

SECTION 2 IN A WEB 2.0 WORLD: AN EXPANDED VISION OF RELEVANT PRODUCT MARKETS

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Section 2 enforcement by the U.S. antitrust authorities is back—at least, that is what the antitrust enforcers themselves have been saying.¹ An examination of Section 2 enforcement principles could not be more timely. Our goal in this essay is to share a few ideas for fresh thinking about one element of Section 2 enforcement—defining relevant product markets—that may inform the agencies’ reinvigorated analysis of dominant firm conduct, particularly in important technology sectors of our economy.

* The authors were until recently, respectively, Commissioner and Attorney Advisor to Commissioner Harbour, Federal Trade Commission. The views expressed herein are those of the authors alone and do not necessarily reflect the views of the FTC or any other individual Commissioner. This essay is based on a paper presented at the symposium, Issues at the Forefront of Monopolization and Abuse of Dominance, University of Haifa, Israel (May 24–26, 2009). We are grateful to the other symposium participants for their constructive remarks. We acknowledge significant contributions by Jamie Hine, and we also thank Laurel Price for his helpful comments.

¹ See, e.g., Christine A. Varney, Assistant Att’y Gen., Antitrust Div., U.S. Dep’t of Justice, Vigorous Antitrust Enforcement in this Challenging Era, Remarks Prepared for the U.S. Chamber of Commerce 5 (May 12, 2009) [hereinafter Vigorous Antitrust Enforcement] (“The Antitrust Division must step forward and take a leading role in the development of the Government’s multi-faceted response to the current market conditions. Vigorous antitrust enforcement action under Section 2 of the Sherman Act will be part of the Division’s critical contribution to this response.”), available at <http://www.justice.gov/atr/public/speeches/245777.pdf>; Jon Leibowitz, Chairman, Fed. Trade Comm’n, Remarks at Roundtable Conference with Enforcement Officials, ABA Section of Antitrust Law Spring Meeting (Mar. 27, 2009) (“I am very optimistic that under Christine Varney, who is going to be a terrific Assistant Attorney General for Antitrust, that the Division and the [FTC] will be much, much more in synch.”), ANTITRUST SOURCE, Apr. 2009, <http://www.abanet.org/antitrust/at-source/09/04/Apr09-EnforcerRT4-29f.pdf>. Presumably, in suggesting that the FTC and Antitrust Division have not always been “in synch,” Chairman Leibowitz was referring to the Commission’s unanimous refusal to endorse a September 2008 DOJ report on Section 2 enforcement policy. See *infra* note 5 and accompanying text.

A few months into the Obama Administration, newly appointed Assistant Attorney General Christine Varney, head of the Antitrust Division of the U.S. Department of Justice, rejected and withdrew² the Department's September 2008 report on Section 2.³ AAG Varney indicated that the Department, rather than adopting a monolithic test to govern Section 2 matters, would rely upon well-established judicial precedents that provide guidance on the limits of acceptable conduct by dominant firms.⁴ Varney's comments more closely aligned the DOJ position with the views of at least three Commissioners of the Federal Trade Commission.⁵

Given these expressions of interest in more vigorous enforcement, it seems likely that both U.S. antitrust enforcement agencies actively will be seeking cases to fill their Section 2 investigatory pipelines and, ultimately, to flesh out their Section 2 enforcement agendas. Recent experi-

² Press Release, U.S. Dep't of Justice, Justice Department Withdraws Report on Antitrust Monopoly Law (May 11, 2009), available at <http://www.justice.gov/opa/pr/2009/May/09-at-459.html>.

³ U.S. DEP'T OF JUSTICE, COMPETITION AND MONOPOLY: SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT (2008) (now withdrawn; see Press Release, *supra* note 2), available at <http://www.justice.gov/atr/public/reports/236681.pdf>. This report represented the DOJ's effort to synthesize its findings from a wide-ranging series of public hearings held jointly by the DOJ Antitrust Division and the FTC from June 2006 through May 2007, relating to the evaluation of unilateral conduct under Section 2. See Fed. Trade Comm'n, *Public Hearings: Federal Trade Commission and Department of Justice Hearings on Section 2 of the Sherman Act: Single-Firm Conduct As Related to Competition*, <http://www.ftc.gov/os/sectiontwohearings/index.shtm> (listing a collection of materials relating to Section 2 hearings).

⁴ See, e.g., Varney, *Vigorous Antitrust Enforcement*, *supra* note 1, at 9 (citations omitted):

While the Department is not proposing any one specific test to govern all Section 2 matters at this time, I believe the balanced analyses reflected in the leading cases interpreting the reaches of the Sherman Act provide important guidance in this regard. In particular, leading Section 2 cases—from *Lorain Journal v. United States* to *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.* to *United States v. Microsoft*—highlight a common concern regarding the harmful effects of a monopolist's exclusionary or predatory conduct on competition and, ultimately, consumers. Reinvigorated Section 2 enforcement will thus require the Division to go "back to the basics" and evaluate single-firm conduct against these tried and true standards that set forth clear limitations on how monopoly firms are permitted to behave. There can be no better charter for our return to fundamental principles of antitrust enforcement.

⁵ The FTC had refused to join the Department's September 2008 Section 2 Report and had instead issued its own statement. Statement of Commissioners Harbour, Leibowitz and Rosch on the Issuance of the Section 2 Report by the Department of Justice (Sept. 8, 2008), available at <http://www.ftc.gov/os/2008/09/080908section2stmt.pdf>. See also Federal Trade Comm'n, Working Papers: Federal Trade Commission and Department of Justice Hearings on Section 2 of the Sherman Act: Single-Firm Conduct As Related to Competition (developed by FTC staff involved in the joint FTC/DOJ Section 2 hearings), available at <http://www.ftc.gov/os/sectiontwohearings/index.shtm>.

ence suggests that the agencies will pay particularly close attention to firms that appear to be attaining dominance in new-technology markets. For example, Google can be seen as “the new Microsoft,” in terms of its tremendous capacity for innovation and market success, as well as the intense scrutiny that henceforth will be cast upon the company’s every move.⁶ At the end of the Bush Administration, the DOJ Antitrust Division closely examined a proposed transaction between Google and Yahoo! relating to search advertising. The parties abandoned the deal in the face of an imminent enforcement action.⁷ The DOJ has been closely monitoring the class action litigation surrounding the Google Book Search service,⁸ while the FTC investigated the potential competitive implications of interlocking directorates between Google and Apple.⁹

⁶ See Steve Lohr & Miguel Helft, *New Mood in Antitrust May Affect Google*, N.Y. TIMES, May 18, 2009, at B1 (“In this new climate, the stakes appear to be highest for Google, the rising power of the Internet economy.”), available at <http://query.nytimes.com/gst/fullpage.html?res=9B03E3D8163AF93BA25756C0A96F9C8B63>.

⁷ Press Release, U.S. Dep’t of Justice, Yahoo! Inc. and Google Inc. Abandon Their Advertising Agreement (Nov. 5, 2008) (explaining that the DOJ was preparing to file an antitrust lawsuit alleging that the proposed agreement likely would harm competition in markets for Internet search advertising and Internet search syndication, where the two firms accounted for 90 percent or more of each relevant market), available at http://www.usdoj.gov/atr/public/press_releases/2008/239167.pdf; see also Press Release, Yahoo!, Yahoo! Announces Termination of Services Agreement by Google (Nov. 5, 2008), available at <http://yhoo.client.shareholder.com/PRESS/releasedetail.cfm?ReleaseID=345734>.

⁸ See, e.g., Statement of Interest of the United States of America Regarding Amended Settlement Agreement, *The Authors Guild, Inc. v. Google Inc.*, 05-8136-DC (S.D.N.Y.) (Feb. 4, 2010) (recommendation that the court should not accept the settlement, but should continue to encourage the parties to pursue alternatives and, perhaps, provide additional guidance to the parties), available at <http://www.justice.gov/atr/cases/f255000/255012.pdf>; Press Release, U.S. Dep’t of Justice, Justice Department Submits Views on Amended Google Book Search Settlement (Feb. 4, 2010), available at http://www.justice.gov/atr/public/press_releases/2010/255014.pdf; see also Statement of Interest of the United States of America Regarding Proposed Class Settlement, *The Authors Guild, Inc. v. Google Inc.*, 05-8136-DC (S.D.N.Y.) (Sept. 18, 2009) (comment on earlier version of settlement), available at <http://www.justice.gov/atr/cases/f250100/250180.pdf>; Press Release, U.S. Dep’t of Justice, Justice Department Submits Views on Proposed Google Book Search Settlement (Sept. 18, 2009), available at http://www.justice.gov/atr/public/press_releases/2009/250181.pdf; Miguel Helft, *Justice Dept. Opens Antitrust Inquiry into Google Books Deal*, N.Y. TIMES, Apr. 29, 2009, at B5, available at <http://www.nytimes.com/2009/04/29/technology/internet/29google.html>.

⁹ See, e.g., Miguel Helft & Brad Stone, *Board Ties at Apple and Google Are Scrutinized*, N.Y. TIMES, May 4, 2009, at B1, available at <http://www.nytimes.com/2009/05/05/technology/companies/05apple.html>; Press Release, Fed. Trade Comm’n, Statement of Bureau of Competition Director Richard Feinstein Regarding the Announcement that Google CEO Eric Schmidt Has Resigned from Apple’s Board (Aug. 3, 2009) (“We have been investigating the Google/Apple interlocking directorates issue for some time and commend them for recognizing that sharing directors raises competitive issues, as Google and Apple increasingly compete with each other.”), available at <http://www.ftc.gov/opa/2009/08/googlestmt.shtm>; Press Release, Fed. Trade Comm’n, Statement of Chairman Jon Leibowitz Regarding the Announcement that Arthur D. Levinson Has Resigned from Google’s Board (Oct. 12, 2009) (“Google, Apple, and Mr. Levinson [Apple Board Member] should

More recently, the Commission initiated an investigation of Google's proposed acquisition of AdMob, a mobile advertising firm.¹⁰ Whether Google deserves all of this attention or not, Google's behavior is likely to serve as a focal point for discussions regarding the limits of acceptable conduct for dominant, or potentially dominant, Internet-based firms.

Debate—both domestic and international—will continue regarding the appropriate analytical framework for dominant firm conduct.¹¹ This essay will focus on one particular element of that framework. Among the first principles of antitrust is that any analysis of potentially anticompetitive conduct requires the definition of a relevant product market. In any industry, product market definition is capable of determining the outcome of an antitrust inquiry or enforcement action.¹² In technology markets that evolve rapidly, the challenge of market definition increases; this is especially true of Internet markets characterized by large numbers of innovators, rapid application development capability, and relatively low entry barriers. As technologies converge, today's complements might become tomorrow's substitutes. Is it possible for anyone—consumers, business actors, legal counselors, or regulators—to understand fully how different products may relate to each other a month or a year down the road?

To ensure that consumers are adequately protected, the antitrust enforcement agencies should actively embrace the possibility of defining

be commended for recognizing that overlapping board members between competing companies raise serious antitrust issues and for their willingness to resolve our concerns without the need for litigation.”), available at <http://www.ftc.gov/opa/2009/10/google.shtm>.

¹⁰ Google Public Policy Blog, *An Update on Our AdMob Acquisition* (Dec. 23, 2009), (acknowledging FTC inquiry and receipt of FTC “second request,” which typically signifies a substantial merger investigation), <http://googlepublicpolicy.blogspot.com/2009/12/update-on-our-admob-acquisition.html>. Several months earlier, Google's CEO had announced that “[a]cquisitions are turned on again” after the worst of the economic downturn, and that henceforth Google anticipated making one acquisition a month in lieu of new hiring. *Google CEO Sees One Small Acquisition a Month*, REUTERS, Sept. 23, 2009, available at <http://www.reuters.com/article/idUSTRE58M4LV20090923>.

¹¹ The International Competition Network (ICN) is a key forum where this discussion has been ongoing for several years. The ICN Unilateral Conduct Working Group, formed in May 2006, has been engaged in a detailed comparative examination of “the challenges involved in addressing anticompetitive unilateral conduct of dominant firms and firms with market power,” and has established a goal of “promot[ing] greater convergence and sound enforcement of laws governing unilateral conduct.” Int'l Competition Network, Unilateral Conduct Working Group, <http://www.internationalcompetitionnetwork.org/index.php/en/working-groups/unilateral-conduct>.

¹² See, e.g., *United States v. Oracle Corp.*, 331 F. Supp. 2d 1098, 1158–61 (N.D. Cal. 2004) (plaintiffs did not meet burden of proof on product market definition; court could not exclude related software solutions outside the narrowly drawn enterprise software application markets argued by plaintiffs).

relevant product markets based on current and future interrelationships and convergence among various technologies. Under this approach, the market definition exercise would strive, as usual, to identify—from a functional perspective—where in the marketplace consumers currently benefit from competition. Market definition would, however, also account for areas where new and meaningful competition is likely to emerge, based on technological developments as well as emerging consumer preferences.

We propose two types of product market definitions that would embody these principles. First, we suggest the definition of markets for data, separate and apart from markets for the services fueled by these data.¹³ Data market definition would reflect the distinction between data collection at one point in time and expanded data usage at some later date. Data market definition also would properly recognize the increased significance and value of the massive and growing data troves that constantly are generated by Internet activities. Additionally, and importantly, this approach to market definition would be consistent with marketplace reality: Internet-based firms often derive great value from user data, far beyond the initial purposes for which the data initially might have been shared or collected, and this value often has important competitive consequences. In contrast, product market definitions based only on a snapshot of current data usage may not accurately capture this aspect of competition, especially in markets that exhibit network effects based on aggregations of data.

Second, the agencies should consider framing relevant product markets around privacy issues. In the United States, up until now, privacy has been thought of primarily as a consumer protection issue. But privacy is an increasingly important dimension of competition as well, which is exactly why modern antitrust analysis must take privacy into account. It makes no sense to maintain an artificial dichotomy between competition and consumer protection law, especially when their goals are complementary.¹⁴ The product market definition exercise may be a

¹³ Such services might include, for example, social networking, mapping, email, photo sharing, calendaring, document management, and advertising, to name just a few.

¹⁴ Competition law strives to provide consumers with an efficient range of choices, while consumer protection law aims to ensure that consumers can exercise these choices based on truthful and accurate information. The synergies between competition and consumer protection have been highlighted in, for example, Neil W. Averitt & Robert H. Lande, *Consumer Sovereignty: A Unified Theory of Antitrust and Consumer Protection Law*, 65 ANTITRUST L.J. 713, 713 (1997); Spencer Weber Waller, *In Search of Economic Justice: Considering Competition and Consumer Protection Law*, 36 LOY. U. CHI. L.J. 631 (2005).

useful way to begin the process of making privacy cognizable under the antitrust laws.¹⁵

We acknowledge, but do not attempt here, the challenge of deriving these kinds of product market definitions according to traditional market definition principles (e.g., defining buyers and sellers, identifying substitutes, applying the hypothetical monopolist test, etc.). Such efforts are best undertaken—on a case-by-case basis—by counselors, enforcers, and economists who have access to market-specific facts regarding data acquisition and use. The current joint FTC/DOJ inquiry into proposed Merger Guidelines reforms¹⁶ may yield useful insights into a methodology that will facilitate the product market definition in these complex technology-driven areas—especially if the agencies endorse an effects-based analytical approach that supports “backing into” a product market definition based on direct effects evidence.¹⁷

¹⁵ This essay deals primarily with product market definition in the context of evaluating unilateral conduct by dominant (or potentially dominant) firms under Section 2. We note, however, that the same concepts could apply to product market definition in the merger context (to the extent that courts continue to apply a legal framework that requires plaintiffs to meet their burden of proof by defining relevant product markets). Merger analysis often is premised on the idea that a merger may create a dominant firm, which might then be able to engage in anticompetitive conduct that would not have been possible but for the merger. Given the “incipiency” approach of the Clayton Act, which proscribes transactions whose effect “may be” (not “will be”) substantially to lessen competition, firms typically are not allowed to consummate a merger or acquisition that is likely to lead to a dominant market share in a properly defined relevant market. See *Brown Shoe Co. v. United States*, 370 U.S. 294 (1962); *United States v. Philadelphia Nat’l Bank*, 374 U.S. 321 (1963); accord *FTC v. H.J. Heinz Co.*, 246 F.3d 708, 713 (D.C. Cir. 2001). An important distinction between merger and monopolization law is that, under Section 2, dominance (or the likelihood of dominance) is not prohibited outright. Rather, a firm may seek or attain lawful dominance unilaterally, as long as the firm does not engage in acts of exclusionary conduct. *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966) (cited as “settled law” in *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004)).

¹⁶ Press Release, Fed. Trade Comm’n, Federal Trade Commission and Department of Justice to Hold Workshops Concerning Horizontal Merger Guidelines (Sept. 22, 2009), available at <http://www.ftc.gov/opa/2009/09/mgr.shtm>. Press Release, Fed. Trade Comm’n, Federal Trade Commission Seeks Views on Proposed Update of the Horizontal Merger Guidelines (Apr. 20, 2010), available at <http://www.ftc.gov/opa/2010/04/hmg.shtm>.

¹⁷ See Fed. Trade Comm’n & U.S. Dep’t of Justice, Horizontal Merger Guidelines: Questions for Public Comment (Sept. 22, 2009), available at <http://www.ftc.gov/bc/workshops/hmg/hmg-questions.pdf>. Question 2, in particular, asks: “Should the Guidelines be revised to address more fully how the Agencies use evidence about likely competitive effects that is not based on inferences drawn from increases in market concentration? If such revisions are undertaken, what types of such direct evidence are pertinent?” Fed. Trade Comm’n & U.S. Dep’t of Justice, Horizontal Merger Guidelines: Questions for Public Comment (Sept. 22, 2009), available at <http://www.ftc.gov/bc/workshops/hmg/hmg-questions.pdf>. The proposed revised Guidelines answer this question in the affirmative, leading off with a detailed discussion of the types and sources of competitive effects evidence. Fed. Trade Comm’n & U.S. Dep’t of Justice, Horizontal Merger Guidelines, For

We also acknowledge that these data and privacy concepts arguably might be addressed as part of a typical entry analysis, rather than at the market definition stage.¹⁸ In some cases, this choice may not be outcome-determinative. We believe, however, that in certain cases there would be value in considering these issues as part of market definition, for several reasons. Market definition plays an important role in organizing and shaping investigations and enforcement recommendations. If putative market definitions do not yield a credible risk of market power, an investigation may be framed differently, competitive harm may seem unlikely, and it is possible that any entry analysis might not be as fully developed.¹⁹ By considering alternate market definitions, however, additional theories of competitive harm may emerge and be fully tested. In addition, many judges treat market definition as a threshold issue, especially when, for efficiency's sake, they seek to decide cases on the narrowest possible grounds. If a judge deems that a plaintiff has not met its market definition burden, the analysis may be cut off there, and questions of entry may never be reached. Therefore, market definition is, and will remain, an important organizing principle and strategic tool for enforcers and other plaintiffs.²⁰

I. A PRIMER ON INTERNET TECHNOLOGIES

The following discussion attempts to distill the core market elements that might affect and inform antitrust analysis, particularly with respect to product market definition.

Public Comment (Apr. 20, 2010), at 3–6, *available at* <http://www.ftc.gov/os/2010/04/100420hmg.pdf>. The section on market definition, which now comes later in the document, emphasizes that “[t]he Agencies’ analysis need not start with market definition” and that “[e]vidence of competitive effects can inform market definition, just as market definition can be informative regarding competitive effects.” *Id.* at 7.

¹⁸ For example, the need to amass huge troves of data, or one firm’s huge lead in assembling such a data trove, might be characterized as an entry barrier. So might the ability to offer consumers their desired level of privacy protection—especially where consumers demand high levels of privacy protection and will only turn to firms with a proven reputation for respecting consumer privacy.

¹⁹ For example, when Google acquired DoubleClick, the Commission adopted product market definitions that led the transaction to be characterized primarily as a vertical merger, and therefore likely to be procompetitive. In contrast, Commissioner Harbour’s dissent proposed product market definitions that would have enabled the transaction to be characterized more in terms of a horizontal overlap, which would have led to a different set of presumptions regarding competitive effects. *See infra* notes 46–48 and accompanying text.

²⁰ Malcolm Coate & Jeffrey Fischer, *Why Markets Matter for Evidence-Based Merger Analysis*, OXERA AGENDA (Jan. 2010), *available at* http://www.oxera.com/cmsDocuments/Agenda_January%2010/Market%20definition.pdf.

A. WHAT IS WEB 2.0?

The term “Web 2.0” is most commonly used to describe the “second generation” of the Internet. This generation of Internet technology is characterized by greater interaction and connectedness among Web users, along with the use of rich, interactive media.²¹

Web 2.0 relies primarily on the sharing of information, which means that user contributions are highly valuable. “The new Web [is] a tool for bringing together the small contributions of millions of people and making them matter.”²² Successful Web 2.0 companies “have embraced the power of the web to harness collective intelligence.”²³ To give a simple example, in Web 1.0, one might have accessed a static, online version of *Encyclopedia Britannica*, where the content had not changed since it was created and posted online. In Web 2.0, in contrast, one might consult or contribute to Wikipedia, an online reference that constantly changes and expands based on user input.²⁴

Web 2.0 takes advantage of multimedia capabilities that are enabled by the widespread availability of high-bandwidth Internet access. In Web 1.0, a user might have accessed a transcript of the text of Martin Luther King’s “I Have a Dream” speech. In Web 2.0, a user can search YouTube and find hundreds of video clips of that speech. A user might add her own comments, either within YouTube or, perhaps, on a separate “blog” page that provides links to the video. A user who actually attended the 1963 speech might add her own perspective and narrative, along with scanned snapshots from her own photo albums, which would expand the historical record available to others. Or a user could “mash up” either the audio or video of Dr. King’s speech with other user- or professionally-created material, creating a whole new form of expression.

Success in the Web 2.0 world relies on the creation and exploitation of network effects, which means that a given Web site becomes more

²¹ For a detailed explanation of the Web 2.0 concept (by one of the people who originated the term), see Tim O’Reilly, *What Is Web 2.0: Design Patterns and Business Models for the Next Generation of Software* (Sept. 30, 2005), <http://www.oreillyn.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>.

²² Lev Grossman, *Time’s Person of the Year: You*, TIME, Dec. 13, 2006, available at <http://www.time.com/time/magazine/article/0,9171,1569514,00.html>. In 2006, *Time* named “You” as its 2006 Person of the Year in recognition of the millions of contributors whose user-generated content drove the success of Web sites, such as Wikipedia, YouTube, and MySpace. “Silicon Valley consultants call it Web 2.0, as if it were a new version of some old software. But it’s really a revolution.” *Id.*

²³ O’Reilly, *supra* note 21.

²⁴ Wikipedia: About, <http://en.wikipedia.org/wiki/Wikipedia:About>.

useful and increases in value with larger numbers of users.²⁵ One current example is the tremendous growth in the number of Facebook users, particularly among older age groups who were not the site's original target audience of college and high school students.²⁶ As more people in this expanded demographic have joined, Facebook has become a popular means of communication among friends of all ages, extended family members, and even business associates.²⁷ With a broad range of people spending large amounts of time on Facebook, many companies and organizations are rushing to establish a Facebook presence as a means to market their goods and services and, perhaps, better understand their target audience. Application developers, too, are vying for the attention of Facebook users and seeking ways to monetize these new connections.²⁸

Another prime example of the role of network effects in establishing a strong Web 2.0 presence is the Google search engine algorithm. Google's initial success in the search market derived from a novel and unique search methodology that excelled at generating highly relevant search results.²⁹ Google's popularity has exploded, however, because the accuracy and relevance of Google search results actually improves as more and more searches are conducted. This improved performance, in turn, has attracted even more searchers to Google, which further improves the search results, and so on, in a continually self-reinforcing

²⁵ Seminal literature regarding network effects includes Michael Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 J. ECON. PERSP., Spring 1994, at 93; Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424 (1985). See also O'Reilly, *supra* note 21 ("Network effects from user contributions are the key to market dominance in the Web 2.0 era.")

²⁶ As of April 2010, Facebook had over 400 million active users, more than half of whom were logging in daily. Facebook Press Room, Facebook Factsheet, <http://www.facebook.com/press/info.php?factsheet>; Facebook Press Room, Statistics, <http://www.facebook.com/press/info.php?statistics>; see also Facebook Press Room, Company Timeline, <http://www.facebook.com/press/info.php?timeline> (Facebook users doubled from 100 million to 200 million between August 2008 and April 2009, and had tripled to over 300 million by September 2009).

²⁷ This evolution of Facebook appears to be consistent with the original vision of Facebook's founder, Mark Zuckerberg, who hoped that the Facebook "social utility" ultimately would become "a truly global digital phone book. . . . [N]ow his vision goes well beyond the site as a digital phone book. It becomes the equivalent of the phone itself. It is the main tool people use to communicate for work and pleasure. . . . Facebook will be where people live their digital lives. . . ." See Jessi Hempel, *How Facebook is taking over our lives*, CNNMONEY.COM, Mar. 11, 2009, http://money.cnn.com/2009/02/16/technology/hempel_facebook.fortune/index.htm.

²⁸ The rise in popularity of Twitter and LinkedIn offers similar examples, albeit with a more targeted focus (Twitter for short bits of time-sensitive information, LinkedIn for professional connections and information exchanges).

²⁹ See Google, Corporate Information: Technology Overview, <http://www.google.com/corporate/tech.html>.

loop. As a result, “Google” has now entered the lexicon as a verb synonymous with the very act of Internet searching.³⁰

Network effects lead to the collection and sharing of ever-expanding amounts of information, which often is quite valuable to users. But as has been demonstrated in other technology areas, network effects also may make it easier for a firm to achieve and maintain a position of market dominance. The *Microsoft* case provides a notable example of the relationship between network effects and market dominance. In its original Findings of Fact, the district court found that the large installed base of Windows users creates incentives to develop compatible software applications, which in turn reinforces demand for Windows, in a “positive feedback loop” that creates “positive network effects.”³¹ From the perspective of would-be competitors, however, the court explained that these network effects made it difficult for a rival operating system to attract sufficient software development, a situation characterized by the court as the “applications barrier to entry.”³²

B. CLOUD COMPUTING

In order to properly analyze evolving Internet markets, it is also necessary to understand the concept of “cloud computing.” In very simple terms, cloud computing refers to complex applications and associated data that reside on remote servers (sometimes halfway across the world) and are accessed through the Internet, rather than residing on individual PCs or individual corporate networks. No matter where you are, if you have a laptop and an Internet connection, you can take advantage

³⁰ For example, the word “google” now shows up as a verb in a popular dictionary. See MERRIAM-WEBSTER DICTIONARY (Online Edition 2010), <http://www.merriam-webster.com/dictionary/google>.

³¹ *United States v. Microsoft Corp.*, 84 F. Supp. 2d 9, 20 (D.D.C. 1999) (Findings of Fact, ¶ 39).

³² *Id.* at 19–22 (Findings of Fact, ¶¶ 36–44). After the D.C. Circuit’s main *Microsoft* opinion, the remand to the district court for further remedial proceedings, and the eventual settlement, the D.C. Circuit considered a subsequent appeal by the Commonwealth of Massachusetts, which challenged the remedy as inadequate. In denying this appeal, the D.C. Circuit was careful to distinguish between the effects of Microsoft’s exclusionary conduct and the “positive network effects” inherent in the operating system market.

[I]t does not follow that, because a proposed requirement could reduce the applications barrier to entry, it must be adopted. Recall the applications barrier to entry arose only in part because of Microsoft’s unlawful practices; it was also the product of “positive network effects.” 84 F. Supp. 2d at 20. If the court is not to risk harming consumers, then the remedy must address the applications barrier to entry in a manner traceable to our [earlier] decision.

Massachusetts v. Microsoft Corp., 373 F.3d 1199, 1226 (D.C. Cir. 2004). In other words, while the court could impose or condone a remedy that responded directly to Microsoft’s exclusionary conduct, remedial action would not be justified solely to counter legitimate market power acquired as a result of “positive network effects.”

of applications that rely on an Internet interface to harness the computing power and storage capabilities of massive remote servers.³³

Many cloud applications are targeted directly to consumers. Familiar examples include Web-based e-mail, online calendars, document management sites, and photo-sharing sites, many of which are made available to consumers fee-free. Cloud computing also has many high-level commercial applications. Increasingly, even large firms with sophisticated computing needs do not have to bring massive computing power in-house. Instead, a firm might equip itself with basic computers and Internet access, then effectively contract out its entire IT infrastructure.³⁴

Cloud computing can lead to significant efficiencies. For example, highly mobile consumers, who may choose to utilize free cloud-based applications, enjoy the flexibility of data that are no longer tethered to a specific location, which facilitates access from anywhere at any time. On the commercial end, firms might choose to start out by transferring basic IT needs to the cloud, then scale up their reliance on cloud-based computing over time to incorporate the company's most mission-critical software applications.

As with network effects, however, cloud computing is not without risks. Someone else—not the user—becomes the caretaker of the underlying data that have been fed into a given application. This raises questions regarding who may have access to, and control of, valuable data, and what might be done with those data.³⁵ In addition to potential privacy and data security implications,³⁶ one particular area of concern

³³ "It's always a balancing act, but today's combination of high-speed networks, sophisticated PC graphics processors, and fast, inexpensive servers and disk storage has tilted engineers toward housing more computing in data centers." Aaron Rocadela, *Computing Heads for the Clouds*, BUS. WK., Nov. 16, 2007, available at http://www.businessweek.com/technology/content/nov2007/tc20071116_379585.htm.

³⁴ Salesforce.com is one of the best known and most successful examples of the cloud computing business model. The company originally offered cloud-based software solutions for sales and customer service; the company has since expanded its business model to include a wider range of software applications. See Salesforce.com, What Is Cloud Computing?, <http://www.salesforce.com/cloudcomputing/>.

³⁵ See, e.g., Bobbie Johnson, *Cloud Computing Is a Trap, Warns GNU Founder Richard Stallman*, GUARDIAN, Sept. 29, 2008, <http://www.guardian.co.uk/technology/2008/sep/29/cloud.computing.richard.stallman> (leading advocate of free software warned that cloud computing applications pose the same risk as other proprietary software, leading to a loss of control over one's data).

³⁶ For example, consumers may trade some of their privacy for "free" cloud applications, funded by revenues from targeted advertising derived from applications data. It may not always be clear, however, whether consumers fully understand and have consented to this trade-off. With respect to data security, responsibility for maintaining ade-

relates to data portability. If cloud services providers adopt proprietary standards and formats rather than open ones, data portability may be limited; users may run the risk of lock-in once they commit to a certain platform, and entry by new services providers may become more difficult.³⁷

C. THE COMMERCIAL MODEL AND ITS IMPLICATIONS

As a final background point, it is important to recognize one key aspect of today's Internet environment. In many Web 2.0 markets, the revenue stream is not matched directly to specific Internet-based services. Rather, to a large extent, revenue—or “monetization,” to use the current term of art—derives from the accumulation of data, which can then be put to myriad commercial uses. This model explains how many Web sites are able to finance the provision of “free” content and services. The sites are subsidized, in effect, by trading on the value of accumulated data. In many instances, the data come from individual consumers, who may or may not realize that they are paying for “free” information or services by disclosing their personal information.

A primary example of this revenue model is behavioral advertising—a topic to which the FTC has been paying a great deal of attention.³⁸ Behavioral advertising relies on the sophisticated analysis of data about users—including their actions, choices, and revealed preferences—to make predictions about which advertisements might appeal to which consumers. Those targeted ads are then served up while a user is browsing a Web site. The ads typically show up along the top or side of the main content on a page, with different ads being displayed to different

quate safeguards will need to be allocated among the various guardians who have access to cloud applications data at processing, transmittal, and storage points.

³⁷ See, e.g., *Battle of the Clouds*, *ECONOMIST*, Oct. 17, 2009, at 16 (“Buyers of cloud services must take account of the dangers of lock-in.”). But see *Clash of the Clouds*, *ECONOMIST*, Oct. 17, 2009, at 80, 81–82 (the economics of cloud computing may favor open standards, thus mitigating potential lock-in concerns, although certain “closed” applications with desirable features still may be popular).

³⁸ See, e.g., Press Release, Fed. Trade Comm’n, FTC Staff Proposes Online Behavioral Advertising Privacy Principles (Dec. 20, 2007), available at <http://www.ftc.gov/opa/2007/12/principles.shtm> (includes link to text of staff statement); Press Release, Fed. Trade Comm’n, FTC Staff Revises Online Behavioral Advertising Principles (Feb. 12, 2009), available at <http://www.ftc.gov/opa/2009/02/behavad.shtm>; FED. TRADE COMM’N, STAFF REPORT, SELF-REGULATORY PRINCIPLES FOR ONLINE BEHAVIORAL ADVERTISING (2009) [hereinafter FTC STAFF BEHAVIORAL ADVERTISING REPORT], available at <http://www.ftc.gov/os/2009/02/P085400behavadreport.pdf>; see also Commissioner Pamela Jones Harbour, Concurring Statement Regarding Staff Report, Self-Regulatory Principles for Online Behavioral Advertising (Feb. 12, 2009) [hereinafter Harbour Behavioral Advertising Concurrence], available at <http://www.ftc.gov/os/2009/02/P085400behavadharbour.pdf>.

users who browse the same Web site. This placement method is very different from the traditional, static advertising model, where a given ad would be assigned to a specific space in a printed newspaper or a specific time slot in a given TV show.

In online advertising, an advertiser gets the most “bang for its buck” when its ads generate more “click-throughs”—meaning that a user’s interest is piqued, and the user completes an action, such as clicking on the ad to pursue more information. The point of traditional, non-behavioral display advertising is a numbers game: it seeks to place a given ad in front of as many eyeballs as possible, figuring that if a certain percentage of viewers will respond to the ad, more eyeballs will equal more click-throughs. Behavioral advertising takes a more targeted approach. It attempts to place highly relevant ads in front of the *right* sets of eyeballs, to maximize the likelihood of a click-through from each viewer. If the ads are likely to be more effective at attracting customers, an advertiser will pay more to place the ads, which will generate a larger revenue stream for the Web site.

Sometimes ads are served up because they relate directly to the content on the pages the user has been viewing. One recent article³⁹ cited this example: a user is Web surfing to research the purchase of a new car, and ads for the user’s chosen brand of car soon start popping up. That type of advertising does not require much data analysis. In more sophisticated applications of behavioral advertising, however, ads may appear that are not entirely related to the content of the page being viewed. Rather, ads may be selected and served up based not only on the current page, but also on other aggregated data about the user—including, for example, searches the user recently has conducted, other sites the user has visited, the user’s geographic location, and other factors.

Here is one stylized (but entirely plausible) example.⁴⁰ Imagine an avid baseball fan who frequently visits fantasy baseball and other sports Web sites. This user later visits an airline comparison shopping Web site, and peruses flight options to Baltimore. Next, the user visits the *New York Times* Travel Section online, and reads an article about what to do during a weekend visit to Baltimore. An advertiser selling Baltimore Orioles tickets would love to target this user for an offer for baseball tickets. The ticket seller is likely to pay an advertising network a premium to deliver its ad to a user matching this profile, based on the user’s collec-

³⁹ Diana Dietrich, *Google/DoubleClick: Is Privacy an Antitrust Concern (Not to Mention What is the FTC Doing About Behavioral Advertising)?*, SECURE TIMES, Spring/Summer 2008, at 2.

⁴⁰ This example is based on similar examples contained in the FTC STAFF BEHAVIORAL ADVERTISING REPORT, *supra* note 38, at 3–4.

tive interests and the high likelihood that he will be interested in the content of the ad.

This type of behavioral targeting may be highly efficient, in terms of finding the right eyeballs for an ad, and matching Internet users with content and opportunities relevant to their interests. But behavioral advertising also raises extensive questions about the boundaries of privacy and, perhaps more importantly, consumers' expectations and assumptions regarding their privacy.⁴¹ It is unclear whether consumers fully understand how the business model works, in terms of the price they pay for "free" content and services. It is also difficult to quantify the cumulative consequences of sharing data—consequences that may be difficult to reverse if a consumer ultimately decides that the revenue model is not to her liking,⁴² and that may be magnified as data-gathering technologies infiltrate more of our daily lives.⁴³ As illustrated by Facebook's re-

⁴¹ The *FTC Staff Behavioral Advertising Report* described the agency's ongoing examination of behavioral advertising, including its implications for consumer privacy. *See, e.g., id.* at 10 ("the invisibility of the practice to consumers raises privacy concerns, as does the risk that data collected for behavioral advertising—including sensitive data about children, health, or finances—could be misused"). The report also set forth revised principles to govern self-regulatory efforts in this area. *Id.* at 45.

The Commission recently initiated a series of roundtables to explore privacy issues more broadly, as discussed *infra* note 89. Fed. Trade Comm'n, Exploring Privacy: A Roundtable Series, <http://www.ftc.gov/bcp/workshops/privacyroundtables/index.shtml> [hereinafter *FTC Privacy Roundtables*].

⁴² For a more detailed discussion of these concerns and risks, see Harbour Behavioral Advertising Concurrence, *supra* note 38.

There may be a "tipping point"—a point where consumers become sufficiently concerned about the collection and use of their personal information that they want to exercise greater control over it, but where any such attempt to exercise control becomes futile because so much of their digital life already has been exposed.

Id. at 4.

⁴³ These concerns may be exacerbated as consumers rapidly adopt cloud computing, mobile devices, and other data-focused technologies. In the cloud and mobile environments, not only are increasing volumes of data being shared and collected, but a broader range of data may be available to fuel targeting efforts. Mobile technologies may enable consumers to be reached by targeted ads throughout the day, even at times when consumers are not sitting down and using traditional computers. In addition, new technologies, such as "smart grid" electricity meters that capture detailed information about individual energy consumption use, may further expand the data pool and thereby raise their own unique privacy issues. *See, e.g.,* INFO. & PRIVACY COMM'R, ONTARIO, & FUTURE OF PRIVACY FORUM, SMARTPRIVACY FOR THE SMART GRID: EMBEDDING PRIVACY INTO THE DESIGN OF ELECTRICITY CONSERVATION 3 (Nov. 2009) [hereinafter *SMARTPRIVACY FOR THE SMART GRID*] (while smart grid planning efforts are laudable, "[w]e must take great care not to sacrifice consumer privacy amidst an atmosphere of unbridled enthusiasm for electricity reform."), available at <http://www.ipc.on.ca/images/Resources/pbd-smartpriv-smartgrid.pdf>.

cent experience when it modified its privacy settings,⁴⁴ as well as Google's recent conversion of email accounts into social networking accounts,⁴⁵ a delicate balance exists between, on the one hand, the benefits of sharing information, and on the other hand, the desire to maintain control over data dissemination and use.

II. DATA MARKETS IN CYBERSPACE

With this background in mind, we will explore situations where it might be appropriate and useful to define an input market for data itself—not just a market for the services fueled by the data.

A. GOOGLE

Commissioner Harbour, an author of this essay, first articulated a position regarding data markets in her dissenting statement⁴⁶ when the Commission approved the merger of Google and DoubleClick in De-

⁴⁴ A strong public reaction erupted when, in late 2009 and early 2010, Facebook modified its privacy policy and the privacy settings available to users. Press Release, Facebook, Facebook Asks More than 350 Million Users Around the World to Personalize Their Privacy (Dec. 9, 2009), *available at* <http://www.facebook.com/press/releases.php?p=133917>. A backlash quickly ensued. *See, e.g.*, Jaikumar Vijayan, *Facebook Hit With Class Action over Privacy Changes*, COMPUTERWORLD.COM, Feb. 16, 2010, http://www.computerworld.com/s/article/9157758/Facebook_hit_with_class_action_over_privacy_changes?source=rss_news; Brian Womack, *Facebook's New Information-Sharing Options Attract Criticism*, BLOOMBERG.COM, Dec. 12, 2009, http://www.bloomberg.com/apps/news?pid=20601103&sid=A_311Tx4BFwM; Kevin Bankston, *Facebook's New Privacy Changes: The Good, The Bad, and The Ugly*, ELECTRONIC FRONTIER FOUNDATION DEEP LINKS BLOG, Dec. 9, 2009, <http://www.eff.org/deeplinks/2009/12/facebooks-new-privacy-changes-good-bad-and-ugly>. In the United States, the Electronic Privacy Information Center (EPIC) filed a complaint and supplement with the Commission, alleging that Facebook's revised privacy settings violated user expectations, diminished user privacy, and contradicted Facebook's own representations. Electronic Privacy Information Center, *In re Facebook*, <http://epic.org/privacy/inrefacebook/> (listing materials relating to the EPIC complaint). In Canada, the Office of the Privacy Commissioner, prompted by a complaint from the Canadian Internet Policy and Public Interest Clinic at the University of Ottawa, relaunched a previously closed investigation of Facebook; that investigation had culminated in the release of a July 2009 report examining privacy issues raised by the Web site. Press Release, Office of the Privacy Commissioner of Canada, Privacy Commissioner Launches New Facebook Probe (Jan. 27, 2010), *available at* http://www.priv.gc.ca/media/nr-c/2010/nr-c_100127_e.cfm; Press Release, Office of the Privacy Commissioner of Canada, Facebook Agrees to Address Privacy Commissioner's Concerns (Aug. 27, 2009), *available at* http://www.priv.gc.ca/media/nr-c/2009/nr-c_090827_e.cfm.

⁴⁵ Miguel Helft, *Anger Leads to Apology from Google About Buzz*, N.Y. TIMES, Feb. 14, 2010, *available at* <http://www.nytimes.com/2010/02/15/technology/internet/15google.html>. When initially launched, the Google Buzz social network automatically connected people based on their email and chat contacts. After an angry response by users, Google altered the service so that connections were "suggested" instead.

⁴⁶ Dissenting Statement of Commissioner Pamela Jones Harbour, Google/DoubleClick, FTC File No. 071-0170, (Dec. 20, 2007) [hereinafter Harbour Google Dissent], *available at* <http://www.ftc.gov/os/caselist/0710170/071220harbour.pdf>.

cember 2007.⁴⁷ The competition analysis in *Google/DoubleClick* might have proceeded differently if the Commission had taken a more dynamic and forward-looking approach to market definition, instead of relying on a snapshot of current, narrowly-drawn product categories.⁴⁸ Even before the merger, it might have been argued that Google held a significant market share in a possible market for “data gathered via search.” Assuming such a product market were defensible, the Commission might have asked whether Google’s acquisition of DoubleClick would have substantially increased the likelihood that Google would acquire or maintain market power in that market (a question that the Commission majority did not address).

Furthermore, if that product market definition is valid, Google’s share of the search data market has only increased over time. The Google search engine has become further entrenched as the dominant search site,⁴⁹ and the firm has accumulated even more search data. Given the role of network effects, one might wonder whether any other firm will be able to chip away at Google’s search supremacy without access to a comparable trove of data.⁵⁰

⁴⁷ Press Release, Fed. Trade Comm’n, Federal Trade Commission Closes Google/DoubleClick Investigation (Dec. 20, 2007), *available at* <http://www.ftc.gov/opa/2007/12/googlecdc.shtml>; Statement of Federal Trade Commission, Google/DoubleClick, FTC File No. 071-0170 (Dec. 20, 2007), *available at* <http://www.ftc.gov/os/caselist/0710170/071220statement.pdf>; *see also* Concurring Statement of Commissioner Jon Leibowitz, Google/DoubleClick, FTC File No. 071-0170 (Dec. 20, 2007), *available at* <http://www2.ftc.gov/os/caselist/0710170/071220leib.pdf>.

⁴⁸ In particular, Commissioner Harbour disagreed with the Commission majority’s decision to treat search and display advertising as fundamentally different products—complements versus substitutes, leading to a primarily vertical characterization and an abbreviated entry analysis—even though evidence strongly suggested that these two types of advertising already were converging, the two firms were fast becoming horizontal competitors, and the acquisition might create market power. *See* Harbour Google Dissent, *supra* note 46, at 5–7. She also disagreed with the Commission majority’s distinctions between premium and remnant Internet advertising space and between direct and intermediated sales because she believed that the combination of network effects and technological advances soon would blur these distinctions. *Id.* at 7–8.

⁴⁹ In January 2010, it was estimated that Google had a market share of over 65 percent of searches conducted; Yahoo! was a distant second with 17 percent, and Microsoft’s Bing had about 11 percent. Press Release, comScore, comScore Releases January 2010 U.S. Search Engine Rankings (Feb. 11, 2010), http://comscore.com/Press_Events/Press_Releases/2010/2/comScore_Releases_January_2010_U.S._Search_Engine_Rankings. Microsoft’s May 2009 launch of Bing appears to have had little effect on search engine market shares. *See* Press Release, comScore, comScore Releases May 2009 U.S. Search Engine Rankings (June 17, 2009), http://comscore.com/Press_Events/Press_Releases/2009/6/comScore_Releases_May_2009_U.S._Search_Engine_Rankings (Google at 65 percent, Yahoo at 20 percent, Microsoft at 8 percent).

⁵⁰ One might argue that the existence of network effects heightens the incentives to develop completely new technological solutions (as opposed to incremental improvements of existing technologies) because of the “winner-take-all” nature of the market. If

Alternatively, one might define a somewhat broader market, such as “data used for behavioral advertising.” This market would include not only search data, but also data gathered from other sources and applications that offer clues regarding consumer preferences. Given Google’s extensive reach throughout the cloud, and the popularity of various Google applications, Google likely has amassed the largest collection of data that can be used for behavioral advertising. As a result, Google-affiliated advertising spaces are viewed as very attractive and valuable locations for advertisers to place their ads, such that advertisers may be reluctant to spend their limited advertising dollars elsewhere. Existing competitors and potential entrants may find it difficult to generate sufficient advertising revenue to survive in competition with Google. Meanwhile, Google will continue to amass still greater amounts of search and application data, which will further strengthen network effects and hamper entry. Over time, as a result of its data ownership, Google might be uniquely positioned to control not only the data market, but also the related market for behavioral advertising itself.

We are not asserting that Google actually has attained a dominant position in one or more properly defined relevant product markets. And even if Google has reached such a milestone, we certainly do not mean to condemn the firm for having achieved success by innovating and marketing superior products.⁵¹ Nor do we mean to suggest that Google has engaged, or is now engaging, in any exclusionary conduct that would violate Section 2. Our main point is that, if antitrust enforcers wish to evaluate the conduct of Google (or other successful Internet

one of these new technologies proves superior, its adoption is likely to effectuate a paradigm shift and thereby eliminate any competitive problems in the original market. In theory, if such a paradigm shift could occur rapidly, the risk of competitive harm would be small indeed. Presumably, antitrust enforcers would encourage such paradigm-shifting innovation, and would shape their enforcement approach accordingly. One such example might be the DOJ’s recent decision to allow the proposed Internet search and paid search advertising agreement between Microsoft and Yahoo!, based on a prediction that the transaction would accelerate competition-enhancing innovation. See *infra* text accompanying notes 52–54.

In contrast, enforcers might be expected to intervene when innovation may be suppressed. Harm to competition may be especially likely if, for example, it would take several years for a new technology to shake up and reshape the market. During that time, any interim harm suffered by consumers (due to potential exclusionary conduct by the incumbent dominant firm) might be more likely to outweigh any efficiencies generated by network effects.

⁵¹ See *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966) (Section 2 targets “the willful acquisition or maintenance of [monopoly] power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.”); *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 430 (2d Cir. 1945) (antitrust law does not condemn a “successful competitor” who has attained a monopoly “by virtue of his superior skill, foresight and industry”).

firms) through a Section 2 (or EU Article 82, now Article 102) lens, defining data markets may be a useful tool—especially if the enforcers seek (as they should) to craft an analytical framework that accurately reflects how these firms, their competitors, and their customers interact in the real world.

It appears that the Department may have been leaning towards this approach in its recent analysis of the Microsoft/Yahoo! transaction, as evidenced by the public statement explaining the DOJ's rationale for closing its investigation of the parties' proposed search and advertising agreement. The statement highlighted the "unusual relationship between scale and competitive performance" in the search and paid search advertising industry, and explained how the quality of Microsoft's search algorithms would be enhanced via access to a larger set of queries as a result of the transaction.⁵² The Department predicted that Microsoft's "larger data pool may enable more effective testing and thus more rapid innovation of potential new search-related products, changes in the presentation of search results and paid search listings, other changes in the user interface, and changes in the search or paid search algorithms."⁵³ The statement suggested that this "enhanced performance . . . should exert correspondingly greater competitive pressure in the marketplace,"⁵⁴ presumably creating a stronger number two firm to challenge the market leader Google.

As a matter of practical significance, early-stage product market definition affects the output of any government investigation.⁵⁵ In conduct as well as merger investigations, antitrust enforcers typically issue subpoenas or other compulsory process to obtain documents, data, and narrative responses. Tentative product market definitions will be incorporated into the subpoenas, and these definitions will affect the structure and scope of the entire investigation. If data troves are not squarely included within the scope of compulsory process (separate from the products and services that rely on the data), it may become difficult for enforcement staff to pursue data-driven theories as the case evolves because the staff may be less able to evaluate other potential or intended

⁵² Press Release, U.S. Dep't of Justice, Statement of the Department of Justice Antitrust Division on Its Decision to Close Its Investigation of the Internet Search and Paid Search Advertising Agreement Between Microsoft Corporation and Yahoo! Inc. (Feb. 18, 2010), available at http://www.justice.gov/atr/public/press_releases/2010/255377.pdf.

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ Accord Dietrich, *supra* note 39, at 4–5 (discussing short-term practical implications if government investigations more closely scrutinize data usage, and suggesting how outside parties and counsel might respond to this new category of interest).

uses for the data.⁵⁶ For this reason, enforcers who are developing investigative plans involving Internet firms should think creatively and consider the inclusion of one or more data markets, such as data gathered via search, data used for behavioral advertising, or other types of data markets that might be suggested by case-specific facts.

B. PRECEDENT FOR DATA MARKETS: OTHER CASES

When Commissioner Harbour's *Google/DoubleClick* dissent was issued, some critics suggested that the data market concept did not reflect mainstream antitrust analysis. This critique is inconsistent with several significant merger cases that, for all intents and purposes, have been about data markets. While there may not yet have been a pure Section 2 case based squarely on data markets, the concept is defensible and is consistent with past agency practice.

1. *CCC/Mitchell*

One such example is the *CCC/Mitchell* merger case,⁵⁷ where the Commission obtained a preliminary injunction to block a proposed merger between competitors in the markets for "estimatics" (electronic systems used to estimate the cost of automobile collision repairs) and total loss valuation systems (software systems used to value passenger vehicles that have been totaled). Insurance companies are the primary customers of these systems.

⁵⁶ Commissioner Harbour's *Google/DoubleClick* dissent raised similar concerns. It suggested that if the Second Requests in the merger investigation had included data markets, the staff might have been better equipped to probe the parties' intentions for their combined data troves. These answers would have been relevant to the antitrust analysis, might have further informed the consumer protection inquiry regarding privacy implications and presumably would have had some binding effect on the parties. Instead, the staff's investigation relied on the parties' voluntary and non-binding representations about future data usage. Harbour Google Dissent, *supra* note 46, at 9.

⁵⁷ Press Release, Fed. Trade Comm'n, FTC Launches Suit to Block Merger of CCC and Mitchell (Nov. 25, 2008), available at <http://www.ftc.gov/opa/2008/11/cccmitchell.shtm>; FTC v. CCC Holdings Inc., No. 08-2043-RMC (D.D.C. filed Mar. 18, 2009) (Memorandum Opinion) [hereinafter *CCC Opinion*] (granting preliminary injunction), available at <http://www.ftc.gov/os/caselist/0810155/090309cccmitchellpublicopinion.pdf>. Case materials (federal court proceedings) are available at <http://www.ftc.gov/os/caselist/0810155/index.shtm>.

The Commission also issued a Part 3 complaint in a parallel administrative proceeding. CCC Holdings Inc. & Aurora Equity Partners III L.P., FTC Docket No. 9334 (Nov. 25, 2008) (Complaint). The Part 3 case was dismissed following the district court's granting of a preliminary injunction and the parties' subsequent abandonment of the proposed merger. *CCC Opinion*, *supra*. Case materials (administrative proceedings) available at <http://www.ftc.gov/os/adjpro/d9334/index.shtm>.

The complaint alleged relevant product markets for systems.⁵⁸ However, the key assets that would have been combined were extensive proprietary databases of parts and labor costs, going back many years, for virtually all vehicles on the road. As alleged by the Commission's complaint and found by the court, it would be extremely costly and time-consuming for another firm to create a comparable database.⁵⁹ The parties did offer software systems used to analyze and process the data, as well as other related services. But the software and services were secondary in the Commission's analysis, in large part because they would be easier for a potential entrant to replicate. The rich trove of historical data drove the success of each of the merging firms, and the lack of access to a comparable database was viewed as a significant entry barrier.

2. *Thomson/Reuters*

Another example is *Thomson/Reuters*,⁶⁰ a DOJ merger settlement from February 2008. According to the complaint and other public documents, the parties were two of a very few firms that sold financial data used by investment managers, investment bankers, traders, and other institutional customers. These data were used by customers to make investment decisions and to provide advice to their firms and clients. Specifically, the DOJ complaint alleged the following three relevant product markets: (1) fundamentals data; (2) earnings estimates data; and (3) aftermarket research reports.⁶¹

⁵⁸ *FTC v. CCC Holdings Inc.*, No. 08-2043-RMC, Complaint ¶ 15 (D.D.C. filed Nov. 26, 2008) (Complaint), available at <http://www.ftc.gov/os/caselist/0810155/081126/cmpltforpitro.pdf>.

⁵⁹ Among the "significant barriers to entry" in the relevant markets, as cited in the FTC's complaint, were "the substantial time and expense required to assemble, edit, and maintain estimatics and TLV [total loss valuation] databases relating to virtually every vehicle driven in the United States, as required by customers." *Id.* ¶ 25. The district court agreed:

The difficulty and cost of developing and maintaining an entirely new parts and labor database that is accepted by the market would be significant barriers to new entrants. . . . It would take a number of years, untold thousands of man-hours, and millions of dollars of investment to create and maintain a competitive parts and labor database.

CCC Opinion, *supra* note 57, at 38–39.

⁶⁰ Press Release, U.S. Dep't of Justice, Justice Department Requires Thomson to Sell Financial Data and Related Assets in Order to Acquire Reuters (Feb. 19, 2008) [hereinafter *Thomson/Reuters News Release*], available at http://www.usdoj.gov/atr/public/press_releases/2008/230250.pdf.

⁶¹ *United States v. Thomson Corp.*, No. 08-0262, Complaint at ¶¶ 14–31 (D.D.C. filed Feb. 19, 2008), available at <http://www.usdoj.gov/atr/cases/f230200/230281.pdf>.

As part of the settlement, Thomson, the acquiring firm, was required to divest copies of three financial datasets. The DOJ announcement⁶² specifically noted that the remedies imposed by the Department were consistent with remedies obtained by the European Commission (EC) in a parallel settlement,⁶³ which may provide some insight regarding how the EC might view the concept of a data market

3. *Hearst/First DataBank*

An older, but still relevant, example dates back to December 2001, when the Commission accepted a landmark settlement with The Hearst Trust to resolve charges stemming from an April 2001 complaint.⁶⁴ The complaint had alleged that Hearst illegally acquired a monopoly in the market for electronic integratable drug information databases, which are used by pharmacies, hospitals, doctors, payors, and patients to obtain information about drug prices, drug effects, drug interactions, and drug eligibility under various payment plans.

According to the complaint, after unlawfully acquiring its sole competitor in this market, Hearst drastically raised prices, and virtually all customers acceded to the price increases. Despite these “enormous” price increases, three years later there had been no significant new entry into the relevant product market.⁶⁵ The structural relief portion of the remedy required Hearst to divest (among other things) a copy of the entire electronic integratable drug information database that Hearst had acquired, along with access to information needed for updates.⁶⁶

4. *Ticketmaster/Live Nation*

Another example is the combination of Ticketmaster and Live Nation, which was the subject of a DOJ antitrust investigation and a settlement that includes both structural and behavioral relief. The DOJ

⁶² Thomson/Reuters News Release, *supra* note 60, at 2.

⁶³ Press Release, European Comm’n, Mergers: Commission Clears Acquisition of Reuters by Thomson Subject to Conditions (Feb. 19, 2008) (IP/08/260). Case materials available at <http://europa.eu/competition/mergers/cases/index/m94.html>.

⁶⁴ Press Release, Fed. Trade Comm’n, Hearst Corp. to Disgorge \$19 Million and Divest Business to Facts and Comparisons to Settle FTC Complaint (Dec. 14, 2001), *available at* <http://www.ftc.gov/opa/2001/12/hearst.shtm>; *see also* Press Release, Fed. Trade Comm’n, FTC Charges Hearst Trust with Acquiring Monopoly in Vital Drug Information Market (Apr. 4, 2001), *available at* <http://www.ftc.gov/opa/2001/04/hearst.shtm>; FTC v. The Hearst Trust, No. 01-00734 (D.D.C. filed Apr. 15, 2001) (Complaint) [hereinafter Hearst Trust Complaint], *available at* <http://www.ftc.gov/os/2001/04/hearstcmp.htm>.

⁶⁵ Hearst Trust Complaint, *supra* note 64, ¶¶ 37–38.

⁶⁶ Final Order and Stipulated Permanent Injunction, FTC v. The Hearst Trust, No. 01-00734 (D.D.C. filed Dec. 18, 2001), *available at* <http://www.ftc.gov/os/2001/12/hearstfinalorder.pdf>.

enforcement action focused on protecting competition in a market for primary ticketing services to major concert venues, a market in which Ticketmaster already was a leader and Live Nation was an emerging threat.⁶⁷ While a data market does not appear to have been formally defined, in crafting the relief the DOJ explicitly acknowledged the importance of data as a valuable competitive asset.

Notably, the Proposed Final Judgment requires the merged firm to provide current clients with their ticketing data promptly upon request, in a “reasonably usable” form, if clients wish to move their business to another primary ticketing firm.⁶⁸ The DOJ’s Competitive Impact Statement explains that this data portability provision “reduces venues’ switching costs and lowers barriers to other companies competing for Defendants’ primary ticketing clients because it ensures that those venue clients will not be forced to relinquish valuable data if they decide to switch primary ticketing service providers.”⁶⁹ This aspect of the relief addresses the elimination of horizontal competition between established Ticketmaster and newcomer Live Nation in the market for primary ticketing services. With respect to this horizontal overlap as it existed at the time of the merger, the remedy arguably would have been the same if the DOJ had chosen to define a data market comprising, for example, data used for primary ticketing. Defining a ticketing data market, however, might have enabled the remedy to reach even further, covering expanded uses of historical ticketing data that would have generated further horizontal competition between the parties in the future.

The Proposed Final Judgment also addresses a potential, primarily vertical, competitive concern relating to the practice of “data mining” in ticket sales.⁷⁰ As explained in one press report that arose when the transaction was first announced, concert promoters “mine” data from past performances, and use this information when bidding against rivals for future performances. For instance, promoters look at detailed informa-

⁶⁷ Press Release, U.S. Dep’t of Justice, Justice Department Requires Ticketmaster Entertainment Inc. to Make Significant Changes to Its Merger with Live Nation Inc. (Jan. 25, 2010), available at http://www.justice.gov/atr/public/press_releases/2010/254540.pdf; Competitive Impact Statement, United States v. Ticketmaster Entertainment, Inc. & Live Nation, Inc., No. 10-00139 (D.D.C. filed Jan. 25, 2010) [hereinafter *Ticketmaster Competitive Impact Statement*], available at <http://www.justice.gov/atr/cases/f254500/254544.pdf>.

⁶⁸ [Proposed] Final Judgment ¶ IX.C, United States v. Ticketmaster Entertainment, Inc. & Live Nation, