only if it results in increased output or, equivalently, if more purchases are made than would be made in a single price market with a similar competitive structure.¹²⁹ This is possible only if prices are brought closer to marginal cost for at least some consumers, motivating additional purchases by those with relatively low willingness to pay.

The fact that, in some cases, price discrimination can make goods accessible to additional consumers is probably its most influential normative justification.¹³⁰ Note, however, that price discrimination does not always expand output and, equally importantly, that it improves access for consumers only in conditions of monopoly or imperfect competition—in other words when there is market failure.¹³¹ A competitive market with a single price equal to marginal cost, if it can be achieved, is better for consumers than even the most consumer-friendly price discrimination strategy.

Two types of market failure are of particular interest here. Price discrimination is often associated with goods for which average fixed costs of production are high relative to marginal

(cited in note 115).

¹²⁷ Rosa Branca Esteves, *A Survey on the Economics of Behavior-Based Price Discrimination* 4 (NIPE May 2009), online at http://www3.eeg.uminho.pt/economia/nipe/docs/2009/NIPE_WP_5_2009.pdf (visited Sept 15, 2013). See also Armstrong, *Recent Developments in the Economics of Price Discrimination* at 14–18, 28 (cited in note 115).

¹²⁸ Esteves, *A Survey on the Economics of Behavior-Based Price Discrimination* at 4 (cited in note 127); Miller, *What Do We Worry About When We Worry About Price Discrimination?* at 13 (cited in note 115).

¹²⁹ Carroll and Coates, 66 *Southern Econ J* at 472–73 (cited in note 115); Varian, *Differential Pricing and Efficiency* at 6 (cited in note 115); Armstrong, *Recent Developments in the Economics of Price Discrimination* at 10 (cited in note 115).

¹³⁰ See Varian, *Differential Pricing and Efficiency* at 7 (cited in note 115).

¹³¹ Carroll and Coates, 66 *Southern Econ J* 466 (cited in note 115); Armstrong, *Recent Developments in the Economics of Price Discrimination* (cited in note 115); Varian, *Differential Pricing and Efficiency* (cited in note 115).

costs.¹³² Perfectly competitive markets fail to produce such goods, since marginal cost pricing leaves producers unable to break even.¹³³ Prices may fail to converge to marginal costs even for goods with low fixed costs, however. Perhaps the most important reason for this type of market failure is the fact that it is costly for consumers to collect the information needed for price and quality comparison.¹³⁴ Transportation costs of obtaining goods from different sellers similarly segment the market, depressing competition.¹³⁵ While the fixed cost issue is intrinsic to some goods, these other causes of market failure may be addressable directly. Normative assessments therefore should consider any potential interactions between price discrimination strategies and strategies for mitigating these other causes of market failure.

An assessment of potential consumer disutility from online price discrimination should not stop with the economic analysis. Public debates about price discrimination also reflect concerns about fairness and distribution.¹³⁶ Consumers have had strong negative reactions to price discrimination practices that appeared to use individual information about willingness to pay as a basis for charging higher prices.¹³⁷ Some group-based proxies for willingness to pay are widely accepted, while others are not. Thus, age-based and convenience-based proxies for willingness to pay appear to be widely accepted, while proxies based on race or ethnicity certainly would be deemed unacceptable, even if those categories were correlated with willingness to pay. Similarly, some ways of varying quality among versions of a product are considered unfair and immoral.

¹³² Varian, *Differential Pricing and Efficiency* at 7–8 (cited in note 115).

¹³³ Id at 2–3. This problem is equivalent to the standard justification for intellectual property rights. See, for example, Michael Meurer, *Copyright Law and Price Discrimination*, 23 *Cardozo L Rev* 55 (2001).

¹³⁴ S. Salop and J.E. Stiglitz, *The Theory of Sales: A Simple Model of Equilibrium Price Dispersion with Identical Agents*, 72 *Am Econ Rev* (Dec 1982). See also Newman, *The Cost of Lost Privacy* at 78–81 (cited in note 113) (discussing these issues in the context of online behavioral advertising).

¹³⁵ See, for example, Esteves, *A Survey on the Economics of Behavior-Based Price Discrimination* at n 5 (cited in note 127); Stole, *Price Discrimination and Competition* at 31–32 (cited in note 115).

¹³⁶ See Miller, *What Do We Worry About When We Worry About Price Discrimination?* (cited in note 115).

¹³⁷ See, for example, Odlyzko, *Privacy, economics, and price discrimination on the Internet* at 5 (cited in note 113); Valentino-Devries, et al, *Websites Vary Prices, Deals Based on Users*, *Wall St J* (cited in note 113).

Thus, for example, US society has not deemed it acceptable for companies to effectuate price discrimination in the pharmaceutical context by producing less effective or more risky “versions” of drugs for sale to those with lesser ability to pay. Price discrimination practices that users believe to be unfair are sources of disutility for those users.

Price discrimination strategies also may impose costs on consumers if they are designed to exploit systematic behavioral irrationalities, information asymmetries, and consumer transaction costs so that consumers do not fully comprehend either the features of the goods they buy or the payment terms to which they agree.¹³⁸ Unlike true price discrimination, which aims to align prices with consumer *willingness* to pay (and hence with consumer preferences), exploitative pricing strategies are aimed at extracting payments reflecting consumers’ *ability* to pay. Because of the complex structures, such as loyalty programs, subscriptions, and discount coupons, that often are used to implement second and third degree price discrimination, it may be difficult for consumers (or regulators, for that matter) to distinguish true price discrimination schemes from such exploitative tactics.

In light of the complex issues associated with price discrimination, how should we assess the potential disutility imposed by the behavioral advertising business model, with its associated ubiquitous collection, aggregation and analysis of personal data? As a preliminary matter, it is certainly clear that the ordinary consumer has little hope of sorting through the economics to assess her expected costs and benefits from the price discrimination facilitated by online data collection. But that is the case for price discrimination generally. The real question of interest here is the particular impact of online targeting and data collection on expected costs and benefits.

Online targeting and data collection affect price discrimination in at least three ways. First, online data collection facilitates more finely grained mapping of consumer willingness to pay. In some cases (and probably increasingly), this may mean that producers have individualized information

¹³⁸ See Zarsky, 5 Yale J L & Tech at 30–31 (cited in note 104). For a discussion of behavioral economics issues with complex contractual pricing schemes, see Oren Bar-Gill, *Seduction By Contract: Law, Economics, and Psychology in Consumer Markets* (Oxford 2012).

about consumer willingness to pay for particular goods. For example, if a consumer makes frequent trips on a favorite airline, that airline may be able to gauge quite accurately the price point (or price differential) at which the consumer gives up and books a trip on a different airline that is offering a cheaper fare.¹³⁹ Perhaps more commonly, online data collection results in more well-researched and fine-grained proxies for willingness to pay.¹⁴⁰

All else equal, a more fine-grained mapping of consumer willingness to pay allows producers to move in the direction of first degree price discrimination, with results for total welfare and consumer surplus that are dependent on the interplay between better ability to extract consumer surplus and better targeted business stealing efforts. The effect of more fine-grained tailoring on prices paid by any given consumer is even more difficult to predict, though one might anticipate that output expansion will be particularly beneficial to lower income consumers while business stealing efforts are more likely to target more “valuable” higher income consumers.¹⁴¹ The direct effect of more fine-grained targeting on consumer perceptions of fairness is likely to be negative, especially if consumers learn that pricing varies in ways that raise distributive concerns.¹⁴²

Second, online data collection can be used for market research to hone practices intended to obfuscate true price and exploit consumer irrationality and lack of information. While the direct effects of ubiquitous online data collection may be positive or negative for a particular consumer, the use of data collected online to fine tune practices such as these is a clear source of disutility to consumers. Without knowing the extent of such

¹³⁹ See, for example, *Frequent Fliers, Prepare to Pay More* (NY Times Mar 4, 2013), online at http://www.nytimes.com/2013/03/04/opinion/frequent-fliers-prepare-to-pay-more.html?_r=0 (discussing recent regulatory changes that will permit airlines to offer different prices and deals to different customers).

¹⁴⁰ Natasha Singer, *You for Sale: Mapping, and Sharing, the Consumer Genome*, NY Times, (NY Times June 16, 2012), online at <http://nyti.ms/LcBw0g> (visited Sept 15, 2013) (detailing how Axciom “assigns consumers to one of 70 detailed socioeconomic clusters and markets to them accordingly . . . [with sellers making] customized appeals any time, anywhere.”).

¹⁴¹ See Turow, *The Daily You* (cited in note 8) (discussing the division of consumers into “targets” and “waste”).

¹⁴² See, for example, Valentino-Devries, et al, *Websites Vary Prices, Deals Based on Users* (cited in note 113) (reporting that location-based pricing by Staples resulted in higher prices being charged to lower income consumers).

efforts and the degree to which they are made more effective as a result of online data collection, consumers cannot estimate the magnitude of this disability.

