Chapter 4
Cookie Wars: How New Data Profiling and Targeting Techniques Threaten Citizens and Consumers in the "Big Data" Era

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4.1 Introduction

Digital marketers have unleashed a powerful and far-reaching data collection, profiling, and targeting apparatus. Interactive advertising techniques incorporate some of the latest developments in such fields as semantics, artificial intelligence, auction theory, social network analysis, data mining, and neuroscience. Consumers and many policymakers are largely unaware of how online advertising operates, let alone its impact. Tracking technologies regularly monitor our travels on the Internet, generating information that forms digital targeting profiles. Unlike more traditional ads, digital marketing *watches us*, relying on such techniques as data optimization, "self-tuning" algorithms, "intent" data, and "immersive" multimedia (Econsultancy 2011, 41). This data collection and targeting apparatus has already been purposely migrated into the core business models shaping social media, mobile devices, gaming platforms, virtual worlds, and online video. Some digital data marketers refer to this as a new kind of "Wild West" and the era of "Big Data," as both conglomerates and start-ups vie to develop even more methods to "monetize" consumer information online (Hutchinson 2011).[1]

Since the emergence of the commercial Internet in the early 1990's, I have followed closely the role online advertising has played in shaping the foundations of our digital culture. While back in the 1990's there was tremendous international enthusiasm for the Internet's democratic potential, there was far less concern over the ultimate impact of the interactive advertising business model at the core of the new medium. As a campaigner on media issues who has worked for decades trying to promote "public interest" policies for US television, and who knew the lessons of

[1] See also eXelate Networks, "Targeting Exchange, Digiday 2009" http://www.slideshare.net/DM2EVENTS/exelate-networks-1556802 (viewed 23 Mar. 2011).

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twentieth-century American communications history, I recognized that many of the same forces that shaped broadcasting and multichannel communications would be at work in the new environment. The combined imperatives of marketing, advertising, and entertainment—fueled by the technological capabilities that would deliver personalized interactive content—and coupled with a growing consolidation of digital media ownership and control by leading companies, would likely unleash a highly commercialized digital environment. Since the mid 1990s, I have played a leading role trying to temper the impact of an unfettered online data collection system by promoting privacy regulation, as well as exposing how the goals of much of Internet marketing pose threats to consumers and citizens (Barnouw 1968; Federal Trade Commission 2007; McChesney 1995; Singer 2010; Starr 2005).

Online advertising companies, such as Google, Facebook, Yahoo, and Microsoft, routinely offer the public and government officials a glossy version of digital reality that purposely evades how their tactics and techniques threaten privacy and have other problematic consequences. They claim that there are only benefits derived from access to the abundance of information readily available online. In their worldview, the ad-supported Internet has now freed consumers and citizens to make more informed choices, immune even from the persuasive lure of marketing messages that may have influenced their behavior in the past. This essay attempts to challenge such storybook claims, relying on my investigatory work to peer behind the Wizard's curtain and discover what kind of digital "Oz" we may find. For what online marketers say to the public, as we shall discuss, is very different from the discourse they have with each other and their allies. In that conversation, ultimately we believe the more truthful one, the public is at the mercy of advanced technologies designed to move them through a "purchase funnel," whether on their computers, mobiles, game players, or digital TVs.

The leading global companies and brands, including those from the financial, health, consumer product, and entertainment sectors, have enthusiastically embraced online advertising, with nearly $ 71 billion (US) expected to be spent worldwide in 2011 (MagnaGlobal 2010). US Internet marketing companies, including Facebook, Google, Microsoft, and Yahoo, operate a range of digital data-targeting services throughout the world, including in the European Union, the Asia-Pacific region, and Latin America. Advanced techniques for the buying and selling of individuals online for targeted advertising, developed initially in the US, are now found in EU countries as well as new markets such as China. Digital marketing trade associations, the networks of "Interactive Advertising Bureaus," have banded together to fight against privacy legislation and regulation, including in the US and EU. In an attempt to counter critics, the industry has developed a new self-regulatory scheme relying on "icons" to signal to consumers that they are being tracked (Interactive Advertising Bureau 2010a; Lau 2011; Microsoft 2010; Facebook 2011b; Google 2011b; Interactive Advertising Bureau 2011a; EU has Trouble Digesting New Law on Internet Cookies—IAB Europe Offers Solution 2010).[2]

[2] Sociomantic Labs, "Social Targeting," http://www.sociomantic.com/social-targeting.

The potential impact of these tiny graphic icons on websites will likely be overwhelmed by the everyday practices of contemporary online marketing. The commercial digital media system is largely designed to promote data collection through "360-degree" online marketing strategies (Advertising Research Foundation 2010, 2011). While the debate on privacy and online marketing has focused on behavioral profiling—so called Online Behavioral Advertising (OBA)—such practices are only a part of the overall data collection apparatus. From social media surveillance tools and "in-game" advertising tracking, to online video measurement and location tracking, a bevy of increasingly inter-connected user data services are deployed to track us throughout the interactive landscape. Our Internet experiences are also shaped, invisibly, by technologies that "optimize" how we interact with Web pages, to help manage our online journeys so we will "convert" to whatever the digital marketer desires us to do (such as buying a product or filling out a form). A growing range of "immersive" and neuromarketing-based applications, designed to convince us to accept the enjoyable pleasures of much of contemporary online marketing-based content, has added new forms of "subliminal persuasion" to the data collection equation (Facebook 2011c; Omniture 2011).[3]

Interactive marketing campaigns rely on all of these techniques and more to encourage users to provide their information, including through a process known as "engagement." A new approach developed for the Internet era, the goal of engagement is to create deep emotional connections between brands, products, and users. Strategies employed to promote engagement include the creation of "immersive" online environments—various forms of interactive multimedia such as video, games, or animation—that spur "data capture" (DoubleClick 2011). Increasingly, digital advertising also relies on forms of neuromarketing. Ads for both online and offline are thoroughly tested using fMRIs and other brain scan diagnostic tools. The goal is to perfect an ad that bypasses the consumer's rational decision-making process and is absorbed into the subconscious (Chester and Montgomery 2007; Montgomery and Chester 2009; Montgomery et al. 2011).[4] An emerging genre of techniques focused on a user's "social graph"—one's connections of friends and networks—increasingly enable marketers to reap a treasure trove of highly specific social media data (Facebook Developers 2011).

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[3] Samira Lama, "Lennox Invests in a Mobile Strategy and Sees Lower Cost per Conversions," Google Mobile Ads Blog, 1 July 2011, http://googlemobileads.blogspot.com/2011/07/lennox-invests-in-mobile-strategy-and.html;; Neurosense, "Applications," http://www.neurosense.com/apps.html (all viewed 5 July 2011).

[4] See also "Advertising Research Foundation Develops Standards for Neuromarketing Research," 22 Mar 2011, http://www.prnewswire.com/news-releases/advertising-research-foundation-develops-standards-for-neuromarketing-research-118423879.html (viewed 23 Mar. 2011); A. K. Pradeep, *The Buying Brain* (Hoboken, NJ: Wiley, 2010).

4.2 Cookies on Digital Steroids

The fundamental foundation of online marketing is based on the concept of "one-to-one marketing," popularized during the first dot-com boom of the 1990s (Peppers and Rogers 1999). The Internet was seen early on as the perfect vehicle to conduct new forms of "consumer relationship marketing," given all the granular details that could be collected via the Web (Chester 2007). Since that time, the over-arching goal of online marketing has been the collection and use of ever-greater amounts of consumer information, across all platforms and many applications. Major online ad companies have invested significant resources to expand the capacity of digital advertising. Microsoft has established one of its "labs" for data mining and ads in Beijing; Yahoo's Bangalore facility in India works on "computational advertising"; Google has an extensive global ad research apparatus that includes the funding outside scholars (Matias 2011; Google Research 2011).[5]

One of the ironies of the debate about behaviorally targeted (BT) advertising and privacy is that marketing industry representatives primarily tell regulators that such data techniques aren't targeted to individuals. When pressed about the privacy concerns connected to BT, they generally retort that there is a misunderstanding. Such targeting is both "anonymous and innocuous," and is only aimed at providing consumers with ads they will find of greater interest. In the US, what is currently considered "personally identifiable" information (or PII) is undergoing review. But traditionally it has meant one's physical and email address, birth date, and Social Security number. Online marketers cling to a claim that most, if not all, of the information they collect on a user is non-personally identifiable (non-PII). But such arguments don't hold up to serious scrutiny (not to mention the claims marketers make to each other and to prospective clients). Dozens of online ad firms openly speak of their use of "Unique personal data" in their targeting equations. Beyond all the data they compile, digital advertisers also recognize that in today's Internet-connected environment, it isn't necessary to know someone's real name in order to target them. Through cookies, Web beacons, and IP addresses, marketers know the key aspects of our digital identities: the content we favor or ignore; the amount we are willing to spend in shopping carts; the search terms we use; and favored sites and the like. Increasingly, we also willingly provide additional details that can be used in our profiles, through social media, mobile devices, and by obligingly filling out online forms, questionnaires, and entering online sweepstakes.

[5] In its joint academic grant program operated with ad giant WPP, Google supports scholars who can help make interactive ads more precise. For example, in a recent research round, Google listed as "Topics of interest" that included: What do we know and what more do we need to know about on-line audiences? How can advertisers be welcome in social networks? How do teens interact with digital media and what are the implications? How can pharmaceutical brands engage more effectively online? What are the unique marketing and targeting opportunities for other verticals: financial services, insurance?.

The actual role BT plays as a form of commercial surveillance can be confirmed from the "glossary" provided to members of the US Interactive Advertising Bureau (IAB). It explains that BT "uses information collected on an individual's web browsing behavior such as the pages they have visited or the searches they have made to select which advertisements to be displayed to that individual" (Interactive Advertising Bureau 2001). In its 2010 "Networks and Exchanges" guidelines, the IAB further defines BT as a "user-initiated action which may include, but not limited to: searches, content views, clicks, purchases, form-based information and other interactions." Stored in a "user profile," it explains, are data that can "consist of demographic information (e.g., age, gender, geographical location), segment or cluster information (e.g., auto enthusiast), and retargeting information (e.g., visited Site X two days ago)" (Interactive Advertising Bureau 2011b). Both the IAB UK and Microsoft Advertising describe BT as a "form of online marketing that uses advertising technology to target web users based on their previous behaviour. Advertising creative and content can be tailored to be of more relevance to a particular user by capturing their previous decision making behaviour (e.g., filling out preferences or visiting certain areas of a site frequently) and looking for patterns" (IAB UK 2011; Microsoft Advertising 2011).

Yahoo, like other leading digital marketing companies, claims its BT approach is anonymous. But a more candid admission by Yahoo can be found in a 2007 presentation to advertisers from the United Kingdom. Yahoo boastfully described its behavioral targeting efforts as a form of "intelligent user profiling," explaining that it captures user "DNA" from "registration and behaviours" (including such online activities as page views, ads clicked, search queries, and clicks) (Behavioural Targeting 2009).[6] More recently BT ads have been transformed into so-called "Smart Ads," as Yahoo calls them. Data collected from a user helps transform the creative copy into a more precise interactive pitch in real-time. Yahoo explains that by "using Yahoo! Data" for these Smart Ads it can push "valuable prospects deeper into the purchase funnel."[7] Google has also entered into the "smart ads" business through its 2009 acquisition of Teracent. The Google subsidiary enables advertisers to deploy "an unlimited number of ad creative combinations. . . through a single ad unit. Then, sophisticated machine learning algorithms instantly select the optimal creative elements for each ad impression—based upon a real-time analysis of which items will convert from impressions into sales."[8]

Not only are online ads compiling data about us, the Web pages and sites we access are often stealthily designed to ensure we leave our digital fingerprints behind. The design of a site includes analyzing how best to place various banners, buttons, and videos, and other navigation tools, in order to structure what's known as the "user's

[6] See also Yahoo, "Behavioural Targeting," http://advertisingcentral.yahoo.com/en_GB/products/behaviouraltargeting (viewed 23 Mar. 2011).

[7] Yahoo, "Yahoo! Smart Ads," http://advertisingcentral.yahoo.com/en_GB/products/retargeting_smartads (viewed 23 Mar. 2011).

