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Online Advertising, Identity and Privacy

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THE LAW SCHOOL
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Online Advertising, Identity and Privacy

*Randal C. Picker**

We are in the midst of two large related shifts in our computing platform both of which are tied to identity. The first shift, which often travels under the name Web 2.0, is fundamentally about what we use computers to do. We have moved from creating documents in Microsoft Office to living life online: searching on Google, buying and selling on eBay, hanging out with our friends on mySpace and Facebook, watching the newest viral video on YouTube or blasting out tweets on Twitter. These new intermediaries sit at the crossroads of the matching and coordination that define how we use the Internet today. The second shift, often called cloud computing, is more about a change in the organization of the fundamental processes of computing—computation and storage—with some overlap with the Web 2.0 shift. Instead of storing my email on my laptop, I will just outsource storage and store it with Google or another cloud-service provider. I won't have an email product resident on my computer; instead, Google will provide an email service through a Web browser.

These shifts have one key point in common: the possibility of creating prodigious amounts of data about end users. Those intermediaries—Google originally but increasingly Facebook as well—have access to extraordinarily detailed information about their customers. In Google's case, that information is tied most directly to the web browser on my computer. Not my identity directly, but the window through which I visit websites. Not me as me but instead browser-me. My use of Google and other websites

* Copyright © 2008-09, Randal C. Picker. All Rights Reserved. Paul and Theo Leffmann Professor of Commercial Law, The University of Chicago Law School and Senior Fellow, The Computation Institute of the University of Chicago and Argonne National Laboratory. I thank the John M. Olin Foundation and the Paul H. Leffmann Fund for their generous research support. I also thank Microsoft for funding that supported this work.

tied into Google's advertising infrastructure creates a rich picture of me for Google, or more precisely, of whomever is surfing the Internet using the browser identified to my computer.

Many of these services—eBay, Facebook and Twitter—require an online identity for use and others often work better if an identity is established. Cloud computing services also depend on identity: if I store my email remotely, I need to be able to identify myself to see my email (and not your email) and to make sure that you can't read my email. This doesn't need to be actual me, but I need to be represented by a consistent authenticatable identity. And if we introduced payment for these services, then we have to tie that identity to an online payment means and that will often get us back to actual me. These cloud-service providers will also have available to them a rich datastream that arises from their customer's activities. This combination of identity and an ongoing stream of interactions with remote computers make it possible for service providers to know a great deal about me. My direct revelation of information coupled with information revealed during identified use creates a rich information profile about me or at least about my online identity, my avatar me as it were.

That information can be used to improve their core businesses—adding collective intelligence to search to increase relevance—and to finance—through advertising backed by rich databases that allows ads to be matched to individual customers—virtually any content or service that can be provided through a screen. The advertising that supports much of the content on the Internet is more valuable if it can be matched to my actual interests, and the flexibility of the web in delivering content means that web advertising is increasingly tailored advertising, or so-called behavioral advertising.

We seem to be in the midst of a perhaps defining change in how we pay for content. The change is driven by the technology of the Internet, and that technology matters in two important ways, first in the way that it changes the ease with which content can be copied and distributed and second in the way that advertising can

be matched to content and individuals. The first change has weakened the integrity of the copy as a means of organizing paying for content. An individual possessing a digital copy of a song can distribute it around the world in an instant without any payments for the content at all. If copies cannot be sold reliably, we will need to switch how we finance the underlying creative works. One way to do that is to pay for those works using advertising, just as we have done in the U.S. with broadcast TV and radio.

The second change is the way in which online advertising can be matched with content and with the person reading it. This is ad personalization or—different phrase—behavioral targeting. When two people read a news story on MSNBC.com, there is no reason that they need to see the same ad. If I was looking at Honda's website five minutes before visiting MSNBC's site, it probably makes sense to show me a car ad, but if you just bought a car, you should see an ad for something else. Ad personalization depends on information about the individual reading the story. That information could arise from any number of sources, but the clickstream that we create as we surf the Internet probably presents unrivaled access to information about us. And again the more that I use online services through a particular identity the more information the identity provider will have about me to support that advertising.

How we choose to regulate these datastreams is the central regulatory issue of the emerging computer infrastructure and we are at an early stage in that regulation.¹ Our choices here obviously

¹ Early steps include two interpretations of the European Union's Data Protection Directive (95/46/EC) by the Article 29 Data Protection Working Party created pursuant to the directive. See Opinion 1/2008 on data processing issues related to search engines, April 4, 2008 (online at http://ec.europa.eu/justice_home/fsj/privacy/docs/wpdocs/2008/wp148_en.pdf) ("Article 29 Search Engine Opinion") and Opinion 5/2009 on online social networking, June 12, 2009 (online at http://ec.europa.eu/justice_home/fsj/privacy/docs/wpdocs/2009/wp163_en.pdf) ("Article 29 SNS Opinion"). See also Federal Trade Commission, Self-Regulatory Principles for Online Behavioral Advertising, February, 2009 (online at <http://www.ftc.gov/os/2009/02/P085400behavadreport.pdf>) ("FTC Behavioral Ads

have privacy consequences but also for how much competition will emerge. These are tightly linked. In the past, we have regulated intermediaries at these transactional bottlenecks—banks, cable companies, phone companies and the like—and limited the ways in which they can use the information that they see. Presumably the same forces that animated those rules—fundamental concerns about customer privacy—need to be assessed for our new information intermediaries.

In doing that, we need to be acutely aware of how our choices influence competition. An uneven playing field—allowing one firm to use the information that it sees while blocking others from doing the same thing—creates market power through limiting competition. And privacy rules that limit how information can be used and shared across firms will artificially push towards greater consolidation, something which again usually works against maintaining robust competition.

Section I of the paper briefly sketches the emergence of the new Web-based computing platform. Section II focuses on how datastreams arise as we switch from computing products to computing services. That switch need not give rise to a change in how detailed consumer use information is handled, though so far, it clearly has done so. The ability of these datastreams to be leveraged across products suggests that, to pick the most prominent example, Google can scale up its services in a substantial way. Indeed, if you take Google's mission statement seriously—"to organize the world's information and make it universally accessible and useful"—this is exactly Google's plan.²

Report"). On June 18, 2009, the U.S. House of Representatives also conducted extensive hearings on behavioral advertising (online at http://energycommerce.house.gov/index.php?option=com_content&view=article&id=1678:energy-and-commerce-subcommittee-hearing-on-behavioral-advertising-industry-practices-and-consumers-expectations&catid=129:subcommittee-on-commerce-trade-and-consumer-protection&Itemid=70) ("House Ad Hearings")

² See Google Corporate Information, Company Overview (online at <http://www.google.com/corporate/>).

Section III discusses the way in which the rise of the Internet is disrupting the prior business model for selling content through its destruction of the integrity of the copy. This is forcing a move away from selling copies towards attaching advertising to content that will be distributed for free anyway. As we move to relying on advertising, content itself will change. Section IV of the paper plays through a simple model of advertising as matching. It demonstrates in a simple framework that sellers will do too little advertising and buyer advertising—voluntary disclosures of information—helps to push closer to the socially-desired level of advertising. Technologies that reduce the cost of matching buyers and sellers—think eBay, Craigslist, Facebook and Google and other search engines—make buyers and sellers better off as they improve the likelihood of making a successful match. Finally, Section V offers a more detailed examination of the institutional features of online advertising, identity and privacy.

I. The New Computing Platform: Web 2.0 and the Cloud

We are once again changing how we use computers. In the past, we moved from mainframes to mini computers to freestanding personal computers. That was a powerful shift in control and organizational structure. Mainframes were rare and were treated as such, tended to with loving care and serviced by a small caste of computing priests. PCs, in contrast, were everywhere: on every knowledge worker's desk and eventually in the family room of many homes. Full decentralization. In the PC age, the computer desktop was the most valuable real estate around, and, for most people, that meant Microsoft Windows.

We should start with desktop computing before the emergence of the Internet. Microsoft Office—Excel, Outlook, PowerPoint and Word—set the standard for desktop productivity tools. These were the tools that we used to create documents that resided on the hard disks in our desktops or laptops. Outlook was used to manage calendar, contacts and email. The CPUs in our computers churned

away to do the calculations in an Excel spreadsheet or to format a document in Word. These documents were then distributed, on paper or via email, to be read by the recipients.

Now think about what you use your computer for today. In this new era, we might think of matching and coordination as being the defining tasks we expect software to perform. eBay is explicitly about creating a marketplace to match buyers and sellers. Craigslist matches everything under the sun: buyers and sellers to be sure and job seekers galore, but also personals and house swaps, lost and found items and rideshares. Social networking sites like mySpace and Facebook match individuals to define old and new social networks. Google matches people looking for content with the websites where that content is stored. And Twitter has emerged as a micro-blogging platform or more of a connected micro-broadcasting format. Individuals subscribe to the tweets—140-character messages—of people that they find interesting and can in turn send out tweets to individuals who have signed up to follow them.