Third, and perhaps most importantly, the trend toward online targeting and data collection may undermine the online environment's potential to enhance consumer welfare by mitigating some of the factors that undermine the competitive market. As discussed above, even when price discrimination enhances consumer welfare, it is a second-best strategy premised on the assumption that a competitive market is not attainable. Unless there are high fixed costs for producing a product, consumers will benefit if competitive conditions are improved. While price discrimination may remove some of the sting of imperfect competition under some conditions, the online environment has the potential to enhance competition directly. The Internet decreases consumer information costs, thereby facilitating product evaluation, search, and price comparison between sellers. In some markets, it also can facilitate competition by reducing the costs of serving large geographical areas and thus bringing more sellers into the mix.

Companies' efforts to price discriminate are directly at odds with the possibility for improved competition online because price discrimination is possible only when producers can maintain differential pricing. Arbitrage, which price discrimination strategies must be designed to preclude, is, by the same token, a mechanism for enhancing competition. The online environment can decrease the transaction costs associated with arbitrage drastically, as eBay.com and Craigslist.com illustrate, but producer strategies to prevent arbitrage undermine that potential. Similarly, the siloed and complicated pricing schemes associated with individually targeted price discrimination undermine the Internet's potential to reduce the costs of price and product comparison. The potential for consumer disutility stemming from lost opportunities to reduce impediments to competition as the online environment is tailored more and more for behavioral tracking and price discrimination may well be quite large.

In sum, the price discrimination facilitated by the online behavioral advertising business model may impose costs on consumers in several different ways, from direct effects to lost opportunities for a more competitive market.

2. Imperfect information about company data practices.

Studies continue to demonstrate that Internet users lack basic knowledge about data collection online. For example, a recent consumer survey by Chris Hoofnagle and Jennifer Urban suggested that a majority of respondents either held false beliefs about basic aspects of data use by “free” websites or were uninformed.¹⁴³ Nineteen percent of those surveyed thought that “[f]ree websites that are supported by advertising are [not] allowed to sell information gathered from users of the site, even if they have a privacy policy,” while 40 percent did not know whether the statement was true or false.¹⁴⁴ Twenty-five percent believed that “when visiting free websites supported by advertising, you have the right to require the website to delete the information it has about you,” while 42 percent did not know whether the statement was true or false.¹⁴⁵

One might be tempted to conclude that this lack of information reflects indifference, were it not for the fact that detailed information about company practices that users might actually find helpful in assessing the expected disutility of a company’s data collection is largely unavailable. Because company data collection, storage, and use practices are not directly observable by consumers, the information available to Internet users about commercial online data collection is found in privacy policies. Privacy regulation in the United States has been based roughly on the so-called Fair Information Principles, or “FIPs,” which provide the conceptual basis for sectoral privacy statutes¹⁴⁶ and for the Federal Trade Commission’s approach to privacy under its “unfair and deceptive practices” jurisdiction.¹⁴⁷ There are various versions of FIPs available. For example, the

¹⁴³ Chris J. Hoofnagle, Jennifer Urban, and Su Li, *Privacy and Modern Advertising: Most US Internet Users Want ‘Do Not Track’ to Stop Collection of Data about their Online Activities* *10–13 (Amsterdam Privacy Conference Oct 8, 2012), online at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2152135 (visited Sept 15, 2013).

¹⁴⁴ Id at *20.

¹⁴⁵ Id.

¹⁴⁶ See, for example, the Fair Credit Reporting Act, codified at 15 USC § 1681 et seq; Health Insurance Portability and Accountability Act of 1996, Pub L No 104-191, 110 Stat 1936 (1996), codified at 29 USC 1181 et seq; Video Privacy Protection Act, codified at 18 USC § 2710 et seq.

¹⁴⁷ 15 USC § 45. See also FTC, *Fair Information Practice Principles*, online at <http://www.ftc.gov/reports/privacy3/fairinfo.shtm> (visited Sept 15, 2013) (describing how the fair information principles relate to “safeguards required to assure that [information practices] are fair and provide adequate privacy protection”).

Federal Trade Commission, which is the primary regulator of commercial data collection online, states them as Notice/Awareness, Choice/Consent, Access/Participation, Integrity/Security, and Enforcement/Redress.¹⁴⁸ United States law and regulation have (at least thus far) emphasized the notice and choice principles,¹⁴⁹ with the result that, in the commercial data collection arena, the primary mechanism for implementing the FIPs has been to have consumers agree to a business's privacy policy. Privacy policies are notoriously ineffective at providing information to consumers about online businesses' data practices.¹⁵⁰ They are generally long and often are written in legalese. Even privacy policies that avoid legalese usually provide only long laundry lists of broad types of information about an individual that a business may collect and types of uses to which it will be put.¹⁵¹ Indeed, privacy policies often disclose the fact that consumer information collected by one online entity is shared with other entities, without providing specifics about to whom disclosure is made, from whom information is obtained, and for what purposes information from different sources is combined.¹⁵²

One area in which consumers' lack of information about company data practices may be particularly significant is price discrimination. The second and third degree price discrimination practices with which consumers are familiar necessitate a fairly

¹⁴⁸ See FTC, *Fair Information Practice Principles* n 29, online at http://www.ftc.gov/reports/privacy3/endnotes.shtm#N_29_ (visited Sept 15, 2013). The FTC issued a new Framework for privacy regulation in March 2012, which attempts to expand on the FIPs in light of current technology. However, this framework has yet to have much impact on statutory privacy regulation or on industry practices.

¹⁴⁹ This notice-and-choice framework has been the subject of considerable criticism, but nonetheless remains at the foundation of current regulation and practice. See, for example, Hoofnagle, et al, *Privacy and Modern Advertising: Most US Internet Users Want 'Do Not Track' to Stop Collection of Data about their Online Activities* at *2 (cited in note 143); Fred H. Cate, *The Failure of Fair Information Practice Principles, Consumer Protection in the Age of the Information Economy* (2006), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1156972 (visited Sept 15, 2013); James P. Nehf, *The FTC's Proposed Framework for Privacy Protection Online: A Move Toward Substantive Controls or Just More Notice and Choice?*, 31 Wm Mitchell L Rev 1727 (2011).

¹⁵⁰ See Tene and Polonetsky, 13 Minn J L Sci & Tech at 313 (cited in note 1); Solove, 126 Harv L Rev at *4-6 (cited in note 104).

¹⁵¹ See, for example, Facebook, *Information We Receive About You*, online at <http://www.facebook.com/about/privacy/your-info> (visited Sept 15, 2013); Google, *Privacy Policy* (July 27, 2012), online at <http://www.google.com/intl/en/policies/privacy> (visited Sept 15, 2013).

¹⁵² See Facebook, *Information We Receive About You* (cited in note 151); Google, *Privacy Policy* (cited in note 151).

high degree of transparency. To select among product versions, consumers must compare their prices and properties. To obtain senior discounts or student fares, consumers generally must take affirmative action to announce or register their status and are aware of the price benefits they can obtain by doing so. When a price discrimination structure is transparent, consumers are able to express their preferences about, and potentially to influence, its parameters.

Online behaviorally based price discrimination can be much more secretive, leaving consumers in the dark about why they are being offered particular prices and how those prices compare to prices being offered to others.¹⁵³ Consumers may not even be aware that price discrimination is occurring. Though the online context may assist consumers in comparing prices offered to them by different producers, it tends to obfuscate pricing differentials *between* consumers. When shopping online, consumers view prices privately and may find it difficult or impossible to find out what prices are being offered to others. The online context also facilitates the use of targeted coupons, sales, and special offers, which complicate price comparison. Moreover, even if consumers were somehow to gather information about the different deals being offered to different individuals, they might not be able to “reverse engineer” that information to find out how pricing was determined.

The lack of transparency in behaviorally targeted price discrimination ensures that its costs cannot be assessed and weighed by consumers. It thus prevents consumers from expressing their preferences with respect to these practices when making decisions about online activity.

In sum, many of the things that consumers would need to know in order to make accurate assessments of the potential costs of data collection are not disclosed by online businesses. Specific information about what data is held, in what format, and with what security precautions, specific knowledge about how the data is used to target advertising or to price discriminate, and specific knowledge of who has access to the information is held close to the vest. Companies may have very good competitive or security reasons for keeping some of these

¹⁵³ Armstrong, *Recent Developments in the Economics of Price Discrimination* at 5 (cited in note 115); Odlyzko, *Privacy, economics, and price discrimination on the Internet* at 4 (cited in note 113).

things secret, but nonetheless the secrets get in the way of consumers' ability to predict what is likely to happen to their data and, as a result, to them. Moreover, even where information is available either about a company's data practices or about steps the consumer might take to mitigate the potential harms of data collection, consumers face extremely high transaction costs associated with obtaining, reading, and understanding available information, given the length and complexity of privacy policies.¹⁵⁴

Even if a consumer knew everything there was to know about what an online company was doing and planned to do with consumer data at the time of a particular data disclosure, it would still be impossible for her to predict what would happen with the data in the future, since companies routinely change their collection and data use practices as time goes on, governments change their laws and practices pertaining to obtaining access to and using data held by private companies, technological innovation affects data security and the possible uses of data for better and for worse, and so forth. This fact explains, in part, why companies choose to keep their privacy policies as vague as possible. Thus, many changes fit within the parameters of existing privacy policies. Beyond that, however, privacy policies are often revised. While some companies promise to obtain consumer consent to changes in their policies,¹⁵⁵ often privacy policies change without consumer consent.