[8] Teracent, "Advertiser Solutions," http://www.teracent.com/advertiser-solutions/ (viewed 23 Mar. 2011).

journey." Many online services use a variety of tools to structure the composition of what's known as "landing pages" in order to facilitate the "on-site behavioral targeting" of a user. Various data "optimization" techniques are routinely used, including evaluating how our eyes move across a page—"eye-tracking"—in order to make sure we favorably interact with the site. The goal of such practices, as marketing firm Web Trends recently explained, is to "maximize conversions." These conversions aren't about religion or politics—it's about what online advertisers call moving a consumer through the "pathways to purchase" (Enquiro 2011; Garcia 2010).[9]

4.3 The Right Ad, Right Time, Right Price, and Right Audience

Contemporary online data collection practices have more recently crossed a digital Rubicon. Advertisers are now able to track, buy, and sell an individual in real-time, through what's known as digital ad exchanges. In just milliseconds, a user is subject to an invisible auction process, where advertisers—armed with copious amounts of information on that person—compete in a bidding process for the ability to serve them an ad. Real-time bidding is available for targeting consumers whether they are visiting a website, watching an online video, or using their mobile phone. As one industry executive explained, we now find ourselves unwitting participants in the "Cookie Wars." James Lancelot of Invite Media (now owned by Google), observed that these battles are taking place because "a major shift is happening currently in the industry away from buying 'inventory' and moving towards buying 'audiences.' From a technical perspective, buying audiences means bidding on users, and how you bid on a user is based off of the cookies that have been dropped on that user's computer" (Lancelot 2009). Competition for the "best cookies," in effect (i.e., the prime prospects for any particular good or service), has become fierce, leading to what Lancelot expects will be an even larger consolidation within the digital ad industry—and more exchange and aggregation of personal data as the control over user cookies falls into fewer corporate hands.

Online ad industry consolidation has *already* helped transform the industry, as leading companies positioned themselves in the lucrative consumer online data collection market. For example, Google now operates DoubleClick and Admob; Yahoo acquired Blue Lithium and Right Media; AOL owns Tacoda; WPP took over 24/7 Real Media; Adobe bought Omniture and Demdex; Apple purchased Quattro; IBM acquired Coremetrics and Unica; Akamai owns Acerno; and Microsoft bought aQuantive—to name only a few. There has also been a boom in venture capital investment for both existing and start-up digital advertising companies. Owning a piece of the digital "data ecosystem" is seen as a necessity if companies are to thrive in the interactive advertising era (Ebbert 2011; M&A & Venture Capital 2011; Terence 2010).

[9] For an example of eye-tracking, see Enquiro (2011).

It's not just technology companies or digital marketers like Google that are enhancing their data-targeted assets. Leading global advertising agencies are also buying and selling consumer data for online targeting. For example, WPP's "Zeus Advertising Platform" (ZAP) enables its clients to use advanced data-mining techniques "to track the effectiveness of each individual digital marketing element in the purchase funnel; to identify precisely which factors affect their audience at what times, and if/how they ultimately lead to conversion. ZAP provides a holistic view of *site analytics and campaign data for a comprehensive understanding of every individual consum*er. . . . within many live campaigns that reach hundreds of millions of unique users per month, and the solution is expanding in both data volumes and capabilities" (Netezza 2009).[10] Through the "Zeus data warehouse, advertisers can action consumer and advertising data as well as integrate and action external data. . . . Third party data is layered on top of aggregated user level data. . . to form a record for each user, marrying audience data with performance metrics" (Google Extends VivaKi Partnership 2010; Adnetik 2011; Cadreon 2011; Econsultancy 2011, 76–77).[11]

As a January 2011 report on audience buying platforms explains, "Data has become one of the most valuable commodities in the real-time bidding system. There is a fundamental shift in media buying from buying placements to buying audiences" (Econsultancy 2011, 3). Complex array of data are used for consumer profiling, tracking, and targeting on these "exchange" and "demand-side" platforms. Data collected on an individual, including via behavioral tracking, "intent" data warehouses, and outside databases, are used to determine the value of an individual targeting "impression." In the words of computational advertising company Rocket Fuel, companies can buy "individual impressions of the users that matter most—the ones . . . determined [to] fit [a] customized data-driven audience profile" (Econsultancy 2011, 92).

Among the leaders of this new marketplace are such companies as Admeld, Data XU, the Rubicon Project, Mediamind, and Turn. They are part of the "audience buying" system predicted to benefit from an increase in spending in real-time ad buying from $ 2.2 billion in 2010 to $ 5.2 billion in 2014. But the growing reliance on superfast computers that can constantly track us wherever we are, compile and analyze sets of online and offline data, and then offer us up for sale to the highest bid for ads underscores the urgent need to protect privacy.[12]

Consumers should not be expected to understand the privacy dimensions of a "custom targeting" system that uses wide-ranging data sets to determine "the absolute value of each impression" for an advertiser. How and why should any user

[10] See also Media Innovation Group, http://www.themig.com/mobile/zap.php (both viewed 15 Feb. 2011).

[11] Other ad giants operating their own data platforms or "audience buying" services include Havas (Adnetick), IPG (Cadreon), and Publicis (VivaKi). VivaKi, http://www.vivaki.com/ (all viewed 23 Mar. 2011). In November 2010, Google extended its digital ad targeting partnership with agency giant Publicis and its "VivaKi Nerve Center Trading Desk." They are buying video and mobile ads via Google Doubleclick's ad exchange for data targeting.

[12] Ebbert, "eXelate CEO Zagorski Discusses New DataLinX Platform and Company Strategy."

have to know how a data-targeting "demand-side platform" operates and will affect their privacy and consumer decision-making? (Econsultancy 2011, 10).[13] Even technology-savvy users may be hard-pressed to address the consequences to privacy of automated decision systems able to cull data in a flash of an eye, but online publishers, marketers, and data brokers understand the benefits in better targeting users. They can now "precisely identify and target desired audiences and behavior, without using content as a proxy"; use "Impression-level-bidding [to] make cookie retargeting more scalable and powerful; Execute cross-sell, up-sell and retention campaigns by leveraging customer relationship management databases and third-party data" (Econsultancy 2011, 23).[14]

4.4 BYOBD: Bring Your Own Behavioral Data

New advanced approaches for targeting consumers, such as "demand-side platforms," have not displaced behavioral targeting. The global growth of real-time digital ad exchanges depends on their ability to seamlessly access both online and offline consumer information. To better serve the twenty-first-century digital marketing industry, behavioral targeting warehouses and "co-ops" have been formed. Such services are a kind of data-mining "one-stop-shopping" for online targeting. For example, BlueKai claims to operate "the largest data exchange focused on identifying consumer intent in the advertising world as well as bringing to market the most advanced data management platform available to marketers" (BlueKai 2011d). US-based BlueKai assures prospective clients that they will be able to "access actionable audience data on more than 200 million users" (BlueKai 2011b). BlueKai offers

[13] As Econsultancy describes it, a demand-side platform includes: Connects to multiple inventory sources (e.g., ad exchanges, optimizers), creating a significant pool of impressions; Calculates the value of an impression relative to its characteristics in real-time; Makes decisions on what impressions to bid for and what price to bid for each in real-time; Enables data integration with third-party data providers, agencies, analytics companies and clients; Integrates data, targeting, optimization, analytics, impression attribution, and reporting; Makes the media and data buying process more transparent and efficient; Enables media buyers to manage and optimize their campaigns in real-time though a single interface; Provides better insight into users' behavior and allows retargeting across numerous platforms.