This is the emergence of a new class of online intermediaries. They typically operate over the Internet through a Web browser. They can charge transaction fees like eBay or charge for a job posting like Craigslist. Given the number of pageviews that take place, the intermediary can support all of the content with advertising as Google does. Given the ready ability to match advertising with content, a platform that generates pageviews is a valuable media property.

But there is more. The intermediary has the ability to see what is happening with every click and this creates an incredibly rich clickstream.³ eBay may be able to figure out whether I am more of a Cubs fan than a White Sox fan and how much I like Pokémon. Google has an even deeper knowledge of my interests, as I search far more often than I buy or sell on eBay. Google stores cookies on the computers of individual users and through the cookie

³ John Battelle, *The Search* (Portfolio, 2005).

accumulates information about my interests. In Google's case, for the most part, Google's information about me is associated with the particular browser that I use.

Visit Google in two different guises, first using your standard browser and then again using a virginal browser.⁴ For me, I use Google Chrome as my basic browser; I never use Opera—or opera for that matter—except to run tests. The Google Opera-version of me, in Sergeant Schultz like fashion, knows *nothing*: no interests are listed for me and the browser reports that no doubleclick.net “id” cookie is installed for Opera-me. In contrast, Google believes that Chrome-me is interested in business; finance and insurance; news and current events: newspapers; and so on and a very lengthy cookie is associated with Chrome-me browsing.⁵

But search is the core of Google's business but search need not rely on identity to be useful. Google's original approach to search focused on links across websites to assess relevance. Search also is fundamentally a law-of-large-numbers business: the search engine knows how to respond to your request based on how other searchers have responded to similar requests in the past. The search engine can learn what is and is not relevant based on the clicks it observes. That need not be tied to identity at all. Google does offer a version of personalized search tied to identity which promises to deliver tailored results based on past search and sites visited, but that requires a Google separate account and you need not have one to search on Google.⁶

But many Web 2.0 products turn on identity. Not Opera-me or Chrome-me, but directly on me me. Facebook and Twitter are social networking programs, meaning that at their heart they turn

⁴ Go to <http://www.google.com/ads/preferences/>.

⁵ Google makes clear that while its customers can opt out of receiving interest-based ads, opt-out is specific to a particular browser. If you use a different browser, you will need to opt out again for that browser. See Google Advertising Privacy FAQ, How does Google use cookies to serve ads? (online at http://www.google.com/privacy_ads.html#toc-faq).

⁶ www.google.com/psearch.

on one-by-one direct links between users, Facebook's home page states that "Facebook helps you connect and share with the people in your life." That is exactly what it does. On Facebook, I have direct links with my friends. A potential friend sends me a request to validate that status. If I do so, I then see updates about my friend's life. Facebook has a dashboard of controls that let you calibrate exactly how much information you broadcast to your connections and to the world at large. For friend status, Facebook operates on an opt-in basis: you aren't my friend unless I say that you are. Facebook has also expanded its privacy controls to make it possible for users to calibrate more finely exactly how their information is revealed.⁷

Twitter has a different approach to connections. Twitter is the leading "microblogging" service or as Twitter puts it, "a service for friends, family, and co-workers to communicate and stay connected through the exchange of quick, frequent answers to one simple question: What are you doing." Users blast out tweets in 140-character units to their "followers." Followers must opt in—I can't force you to pay attention to me—but you can follow me without my permission (though I can subsequently block you if I really don't want you following me). This makes the service asymmetric and in some notable cases highly so. Ashton Kutcher (aplusk on twitter)—I could tell you who he is but I would have to Google him to be sure—has over 2 million followers, while he follows 169 people. Oprah has 1.5 million followers but only follows 14.⁸ Put this way, Twitter sounds frivolous, but that would be like blaming paper for *People* magazine. This are just communication tools—and I do read *People* sometimes—but amidst the turmoil in Iran in mid-2009, the U.S. State Department asked Twitter to delay a service outage so that citizens in Iran could continue to tweet.⁹

⁷ Facebook Press Release, Announcement: Facebook Updates Privacy Controls, March 18, 2008 (online at <http://www.facebook.com/press/releases.php?p=24114>).

⁸ Figures as of June 19, 2009.

⁹ Mark Landler and Brian, Stelter, Washington Taps Into a Potent New Force in

But, again, both Twitter and Facebook depend on identity. I connect to my friends and see tweets from the people I choose to follow. If I don't provide my Facebook identity or my Twitter identity when I log onto those services, they are of much less use. You don't seem to be able to access Facebook without logging in—the ultimate walled garden—and while you can search on Twitter without logging in, its search function is still relatively weak.

Both Facebook and Twitter are a substantial information/privacy step beyond Google in that they both are best used using actual identities. It makes very little sense to speak of opting out of some version of identity on Facebook or Twitter. You could operate under a pseudonym and there clearly are circumstances under which you might want to do so—after all, *The Federalist Papers* were written by Publius—but most users will be on Facebook and Twitter in their actual identities.¹⁰

Users may want to calibrate with great precision what information is shared with different users or limit particular uses of information but fully anonymous use of Facebook or Twitter would largely render the services useless. In contrast, I may be delighted to search anonymously and indeed may prefer to search anonymously, as my very searches may reveal a great deal about me that I would prefer to keep private.

This is an important difference between Facebook and Twitter and Google. Again, search is first and foremost a business of intelligent aggregation across websites and largely anonymous individuals. The finance model—advertising—works better if at least pseudo-identity is established—browser-me—but the business function itself—returning organic search results—works with anonymous users. But actual identity is central to Facebook and Twitter, plus the nature of the interactions on Facebook encourages users to provide real information about their lives.

Diplomacy, The New York Times, June 16, 2009 (online at <http://www.nytimes.com/2009/06/17/world/middleeast/17media.html>).

¹⁰ The EU's Article 29 Working Group would require social networking services to allow pseudonyms. See Article 29 SNS Opinion, *supra* note 1, at 13.

Switch to cloud computing. Computing power was originally highly centralized with mainframes, and then we decentralized through minicomputers and PCs. With the cloud, content and computing power will increasingly be managed centrally.¹¹ The problem with owning a PC is that you are your own tech support and most of us are getting lousy service. Computers are complicated. Badly-run computers inflict harm on all of us, when their power is harvested in botnets and computer spam is sent across the globe. And PCs are lumpy: you buy computing power at one time and not just when you need it.

It doesn't have to work that way. Most people wouldn't consider for a second rolling their own electricity; they expect to get it from a socket and want to rely on the local electricity company to do the hard work that lies behind that. We may be headed that direction on computing power, both for calculation and storage. Some content may be stored locally on your machine, while other content—content that you in some powerful sense think belongs to you—will be stored remotely. Where actually? You won't have a clue.

Most people probably don't have strong feelings about where their computer calculations are done. Whether most of the processing power exists locally in the device on your desktop or in your hand is a detail. If communications costs have dropped sufficiently such that we won't notice when most of the computing is done remotely and then delivered rapidly to our local devices, we can return computing power to the center. This is really just an engineering problem that turns on the relative cost of central and local processing power and of distant and local—really local meaning on the bus inside your computer—communication. Important, to be sure, but not something most end-users will care about.

¹¹ Nicholas Carr, *The Big Switch: Rewiring the World, From Edison to Google* (Norton, 2008).

But that analysis is crucially dependent on an implicit assumption, namely, that changing the location of processing or storage doesn't change anything about how the datastream associated with processing or storage is used. Think of this as a version of cloud neutrality: where processing or storage is done should be irrelevant—neutral—for outcomes, legal or otherwise. If instead my cloud provider monitored all of my spreadsheet calculations and then tailored advertising to match what it had gleaned from the calculations—"Looks like he's looking for a mortgage"—that would be a big change. The move to centralized processing and storage creates communications traffic that can be monitored.

Email is a good example. I have a separate email application (Microsoft Outlook) that I use to download email messages and store those on my laptop. I also have an email account through Google (Gmail) which I manage through a web browser. That email is stored remotely with Google and Google dutifully notifies me of how much of "my" storage space at Google that I have filled up. I paid cash for Outlook—more exactly, the University of Chicago has a site license with Microsoft—but I "pay" for Gmail by being exposed to the advertisements that it places on the far right edge of the screen. Google runs my email through a filter to determine which ads I should see.

A cloud structure necessarily means transactions that turn on identity. If I write a poem on my typewriter, I don't have to somehow identify myself to my typewriter. I put the sheet of paper in and type, no questions asked. If I type a poem on my laptop, I don't necessarily have to identify myself to my laptop, though it may be wise to structure the transaction that way. My laptop may or may not require a password to be entered to use it. This is just a question of security where I may want to use a password login to enhance my security against third parties who might gain access to my laptop.