The potential for changes in a company's data practices is relevant to calculating the expected disutility from present-day data collection because consumers generally cannot withdraw their data at a later date if they are not satisfied with a change in practice, either to take it with them to another company or simply to have it removed from the collections of the company that collected it and everyone to whom it may have been transferred.¹⁵⁶

¹⁵⁴ See Aleecia M. McDonald and Lorrie F. Cranor, *The Cost of Reading Privacy Policies*, 4 *IS: J of L & Pol for the Info Soc* 540, 550–60 (2008), online at http://moritzlaw.osu.edu/students/groups/is/files/2012/02/Cranor_Formatted_Final.pdf (visited Sept 15, 2013) (discussing how long it takes readers to read or skim policies).

¹⁵⁵ See, for example, Google, *Privacy Policies* (cited in note 151).

¹⁵⁶ A proposed EU data privacy regulation would incorporate a “right to be forgotten.” See, for example, Jeffrey Rosen, *The Right to Be Forgotten*, 64 *Stan L Rev Online* 88, 89–90 (2012), online at <http://www.stanfordlawreview.org/online/privacy->

Finally, some harms result from inadequate data security or the actions of rogue insiders. While online businesses may reassure consumers that steps are being taken to protect the security of their data, consumers have no real information about company security practices. Legal regulation of data security is generally limited to “breach notification” laws, which are of limited value in prospective assessment of the security practices of online businesses.¹⁵⁷ Information about data security comes to consumers only episodically, when breaches make news. Moreover, data breach notification tells users little or nothing about the potential for bad acts by rogue company insiders.

3. Imperfect information raises the costs of avoiding or mitigating disutility.

In principle, Internet users can take some steps to avoid data collection and thus mitigate the potential for associated disutility. Here, however, users are thwarted by the ubiquity of online tracking and the complexity of the available mechanisms for avoiding tracking.¹⁵⁸ Moreover, as reported in recent studies,¹⁵⁹ companies respond to user adoption of mechanisms of avoiding tracking, such as deleting cookies, with technologies aimed at circumventing those mechanisms. The transaction costs associated with obtaining information about online data collection and methods of mitigating its potential disutility are malleable and generally in the hands of the online companies

paradox/right-to-be-forgotten (visited Sept 15, 2013). See European Commission, *European Parliament and Council Proposed Regulation 2012/0011 (COD) on the protection of individuals with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation)* (European Commission 2012), online at http://ec.europa.eu/justice/data-protection/document/review2012/com_2012_11_en.pdf (visited Sept 15, 2013). For the revised proposal, see Committee on Civil Liberties, Justice and Home Affairs, *Draft Report on the proposal for a regulation of the European Parliament and of the Council on the protection of individuals with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation)*, online at http://www.europarl.europa.eu/meetdocs/2009_2014/documents/libe/pr/922/922387/922387en.pdf (visited Sept 15, 2013).

¹⁵⁷ For discussions of breach notification laws, see Joseph Simitian, *How a Bill Becomes a Law, Really*, 24 Berkeley Tech L J 1009 (2009).

¹⁵⁸ See Lorrie Cranor, *Can Users Control Online Behavioral Advertising Effectively?*, 10 IEEE Xplore 93 (Mar–Apr 2012); Tene and Polonetsky, 13 Minn J L, Sci, & Tech at 285, 291–92 (cited in note 1).

¹⁵⁹ Chris J. Hoofnagle, et al, *Behavioral Advertising: The Offer You Cannot Refuse*, 6 Harv L & Pol Rev 273, 292–93 (2012); Ashkan Soltani, et al, *Flash Cookies and Privacy* *2–4 (Aug 10, 2009), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1446862&download=yes (visited Sept 15, 2013).

themselves.¹⁶⁰ Companies have every incentive to keep these transaction costs high in order to discourage consumers from taking steps to avoid data collection.

4. Imperfect information about the marginal effects of particular instances of data collection.

Though the deficits of information about company data practices and of statistical information about the various potential harms of data collection are severe, at least they could in principle be addressed by reasonably straightforward measures. Companies could be required to provide more transparent disclosures of their practices.¹⁶¹ Even if individual users are unlikely to invest in making sense of more detailed disclosures, if such disclosures were required, public and private consumer advocates could step in to provide tools, ratings, certifications, and so forth.¹⁶² Alternatively, company practices could be audited for compliance with some set of standards.¹⁶³ Government and other groups could collect more detailed statistical information about downstream harm from data collection. While these are difficult problems, theoretically, practically, and politically, there are far more intractable problems with the “purchase” analogy.

For an Internet user to weigh the costs and benefits of a particular online activity, the user must estimate the marginal expected disutility of the particular data collection associated with that activity. To determine marginal disutility, an Internet user must have information about how the incremental data collected in association with the particular activity changes the overall availability of information about her in the online ecosystem. Not only that, she must be able to connect that

¹⁶⁰ See Govern, 74 Wash L Rev at 1074–90 (cited in note 104).

¹⁶¹ See, for example, Tene and Polonetsky, 13 Minn J L, Sci, & Tech at 334–37 (cited in note 1) (describing legislative proposals to mandate more transparent disclosure).

¹⁶² See, for example, *id* at 345–47 (cited in note 1); Lorrie Faith Cranor, *Necessary But Not Sufficient: Standardized Mechanisms for Privacy Notice and Choice*, 10 J Telecomm & High Tech L 273 (2012).

¹⁶³ See, for example, Deborah C. Peel, *Privacy Trust Framework*, online at <http://ssrn.com/abstract=2231667> (visited Sept 15, 2013); Kenneth A. Bamberger and Deirdre K. Mulligan, *Privacy On the Books and On the Ground*, 63 Stan L Rev 247, 263 (2011).

increment in available information to an increment in expected disutility. This is essentially an impossible task.¹⁶⁴

Especially in the current online ecosystem, in which various players vie to collect data about individual Internet users, there are many sources of data available, some of which are redundant. When deciding whether to engage in a transaction involving data disclosure, consumers have no way to know what personal data about them, other than information publicly searchable on the Internet, is already available to whom. The incremental information availability associated with any particular data collection may also depend on what information other people disclose. For example, an individual seeking to determine the potential impact of a social media provider's collection and use of personal information she discloses in using the service would have to know what personal information the social media provider already has collected about her from other sources—including her friends, family members, and associates who already participate in the service. Consumers generally cannot track information about them disclosed by others. (Nor, in deciding whether to participate in an online activity, are they likely to account fully for any external disutility their decisions to allow data collection impose on others.)

Moreover, the potential uses of consumer data (both positive and negative) generally depend on aggregating information about a consumer from multiple sources and on aggregating data from many consumers.¹⁶⁵ There is no reason to think that this aggregation process is linear. The increment in cognizable information from any added data depends on the entire web of information that is already available and may change when further data is collected from the user herself or from others. Finally, it is often difficult, if not impossible, even in retrospect, to trace any particular disutility caused by data access to any particular data disclosure. The incremental expected disutility associated with a particular data collection may be impossible to calculate even in principle,¹⁶⁶ much less reasonably estimated in advance by individual consumers at any remotely feasible cost.

¹⁶⁴ See Zarsky, 5 Yale J L & Tech at 34–35 (cited in note 104) (making a similar point).

¹⁶⁵ See Solove, 126 Harv L Rev at *9–10 (cited in note 104); Nehf, 2005 U Ill J L, Tech, and Pol at 30 (cited in note 104).

¹⁶⁶ See David Dequech, *Bounded Rationality, Institutions, and Uncertainty*, 4 J Econ

B. Consumer Decisions about Online Activity Are Affected by Bounded Rationality

The severe problems of imperfect information and limited information processing ability facing an Internet user seeking to decide whether the potential benefits of online activity are worth the potential costs of data collection are compounded by certain well-known effects of bounded rationality.¹⁶⁷ Because these issues have been discussed at length by others with respect to privacy decisionmaking¹⁶⁸ and because the insights of behavioral economics merely provide additional nails in the coffin of the idea of data collection as price, there is no need to belabor them here. Briefly, human beings are not good at estimating the expected costs of low probability, high cost harms, yet most disutility from data collection is of that type. We tend to account inadequately for expected costs that are deferred or are not salient. Data collection is deferred from the initial decision to access an online product or service and operates quietly in the background of online activity.¹⁶⁹ When faced with imperfect information and the need for complicated assessments of value, cascade or herding effects are possible, in which individuals rely on others' behavior as proxies for quality assessment. Finally, there is evidence that individuals react irrationally to the zero-price point¹⁷⁰ and are overly willing to purchase goods at zero price to the neglect of potential disutilities associated with those goods. The behavioral advertising business model seems almost designed to take advantage of these aspects of bounded rationality.

Issues 911, 912 (2001) (discussing the possibility of “fundamental uncertainty” in which decisions must be made before some necessary information exists).

¹⁶⁷ For overviews, see generally Christine Jolls, Cass R. Sunstein, and Richard Thaler, *A Behavioral Approach to Law and Economics*, 50 *Stan L Rev* 1471 (1998); Dan Ariely, *Predictably Irrational: The Hidden Forces That Shape Our Decisions* (HarperCollins 2008). For recent applications of behavioral economics in the related arena of longer-term consumer contracts, see generally Oren Bar-Gill, *Seduction By Contract: Law, Economics, and Psychology in Consumer Markets* (Oxford 2012).

¹⁶⁸ See, for example, Solove, 126 *Harv L Rev* at *6–7 (cited in note 104); Alessandro Acquisti and Jens Grossklags, *What Can Behavioral Economics Teach Us About Privacy?*, in Alessandro Acquisti, et al, ed, *Digital Privacy: Theory, Technologies and Practices* 363 (Auerbach 2007); Nehf, *Open Book* at 186–256 (cited in note 104).

¹⁶⁹ See, in a similar context, Bar-Gill, *Seduction By Contract* at 8–14 (cited in note 167).

¹⁷⁰ See Shampanier, Mazar, and Ariely, 26 *Marketing Sci* at 743 (cited in note 97).

Moreover, decisions relating to activities the effects of which are small individually, but potentially large cumulatively, are subject to a kind of internal collective action problem. The expected disutility of data collection is, as discussed above, cumulative. Especially once some data about an individual is “out there,” the collection of any single additional piece of data seems unlikely to have a large impact on the individual’s expected disutility from data collection overall, though a sequence of data collections may have a large impact. Each day’s decision to continue on with an online product or service is made in the context of a small contribution to the aggregate data collected and it is easy for a consumer to discount its importance.¹⁷¹ Moreover, once enough data is accumulated in the online ecosystem, an individual may come to believe (correctly or not¹⁷²) that she has little to lose as a result of further data collection.

C. The Missing “Purchase” Transaction

Not only are consumers unable to come up with useful estimates of the expected disutility they are incurring by allowing data collection, but the simple picture of a purchase transaction in which consumer data is exchanged for an information product is also misleading. The bulk of data collection does not occur at the time a consumer first accesses a zero-price online product or service. The online behavioral advertising model is “buy now, pay later.” Or, more accurately, it is a model that involves payments over time for ongoing access to services. Moreover, unlike a lease or a gym membership, the payments are not fixed ahead of time nor are they collected at intervals in a way that is salient to the consumer. Instead, a company’s access to consumer data occurs quietly and incrementally behind the scenes, unless and until some detectable and traceable potential harm comes to fruition.

¹⁷¹ See Katherine J. Strandburg, *Social Norms, Self Control, and Privacy in the Online World*, in Katherine J. Strandburg and Daniela Raicu, eds, *Privacy and Technologies of Identity: A Cross-Disciplinary Conversation* (2005); Katherine J. Strandburg, *Privacy, Rationality, and Temptation: A Theory of Willpower Norms*, 57 Rutgers L Rev 1237, 1243 (2005) (discussing this issue extensively from the perspective of willpower and self-control).

¹⁷² The individual’s belief is most likely incorrect to some degree, since personal information that might be relevant to advertisers evolves dynamically over time.

Perhaps better than the analogy to a purchase transaction would be an analogy to obtaining free medical care in exchange for participating in a trial of a new medical treatment.¹⁷³ Researchers are willing to provide free care because of the benefits they (and, presumably, future patients) receive from patients' participation in medical trials. In order for the researchers to obtain the benefits of the research, however, the patient is subjected to some risk. Like the potential disutility of data collection, the risk of participating in a treatment trial often grows the longer a patient participates in the trial, along with the benefits of the free treatment. Also similarly, if a patient decides to quit a particular experimental treatment, she may well continue to suffer some risk from the accumulated effects of the treatment. Because of these risks, and because patients generally cannot be expected to have either the information or the expertise to estimate them, there are strict standards for obtaining informed consent from patients participating in medical research.¹⁷⁴ Beyond that, because patients' lack of expertise leaves them vulnerable to exploitation by doctors even if they give informed consent, we impose ethical duties on physicians.¹⁷⁵ In the medical context, we would be shocked if researchers secretly used information they gleaned from a patient's participation in a treatment trial to decrease her well-being or subject her to greater risk. In the personal data context, the use of accumulated consumer data to offer particular consumers worse deals through price discrimination is one of the goals.

To sum up, the analogy between the online data collection associated with behavioral advertising and more familiar purchase transactions falls apart upon inspection. With regard to estimating the expected disutility from online data collection and assessing the effectiveness of measures they can take to avoid it, consumers are almost entirely at sea. Rather than

¹⁷³ See Solove, 126 Harv L Rev at 17 (cited in note 104) (discussing the different approach to consent in the medical arena); Tene and Polonetsky, 13 Minn J L, Sci, & Tech at 340 (cited in note 1) (same). See also Directive 95/46/EC at Art. 2(h) (cited in note 28) (defining "data subject's consent" as "free given, specific and informed").

¹⁷⁴ See Lars Noah, *Informed Consent and the Elusive Dichotomy Between Standard and Experimental Therapy*, 28 Am J L & Med 361, 364–70, 379–92 (2002).

¹⁷⁵ See AMA's *Code of Medical Ethics*, especially Principles I, IV, VIII, online at <http://www.ama-assn.org/ama/pub/physician-resources/medical-ethics/code-medical-ethics.page?> (visited Sept 15, 2013).

handing over their data as the price for online products and services in a tidy purchase transaction, consumers are essentially doing what amounts to closing their eyes and taking an unknown risk in exchange for a presently salient benefit.

IV. IS DATA COLLECTION JUST THE PRICE WE NEED TO PAY FOR A VIBRANT INTERNET?

Proponents of the behavioral advertising business model argue that even if behaviorally targeted advertising, with its associated data collection, is a net negative for consumers, its cost is a small price to pay for all of the free advertising-supported products and services available online.¹⁷⁶ Indeed, some go so far as to suggest that regulation of behavioral advertising would kill the Internet goose that lays the golden egg.¹⁷⁷ So far, I have argued that the disutility from behavioral targeting and data collection is not appropriately viewed as a price paid for online products and services. But is it true, nonetheless, that the online ecosystem needs behavioral advertising to sustain it? Of course, no one can answer this question with certainty, but in this Part I argue that apocalyptic predictions of this sort should be taken with a large grain of salt.

A. Would Revenue Loss from Banning Behaviorally Targeted Advertising Cripple the Internet?

Very few would dispute that free online products and services create tremendous value for users. For example, the IAB Europe-sponsored study estimated the total user surplus from online activity in 2010 as about \$130 billion dollars total for the US and Europe.¹⁷⁸ Free services were estimated to generate about 80 percent of the total consumer surplus or about \$105 billion,¹⁷⁹ with email (16 percent), search (15 percent), social networks (11 percent), instant messaging (10 percent), and Internet phone (7 percent) leading the list.¹⁸⁰ As mentioned

¹⁷⁶ See, for example, Thierer and Szoka, *Targeted Online Advertising* at 8 (cited in note 3).

¹⁷⁷ *Id.*

¹⁷⁸ IAB Europe, *Consumers Driving the Digital Uptake* at *16 (cited in note 53) (converted from 100 billion Euros).

¹⁷⁹ *Id.* at 20 (converted from 80 billion Euros).

¹⁸⁰ *Id.* at 19.

earlier, these numbers may underestimate consumer disutility from data collection and thus overestimate consumer surplus. Nonetheless, it is undeniable that consumers place a high value on many ad-supported online information products.

The mere fact that advertising-supported online activity generates high consumer surplus does not tell us how much of that surplus is attributable to *behavioral advertising*, however. To begin with, behavioral advertising provides only a fraction of online advertising revenue generally.¹⁸¹ Moreover, contextual advertising presumably would substitute for behavioral advertising at least to some degree if behavioral advertising were unavailable. Thus, online advertising-supported businesses are not dependent exclusively or even primarily on revenue from behavioral targeting. A mixture of contextual advertising and paid services might generate an even larger consumer surplus, given that contextual advertising is cheaper to generate, does not impose the costs of amassing and processing large amounts of user data, and does not distort the market toward producing products and services geared to data extraction. The relevant question is not whether consumers are receiving a large surplus in the present market but whether consumers currently receive a larger surplus than they would from a market involving only contextual advertising and paid offerings.