[14] In deciding which advanced online targeting technology company to use, marketers are told they should ask themselves a range of data-related questions, including "Who are their data partners? Is the company able to integrate and manage first-party data as well as third-party data sources? Can you use data from any third-party provider or are you limited to certain providers only? What types of data can the platform integrate, e.g., intent data, unique personal data? Does the platform have predictive targeting. . . capabilities? Are cross-platform buying capabilities (e.g., Facebook, Google Adwords) offered?" Questions that should be asked on "targeting and optimization" include "Is the optimization approach rules-based or algorithmic-based? Are the algorithms static or dynamic? Does the DSP offer real-time assessment, page-level optimization and automated optimization? . . . What targeting approaches does the DSP offer (e.g., demographic, contextual, behavioral, geo-targeting, retargeting, multivariate targeting)?" Econsultancy, "Demand-Side Platforms Buyer's Guide," (p. 33).

marketers the ability to track and target a consumer's financial interests through the sale of their data related to credit cards, mortgages and refinancing, retirement, and other financial service products (BlueKai 2011c).[15]

eXelate, similarly, enables "data buyers [to] build an instant behavioral targeting function and optimize their campaign delivery, while data sellers gain direct control over their audience data distribution. . . ." Its "eXchange includes over 50 top ad network, agency and demand-side platform buyers, and dozens of leading publishers, who deliver targeting data on nearly 200 million US unique users in verticals including Business-to-Business, Auto, Travel, Finance, Shopping, and registration-based Demographics" (eXelate 2011a; b).[16]

Across the world, both established companies and new entrants are now part of a consumer data outsourcing supply chain. So-called "third parties" collect and sell information that can be used by ad networks, audience buying platforms, and other data buyers (Econsultancy 2011). For example, Experian—long known for its credit reports—now operates several corporate divisions focused on online commerce. Experian Interactive collects information on consumers who are interested in a loan or in buying a product through its Lowermybills.com, Pricegrabber.com, and other subsidiaries (Experian Interactive 2011). It also offers marketers real-time data for targeting through its "Audience IQ" product. Consumers are likely unaware that websites using Experian will have data that can "predict the location of the consumer at a resolution that varies from five-digit ZIP Code to household," and that will help generate a "score" based on what is known about their "lifestyle" and "credit" (Experian 2011). Experian is part of a "Data Partner" online marketing system available to advertisers, where data from different sources can be mixed and matched. Little known database companies such as Bizo, Rapleaf, AlmondNet, TARGUSinfo, eBureau, Datalogix, and Acxiom, as well as Bluekai, and eXelate, can be tapped in an instant to help better profile a user.

The combination of all these data used for real-time targeting should be a central focus for the privacy policy debate. Given the consolidation within the online marketing industry, advances in advertising technologies, the growth of new online ad markets (such as Asia-Pacific), and the dizzying data-chain of partnerships and alliances, it is vital for regulators to develop appropriate rules that reflect today's challenges to privacy; however, with the online ad industry largely united in claiming that its profiling practices are based on anonymous data, it is useful to examine how one company compiles targeting information.

Turn is "one of the largest marketing platforms on the Internet." It operates what it says is a "data-driven" ad-targeting platform that "crunches 2000+ behavioral,

[15] http://www.bluekai.com/intentdata_bluekaiinside.php (both viewed 9 Feb. 2011).

[16] How does eXelate collect all these data? As it explains, "All of eXelate's online-based activity data is directly sourced from online publisher partners via tags located on web pages in which consumers interact with relevant content or queries. Via this tag, eXelate is able to drop a 'targeting cookie' which collects relevant activity. . . ." The company uses a consumer's data for targeting that "may be limited to a specific deep action (such as a shopping search, or lead generating auto interaction), while in others, such as age or gender, multiple registration-based data points may be accumulated on the user in the segment".

contextual, inventory, and ad selection variables within 25 milliseconds... all to determine the right ad, right time, right price, and right audience."[17] A recent research paper by Turn discusses how its "data mining solution enables marketers to cost-effectively identify interactions and variables of thousands of data points. It also allows them to look at the entire user profile at the time of impression receipt and do a thorough analysis of the impact of all the variables on a campaign (including latent variables which go beyond the audience segmentation and are often times overlooked)."[18] Turn explains that its "secret sauce" is a "scalable infrastructure [that] enables us to read an individual user's data profile from among hundreds of millions of profiles within a very small time frame, generally 2 or 3 milliseconds. And, we do this over 100,000 times a second (8 + billion times a day)."[19]

In its privacy statement, Turn notes that it "does not collect PII," while saying it collects the following non-personal information: "... the IP address used to access the Internet, the type of browser used, which and how many Business Partner web pages have been viewed, search terms entered on Business Partner websites, referring/exit pages, and the date and time a Turn Ad was viewed."[20] In its discussion of the use of cookies and Web beacons, the company claims that such tracking and analysis isn't personally identifiable. But Turn's claim that it's targeting is all based on non-PII data needs to be evaluated by what its "data partners" can provide (as well as its own pronouncements concerning its ability to track and target an "entire user profile"). Turn uses Bizo, IXI, TARGUSinfo, Polk, Datalogix, Almondnet, Bluekai, and eXelate for its data operations.[21] The data provided by a single partner of Turn, let alone the impact of its combination, should raise questions about whether regulators—and the public—should accept the claims that all this information is "anonymous and innocuous."

Bizo, for example, provides "business demographics of a person that may include, but is not limited to job function, seniority, company size, industry, geography, etc" (Bizo 2011). IXI's digital ad data enables online marketers to "target only the consumers that have the right financial profile for each offer and brand.... [with] real-time user classification capabilities.... [that] ranks online consumers based on their expected ability to pay their financial obligations... [and] provides a powerful, complete and accurate estimate of your prospects' and customers' total household income... [along with an] estimate of a household's spending after accounting for the fixed expenses of life (housing, utilities, public transportation, personal insurance and pensions)" (IXI Corporation 2011a, b, c). TARGUSinfo's

[17] Turn, "Turn Media Platform Overview," http://www.turn.com/?p=3055; Turn, "The Ingredients of Our Secret Sauce: Part 1," http://www.turn.com/?p=5973 (both viewed 15 Feb. 2011).

[18] Turn, "Mining Data for Digital Advertising," http://www.turn.com/?p=4014 (viewed 15 Feb. 2011).

[19] Turn, "The Ingredients of Our Secret Sauce: Part 1."

[20] Turn, "Site Privacy Policy," http://www.turn.com/?page_id=534 (viewed 15 Feb. 2011).

[21] Turn, "General Info," http://www.turn.com/?page_id=532; Turn, "Info Collection & Use," http://www.turn.com/?page_id=536; Turn, "Site Privacy Policy"; Turn, "Data Partners," http://www.turn.com/?p=1392 (all viewed 15 Feb. 2011).

data include "names, addresses, landline phone numbers, mobile phone numbers, email addresses, IP addresses and predictive attributes" (continually updated "10 times daily").[22] TARGUSinfo also facilitates the collection of "audience targeting data high-quality, offline attributes—including demographics, shopping behaviors, lifestyles, preferences and brand affinities—that are verified. . . to accurately identify Internet users and link them to attributes—such as demographics, buying behaviors and attitudes—in a real-time. . . manner. . . . enabling you to target the most relevant ad to every user regardless of location or media buying methodology."[23] "AdAdvisor services use cookies that give you a window to rich, predictive data on **over 50 million unique US users**."[24] Polk provides "consumer detail (e.g., age, household income, gender), phone numbers, email addresses," along with "comprehensive customer profiles with unique automotive variables. . . . The number of registered vehicles in a household, When a household will likely be in the market for their next vehicle purchase, How much will likely be spent on the next vehicle purchase," and "reliable and extensive ethnic data including those with the highest levels of purchasing power—Hispanics and Asians" (R. L. Polk & Co. 2011a, b).[25] Datalogix, "a source for real-world data for online targeting," uses "tens of millions of . . . Affiniti Cookies to support online targeting" (Datalogix 2011b, d). "DataLogix' audience platform is powered by a database with over $ 1 trillion dollars in consumer spending behavior" (Datalogix 2011a). "Available data spans hundreds of product categories and a host of recency, frequency and monetary value data elements" (Datalogix 2011c). AlmondNet "partner(s) with Data-Owners & Media-Owners to facilitate the delivery of relevant, targeted (based on recently-conducted searches for products/services) ads to consumers wherever they go. . . ," ". . . based on their observed online behavior wherever they may be found" (AlmondNet 1998, 2010). We've already discussed the data collected and sold by both BlueKai and eXelate, which can be configured for Turn's targeting mix. Only a semantic revisionist specializing in Orwellian "Doublespeak" could claim this aggregation of information on a single user is somehow striking naively in the dark!

4.5 Subprime Data

The debate about privacy online has primarily focused on how data are collected from a user without their informed consent—and less about how all that information is ultimately used. Some in the online ad industry claim that their data collection

[22] TARGUSinfo, "About Us: Our Data," http://www.targusinfo.com/about/data/ (viewed 15 Feb. 2011).

[23] TARGUSinfo, "Solutions: On-Demand Scoring: Display Advertising Optimization," http://www.targusinfo.com/solutions/scoring/optimization/default.aspx (viewed 15 Feb. 2011).

[24] TARGUSinfo, "Solutions: On-Demand Scoring: Advertisers," emphasis in the original, http://www.targusinfo.com/solutions/scoring/optimization/advertisers.aspx (viewed 15 Feb. 2011).

[25] "Targeted Marketing Lists," http://usa.polk.com/Industries/Media/Communicate/TargetMkt/ (viewed 10 Feb. 2011).

practices are relatively harmless, and merely about providing a consumer with more relevant advertisements. Such arguments fail to acknowledge the real-world implications to our personal lives of digital data collection, as we increasingly rely on the Internet and mobile devices to engage in key transactions. Already, major business models for digitally delivering a wide range of financial products have been developed, including for loans, credit cards, and mortgages. During the height of the housing boom in the US, from 2005 to 2007, online mortgage services companies Countrywide Mortgage and LowRateSource increased their online spending (from $ 18.3 million to $ 35.5 million and $ 17.9 million to $ 51.7 million, respectively). Four mortgage or financial services companies were in the top five on online ad spending in August 2007. Consumers were unaware of the role played by behavioral marketing and online lead generation (where a lead or prospect is identified as a target for a financial product) in the marketing of subprime mortgages. To date, the part played by online marketers in what became the global economic crisis has not received the proper scrutiny (Chester 2009).

Consumers, who were victimized during the subprime mortgage era, or those who were sold unaffordable loans for education, should not have to remain vulnerable to new forms of database marketing that combine offline and online data. For example, in a new partnership involving eBureau and BlueKai, they explained,

> Through this partnership, marketers are no longer forced to make a tradeoff between precision and scale. Because eBureau Custom Audiences are built using tens of thousands of predictive factors to identify ideal customers and new prospects, the addressable audience is dramatically larger than a simple demographic approach. To build a Custom Audience, a marketer defines their customer profile, using input from their historical performance data, customer lists or demographic and/or psychographic criteria. eBureau's predictive analytics platform amasses the client data with eBureau's extensive amount of offline data to define the marketer's unique target market. The results are distilled into a single, custom targeting attribute representing the Custom Audience and made available only to those clients through the BlueKai Platform. (eBureau and BlueKai Partnership Provides New Level of Targeting Precision at Scale for Digital Advertisers 2010)

Drug companies increasingly take advantage of online data collection for the promotion of branded pharmaceuticals for serious illnesses, which also illustrates privacy and consumer protection concerns. Digital marketers tell drug companies they can help manage the "online patient journey," as well as influence prescribing by medical professionals, to spur the demand for branded pharmaceuticals and medical treatments. New forms of "'condition' or 'disease' targeting" are now part of the behavioral advertising's arsenal (Center for Digital Democracy and U. S. PIRG 2009b; Center for Digital Democracy, U.S. PIRG 2010, Consumer Watchdog, and World Privacy Forum 2010).