But the cloud depends fundamentally on an authenticated identity. If I store my email or documents in the cloud, I need to

verify my identity to the cloud provider to access the documents. After all, I want *my* email and not yours. To get my email, I need to identity myself to my cloud-based email provider. This is true of cloud services generally. I use Google's Reader program extensively to manage RSS—real simple syndication—feeds. Think of this as a subscription to a website. As the website is updated, it makes available a list of those updates. The feed reader reaches out to get those updates and provides them as a single integrated list. Think of this as a broadcasting model, where the feeder reader has been tuned to the websites that a user selects.

All of this makes it straightforward to pay attention to many websites without having to visit any of them. It also means that how often the website adds new content is irrelevant. You might get tired of visiting an infrequently-updated site and might drop it completely. The cloud never gets tired and captures quickly new content at even the most moribund website. But the core of this is that I want updates on the sites that *I* have selected, not updates on a random assortment of websites that I have no interest in. To use Google Reader, I have to be logged in with my Google identity and absent providing that identity the program is worthless.

II. Scale and Scope Limits and the Switch from Products to Services

Microsoft Windows was—and is—both product and delivery system. Product in the sense that Windows performed certain functions that all operating systems perform. Windows tracks files, sends data through ports for printing and tells your computer screen how to display fonts and images. Basic stuff that we expect of our operating systems. But Windows is more than that: Window delivers software. Software delivery, especially before the Internet, was difficult. A consumer might find the software pre-installed on a new PC. Or the consumer might go to a computer store—remember those?—and plunk down her credit card and walk out with a large, almost empty box, that had, buried within it somewhere, a plastic CD with new software.

But Microsoft could guarantee software delivery by just incorporating the new software into Windows. With each new release of Windows—as Windows moved down the development path from Windows 3.1 to Windows 95 to 98 and on towards Vista—Microsoft expanded the footprint of Windows. This was not just a question of more megabytes; Windows got bigger because it expanded its functionality and in doing so killed off what had been separate markets in freestanding functions. Including a product in the next version of Windows insured its widespread distribution as each version of Windows quickly expanded its market share.¹²

In some basic sense, Windows was fundamentally unbounded. That is, there was no obvious boundary for the scope of functions that might be embraced in Windows.¹³ This mattered most when we introduced ubiquitous networks to link computers together to create the Internet and the Web. The move to networked devices created a possible inflection point, a point of churn and competition as different firms sought the upperhand in the new computing space. In his May, 1995 Internet Tidal Wave memo, Bill Gates famously feared that Netscape would “commoditize the

¹² Microsoft’s current dispute with the European Union over Internet Explorer is precisely about how Windows delivers software. The EU wants Microsoft to include competing browsers with Windows 7—so-called must carry—and then to offer a browser ballot on first boot of the computer. The end user would then select a browser the first time she turned on her computer. Microsoft has elected instead to not ship a browser at all, a choice that the EU has expressed skepticism about. For discussion, see Charles Forelle, EU Plans Fresh Strike on Microsoft, *The Wall Street Journal*, May 30, 2009; Dave Heiner, Working to Fulfill our Legal Obligations in Europe for Windows 7, June 11, 2009 (online at <http://microsoftontheissues.com/cs/blogs/mscorp/archive/2009/06/11/working-to-fulfill-our-legal-obligations-in-europe-for-windows-7.aspx>); Associated Press, E.U. Criticizes Microsoft Plan to Remove Browser, June 12, 2009 (online at <http://www.nytimes.com/aponline/2009/06/12/technology/AP-EU-EU-Microsoft.html>).

¹³ See Randal C. Picker, *Pursuing a Remedy in Microsoft: The Declining Need for Centralized Coordination in a Networked World*, 158 *J Institutional & Theoretical Econ* 113 (2002); Randal C. Picker, *Unbundling Scope-of-Permission Goods: When Should We Invest in Reducing Entry Barriers?*, 72 *U Chi L Rev* 189 (2005).

underlying operating system.”¹⁴ Windows was going to become plumbing, important to be sure, but fundamentally anonymous and only noticed when it wasn’t working right. Microsoft moved aggressively against Netscape and relied heavily on its ability to bundle Internet Explorer with Windows at no additional charge to defeat Netscape. Microsoft won its battle against Netscape, though it did so in ways found to be illegal by competition authorities in the United States.¹⁵

But Microsoft seems to be losing the larger war suggested by the tidal wave. Gates also feared that a new platform would emerge for accessing the Internet that would sidestep the PC itself: “One scary possibility being discussed by Internet fans is whether they should get together and create something far less expensive than a PC which is powerful enough for Web browsing.”¹⁶ The shift that Gates envisioned is now emerging with real force with cloud back-ends matched with smartphone and netbook front-ends. These new devices—say Apple’s iPhone and iPod Touch platforms, Google’s Android devices, the Palm Pre and netbooks—aren’t PCs, but do much of the work that we want our devices to do today.

The shift in the computing platform is working against Microsoft powerfully. The current Web 2.0 market is dominated by Google, Facebook and Twitter. End-users don’t pay to use these services but instead “pay” for them through exposure to advertising. And like Windows, an advertising-based infrastructure has no obvious boundaries, other than the limits of advertising itself. Focus on Google as the leader in this space. The Google

¹⁴ Bill Gates, *The Internet Tidal Wave*, May 26, 1995 (online at <http://www.usdoj.gov/atr/cases/exhibits/20.pdf>).

¹⁵ *United States v Microsoft Corp.*, 253 F3d 34, 58 (DC Cir 2001) (en banc). The European Union also found that Microsoft had abused its dominant position in operating systems, though the focus of the EU case was on interoperability with servers and the bundling of Windows Media Player with Windows. See *Microsoft Corp. v Commission of the European Communities*, Case T-201/04, Court of First Instance.

¹⁶ Gates, *The Internet Tidal Wave*, supra note 14, at 4.

engine is in many ways more powerful than Microsoft's. It isn't obvious how the size of Windows or how its functionality effected the price that Microsoft could charge for Windows. When Microsoft added browser functionality to Windows, it didn't necessarily increase the price of Windows. In contrast, Google's "price" scales up directly with each added service that it finances through advertising. Google's expansion model results in additional revenue with each ad that is clicked. Like Windows, Google's business has no obvious boundaries. The limit seems to be the content or services that can be supported by advertising and might be as large as anything mediated by a display screen, but, unlike Windows, Google's revenue scales as more services are added. Google's limits are the limits of advertising itself.

III. Paying for Online Content and Services

The emergence of the Internet and a broadband infrastructure have radically decentralized the opportunities to create and distribute content. There has never been a better time to be a new, unknown creator. Before the Internet, the high cost of distribution meant that gatekeepers limited how much content could reach the public. Those gatekeepers would have a strong incentive to select content that would succeed financially, but the high failure rate for new content makes clear that gatekeeping is hard work. *Nobody knows* is the operative principle in Hollywood,¹⁷ and if that is right, we should welcome a strong drop in creation and distribution costs so that gatekeeping becomes much less important. Don't guess in the dark; instead put something on YouTube and see how the public reacts to it. Lower costs means we can sort after the fact and not rely on gatekeepers to do so before the fact.

But this drop in distribution costs has had a second consequence: the copy itself is no longer a reliable mechanism for organizing payment for the work. For most of the history of content, built-in technological limitations of the media of

¹⁷ See Richard E. Caves, *Creative Industries 3* (Harvard 2000).

distribution meant that publication brought with it certain control over content. For a consumer, books, movies and recorded music were hard to copy and even harder to distribute in large numbers. The Internet has changed this. To possess a copy of a work—especially a digital copy—is to have the power of distribution in your hands. For a creator, to sell a single copy of a work is to sell the practical ability to distribute content for free. Sold once, free everywhere.

With the death of the copy, we are losing our ability to organize paying for content. The sold copy has represented a simple way of organizing consumers to pay for content. When consumers pay for content, they are the patrons served by content producers. If consumers don't pay for content, the advertisers are the patrons and it is their interests that will be served. Sold once, free everywhere is a world in which volunteers pay for content and we may find it quite difficult to organize users to pay for content. Organize is the operative word. The copy, sold and paid for, has served as that organizing device, but in a world of instantaneous free distribution, consumers/users will lose voice, as a group, and advertisers will be heard instead.

That overstates, but if lose the ability to sell copies reliably, we will need to abandon sales of content. We will be relegated to a world of free, advertising-supported content. For ad-supported content, we don't need to figure out a way to get consumers to hand over cash for a copy of the content. Ad-supported content carries with it its own payment and sharing the content on p2p systems doesn't change that. Advertising-supported content may be given away for free—sheet music years ago and broadcast TV and radio today—and that reduces the need to control what happens to copies. Making another copy just spreads the advertising to another potential buyer (though the history of cable TV shows that this is much more complicated). So if sold once, free everywhere means that no one will pay for content, we will need to add advertising to that content.

But that will change content itself. Ad-supported content is sold, but the purchasers aren't the users, the purchasers are the advertisers. Content that the advertisers don't like—often controversial, edgy content—won't get purchased. Advertisers also don't care about reaching all consumers; they only want to reach the consumers who can afford to plunk down money for their products. The content that they will pay for will be tailored to the demographics that the advertisers want to reach.