To sharpen this point, imagine a ban on behaviorally targeted advertising. How would advertisers respond? Assuming that advertisers believe that behavioral advertising is more effective than contextual advertising (as they apparently do, given that they pay more for it), advertisers might react to such a ban by investing less in online advertising overall. Whether and how much advertisers would decrease their total investments in online advertising when faced with such a ban would depend on the relative marginal profitability of alternative investments, including contextual advertising. The fact that contextual and undirected advertising spending currently is much greater than behavioral advertising spending at least suggests that the resulting diminishment of total spending on online advertising might not be particularly large.¹⁸²

¹⁸¹ In 2009, that fraction was about 18 percent. See Beales, *The Value of Behavioral Targeting* at *3 (cited in note 16).

¹⁸² From the beginning of online advertising, there has been debate, consternation,

Even if a ban on behavioral advertising reduced total investment in developing online products and services, it is not clear that investment devoted to meeting *consumer* preferences would decrease. Advertising-supported products are developed primarily to meet the preferences of advertisers, with consumer preferences only indirectly represented. It seems reasonable to assume that catering to advertiser demand for data collection demands substantial investments in data collection, storage and processing, and in algorithm development related to ad targeting. Banning behavioral advertising would allow producers of online products and services to avoid those costs. The 2010 IAB-sponsored study estimated that the total cost of providing the bundle of advertising and information products available online was \$24 billion per year out of total revenue of \$40 billion, based on profits of 40 percent or \$16 billion.¹⁸³ As noted above, it is unlikely that banning behavioral targeting would deprive advertising intermediaries of all of the revenue currently devoted to behavioral advertising. Nonetheless, to be conservative, assume that a ban on behavioral targeting would lead to a 20 percent reduction in online advertising spending, which is slightly more than the 18 percent share estimated by the Beales study in 2009.¹⁸⁴ Under that assumption, the decline would be \$8 billion.¹⁸⁵ The study's estimate of consumer

and hype about its return on investment for advertisers relative to other media. See Turow, *The Daily You* at 36–47 (cited in note 8). Some advertisers always have been, and presumably always will be, willing to pay a premium for targeting their ads to audiences they believe will be most susceptible to them relative to ads they believe will be less effective. The impact that restrictions on particular types of advertising would have on total spending on advertising does not follow straightforwardly from this observation, however.

¹⁸³ IAB Europe, *Consumers Driving the Digital Uptake* at *16 (cited in note 53). The study used a profit margin of 40 percent to calculate producer surplus. The cost number above is obtained by subtracting the study's estimated profit from estimated revenue. All figures are converted from Euros. See *id.*

¹⁸⁴ Beales, *The Value of Behavioral Targeting* at 3 (cited in note 16).

¹⁸⁵ A better, but probably still conservative, assumption would be that Goldfarb and Tucker are correct in their estimate that non-behaviorally targeted ads are only 35 percent as effective as behaviorally targeted ads. Goldfarb and Tucker, *Privacy Regulation and Online Advertising* at *2, 27–28 (cited in note 27). If revenue declined in proportion to effectiveness, then one would expect a revenue decline of only about \$5 billion. Alternatively, as they also suggest, a decline in effectiveness could result in an increase in advertising expenditures, which, by the same reasoning that supports the argument that banning behavioral advertising would kill the Internet by depriving online companies of revenue, would suggest that banning behavioral advertising would be a boon for online companies.

willingness to pay to avoid data collection was \$10 billion,¹⁸⁶ which is more than enough to make up for the decline in advertising revenue. Moreover, there are several reasons to expect that this figure is an underestimate. In estimating willingness to pay to avoid data collection, the study apparently gave respondents three options: “No personal info required”; “Protected limited info required (name, age, usage, . . .)”; “Protected full info required (name, age, usage, credit card, . . .).” It is unclear what study participants would have understood the option of “protected” data collection to mean, particularly since many respondents were European. The European Union’s Data Protection Directive in principle provides far more robust protection than United States law.¹⁸⁷ Since many potential costs to consumers from data collection arise out of failures of companies to protect their data, the study seems to have nudged them to ignore those potential costs. In sum, there appears to be no a priori reason to assume that a mixture of paid and contextual advertising business models would be significantly less capable of supporting a vibrant mixture of Internet offerings than today’s mixture of behavioral and contextual advertising business models.

B. Why Behavioral Advertising Business Models May Survive Even if Consumers Prefer Paid or Contextual Advertising Models

The previous sections argued that there are good reasons to believe that Internet users would be better off in an online market without behaviorally targeted advertising. Surveys suggest that there is consumer demand for online businesses that do not share user data.¹⁸⁸ Yet what we see in the online ecosystem is increasingly ubiquitous data collection driven by advertiser demand for behaviorally targeted advertising. If there

¹⁸⁶ IAB Europe, *Consumers Driving the Digital Uptake* at *22 (cited in note 53). The study estimated 20 billion Euros total WTP to avoid both advertising and data collection. It also estimated WTP per user at 2.7 Euros for ad avoidance and 1.6 Euros for data collection avoidance. They scaled by the ratio of WTP to avoid data collection to total WTP to avoid both and then converted to dollars. See id.

¹⁸⁷ European Parliament and Council, *Directive 95/46/EC* (cited in note 28).

¹⁸⁸ See, for example, McDonald and Cranor, *Beliefs and Behaviors* at *25 (cited in note 154) (noting that 70 percent of respondents stated that whether an online business shared their data would “matter a lot” to their purchasing decisions, as compared, for example, to 75 percent who said that free shipping “matters a lot”).

is consumer demand for them, why haven't paid or contextual advertising-only alternatives emerged in greater numbers? The discussion in Parts II and III suggests possible answers. As emphasized already, Internet users cannot accurately assess their expected disutility from data collection and its lack of salience and delayed impact means that any preference signal they send is likely to be weaker than it should be. Over and above that issue, the characteristics of the online market make it difficult for consumers to express their preferences about data collection.

To begin with, consumers can choose online products and services that do not engage in data collection only if they can distinguish them from those that do. Currently, consumers cannot determine what companies do with their data because collection and use are hidden and privacy policies are written to avoid liability and obfuscate the extent of data collection. On the surface, a user's experience with a company that uses contextual advertising and does not permit customer tracking would look much the same as a company engaged in thoroughgoing data collection and behavioral tracking. Even a paid online product or service that displays no advertising might collect and sell users' data, leaving the user none the wiser. This situation looks like the classic market for lemons problem,¹⁸⁹ associated with credence and experience goods. Consumers cannot recognize quality (here, absence of data collection for advertising) and hence will not pay for it. As a result, the market spirals downward.

The usual market mechanisms for avoiding such adverse selection problems are screening and signaling.¹⁹⁰ Here, secrecy and the difficulty of recognizing and tracing data-related harms to particular sources undermine consumers' ability to screen for good data practices. Reputation can be an effective screening mechanism for experience goods and the online environment helps consumers both to report good and bad experiences and to find out what others have reported.¹⁹¹ Reputation is not an effective mechanism for screening for credence goods, such as

¹⁸⁹ See Akerlof, 84 Q J Econ at 488 (cited in note 4).

¹⁹⁰ See, for example, Stiglitz, 47 Am Econ at 21–22 (cited in note 4).

¹⁹¹ Of course, the effectiveness of online reputation systems depends on whether they are credible. Since online reputation systems have a lot going on “under the hood,” they themselves are experience goods.

data collection, however, since consumers cannot judge quality even after purchase.

Credible signaling by providers of online products and services is difficult for several reasons. Common signaling mechanisms are guarantees and warranties. One might think that privacy policies could be used to provide such guarantees. Currently, privacy policies tend to be confusing, vague, and impenetrable. However, a company seeking to use its privacy policy to assure customers that it was *not* going to collect their data for advertising purposes could adopt much clearer and more straightforward language. Of course, consumers would still find it effectively impossible to monitor a company's compliance with a promise not to collect and use data. Privacy policies are thus considerably less effective than warranties and guarantees as credible signals of "good" behavior. However, consumers are backed up in privacy policy enforcement by the Federal Trade Commission (FTC), which brings actions against companies whose privacy policies are misleading or unfair. Though FTC enforcement is quite spotty at present, in part because of the difficulty of detecting violations of today's complicated and vague privacy policies, a straightforward promise not to collect data for marketing purposes would be easier for the FTC to enforce. Indeed, companies seeking to fill consumer demand for no-data-collection promises would presumably bring themselves to the attention of the FTC by advertising those promises. Thus, there is at least a theoretical possibility that categorical no-data-collection for marketing purposes could, when backed up by FTC enforcement, be signaled to consumers by advertising and a very clear privacy policy.

The complexity of the online ecosystem means, however, that it might be difficult for many companies to ensure that data collection for advertising purposes was not occurring in connection with their online businesses. Currently, most advertising-sponsored online businesses neither produce the advertising displayed on their sites nor collect the data used to target that advertising. Instead, they sell ad space to third-party ad networks, which both serve the ads and collect the data for tracking, using third-party cookies and other mechanisms.¹⁹²

¹⁹² See, for example, Turow, *The Daily You* at 179–80 (cited in note 8); Hoofnagle, et al, 6 Harv L & Pol Rev at 280–85 (cited in note 159); Soltani, et al, *Flash Cookies and Privacy* at *2–4 (cited in note 159).