4.6 Targeting Hits the Road: Mobile Behavioral Profiling

Many of the same consumer data collection techniques that have raised privacy concerns on the Internet have also been brought into the mobile marketplace. Mobile devices, which know our location, are being turned into portable behavioral

tracking and tracking tools (Center for Digital Democracy and U.S. PIRG 2009a; Velti 2011).[26] By combining behavioral tracking with our location, digital marketers can promise advertisers that they can influence a consumer regardless of where they happen to be at any given moment. Campaigns are increasingly designed to shape what's called "The New Shopper Journey," including tracking how digital marketing can help move a consumer to a store or make a purchase, document what has been bought (such as through the encouragement of using mobile barcodes to gather price or product information), and then use a range of digital applications to convince them to repeat the process. Mobile marketers are also able to take advantage of social media, offering discounts, coupons, and incentives when users encourage their friends to visit commercial establishments they have "friended" or otherwise endorsed. Left unsaid to mobile consumers, however, is that the data collected about their location and habits can be added to their data profile and sold in real-time to the highest advertising bidder (Constine 2011; Heine 2010; PSFK 2011; Microsoft 2011; Mobclicx 2011).

Mobile marketers have already deployed a dizzying array of targeted marketing applications, involving so-called rich media, mobile video, and games. They have developed an array of standardized techniques designed to foster a user to "opt in" for data-driven advertising and other services, through such formats as "Click-to-video: click initiates an advertiser's video commercial for a product or service; Click-to-SMS: click initiates an SMS for a user to send a keyword to a shortcode to request more Information; and Click-to-storyboard: click transitions to a second interstitial ad (which itself may provide additional actions)" (Mobile Marketing Association 2011).

Mobile advertisers are working together to develop innovative multi-media services that can lure a user into consenting for their information to be used. For example, the recently created Open Rich Media Mobile Advertising (ORMMA) initiative is setting a new standard for the creation and delivery of interactive mobile marketing applications that have a direct impact on privacy (Google 2011c).[27] Helping fuel

[26] As mobile marketer Velti noted in a filing for the U.S. Securities and Exchange Commission, according to ABI Research, mobile marketing and advertising spending is expected to increase from $ 1.64 billion in 2007 to nearly $ 29 billion in 2014. Unlike other media platforms, mobile devices cover a very large installed base and enable access to consumers virtually anytime and anywhere, allowing real-time interaction and engagement. By using a mobile device, campaigns can be further targeted to consumers based on interest, demographic profile, and behavioral characteristics, thereby enabling brands, advertising agencies, mobile operators, and media companies to effectively engage consumers in interactive, measurable advertising, and marketing campaigns. Measure the consumer engagement. Unlike other media platforms, the mobile device is used by the consumer more frequently and over longer periods, providing greater opportunities to generate data on where, when, and how a consumer responds to a marketing or advertising message. Brands, advertising agencies, mobile operators and media companies can leverage this data to motivate a specific consumer action (e.g., a product purchase) at critical moments (e.g., when choosing between products) or at a distinct location (e.g., a nearby retailer).

[27] As the new collaborative project explains, "Mobile Rich Media ad units are mobile compatible ad units with various measurable, interactive options which drive greater brand engagement and messaging across to end-users compared to basic banner ads. . . . Optionally, the ad unit can capture

the growth of mobile marketing is considerable investment from companies such as Google and Apple, which recently acquired leading mobile ad networks (Takahashi 2010; Wojcicki 2010).

4.7 Surveillance on Social Media

Social media marketing has developed as an extensive but too little scrutinized digital data collection apparatus. Companies such as Facebook suggest that somehow consumers of what they call the "social web" operate with a different set of expectations for privacy. As Facebook recently explained to the Obama administration's Internet Policy Task Force, "certain aspects of the social web... exist precisely because people want to share rather than limiting the sharing of their information to others.... [I]mposing burdensome privacy restrictions could limit Facebook's ability to innovate, making it harder for Facebook to compete in a constantly evolving industry" (Facebook 2011a).

Facebook has been continually pressed to improve privacy practices—especially given its strategy of pushing the limits of using member data. Since the introduction of its now well-known "Beacon" and Facebook Advertising programs in 2007, the social networking leader has been engaged in extensive data mining of its users for advertising purposes (Facebook 2007). Facebook reportedly made $ 1.86 billion from advertising in 2010 (and that excludes revenues from sales of virtual currency) and delivered 1 billion ads on its platform (O'Dell 2011). That's one reason why Facebook is currently expanding its already five-football-field-large data center in the US, and is expanding its Dublin-based EU operations (Letzing 2011, Facebook 2011b).

There are now a host of techniques for "social media marketing" designed to elicit data from users of Facebook and similar sites. New sophisticated "enterprise intelligence" applications have already transformed the nature of marketing and data collection, enabling companies to develop and fine tune far-reaching social media campaigns in real-time. Dozens of companies, with names like Buddy Media, Radian 6, and Rapleaf, vie to provide leading global brands the ability to identify and target the hundreds of millions of users. Techniques have been perfected to identify what are called key "influencers"—individuals whose comments have an impact on the point of view—and buying habits—of many consumers. Algorithms are generated that help target the "influential nodes on networks" and provide the basis for predictive modeling to further implement social media campaigns. New forms of "social contagion" that promote the interests of advertisers are part of this still largely stealth work of the digital marketing industry. Determining the economic value of a Facebook user—especially one considered a "fan" of a brand—is now the subject of research by Nielsen and others. Companies such as Pepsi have established

information from the end-user to continue engagements at other times or via other media.... [and] can be dynamically composed so the ad content is targeted to the end-user".

social media "command centers" that operate around the clock monitoring consumer "buzz" about their products, with the ability to respond in real-time to either positive or negative sentiment (Sinan and Walker 2010; Gibs and Bruich 2010; Leskovec 2011; Ostrow 2010).[28]

While Facebook regularly touts its interest in protecting user privacy, its continual changes to its user interface are designed to harvest greater amounts of member data. For example, the Facebook Marketing Bible recently explained how advertisers can take advantage of the data available via Facebook's recent "user profile" redesign:

The December user profile redesign leads users to provide more personal information which can be targeted through Facebook ads.