Content creates an audience, and it is that audience that is sold to advertisers. The size and characteristics of an audience in turn determine the advertisers who will match with it. Specialized magazines—magazines like *Bicycling* or *Sailing*—define different audiences than magazines like *Sports Illustrated* or the *Economist*. A bike advertiser may be crowded out of a general purpose magazine. Each ad in a magazine reaches *all* of the publication's customers. The publication's audience is bundled together and can't be offered to advertisers in more narrowly defined slices. An ad for a bike may only match one reader in a hundred in *Sports Illustrated*, and if so, the ad has been wasted on the other 99 customers. The expected return on an ad in a particular medium depends on the number of interested customers that will be reached, the value of the advertiser of each customer and of course the cost of an ad.

We want to create content to maximize the efficiency of the ads. In many ways, that is an exercise in matching content and ads. If content can be described in only the most general terms possible—males 25-44—then we should expect to match those characteristics with advertising for widely used products (beer, cars, cell phones and the like). The more that the audience consuming content can be narrowly defined the greater the extent to which we can allow more specialized products to be matched with that content.

Those basic notions don't change as we move from traditional advertising to online advertising, but the technology does create new opportunities. Search engines create content on the fly and then match it with highly-targeted ads. This matching process

creates millions—billions?—of content niches where none existed before. Look through the magazine racks at a Borders or Barnes & Noble. It looks like every interest under the sun is covered, but then step back and think about the searches that you run and the ads that are matched with them. The magazine rack covers a only a narrow slice of the content universe, but search is an infinitely and almost instantaneously scalable means of creating new content niches.

We can easily do ad personalization on the Internet, and this is its shining advantage over traditional advertising media. The newspapers that show up on front stoops every morning tailor to the readership of the newspaper but only crudely. The ads in *The Wall Street Journal* aren't the same ads that show up in the *Chicago Tribune*, but neither newspaper has ads that are tailored to *me*. This is true of magazines, billboards, television and radio. Ads in these media are targeted to rough demographics. The Internet, in contrast, promises advertising matched to me.

IV. A Matching Model of Advertising

I need to situate advertising. In one approach, advertising is inefficient: businesses use advertising to try to steal customers, but, in equilibrium, no customers move and the advertising dollars are just thrown away. Assume, for example, that without advertising, the firms would be indistinguishable and would split the market. One firm can believe it can gain an advantage over the second by advertising and thereby divert customers. That might work if only one firm advertised, but if both firms advertise, the advertising will offset. The firms will still split the market but will do so with higher costs.

While there is undoubtedly some merit to this prisoner's dilemma view of advertising, in this section, I want to pursue a different path. Advertising will facilitate matches between sellers and buyers. Sellers and buyers have trouble finding each other and advertising improves the likelihood of a match. Sellers won't compete with each other—the premise of the prisoner's dilemma

approach to advertising—but instead will sell to consumers if they can match with them successfully. In this model, advertising increases the probability of a successful match. But, and this is the key point, if the gains from a successful match are split, sellers will underinvest in advertising. That is, they will select a level of advertising that takes into account their gains from a successful match but the sellers will ignore the benefits of a match that flow to the consumer. We will get too little advertising.

How we do we solve that? Consumers should advertise. Consumers could buy ads on the Super Bowl—well, not at \$2.6 million for thirty seconds—but when consumers reveal information to potential sellers, consumers are facilitating the matches that I have in mind. In turning over information—in giving up some part of their privacy—consumers are advertising. That advertising is useful precisely because it helps to facilitate good seller/buyer matches and is necessary given that sellers themselves will do too little advertising.

Of course, this is as friendly a conception of advertising as possible. How consumers experience advertising depends on context. Radio and TV ads are frequently irritating and we quickly surf away from those ads. Ads in those media fully displace at least temporarily our access to the content that we are actually interested in. Ads in other media are often less intrusive and the consumer can easily select how much time to spend with an ad, as I do when I read a newspaper or magazine. A more general conception of advertising would need to take into account both the manner in which sellers can compete for sales and the possible disutility of advertising, but in this section, I want to focus on how advertising facilitates matches between buyers and sellers.

A. Advertising by Sellers

Start with a simple conception of advertising as facilitating matches between consumers and sellers across different marketplaces. For a particular type of product, we have one potential seller and one potential buyer and they need to

coordinate over two different marketplaces. If our transacting pair coordinate on the same marketplace, a deal takes place, but otherwise not. Understand of course that this framing means that there is no competition between the sellers. One seller can't drive sales away from another seller. This is a case where the parties want to coordinate successfully and have no stake in blocking some other match.

Without advertising, assume that each participant chooses a marketplace at random. That means that we have a 25% chance of a successful match in marketplace 1 and the same in marketplace 2. Half the time they fail to coordinate: the seller is in market 1, while the buyer is in market 2 or vice versa. Next introduce advertising. Start with a simple conception: advertising increases the probability of a successful match. In the framework so far, treat advertising as increasing market presence so that a seller who advertises is able, probabilistically, to be in more than one market at once. So treat advertising as a variable that ranges from 0 to 1 and let p_{si} be the probability that the seller is in market i . Set $p_{si} = \frac{1}{2} + \frac{1}{2}a$. Be clear on what this is and isn't. This isn't that the seller can advertise to raise the probability that it is in market 1 rather than market 2. Instead, if the seller bought the maximum amount of advertising—set $a = 1$ —the seller would be guaranteed a match with the buyer. With $a = 1$, the seller would have a probability of being in market 1 of 1 and a probability of being in market 2 of 1. Half the time the consumer would appear in market 1 and a deal would be struck; half the time the consumer would go to market 2 and a deal would also be struck. Advertising allows the seller to increase market presence.

Before we specify the cost of advertising, we should say what we can now. Advertising will be socially valuable because it will make beneficial transactions more likely. Buyers and sellers can't find each other, or, more precisely, can only do so probabilistically, and advertising can boost those probabilities. We will also have, in this framework, less advertising than we would like socially. So far I haven't specified the content of what "advertising" is. That will be

important eventually, but for now think of advertising as we usually do, meaning information provided by the seller to improve the chance of a deal with a buyer.

I will start with an arbitrary and rigid division of the benefits of a successful deal. A successful deal will create a net benefit of V to the parties; s fraction of the will go the seller and b fraction to the buyer. Maybe that is specified by a broader framework in which buyers and sellers can rematch and the overall numbers of buyers and sellers determine the balance of power, the kinds of deals that are struck and the resulting division of the benefits, but I will just impose them.

Given that arbitrary and rigid division of the benefits of a successful deal, the seller will underinvest in advertising. There will be too few ads. Sellers will calculate their ad spends based on the benefits to them of making a deal. They will ignore the benefits to the buyer from the successful deal. So sellers will bear the full costs of the ads but will only get part of the benefits, hence there will be too little advertising.

We can play with a little model to see that more sharply, but ultimately the model won't do more than just illustrate the point made. Choose a simple form for how much it costs to advertise:

$$C(a) = za^2 \quad (1)$$

We should calculate the socially optimal level of a , the level that the seller will actually choose and then the gap between the two. The social optimum is determined by maximizing:

$$W(a) = \left(\frac{1}{2}p_{s1} + \frac{1}{2}p_{s2}\right)V - za^2 \quad (2)$$

Recall that the consumer effectively just flips a coin in choosing between markets 1 and markets 2. In the pure market coordination game without advertising, both markets are Nash equilibria and one market isn't preferred over the other, so the consumer has no real basis for choosing a market. Introducing advertising doesn't change that either, since in this specification, advertising raises the

seller's presence in *both* markets simultaneously, so our consumer still flips coins.

If we substitute for p_{s1} and p_{s2} in 2, we then get:

$$W(a) = \left(\frac{1}{2} + \frac{a}{2}\right)V - za^2 \quad (3)$$

In contrast, the seller chooses a to maximize:

$$\pi(a) = \left(\frac{1}{2}p_{s1} + \frac{1}{2}p_{s2}\right)sV - za^2 \quad (4)$$

Again, substitute in the functional forms for market presence with advertising we get:

$$\pi(a) = \left(\frac{1}{2} + \frac{a}{2}\right)sV - za^2 \quad (5)$$

With a little work, we can see that the socially optimal level of advertising is given by:

$$a^* = \frac{V}{4z} \quad (6)$$

And the private optimum for the seller is given by:

$$a^{private} = \frac{sV}{4z} \quad (7)$$

We can see that those are identical if $s = 1$, meaning that the seller receives all of the benefits of the trade. Even a monopolist creates social surplus that it can't capture, unless it is able to price discriminate perfectly. Otherwise the privately-chosen level of advertising is just the social optimum multiplied by the seller's share of the gains from trade. Again, that confirms what we knew at the beginning: unless the seller receives the full social benefit of spending that increases the probability of a successful match, the seller will underinvest in advertising.