Consumer-facing companies seeking to employ a no data collection approach would have to contract with ad networks for no-data-collection service and would themselves face technical hurdles in ensuring that their sites were not used for data collection for targeted advertising,¹⁹³ especially since there is some degree of data collection that is necessary simply to determine metrics commonly used to charge for ad placement, such as numbers of views and numbers of clicks.

Moreover, because most advertising-supported online businesses use intermediaries to select and place ads, consumer demand for no-data-collection contextual advertising-supported alternatives would have to be funneled from thousands of websites and other online businesses to those ad networks. (Of course, this issue would not apply to providers of online products and services, such as Google and Facebook, whose business models center around extracting data from consumers.) Essentially, there would have to be a sufficiently strong signal of consumer demand for no-data-collection alternatives either to induce an online business to switch to a paid model or to induce an ad network to develop a no-data-collection product to market to advertisers. An online business would not be able unilaterally to adopt a no-data-collection policy without taking on huge transaction costs associated with selling advertising space on its site. There are some businesses, such as major publishers and entertainment companies, that sell their own ad space,¹⁹⁴ but the transaction costs of such an approach put it out of reach for a typical online business.

Also cutting against the effectiveness of a signaling approach to solving the credence good problem is the growing degree of user skepticism and distrust regarding online data practices and many consumers' sense that their privacy is already lost.¹⁹⁵ For example, a recent study showed that refusals

¹⁹³ See, for example, *In re Pharmtrak, Inc Privacy Litigation*, 220 F Supp 2d 4 (D Mass 2002), rev'd *In re Pharmtrak, Inc*, 329 F3d 9 (1st Cir 2003) (involving litigation over the use of third-party cookies to collect information from users of a website in violation of the website's agreement with an ad network). Newer tracking technologies are much harder to detect than third-party cookies.

¹⁹⁴ See Turow, *The Daily You* at 71 (cited in note 8).

¹⁹⁵ See Mark S. Ackerman, Lorrie Cranor, and Joseph Reagle, *Privacy in E-Commerce: Examining User Scenarios and Privacy Preferences* *5 (ACM Conference on E-Commerce 1999), online at <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.38.595> (visited Sept 15, 2013); Catherine Dwyer, *The Effect of Behavioral Targeting on Trust in E-Commerce* *14-21 (Apr 2, 2011), online at

to reveal information online have increased over time, at least in part because Internet users are becoming more aware of the broad range of contexts in which privacy concerns are relevant.¹⁹⁶

If a company collects data in order to deliver its core services (such as search or social media), the difficulty of credibly signaling that the data would be used only for core services would be even greater, since such a company would have to credibly commit that it would not hoard and decide, at some point in the future, to sell it or exploit it for targeted advertising.

Probably the most insurmountable barrier to the emergence of no-data-collection alternatives, however, is the intertwined nature of the online data ecosystem. Because it is so difficult to assess the marginal expected disutility related to data collection by any single product or service, consumers may well view avoiding data collection by any one particular product or service as a futile gesture in light of continued data collection by other products and services she uses, along with continued collection of data related to her from others who do not switch.

A hypothetical example may help to illustrate the systematic difficulties consumers and online businesses would have in switching to no-data-collection alternatives. Imagine Abby, a hypothetical Internet user:

Abby is considering whether to visit an ad-supported online travel site, such as Trip Advisor (tripadvisor.com) or to subscribe to a hypothetical paid alternative, Travel Without Tracking (TWT.com). To decide whether it is worth switching, Abby must estimate her expected

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1801366&download=yes (visited Sept 15, 2013); McDonald and Cranor, *Beliefs and Behaviors* at *26 (cited in note 154) (finding a large discrepancy between willingness to accept and willingness to pay related to data collection and hypothesizing that this may be due to a feeling that privacy is already lost and also finding that 69 percent of respondents believe that it is “wrong to be asked to pay to keep companies from invading my privacy”); Aleecia M. McDonald and Jon Peha, *Track Gap: Policy Implications of User Expectations for the ‘Do Not Track’ Internet Privacy Feature* *25 (TPRC Sept 2011), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1993133&download=yes (visited Sept 15, 2013) (“Track Gap”) (finding that 40 percent of survey respondents would be “unsurprised” and 13 percent “resigned” if they learned that a Do Not Track feature had no effect).

¹⁹⁶ Avi Goldfarb and Catherine Tucker, *Shifts in Privacy Concerns* *13–16 (Jan 21, 2012), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1976321 (visited Sept 15, 2013). See also Dwyer, *The Effect of Behavioral Targeting on Trust in E-Commerce* at *18–19 (cited in note 195).

disutility from Tripadvisor's data collection. She might begin by looking at the [tripadvisor.com](http://www.tripadvisor.com/privacy.html) privacy policy.¹⁹⁷ Tripadvisor's privacy policy is laid out fairly cleanly and written relatively comprehensively as these things go. It is 4000 words (about nine pages) long. It tells Abby that Tripadvisor receives and stores "any information you enter on our Web site or give us in any other way." It also tells her that Tripadvisor "may periodically obtain both personal and non-personal information about you from affiliated entities, business partners, and other independent third-party sources and add it to other information about you" and that Tripadvisor will automatically collect "session data, including your IP address, Web browser software, and referring Web site. We also may collect information about your online activity, such as content viewed and pages visited."

The privacy policy explains that Tripadvisor and its "affiliated websites" use cookies and Web beacons to track her activity for various purposes, including the delivery of advertising. Tripadvisor also collects information about her location if she accesses it from her mobile phone, unless she has disabled that access using her phone's privacy settings. The policy explains that information collected through Tripadvisor is used to serve ads both on Tripadvisor and "elsewhere online."

Abby is momentarily relieved to read on page four of the policy that Tripadvisor does not share "personal information (such as email addresses) with unaffiliated third parties so they can serve you with advertisements." She is confused to read in the next paragraph, however, that Tripadvisor "allow[s] third parties to collect information about your online activities through cookies and other technologies. These third parties include (1) business partners, who collect information when you view or interact with one of their advertisements on our sites, and (2) advertising networks, which collect information about your interests when you view or interact with one

¹⁹⁷ Tripadvisor, *Privacy policy*, online at <http://www.tripadvisor.com/pages/privacy.html> (visited Sept 15, 2013).

of the advertisements they place on many different Web sites on the Internet.”

These third parties, she learns, use the information they collect about her activities on tripadvisor.com to serve ads. Moreover, Tripadvisor disclaims any responsibility for what these third parties might do with the information they collect and reminds her that they are not covered by Tripadvisor’s privacy policy.

Later, Abby reads that, in addition to the information collected by third party business partners and advertising networks, Tripadvisor shares her information with third-party vendors who provide various services including “marketing,” with business partners if she chooses to access “optional services,” with “referring websites,” with social media services if accessed through the Tripadvisor website, and with Tripadvisor’s “parent companies and domestic and international corporate affiliate companies and websites (including DaoDao.com).”

Though Abby is assured that Tripadvisor’s corporate affiliates will follow data practices at least as restrictive as those in the Tripadvisor privacy policy, Tripadvisor also disclaims responsibility for the privacy practices of the business partners, referring websites, and social media services with which Tripadvisor shares her information. On the whole, after reading the Tripadvisor privacy policy, Abby is even more eager to avoid data collection.

To properly compare her options, though, Abby has to figure out what she can do to avoid data collection while continuing to use Tripadvisor. She clicks on a link on tripadvisor.com which takes her to the website of the Network Advertising Initiative (NAI), which provides a method to opt out of advertising from all of its affiliates. Abby learns that the NAI opt-out works by placing a cookie on her computer and must be implemented separately for every browser/computer combination she uses. Confusingly, she learns that the opt-out cookie will be deleted any time she clears her cookies after a browser

session and that if her browser privacy settings are set to prohibit third-party cookies she cannot set the opt-out cookie.

Abby wonders whether the NAI opt-out cookie actually stops companies from tracking her or simply stops them from placing targeted ads. From the NAI FAQs she learns that “[o]pt-out cookies signal to NAI member companies not to tailor ads based on information collected across websites, but may leave the cookies used for other purposes in place.” It seems that the NAI opt-out cookie may not stop affiliated companies from accumulating data about her after all.

Seeking some clarity about all of this, Abby does some online searching to find out what others are saying about the NAI opt-out cookie and other means to avoid being tracked online. She reads that various browser settings can be used to decrease online tracking, though these settings may also lead to decreased functionality of some online products and services. The options seem to be many and are different for each browser she uses. Figuring out how to choose among them seems like a daunting task. Moreover, Abby’s online research has turned up reports that websites are beginning to use more complicated technical means to avoid user attempts to opt out. She reads about DNS aliasing, ETags, Flash cookies, HTML5 web storage, Evercookies, and browser fingerprinting.¹⁹⁸

Based on her research, Abby becomes convinced of two things: first, that the privacy policy gives her very little useful information about what Tripadvisor is doing with the data that it may be collecting about her activities on the site and, second, that she will be unable to keep up with the technical arms race in online tracking using the her browser, phone, and other settings. She decides to use her browser’s default privacy settings, assuming that they must be some reasonable compromise between avoiding tracking and functionality. She also decides that

¹⁹⁸ See Dwyer, *The Effect of Behavioral Targeting on Trust in E-Commerce* at *7 (cited in note 195).

she should assume that, no matter what she does, data about all her activities on Tripadvisor will be collected and made available to third parties.