Previously, personal info was only shown in the secondary Info tab, meaning users and their friends rarely saw it during typical browsing. Users would often go months or years without updating their information to reflect changes in location or employer. Others who only entered the required name, gender, email, and date of birth when signing up for Facebook had little to encourage or remind them to list additional information.

Accurate and plentiful personal information allows advertisers to target users with more relevant ads. Here are the ways in which the new redesign coaxes additional information out of users:

- The Profile Info Summary makes personal info more visible to a user and their friends;
- Users see prompts to add missing information on their own Profile Info Summary;
- The Featured Friends panel prominently displays a user's significant other and family members;
- The enhanced Work and Education section encourages users to add their employers and schools;
- The Likes and Interests section now shows images for each Like;
- The new "Sports You Play" Likes category could become a targeting parameter in the future.

Users can now list additional information about their work, such as projects they've undertaken and friends who helped them, and about their education, such as classes and classmates. This information can be a strong indicator of socioeconomic class (Facebook Marketing Bible 2011). Few users—or regulators—however, are informed about how such changes permit Facebook and its partners to take greater advantage of the wealth of data for marketing purposes (Constine 2010; Kontagent 2011; Refresh Partners 2011).[29]

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[28] Webtrends, "Analytics," http://www.webtrends.com/Products/Analytics/Facebook.

[29] Social media users are also tracked based on data collected on them that measures their "Viralocity," (viral coefficient), whether they are "social influencers," "daily active users," and other social engagement metrics. One technique used by Facebook and its advertisers to elicit data is "incentivizing social action with rewards." Such techniques can use third parties to install "tracking pixels" on a Facebook page, which "automatically contact and rewards users when pixels are triggered or activity is observed".

Increasingly, marketers are merging insights gathered via behavioral targeting and analysis of users' social media actions. For example, Adobe's Omniture SiteCatalyst, which offers BT tracking, now incorporates a range of "social media analytics" for Facebook marketers, so they can "gain deeper insights into user behavior" and "understand how apps 'go viral' amongst. . . users" (Smith 2010).

4.8 The Limits of Self-regulation and Voluntary Codes

The threat to privacy of consumers and citizens throughout the digitally connected world grows daily. In the US and the EU, digital marketers have banded together to offer various self-regulatory plans designed to blunt new regulatory safeguards (Dixon 2007).[30] The IAB on both sides of the Atlantic have offered a new self-regulatory system using graphical "icons" to inform online users that data are being collected. The real goals of such a program is to offer a set of self-regulatory privacy principles and an "opt-out" scheme that will blunt the growing support for serious reform designed to protect Internet privacy (EU has Trouble Digesting New Law on Internet Cookies—IAB Europe Offers Solution 2010).

Online advertisers have engaged in self-regulation for more than a decade, with little success. Over the last few years, there have been growing calls by Congress, the FTC, and the public at large for new legislation or rules to regulate commercial online data collection. Sensing that they were losing the battle for digital "hearts and minds," and that the growing concern over privacy threatened their economic self-interest, online advertisers came up with yet another self-regulatory approach. The "Self-Regulatory Principles for Online Behavioral Advertising," offered in 2009 and developed in the US by the IAB and others, has breathed new life into the industry's efforts to oppose new regulation (Interactive Advertising Bureau 2009). Among its more prominent flaws is a failure to protect sensitive information, including data related to finances, health, and families. The woefully inadequate "Sensitive Data Principle" reflects the narrowest range of sensitive information, requiring consent "for the collection of financial account numbers, Social Security numbers, pharmaceutical prescriptions, or medical records about a specific individual for online behavioral advertising purposes" (Interactive Advertising Bureau 2009, 4). The principles likely embraced such a limited definition of sensitive information in order to ensure that consumer data can continue to be collected without consent for the online marketing of financial and health products (as well as from adolescents, racial/ethnic groups, and others who rightly should have their information classified as sensitive). Online marketers in the US spent some $ 1 billion targeting online users seeking medical condition and health-related information last year, and more than

[30] Research conducted by the World Privacy Forum on the Network Advertising Initiative (NAI), the US self-regulatory group created in 1999 (and whose members include Google, Microsoft, and other leading players), has documented the limitations of its approach. See also Network Advertising Initiative, "About the NAI," http://www.networkadvertising.org/about/ (viewed 24 Mar. 2011).

$ 2 billion for financial digital advertising during the first half of 2010 alone (Interactive Advertising Bureau 2010b).

Evidon (formerly "Better Advertising"), which implements the new self-regulatory program for the "Digital Advertising Alliance" (the group of marketing trade associations backing the icon plan), says it has created the equivalent of a nutrition food label for online privacy. But, in reality, it is as if that soup label failed to inform a consumer about the salt, fat, and additive content used to make the product. The new self-regulatory approach relies primarily on a triangulated graphical icon that appears on display ads and is called "Ad Choices." The icon generates no information on the actual techniques used to collect data, leaving a user to wonder what it might actually mean to their privacy. The system also fails to address how it can ensure that a consumer will even notice the icon, while they are likely purposefully distracted with various interactive design techniques (such as rich media, online video, and the like). As the Evidon site illustrates, when users click on a Bank of America ad, they first read the following: "This ad has been matched to your interests. It was selected for you based on your browsing activity." A further click of the overlay generates the following headline: "how data powers your experience" (Evidon 2011b).[31]

If a user seeks to learn from Evidon "How Interest-based Advertising Works," one sees a presentation that does not comport many of the techniques used for behavioral and digital marketing nor does the section candidly discuss the privacy and consumer protection concerns. Instead, Evidon uses sanitized statements such as "Some companies collect data and sell it to other companies; being familiar with company privacy policies helps people protect their privacy. . . . Companies usually provide their own opt-out mechanisms through their web sites. A good place to start is a company's privacy policy" (Evidon 2011c).

If one links to Evidon's section on participating data company BlueKai, a consumer initially sees a description lifted out of obtuse privacy policies: "BlueKai operates an auction based, online data exchange. . . connecting advertisers to ad networks and data aggregators (online and off). . . [which] collects data from online publishers and provides data to advertisers directly or via exchange. . . ." (Evidon 2011a). For those determined to proceed to declare an ad preference, one has to click to learn what profiling categories one was placed in, in order to decide whether to edit them. But missing from this new self-regulatory system are any of the details a company such as BlueKai actually tells its customers—which is a description a consumer deserves to be told. A consumer would learn directly that by using BlueKai, "For the first time in history, advertisers can target individual consumers independent of their media choices. . . ." (BlueKai 2011a). BlueKai provides ". . . the single, largest source of Intent data qualified by in- market actions and keyword searches in the world. It is real- time data from top tier websites with unique access to purchase, shopping comparison, and product research behavior from their users. . . ." (BlueKai

[31] See also The Self-Regulatory Program for Online Behavioral Advertising, "Welcome to the Online Home of the Self-Regulatory Program for Online Behavioral Advertising," http://www.aboutads.info/ (viewed 24 Mar. 2011).

2011c). With access to "[m]ore than 30,000 data attributes," moreover, "... a marketer defines their customer profile, using input from their historical performance data, customer lists or demographic and/or psychographic criteria" (BlueKai 2010).

A similar set of principles and self-regulatory practices have been deployed as well in the European Union, but like their American cousin, marketers in the EU offer a purposely sanitized fairy-tale version of their "online behavioral advertising" practices. Although many leading companies, including Google, Microsoft, and the aforementioned Blue Kai, signed the 2011 "Transparency and Control for Consumers" document, the same purposefully disingenuous claims offered by US digital marketers are echoed. Online behavioral advertising, the IAB EU claims, is really only about providing the consumer "advertisements on the websites you visit and making them more relevant to your interests." Little or nothing is said about the actual data practices, including information gathered via social media or through neuromarketing tactics, that would actually encourage a consumer to opt-out of targeted marketing. Despite the admirable framework established by the EU protecting data privacy, marketers such as Google continue to tout their ability to track and target EU consumers across the Internet. New forms of self-regulation have not damped the growth of data exchanges in the EU selling users in real-time to advertisers (Cole 2011; Durrani 2011; IAB Europe 2011).[32]

Research on the new self-regulatory system already indicates that few consumers ever proceed with opting out, illustrating its ineffectiveness (Marshall 2010; RESEARCH: Consumers Feel Better about Brands that Give Them Transparency and Control Over Ads 2010). "The pilot test data shows that consumers want to learn more about behavioral advertising but that only a small percentage, once informed, will change their preferences," explained Fran Maier, president of the self-regulatory privacy group TRUSTe. "This low rate of preference change indicates that an effective ad notice may actually increase trust without any negative impact on advertising revenues" (Consumers Find Behavioral Advertising Choices Compelling with TRUSTe TRUSTed Ads Privacy Platform 2010).[33]

But US online marketing companies are worried about the potential impact of the EU's growing consumer privacy framework, including requirements from the new E-Privacy Directive. Google, Microsoft, and Facebook, among others, have proposed that the US engage in negotiations with the EU on consumer privacy that will lead to a revamped "safe-harbor" regime (NTIA 2011). What US online marketers hope to achieve is a new treaty that creates a "separate, but equal" privacy regime, enabling them to conduct business in the EU as unfettered as possible by rules on data collection. This approach argues that if the US enacts a federal privacy law—even a

[32] "Your Online Choices," http://www.youronlinechoices.eu/; For a regular report on online ad exchanges in the EU, see ExchangeWire, http://www.exchangewire.com/ (viewed 5 July 2011).

[33] "Consumers Find Behavioral Advertising Choices Compelling With TRUSTe TRUSTed Ads Privacy Platform," Marketwire, 16 Nov. 2010, http://www.marketwire.com/press-release/Consumers-Find-Behavioral-Advertising-Choices-Compelling-With-TRUSTe-TRUSTed-Ads-Privacy-1354242.htm (viewed 16 Feb. 2011).

weak one relying on self-regulation and those twinkling icons—it should be treated as the equivalent of the civil liberties-based EU system (Kennard 2010).[34]

US online companies are especially concerned about the data privacy framework to be chosen for the vital Asia-Pacific region. Throughout Asia, there is a growing population of youthful online users who have enthusiastically embraced mobile phones, social networks, and videogames. Marketers hope that any cross-border data protection agreement made by the Asia-Pacific Economic Cooperation (APEC) economic forum will rely more on the US than on the EU approach to privacy (Asia-Pacific Economic Cooperation 2010; Schweizer 2010).

For many US privacy advocates, the Obama administration has a crucial responsibility to ensure that it respects and supports the EU data framework; that it leads the development of privacy safeguards for the US that match or exceed what has been articulated by the EU; and that it plays a leadership role supporting a privacy policy regime for the Asia-Pacific market that reflects the highest possible standards for consumer privacy protection (Center for Digital Democracy and US PIRG 2011).

But just as during the 1990s, when the online marketing industry initially opposed consumer privacy rules at the FTC, digital advertising companies claim that enacting appropriate privacy safeguards will (as Google puts it), "thwart the ability of companies to develop new services and tools, and in turn make US Internet companies less competitive globally and make the Internet a less robust medium. . . . [A]n anti-innovation framework would counterproductively choke off the development of new tools and services to protect personal privacy" (Google 2011a). The facts—as Google undoubtedly knows—show this not to be the case. First, online marketers did not build serious privacy and consumer protection safeguards into their online marketing products. All the innovation has been, and continues to be, focused on expanding the data collection, profiling, and targeting of users across multiple platforms and applications. Google, Yahoo, Microsoft, ad agencies, and digital marketing companies have significantly invested in creating new forms of digital data collection and new ways to measure it.

Can the digital marketing "ecosystem," as online advertisers have called it, be transformed so it balances the interests and rights of consumers and citizens while it also expands its data collection capabilities? Right now, there are few regulatory or practical impediments to a system that requires people to share greater details about themselves. The lures of technological innovation, entertainment, and convenience—as well as the economic and political clout of the global marketing business—will make truly protecting our privacy a formidable endeavor. But much is at stake, including preserving individual autonomy and assuring freedom of expression, in the outcome of this debate. A new level of candor is required from digital marketers, where they readily identify all the data collection techniques now hidden from the public. Until that time, the citizens and consumers who now rely on the Internet as an essential part of their daily lives will be the unwilling victims of the "Cookie Wars" (Bartz 2011; Interactive Advertising Bureau 2007).

[34] See, for example Kennard (2010).

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