B. Advertising by Consumers

How do we move forward from the gap? In this framework, consumers should advertise. That is, consumers should invest in trying to match successfully with sellers. Consumers benefit too

from a successful match. Does this mean that consumer should be buying time on network TV? They could, but the more tractable place to start is with consumer information and privacy. There is obviously a great deal wrapped up in the notion of privacy, but a relevant notion here is that consumers should want to reveal information to sellers to facilitate matches. When a consumer gives up information voluntarily to a potential seller, we should think of a consumer as engaging in advertising. Reveal information to advertise.

We can run through a similar, but more complex, formulation when the buyer can advertise too. Assume that the buyer has access to a similar matching/advertising technology. The gains from trade arise as before, meaning only when the buyer and seller successfully coordinate on the right market. The social optimum is determined from:

$$W(a) = (p_{s1}p_{b1} + p_{s2}p_{b2})V - za_s^2 - za_b^2 \quad (8)$$

where

$$p_{si} = \frac{1}{2} + \frac{a_s}{2} \text{ and } p_{bi} = \frac{1}{2} + \frac{a_b}{2}$$

This allows for the possibility that the seller and the buyer have different costs of advertising. The socially-optimal levels of advertising are then given by:

$$a_s = \frac{V}{4z-V} \text{ and } a_b = \frac{V}{4z-V} \quad (9)$$

We can then substitute the optimal levels of advertising to find overall welfare given the optimal levels of advertising:

$$W(a) = \frac{2Vz}{4z-V} \quad (10)$$

Differentiating that with respect to z makes clear that as z increases overall welfare drops. That is to be expected: an increase in z means that advertising is becoming more expensive and that in turn means that it is harder for sellers and buyers to match successfully.

Now switch to consider the separate decisions of the seller and buyer. The seller and the buyer choose their separate levels of advertising in the Nash equilibrium determined by maximizing their private returns:

$$\pi_s(a) = (p_{s1}p_{b1} + p_{s2}p_{b2})sV - za_s^2 \quad (11)$$

and

$$\pi_b(a) = (p_{s1}p_{b1} + p_{s2}p_{b2})bV - za_b^2 \quad (12)$$

Working with the generalized divisions of the gains from trade—b and s—leads to messy formulations and makes it harder to see how the Nash case compares to the optimum result. To simplify, assume that the gains from trade are split evenly, meaning that $b = s = \frac{1}{2}$. Then the Nash levels of advertising are given by:

$$a_s^{\text{nash}} = \frac{V}{8z-V} \text{ and } a_b^{\text{nash}} = \frac{V}{8z-V} \quad (13)$$

As expected, these are lower levels of advertising than we would like socially, and, as before, if we do a little additional work, we can see that private welfare levels increase as the cost of advertising decreases. Lower advertising costs increases advertising and here that raises the probability of a successful match. Buyers and sellers should welcome a mechanism that reduces the costs of making a successful match.

V. Managing Identity and Privacy

Identity and anonymity are tricky notions. Part of our new computing architecture is precisely about how identities are constructed and controlled.

A. The Role of Identity

Look at five examples of this architecture to get a sense of the rich choices available.

1. EBAY AND CONSTRUCTED IDENTITY

eBay is an early example of constructed identity and disputes over the ownership, portability and management of that identity. eBay and Craigslist killed newspapers. That overstates—both as to cause and result—but nonetheless is importantly accurate. Both eBay and Craigslist made classified ads less important. eBay created a national market in used goods and did so by constructing identities. eBay mediates transactions between strangers. Coordination and matching are standard Web 2.0 functions and eBay matched buyers with sellers. As eBay built up a critical mass, its momentum became self-fulfilling: sellers wanted to sell where buyers would be, and vice versa of course. Transactions between strangers at a distance is a long-standing problem in commercial law. As a purchaser, how can I determine whether my prospective seller will deliver the listed item? eBay users build up a reputation score transaction by transaction—a score tied to an eBay identity—and that identity help to mitigate the problem of transactions at a distance between strangers.

But the eBay identity system also has important competitive consequences. Since the reputation accumulates prior transactions, a competing auctions entrant starts with an immediate disadvantage. eBay's reputation system is sticky, or, put differently, it creates switching costs. A long-time seller on eBay has a reputation that she has built up carefully. But if she switches to the entrant, she will be a newbie again and buyers will naturally be reluctant to transact with her. But there is a ready solution: make the eBay identity and reputation portable. eBay's user agreement bars this in an attempt to use the constructed identity to limit competition with eBay by new auction entrants.¹⁸

¹⁸ See eBay, Your User Agreement (“While using eBay sites, services and tools, you will not: ... take any action that may undermine the feedback or ratings systems (such as displaying, importing or exporting feedback information off of the sites or using it for purposes unrelated to eBay); transfer your eBay account (including feedback) and User ID to another party without our consent;”) (online at <http://pages.ebay.com/help/policies/user-agreement.html>). I discuss these issues in greater detail in Randal C. Picker, *Competition and Privacy in Web 2.0 and the Cloud*,

2. GOOGLE AND SEARCH: THE ROLE OF IDENTITY

Consider the following figure to understand the role that identity plays in Google's search business. As that figure suggests, Google effectively operates its search business in four identity locations:

Google classic, as it were, is the lower-left quadrant: anonymous organic search results and anonymous ads. Focus first on how Google might use the datastreams that arise in search. Search is an exercise in relevance: for any search term presented, the search engine wants to return the “best” matches. How should we assess best? Brin and Page’s original search patent is for their PageRank algorithm. That algorithm looks to the link structure of the web to measure importance and therefore relevance.¹⁹ If we are

103 Nw. U.L. Rev. Colloquy 1 (2008) (online at <http://www.law.northwestern.edu/lawreview/colloquy/2008/25/>).

¹⁹ For a basic description, see Our Search: Google Technology (online at <http://www.google.com/technology/>).

looking for information about the Chicago Cubs, if many pages link to a particular page about the Cubs, we might conclude that that is a particularly relevant page. The PageRank approach emphasizes information that is available publicly. Any entrant could do the same, at least if they could do so consistent with the original patent. Note also that none of this is tied to the identity of the person running the search. All of this can be done with fully anonymous users.

That version of search doesn't rely on the datastreams that arise in search. But we might imagine an approach which does so and which relies more directly on collective intelligence. Focus on how searchers respond to the presented search results. If searchers routinely reject the first listed item for the second, we would be learning something about the perceived relevance of the results. That approach, multiplied over many users and an almost infinite number of searches, would create a system that learns and evolves in response to what users are doing.²⁰ If that learning improved relevance, more searchers would seek to rely on the system, and that in turn would generate more learning. That in turn generates a positive feedback loop and should operate as a barrier to entry. Unlike the page-link information at the heart of PageRank which relies on publicly observable data, learning through search results relies on private information available only to the search engine.

But this still doesn't rely on identity. This is an exercise in the law of large numbers: see enough cases and the search engine can learn how different searches correlate with desired responses. It is not an exercise that says that for searcher 721, football means soccer and not American football. Personalized search promises exactly that but that must be tied to identity. That takes us to the lower right quadrant of the figure. For Google, at least, a user cannot have personalized search absent a Google Account, so in that sense, Google personalized search is opt in. But in setting up a Google Account, a new user must opt out of personalized search;

²⁰ See Hal Varian, *Why data matters*, Mar 4, 2008 (online at <http://googleblog.blogspot.com/2008/03/why-data-matters.html>).

absent doing so, the new account holder is defaulted in to personalized search.²¹ I call this bundled opt-in in the figure. Your Google account will be at least a pseudo-identity and may be close to an actual identity, as it is my case (meaning that it contains my actual name along with stored transaction information (two test videos bought from Google when it was running its failed Google Video service)). Google is more careful with personalized search, requiring more frequent log in.²²

But we have just been focusing on the search side of search. Organic search results are matched with advertising. Advertising need not turn on some version of identity but advertising is more useful—both for the advertiser and for the content-consumer—if, as discussed in Section III, the advertising is actually relevant to the user. The datastream could also be used to match the ads presented next to the organic search results with the searcher, so-called behavioral advertising. John Wanamaker, the department store magnate, famously observed that he wasted half of the money that he spent on advertising, but “I don’t know which half.”²³ And Wanamaker may have been optimistic. Think about TV advertising and how many ads that you see for products that you never consume. Those ads are almost all wasted. Behavioral advertising offers the promise of tailoring ads to individual consumers greatly increasing the efficiency of each ad dollar spent.

Google uses a number of tools to increase ad relevance, some of which turn on some version of identity and some of which don’t.²⁴

²¹ www.google.com/psearch and www.google.com/accounts/.

²² As Google notes in its description of personalized search, “[t]o help protect your privacy, we’ll sometimes ask you to verify your password even though you’re already signed in. This may happen more frequently for services like Web History which involves your personal information.” The sign-in for the Web History service embeds by default my Google Account email address, but it does not embed my password for that account and also leaves blank the box that will cause Google to “remember me on this computer for Web History.”