So far, so good for our fledging TWT.com service. Now that she is more informed, Abby is more worried than ever about all the data collection going on. Before subscribing to TWT.com, though, Abby decides she should figure out how much difference paying for TWT rather than using Tripadvisor would make to the aggregate data available about her online. She thinks about the types of data that could be collected from her activities on Tripadvisor, which include information about potential vacation spots, the kinds of activities that interest her, the types of hotels she is interested in, her prospective dates of travel, and so forth. She then thinks about whether that information could be collected from her online activities away from Tripadvisor. She soon realizes that most of the information is also reflected in her Google searches, visits to hotel and airline web sites, email exchanges with friends, visits to websites related to the activities that she wishes to pursue while traveling, and so forth. Based on her research and on her reading of the Tripadvisor privacy policy, she figures that she should probably assume that all of that information also is being collected from those other sources. (She certainly doesn't think it would be worthwhile to try to understand the privacy policies and data practices of all of those other online products and services, especially since she has already spent her entire weekend trying to figure out what is going on with Tripadvisor.) She also realizes that her past visits to Tripadvisor.com have already revealed considerable information about her that will remain available in the online ecosystem even if she switches to TWT.com. She begins to think that there may be no point in paying for TWT.com if she cannot make comparable moves everywhere online.

As a final check, she consults with some of her friends about TWT.com and reads some online reviews. The reviews praise TWT's no-data-collection approach and its technology. However, they agree that, at this point, TWT

just cannot compete with Tripadvisor, given Tripadvisor's existing trove of user-generated travel information and active user base. The reviewers thus advise a "wait-and-see" approach. Abby's friends reinforce her feeling that switching would be futile. A few seem interested, but most are unwilling to be in the vanguard of moving to a new service. Some of them discount her concerns about data harms. "I've never known anyone who has had a problem," one says. "Everyone uses Tripadvisor," says another. "If it were that risky, nobody would use it." Some are skeptical that TWT will even abide by its promises not to collect and exploit data for advertising purposes. "How would you even know?" one asks. Some are outraged at the very idea that they would have to pay to avoid being tracked online. Mostly, they think, "There is no real way to avoid online data collection, so why waste the money?" In light of all of this, Abby decides not to subscribe to TWT.com. Moreover, the next time she hears about a paid alternative to one of the online products and services she uses she remembers all the time she wasted trying to figure out whether to switch to TWT and ignores it.

This hypothetical vignette illustrates how difficult it is for consumers to determine whether a move to a no-data-collection product or service is worth it. It also illustrates the interconnectedness of data disclosures, which means that little is to be gained by one-off switches to no-data-collection products and services. The resulting barriers to consumer switching raise corresponding barriers to entry for paid or contextual-advertising-only alternatives.

Some apparently contradictory observations about Internet users' behavior make more sense in light of the impenetrability and interconnectedness of online data collection: users consistently express high levels of privacy concern in response to surveys; they frequently, but inconsistently, adopt simple protective measures, such as cookie deletion, but generally do not adopt more complex technical defenses against data collection; and they continue to use a wide-range of online products and services despite their privacy concerns. As a practical matter, Internet users have only three choices: 1) go more or less "all in" for the online experience, as Abby decided to

do, 2) withdraw significantly or completely from online activities in order to protect their privacy, or 3) deploy drastic and time-consuming technical measures, such as encryption and Tor.¹⁹⁹ The second option is unlikely to appeal to many users, and is especially unlikely to be chosen by those who have grown up with the Internet. The third option is available only to the technically savvy. Because of its costs, it seems likely to be exercised only by two types of users: users who have something particularly important to hide, such as members of dissident political organizations, law enforcement, or criminals, and hacker types for whom outwitting data collection is its own reward. Most users are likely to go with the first option, avoiding online businesses that seem sufficiently sketchy,²⁰⁰ taking simple precautions that they see others taking, and hoping for the best.

V. WHERE DO WE GO FROM HERE?

The behavioral advertising business model gives companies an insatiable thirst for personal information and drives them to obfuscate the extent of that data collection from consumers. Those imperatives cannot be avoided by improving “notice and choice” or even by more robust consent regimes. Such attempts to improve the market also cannot overcome the two basic sources of market failure: the impenetrability and interconnectedness of online data collection. The seriousness with which we should address market failure in the data collection arena depends on what we believe about the magnitude and distribution of the social costs of that failure. The trouble, of course, is that we, as a society, can do only a somewhat better job of predicting the aggregate costs of ubiquitous data collection than individuals can do of estimating the costs of their own online activities. We can and should collect better statistics about the effects of data breaches, identity theft, stalking, harassment, and so forth. The societal consequences of

¹⁹⁹ See Richard Warner and Robert H. Sloan, *Behavioral Advertising: From One-Sided Chicken to Informational Norms*, 15 Vand J Enter & Tech L 49, 64–65 (2012) (describing this situation as a game of “one-sided chicken”). Tor is a technology for protecting the “to” and “from” data of internet communications. See *Tor: Overview*, online at <https://www.torproject.org/about/overview.html.en> (visited Sept 15, 2013).

²⁰⁰ See Hoofnagle, et al, *How Different Are Young Adults from Older Adults* at *10, 13 & Tables 2, 8 (cited in note 47).

price discrimination, government access to information about the personal lives of citizens, siloed access to news, entertainment, and other intellectual goods, automated reputations that are never forgotten, and chilled experimentation and inquiry are old debates, however, and not so easily resolved.²⁰¹ Estimating those costs is part unsolvable empirical question and part normative policy question. The primary aim of this Article is not to resolve those questions, but to argue that we cannot avoid confronting them by pinning our hopes on a mythical market for personal data.²⁰² We need to have the normative debate.

The reader will not be surprised to learn that my intuition is that the potential social costs of behavioral advertising's thirst for personal information are large and its benefits comparatively small when the potential for contextual advertising-based and paid business models, along with the way in which online search has decreased the transaction costs involved in matching buyers and sellers are considered. I also believe that survey responses indicating that Internet users are unhappy with ubiquitous tracking should be taken seriously. In the current online environment, saying that Internet users do not seriously value their privacy because they continue to use online products and services that track them is like saying that drivers do not care about the potential for auto accidents because they continue to drive. It is always a question of the alternatives.

In this last section, I therefore assume that my intuitions about cost are correct and briefly consider possible responses to the failure of the current online market. There is always the possibility, though it is probably a slim one, that the behavioral advertising model will fail of its own accord because it is not profitable enough. Perhaps advertisers themselves will determine that the extensive data collection and tracking now underway does not boost ad effectiveness enough to be worth the

²⁰¹ For discussion of these topics, see Julie E. Cohen, *Examined Lives: Informational Privacy and the Subject as Object*, 52 *Stan L Rev* 1373, 1416–18, 1421 (2000); Jeffrey Rosen, *The Unwanted Gaze: The Destruction of Privacy in America* 8–9 (Random House 2000); Priscilla M. Regan, *Legislating Privacy: Technology, Social Values, and Public Policy* 213, 225 (North Carolina 1995); Daniel Solove, *Conceptualizing Privacy*, 90 *Cal L Rev* 1087, 1126, 1143–46 (2002). See generally Paul M. Schwartz, *Privacy and Democracy in Cyberspace*, 52 *Vand L Rev* 1609 (1999).

²⁰² Compare to Tene and Polonetsky, 13 *Minn J L Sci & Tech* at 284 (cited in note 1) (arguing that policymakers must address “the underlying normative question is online behavioral tracking a social good or an unnecessary evil?”).

investment. Failing that, what are the alternatives? Since the market fails because of the impenetrability of data practices and the interconnectedness of information, the goal should be to do two things: incentivize data practices that are not impenetrable and disentangle the collection of data associated with different online activities. Note that incentivizing data practices that are not impenetrable is different from incentivizing efforts to explain impenetrable data practices through simplified notice. The idea is that data practices should be such that consumers have an intuitive sense of what is going on with their data.

The most straightforward approach would be to ban data collection and processing for behaviorally targeting advertising. Of course, such a ban would leave open the question of what to do about data collection for other purposes, which would have to be considered on their own merits. That would be a good thing. Behaviorally targeted advertising drives so much intertwined data collection that it both muddies the waters for societal debate about the desirability of collecting particular data for particular purposes and undermines the market's ability to reflect consumer preferences about data-based products and services.

Constructing a ban on behavioral advertising would require some attention to details, of course. A line would have to be drawn between behaviorally targeted and contextual advertising, for example. One would probably also want to draw a line between behavioral advertising and first-party recommendations based on past purchases. The key would be to construct such distinctions with the goal of solving the problems of impenetrability and interdependency so as to make it possible for consumers to express their preferences in the market. So, for example, the line between contextual and behaviorally targeted advertising could be drawn to permit advertising based on short-term tracking of a consumer's use of a particular product or service (such as the short-term search queries that Yan, et al, found most effective for targeting search advertising),²⁰³ but not long-term tracking and not tracking across different products or services (regardless of whether they were co-owned). First-party recommendations based on past purchasing could be permitted because the data practice is reasonably clear to consumers and

²⁰³ See text accompanying note 34.

any interdependency between data from different individuals would be limited to data about purchases from a particular online retailer. Consumers would be able to understand such data practices and could move from one retailer to another whose practices they preferred without particularly high switching costs.

There are at least two major problems with such a proposal. First, a ban would not accommodate any consumers who actually wanted to be tracked. That problem could potentially be solved by innovations aimed at allowing users to collect their own data and make it available for targeted advertising. Such approaches have been proposed²⁰⁴ and would certainly have more traction in the market if data collection by advertisers for targeting purposes were banned. The second problem, of course, is that there would be huge industry opposition to such a ban and, in the United States at least, it would have effectively no chance of being adopted.²⁰⁵

A more limited type of approach would aim to mitigate the market's failure to account for the consumer disutility associated with data collection by focusing on reducing costs that are collateral to the collection and use of data for targeting advertising. For example, one might impose responsibilities of a fiduciary or professional ethics character (and associated liabilities) on those who collect and store data, require "privacy by design" practices, or impose legal restrictions on data practices that could be enforced through independent audits.²⁰⁶ To the extent that consumer disutility stems from security breaches, rogue actors, and other data misuses, these

²⁰⁴ See, for example, Vincent Toubiana, et al, *Adnostic: Privacy Preserving Targeted Advertising* *5–6 (Proceedings of the 2010 Network and Distributed System Security Symposium 2010); Mikhail Bilenko, Mathew Richardson, and Janice Tsai, *Targeted, Not Tracked: Client-Side Solutions for Privacy-Friendly Behavioral Advertising* *11–15 (TPRC 2011), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1995127 (visited Sept 15, 2013).

²⁰⁵ There might also be First Amendment challenges to such a ban. See, for example, *Sorrell v IMS Health, Inc.*, 131 S Ct 2653 (2011). This is a complicated subject which I do not address here. The EU is famously more willing to adopt stringent privacy regulations than the US, but a ban on data collection for behavioral targeting would be a stretch even for the EU.

²⁰⁶ See, for example, Ira Rubinstein and Nathan Good, *Privacy by Design: A Counterfactual Analysis of Google and Facebook Privacy Incidents*, Berkeley Tech L J *22–40 (forthcoming 2012), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2128146 (visited Sept 15, 2013); Bamberger and Mulligan, 63 Stan L Rev at 269–72 (cited in note 163).

approaches may be effective. Such efforts go only so far, however. They do not make it possible for consumers to estimate the remaining expected costs of data collection and use accurately. Nor do they overcome the collective action problems illustrated in the vignette about Abby. The market failures remain.

The proposal of a “Do-Not-Track” option²⁰⁷ that consumers could deploy at low cost across all of their online activities has some potential to address the collective action problems associated with data interdependency and thus to lower the barriers to entry for non-tracking alternatives. In principle, a robust Do-Not-Track option would drastically reduce information and transaction costs for Internet users seeking a definitive way to opt out of tracking without having to concern themselves with multiple technologies deployed by multiple online entities. It might also form a rallying point for overcoming the collective action problem between Internet users, becoming a norm at least among some groups. If enough users adopted a robust Do-Not-Track technology, there might be sufficient incentives for ad networks to develop non-tracking contextual advertising products for advertisers who wanted to reach those users. Paid non-tracking alternatives might also emerge because a robust Do-Not-Track technology would ensure users that they were not being tracked surreptitiously.

Even a robust Do-Not-Track option might or might not be sufficient to overcome the barriers to entry for non-tracking alternatives that exist because of past data collection and network effects. The success of a Do-Not-Track technology in opening the market to alternative business models would depend on how existing businesses interact with it and how consumers respond to that interaction. Existing businesses might respond by denying access or providing a severely degraded experience to users who have invoked Do-Not-Track. Users would then have to choose between a Do-Not-Track world with few products and services available and a tracking world with a wide variety of options. They might defect in large

²⁰⁷ See generally Hoofnagle, Urban, and Li, *Privacy and Modern Advertising* (cited in note 143); Tracy A. Steindel, Note, *A Path Toward User Control of Online Profiling*, 17 *Mich Telecomm & Tech L Rev* 459 (2011); Warner and Sloan, 15 *Vand J Enter & Tech L* at 78–82 (cited in note 199); McDonald and Peha, *Track Gap* at *2–3 (cited in note 195); Tene and Polonetsky, 13 *Minn J L Sci & Tech* at 284–85 (cited in note 1).

numbers before there was time for alternative offerings to enter the market. Do-Not-Track is most likely to succeed if it becomes a social movement or norm, so that companies are hit with serious reputational penalties for turning away those who have opted not to be tracked. Alternatively, companies could be required to provide the same access to all users, whether or not they have opted for Do-Not-Track, which would force the market to adjust to consumer preferences in that regard.

Some commentators respond to Do-Not-Track proposals by arguing that a robust Do-Not-Track option would invite a type of free riding, in which consumers would adopt Do-Not-Track while assuming that they would continue to have access to free advertising-supported online products and services.²⁰⁸ If enough consumers do that, the argument goes, there will be no revenue to support such services and the thriving Internet economy will collapse. This is really just a new variant of industry's argument against "opt-in" approaches to advertising and data collection, which has, for the most part, carried the day so far.²⁰⁹ Of course, this argument has some weight. The availability of a robust Do-Not-Track mechanism could in principle mean the end of the data-collection economy, and it is certainly possible that consumers will fail to account for that possibility in deciding whether to adopt a Do-Not-Track option.

But the free riding argument almost proves too much. Similar arguments apply to all advertising-supported bundles. Television viewers who walk out of the room during commercials, magazine readers who skip past the ads, and those who use DVRs and other ad-skipping technology undermine the ad-supported business model in precisely the same way and might similarly fail to appreciate that their behavior decreases the advertising subsidy for the content they receive. While no one has to my knowledge suggested confining TV viewers to their couches during commercials, DVRs and other ad-skipping

²⁰⁸ See, for example, *Comments of Thomas M. Lenard, Technology Policy Institute submitted in response to FTC Notice of Inquiry, "Protecting Consumer Privacy in an Era of Rapid Change: A Proposed Framework for Businesses and Policymakers"* (Technology Policy Institute 2011), online at <http://www.ftc.gov/os/comments/privacyreport/framework/00301-57629.pdf> (visited Sept 15, 2013); Daniel T. Rockey, *Will the FTC's "Do Not Track" Proposal Spell the End of Free Internet Content?*, 16 BNA Insights 164, 167 (2011).

²⁰⁹ See, for example, Michael E. Staten and Fred H. Cate, *The Impact of Opt-In Privacy Rules on Retail Markets: A Case Study of MBNA*, 52 Duke L J 745, 769–83 (2003).

technologies have been met with such arguments, generally in the guise of discussions of copyright infringement.²¹⁰ There is something odd about such arguments in today's technological context, however. There is nothing inevitable, or even natural, about the advertising-supported business model. It emerged as a solution to two separate problems: the difficulty of getting information about available products to potentially interested consumers and the difficulty of collecting payment for broadcast content. Separate paid markets for advertising and for broadcast were not technically feasible at the time the advertising-based model took root.

Times have changed. One of the Internet's great strengths is the way in which it lowers the costs associated with information flow, including the costs of searching for products and services, the costs of producing and delivering information-based products and services, and the costs of collecting payment for such products and services. From a consumer perspective, search may largely replace the value of advertising. To the extent it does not, there seem to be few barriers to the development of freestanding online platforms which could aggregate advertising according to consumer interests. Similarly, subscription and other paid models for online products and services are now entirely feasible, as are "freemium" business models in which a free version of a product or service is used to entice consumers to purchase an upgraded version. Of course, many online offerings can be delivered at very low marginal cost. Offering them at a fee has the usual deadweight losses associated with intellectual property, as well as the distributional effects of any paid market. "Free" advertising-supported offerings also have social costs, however, and they also cater to the preferences of those with money to spend. In any event, contextual advertising supports free offerings without locking consumers into an inescapable data collection web.

The behavioral advertising business model evolved because online companies had cheap access to data about user activities on their websites, while users were largely unaware of how easily they could be tracked. We now seem to be thoroughly ensconced in a data collection dominated online ecosystem. The

²¹⁰ See, for example, Ned Snow, *The TiVo Question: Does Skipping Commercials Violate Copyright Law?*, 56 Syracuse L Rev 27, 42–62 (2006).

hurdles to incremental shifts by consumers to no-data-collection offerings likely mean that moving to an ecosystem without behavioral tracking (or with less of it) will require concerted collective action, possibly through regulation.