²³ See John Wanamaker (1838-1922), *The Advertising Century* (online at <http://adage.com/century/people006.html>).

²⁴ This discussion is based on Google’s description in the Google Privacy Center of

Unsurprisingly, Google displays ads based upon the content of the search and this puts us in the lower half of the figure. A search on “Honda Odyssey” returns different ads than a search on “Toyota Sienna.” This isn’t about identity, it is just about the content of the search terms themselves. Google also displays ads based upon the content of visited websites. As Google notes, gardening websites will likely have ads about gardening. Again, this is tied to content and context, not identity.

Take stock on where we are so far. Google runs, as it were, a generic anonymous search service and a personalized search service. The latter requires a Google Account and thus at least a pseudo identity. Google matches ads with searches and can do that with context-only anonymous ads. Be clear: I mean anonymous in the sense that any searcher running the search would seem the same ads for the same search. The search content matters for the ads but not the identity of the searcher. This is the bottom half of the figure and whether we are in the lower-left quadrant or the lower-right quadrant depends on whether a searcher is running personalized search.

But Google also serves ads based on my interests as identified by Google through cookies and this is the top half of the figure. Again, this isn’t necessarily my actual identity or a pseudonym but instead my browser-identity as tracked by the cookies that Google stores on my computer. Google calls these “interest-based” ads, plus Google makes it possible to display ads to users based upon their previous visits to a website. All of this is tied to the cookie that Google stores—defining my browser identity—but not necessarily my actual identity.²⁵ Google seems to run its interest-based advertising on an opt out basis, meaning that a user will receive interest-based ads—and have her interests tracked—unless she takes an affirmative step to prevent this from happening.²⁶

Advertising and Privacy (online at http://www.google.com/privacy_ads.html).

²⁵ I haven’t actually tested that you can do both personalized search and anonymous ads simultaneously.

²⁶ See Nicole Wong, Deputy General Counsel, Google, Inc., “Giving consumers

It is important not to be confused by the size of the boxes in the figure. Google introduced interest-based ads in March, 2009²⁷ so the top half of the figure didn't even exist until then. I am aware of no public figures on opt-in or opt out of personalized search at Google, though do remember that you can't be in personalized search if you don't have a Google account. My guess is that most of Google's history has taken place in the lower-left quadrant.

Note one other point in passing about the richness of the approaches to opt in and opt out. You have to have a Google account established to do personalized search. When you set up a new account with Google,²⁸ the Web History feature that enables personalized search is set up to default to on—opt out—but you just need to check a box to opt out. In contrast, to opt out of new interest-based advertising, you need to go look through Google's website to find the right spot to opt out.

3. FACEBOOK: 200 MILLION REAL IDENTITIES²⁹

There are a number of social networks, including Facebook and mySpace, plus any number of niche networks, such as LinkedIn which looks to organize business and professional connections. These networks are organized around the notion that individuals will connect with other individuals and will do so by providing real

control over ads," Google Public Policy Blog, March, 2009 ("With one click in the Ads Preferences Manager or in the advertising section of our privacy center, users can opt out of interest based ads altogether ...") (online at <http://googlepublicpolicy.blogspot.com/2009/03/giving-consumers-control-over-ads.html>). This behavior may vary across browsers. If I visit the Ad Preferences Manager in Opera, I need to click a button to affirmatively opt in to the interest-based ads.

²⁷ See Testimony of Nicole Wong, Deputy General Counsel, Google, Inc., House Ad Hearings *supra* note 1, at p5 ("Wong Testimony") (online at http://energycommerce.house.gov/Press_111/20090618/testimony_wong.pdf).

²⁸ <https://www.google.com/accounts/NewAccount>.

²⁹ As of June, 2009, Facebook had roughly 200 million active users, with 65 million based in the United States. See Testimony of Chris Kelly, Chief Privacy Officer, Facebook, House Ad Hearings, *supra* note 1, at p1 (online at http://energycommerce.house.gov/Press_111/20090618/testimony_kelly.pdf) ("Kelly Testimony"). I have not seen a breakdown of actual identity usage versus usage through a pseudonym.

information about themselves. I'll focus on Facebook to choose just one, mainly because it seems to have an edge in momentum.

Facebook is organized around actual identities as its own online space. You must log in to use Facebook though Facebook has gradually made it possible for outsiders to Facebook to see limited profiles of Facebook members, subject to override through its detailed privacy settings.³⁰ You make connections with other Facebook members. One person has to initiate the transaction: will you be my Facebook friend? You will see that request on your Facebook home page, plus you get an email with notice of the friend request.

You then have to decide whether to accept the request. Sometimes your response will be immediate: you are just carrying over a friendship from one space to Facebook's virtual space. But in other cases, you may not have any real clue who the person is, at least not until you click over to the person's Facebook profile. Here is where actual identities come in. If you have been out of high school more than I'll guess a decade some fraction of your Facebook friend requests will be from former classmates. When you fill out your profile on Facebook, you can list exactly where you went to school and when you graduated. Pull out an old yearbook and you may even be able to map the high school picture to the pixels that Facebook is presenting to you. Real identity is the currency of authenticity. We went to high school together and you want to reconnect on Facebook? That is probably enough for most people but absent the profile, you very well might not establish a connection with that individual.

Facebook is ultimately competing for a fraction of your mediated time. You can only spend so much time in front of the screens and even if you multiscreen—notebook on lap in front of the TV with iPod Touch in arm's reach—you have to make choices.

³⁰ See Philip Fung, Public Search Listings on Facebook, The Facebook Blog, September 5, 2007 (online at <http://blog.facebook.com/blog.php?post=2963412130>).

Facebook is free to users. It displays ads on the pages it presented to and thus is, like Google, another ad-supported medium. And like Google, Facebook seeks to provide targeted ads. Unlike Google, Facebook is working off information directly provided by its users. As Facebook puts it in its privacy policy: “if you put a favorite movie in your profile, we might serve you an advertisement highlighting a screening of a similar one in your town. But we don’t tell the movie company who you are.”³¹ As to individual users, Facebook and Google may be in different businesses—respectively, social networking and search—but as to many advertisers paying the bills, they are competing with each other in providing targeted advertising. Both Facebook and Google provide targeted advertising platforms. Facebook’s is tied to actual identities, Google’s to, in the main, browser-identity.

Take that idea and build a quadrant map for Facebook akin to the one built for Google above. You can’t really speak of purely anonymous use of Facebook: its core function is precisely about matching people with different identities. If I am right in thinking that most individuals participate on Facebook using their actual identities, there really is no left-hand side of the Facebook identity map. And Facebook’s privacy policy and its discussion of advertising suggests that Facebook is mainly an upper-right quadrant company. Remember that Google has been, for most of its life, a lower-left quadrant company. Google’s move into interest-based advertising means that Facebook and Google are now much more squarely competitors.³²

4. TWITTER: IDENTITY MAGNIFIED

Twitter is at still an early stage (I write as of June, 2009) but it is enjoying extraordinary growth.³³ Meaningful participation in

³¹ Facebook Privacy Policy (online at <http://www.facebook.com/policy.php>).

³² Fred Vogelstein makes a version of this point as well. See Fred Vogelstein, *The Great Wall of Facebook*, *Wired*, July, 2009, p.96.

³³ See Jay Yarow, *Twitter’s Natural Monopoly*, *Silicon Alley Insider*, April 8, 2009 (online at <http://www.businessinsider.com/chart-of-the-day-twitters-natural-monopoly->

Twitter requires an identity on Twitter but that need not be my actual identity. But if Twitter really is best thought of as a microblogging service or a micro-broadcasting platform, we can expect large numbers of users to want to use their actual identities. Take two examples of people I follow on Twitter: Steven Levy (stevenjayl on Twitter) and Tim O'Reilly (timoreilly) of the geek publishing empire bearing his name. For both of them, Twitter is an extension of their preexisting personalities into a new space where they can attract direct, unintermediated followers. Unintermediated, meaning in Levy's case, not through his position as Senior Editor at *Newsweek*. That vision tracks early empirical research on Twitter finding that 10% of the users do 90% of the Tweeting.³⁴ A few loud voices and many listeners.

There will be issues of course. If Twitter is so far an exercise in connected identities and joint conversations, Twitter will have to manage identity authenticity—how do I know that it the real Tony La Russa, manager of the St. Louis Cardinals doing the tweeting and not an impostor?³⁵—but that is just a question of proof. Unsurprisingly, Twitter is beta testing a Verified Account service precisely to ensure identity authenticity.³⁶ But Twitter matters now both as a successful startup attracting individuals who are using their real identities—a key step as a possible targeted advertising platform—but also because of the way in which Twitter provides a distinctive handle for real-time search. Not what Google saw when it last visited a website, but what is happening now.³⁷

2009-4).

³⁴ Bill Heil and Mikolaj Piskorski, New Twitter Research: Men Follow Men and Nobody Tweets, June 1, 2009 (online at http://blogs.harvardbusiness.org/cs/2009/06/new_twitter_research_men_follo.html).

³⁵ La Russa claimed that someone was pretending to be him on Twitter. See MG Siegler, Hey There! Tony La Russa Is Suing Twitter, TechCrunch, June 4, 2009 (online at <http://www.techcrunch.com/2009/06/04/hey-there-tony-la-russa-is-suing-twitter/>).

³⁶ <http://twitter.com/help/verified>.

³⁷ See Caroline McCarthy, Google execs admit Twitter's winning real-time game, cnet news.com, May 20, 2009 (online at http://news.cnet.com/8301-13577_3-10245361-36.html?part=rss&subj=news&tag=2547-1_3-0-20); Steven Johnson, How Twitter Will

5. GOOGLE'S IDENTITY-BASED CLOUD-SERVICES

Search, to be sure, is Google's shining success story. As I described before, search can be done largely anonymously and ads could be presented solely based on content and context, meaning the content of the particular search or the websites that are being visited. That version of search isn't tied to identity at all. Google has extended that version of basic search in two directions and both of those are tied to some version of identity. Personalized search is tied to actual identity or a pseudonym that I have established with Google, while interest-based ads require at least browser-based identity.

Because search is relatively independent of identity, it sits in a different space vis-à-vis its individual users than Facebook and Twitter, both of which are based on at least pseudonym identity and in many, many cases, actual identity. Facebook certainly thinks of itself in terms of authenticity and trust³⁸ and I suspect that that is driven by the fact that its users use the service as themselves. Much more than Twitter, Facebook users provide real information about themselves. Not Google's identified interest based on how I search or surf the Web, but what I say matters to me. That raises almost an interesting psychological question—is it what I say that counts or what I actually do that really captures my interest?—but Facebook has access to a distinct class of information tied to identity that is separated off of what is accessible to Google.

But Google has a variety of services that are tied to at least pseudo-identity. This is the basic nature of cloud-based services: content that might be stored on my computer is stored somewhere else. I need to authenticate my identity to get at my contents. In the Google universe of services, that is certainly true for Google Mail, Google Docs, Google Reader, Picasa Web Albums and probably many other services.³⁹

Change the Way We Live, Time, June 5, 2009 (online at <http://www.time.com/time/printout/0,8816,1902604,00.html>).

³⁸ See Kelly Testimony, *supra* note 29, at p1.

³⁹ See a list at <http://www.google.com/intl/en/options/>. Google contends that most

And Google has moved directly into authenticated identity with its Google Profile product.⁴⁰ This appears to be a direct competitor to Facebook. You create a profile of yourself with Google. That profile requires at least some information that you describe about yourself to be worthy of being displayed. That will, as Google puts it, “[h]elp people find the right information when they search for you on Google.” This suggests a tight link between Google’s core search product and their profile product. Indeed, Google states that your Google Profile will be displayed on the results page of a web search in your name. Note that that is a different approach to organic search results. It privileges a page that might not otherwise appear on an early result screen. That is not to say that the privileging is in some sense “wrong” as a self-created profile might be a particularly relevant response even if it didn’t otherwise percolate to the top through Google’s standard relevance measures. But this is a listing advantage that Google is able to confer on its identity product. If you search on “Randy Picker” on Google, the top organic result is the Law School’s bio page for me. Google lists my Google Profile as the last search result on the first page and then offers an additional line to search for me on MySpace, Facebook, Classmates and LinkedIn.

B. Regulating Identity Controls

We are in the midst of a growing competition over identity and privacy. The movement of content online—either by choice of the copyright holder or by choice of the user—has been associated with a move to relying advertising as the means of paying for that content. If the movement from offline to online continues or even accelerates, online advertising will become even more important and that will make targeted advertising a particular focus.

In the past, we have placed extensive controls on how intermediaries can use the information that flows through their hands. For example, the Cable Communications Policy Act of

of its products can be used without registering. See Wong Testimony, *supra* note 27, at 4.

⁴⁰ <http://www.google.com/profiles>.

1984 added privacy protections for consumers.⁴¹ The current version of that statute requires written or electronic consent of cable customers before the cable operator can use the cable system to collect personally identifiable information about its customers. But the statute also creates an exception to that rule allowing collection of such information to detect cable theft and, more generally, “to obtain information necessary to render a cable service or other service provided by the cable operator to the subscriber.”⁴² Whether collecting information to implement behavioral advertising will qualify under this safe harbor is an open question. The cable statute also bars disclosure of personally identifiable information to third parties, though, again, the statute exempts disclosures “necessary to render, or conduct a legitimate business activity related to, a cable service or other service provided by the cable operator to the subscriber.”⁴³

We are at an early stage in assessing how we will regulate behavioral advertising. In the United States, the Federal Trade Commission has undertaken a series of related inquiries into online advertising culminating in a February, 2009 staff report.⁴⁴ The FTC has issued reports before on spyware and adware⁴⁵ and has launched actions against individual firms that the FTC believes have engaged in deceptive practice in this space.⁴⁶ Individual members of Congress have suggested that more encompassing

⁴¹ PL 98-549, codified at 47 USC 551.

⁴² 47 USC 551(b)(2)(A).

⁴³ 47 USC 551(c)(2)(A).

⁴⁴ See FTC Behavioral Ads Report, *supra* note 1.

⁴⁵ Federal Trade Commission Staff Report, *Monitoring Software on Your PC: Spyware, Adware, and Other Software*, March 2005 (online at <http://www.ftc.gov/os/2005/03/050307spywarerpt.pdf>).

⁴⁶ The FTC Behavioral Ads Report lists 23 such actions as of the date of the report, see at 5 n8, and the FTC pursues actions in this area on an ongoing basis such as its recent settlement regarding tracking software issued by a company jointly owned by Sears and Kmart. See Federal Trade Commission Press Release, *Sears Settles FTC Charges Regarding Tracking Software*, June 4, 2009 (online at <http://www.ftc.gov/opa/2009/06/sears.shtm>).

privacy legislation is appropriate, though it is hard to be certain about the prospects for such legislation.⁴⁷

The FTC's report issued four non-binding principles to guide self-regulation of behavioral advertising. In drafting those principles, the report concluded that contextual advertising was consistent with consumer expectations and therefore outside the scope of the report. As I suggested above, contextual advertising doesn't turn on identity, as the same ads would be displayed tied to a particular search or a particular website independent of the identity of the consumer. There is no retention of information that is somehow tied to the individual consumer. All of that suggests that contextual advertising poses no identity or privacy issues buttressing the FTC's choice to exclude it from the principles.⁴⁸ And remember, until March, 2009, Google only did contextual advertising.

The FTC report also drew a line between first-party and third-party behavioral advertising, though exactly how that line was drawn is unclear to me. The language of the report is to the point: the definition of online behavioral advertising "is not intended to include 'first' party' advertising where no data is shared with third parties."⁴⁹ The core notion there, says the FTC, is that first-party usage matches much of what we anticipate will happen offline and online as well.⁵⁰ Back in the dawn of sales, my local merchant knew me and knew what I purchased and I might rely on him for recommendations. Amazon does that today, except with remarkable efficiency.

Of course the utility of this doesn't say anything about where the default position should sit and whether firms should be

⁴⁷ See Matthew Lasar, New Web privacy bill would make data sharing opt-in, *ars technical*, May 6, 2009 (online at <http://arstechnica.com/tech-policy/news/2009/05/new-web-privacy-bill-would-make-data-sharing-opt-in.ars>); Emily Steel, Web Privacy Efforts Targeted, *The Wall Street Journal*, June 25, 2009 p B10.

⁴⁸ See FTC Behavioral Ads Report, *supra* note 1, at 46.

⁴⁹ *Id.*

⁵⁰ See FTC Behavioral Ads Report, *supra* note 1, at 26.

required to offer a choice on a mandatory basis. The FTC expects consumers to vote with their feet and switch to another firm if they don't like the choices that first-party providers are making about data. That of course assumes a fair degree of meaningful competition and it isn't clear that that exists in market such as search.

The other point of interest is what counts as data disclosure to a third party and how that in turn effects firm incentives for firm scope and size. For example, a disclosure limit of the sort seen in the cable statute artificially pushes towards vertical integration. As most disclosure limits don't prevent disclosure within a particular firm but only bar disclosure across firm boundaries, a firm will have an artificial incentive to expand the size and scope of the firm so as to use the information fully. Vertical integration renders the disclosure limit ineffective. We might see mergers that would otherwise be unattractive as a way to end-run the across-firm disclosure limits.

Note also that disclosure may not be the act of relevance here. If Google runs an ad placement service—of course it does: AdSense⁵¹—it need not disclose any information to facilitate matches between content and consumers. For Google's paying customers—its advertisers—the information will be in a black box. These customers will be able to evaluate the click-through rates that they are seeing from the use of the information controlled by Google, but they need never see the information itself. No disclosure, just use on their behalf. Indeed, as suggested before, Google would almost certainly prefer not to disclose the information, since disclosing the information gives up the control that Google has from its exclusive access to the information. Google does track sale completion from the original ad click and disclosure of that information might trigger the FTC's concerns about disclosure to third parties.

⁵¹ https://www.google.com/adsense/login/en_US/.

The FTC report itself largely sidesteps opt-in/opt out though it generally favors consumer control over third-party tracking.⁵² It is worth noting the contrast with the EU's Article 29 Working Group in its report on social networking sites. That report provides that social networks should provide "privacy-friendly" default settings and makes clear that in those settings that the "[d]ecision to extend access may not be implicit, for example, with an 'opt-out' provided by" the social network.⁵³

In assessing opt-in and opt-out, we need to focus on the incentives of consumers and ability of service providers to provide multiple versions of their service so as to induce meaningful choices about opt-in and opt-out. Start with consumers and users. One of the questions we will face in this space is to what extent information revelation should be optional. Or to better track where we are right now, to what extent should information revelation be done on an opt-in or opt-out model? In the latter, consumers have to be asked to reveal information. The cable act discussed above is something of a hybrid: it clearly contemplates that consumers should have to opt in, but also recognizes that full opt-in may be inconsistent with how a service operates legitimately (for example, controlling cable theft).

Opt-in and opt-out will suffer from across-consumer externalities. Think about smoking and life insurance. I don't smoke and if I went to buy life insurance tomorrow, I would want to disclose that fact to the insurance company. Insurance is priced based on a pool of risks, and as a nonsmoker, I want to be placed in a different pool than the smokers are in. But when I reveal that I am not a smoker, I set in motion a chain of inferences which

⁵² See FTC Behavioral Ads Report, *supra* note 1, at 32 n.63 ("The proposed Principles do not specify whether this choice would be opt-in or opt-out choice—just that it be clear, easy-to-use and accessible to consumers").

⁵³ See Article 29 SNS Opinion, *supra* note 1, at 7 (footnote omitted). Note also that the opinion is focusing on control over the data and its collection without expressing an opinion on online advertising. The working group intends to provide a separate opinion on that subject. See *id.* at 9 n.19.

should, on average, have the consequence of revealing that smokers are smokers, even if they never say anything. This is a standard result in information economics—we call it unraveling—and creates what we might think of as a privacy externality: when I reveal information about me, it has the consequence of revealing something about you. My willingness to give up my privacy gives up your privacy too. This will bite most often when one group affirmatively wants to distance itself from a second group.

We might defend this in the smoking context on the notion that absent the waiver of privacy by the nonsmokers, we get pooled risks and non-smokers end up subsidizing the higher expected insurance costs of smokers. Smokers therefore won't fully internalize the cost of smoking and we will have too many smokers. Allowing nonsmokers to disclose information about their nonsmoking then turns out to be socially valuable in the way that it better channels the cost of smoking to smokers, but we need to figure out how to account for, if at all, the privacy loss of the smokers.

Now switch back from smoking to the more general setting of consumer information revelation on the Internet to advertisers. Focus on the incentives of advertising-based service providers and then circle back to what that means for consumers. If each consumer receiving free content pays the same advertising cost for that content, then we should expect in equilibrium that the expected click revenues for ads matched with content should be the same for different consumers. Well-identified consumers will see ads that match well with them and that in turn should increase the chances that an ad will be clicked on. Anonymous consumers can't be matched; the only way to increase the chances of a click-thru is to present more ads. If, to just make up numbers, the chance of a click is 1 in 10 for the matched ad and 1 in 100 for a random ad, anonymous consumers would need to see ten times the number of ads to achieve the same click-thru rate.

The analysis above suggests that consumers might very well move off defaults if faced with reduced-quality versions of the

service. If the service explicitly makes clear that additional ads are being served because the consumer has, by default, opted out of targeted ads, consumers who wish to minimize ads may be induced to opt in to a targeted ad regime. Firms almost certainly would prefer opt-out as firms may expect that consumers will react negatively to express product degradation.

Firms can with ease set different versions of their products and may be able to calibrate service levels to induce opt in. They will almost certainly do more of this if regulators otherwise limit the extent to which they can accumulate data to engage in targeted-advertising.⁵⁴ Take Google's search product as an important case. Google presents the organic search results surrounded by sponsored ads on the top and the right side. My guess is that users aren't likely to be particularly sensitive to the number of ads on the right, but might respond to the number of ads presented on top. Those ads more directly intrude on the organic search results and this is really just a question of how we divide the fixed space on the screen between the top-sponsored ads and the organic search results. In the extreme, Google could present to opt-outs nearly a full page of sponsored results and only a single organic result. Even more intrusively, Google could present a pop up splash screen ad that overlaid the search results and necessitated a click. Google could then offer users a chance to opt out of splash screens by opting in to targeted advertising.

Google thinks of itself as a learning company and is constantly running experiments to improve its service. Under the current rules, they have little incentive to harness that learning capability to calibrate opt-in/opt-out. Under the EU's approach which requires privacy-friendly default rules, Google or any other targeted

⁵⁴ The EU's Article 29 Working party seems to suggest that search engines do not need access to some version of identity to run their search engines. See Article 29 Search Engine Opinion, *supra* note 1, at 25 ("While search engine providers inevitably collect some personal data about the users of their services, such as IP address, resulting from standard HTTP traffic, it is not necessary to collect additional personal data from individual users in order to be able to perform the service of delivering search results and advertisements.")

advertiser will have the incentive to learn precisely how it needs to set service versions to induce opt ins. If we think that defaults are powerful with regard to opt-in and opt-out, then we need to learn whether we can take steps to minimize the role that defaults play. In a regime in which opt-out is the default setting, firms have little reason to learn how to induce opt-in. They just set the default as out and consumers stay out. With opt-out as the default setting, firms will need to learn how to get consumers to opt in.

The good news is that firms can easily offer multiple versions of their services to different consumers. Firms will offer an inferior product—more ads with less relevance—to consumers who have not opted in to targeted ad serving. Firms will prompt consumers to opt in to targeted ads: “You are now experiencing the junky version of our product as mandated by the government because you have not opted in to targeted advertising. Check the box below if you would like to opt into targeted ads and get the good version of our product.”

Opt-in/opt-out is just one issue in our regulation of identity. In a computer architecture in which identity matters, we then turn to how identity is managed. Consider the question of identity scope, though we might well call it identity bundling or identity silos. The EU’s Article 29 Working Group calls it “data correlation across services.”⁵⁵ Take my relationship with Google: if I am logged into Google Reader—remember, this is my RSS feed management program—as I am most of the time that my computer is turned on, what else am I displaying to Google and how is that information used across services? Google Reader is really a strong indicator of my interests, as I routinely “star”—mark as important to me—news stories as I see them so that I can return to them later.

⁵⁵ Article 29 Search Engine Opinion, *supra* note 1, at 20-22.

Conclusion

For individuals, the basic architecture of computing is changing. That is obviously about the device itself, with the desktop or laptop computer now being supplemented with other computing devices such as the smartphone and the netbook. That switch, coupled with ubiquitous wireless access, means that many people have access to computing power whenever and wherever.

The way in which we use these devices has changed. We have switched from the freestanding world of the desktop computer and the next stage of surfing the Internet net to consume provided content to a world in which users interact with each other. This is the world of Web 2.0, the world of Google, Facebook and Twitter. This is not just a change in use, but also a change in the organization of computing power and storage, cloud-computing in a phrase.

This is also a world of identity, often direct actual real me, on Facebook and Twitter; an authenticated identity to access my data stored in the cloud when I use Google Reader or Gmail or another cloud-based service; and a browser-identity when I use a search service. And this is also a world of advertising. Web 2.0 and cloud-computing services are often free to individuals, but they have to be paid for somehow, and that is usually through advertising. Advertising is also increasingly important in a world in which the integrity of the copy itself has weakened and the copy may no longer serve as a reliable means of organizing payment for content.

This combination of identity and advertising means that this will be targeted advertising, that is, advertising directed to some version of me, perhaps actual me as Facebook sees me or browser-me as Google sees me. Regulators are now confronting this intersection of commerce and identity. Individuals have a real interest in seeing targeted advertising work. That advertising supports the free services and content that we have all come to expect on the Internet. But individuals also have a strong interest in controlling their identities.

Regulators, especially in the European Union, are moving towards what they regard as “privacy friendly” default settings for information tracking by Web 2.0 providers. To date, default settings have usually put the burden on individuals to opt out of information tracking. An EU privacy-friendly approach would seem to reject that. But Web 2.0 providers and cloud-providers have strong tools for inducing opt in and, indeed, their ability to provide different levels of their services for different individuals should make it possible for them to assess quite carefully what it takes to get individuals to opt in to targeted advertising. So long as those service providers are not blocked from providing different levels of service to individuals who have not elected to receive targeted advertising, moving towards the EU’s privacy-friendly defaults may have the virtue of pushing us away from an often not-so-meaningful default opt in towards more meaningfully calibrated opt ins exchanged for higher quality services, such as seeing fewer, better matched ads.

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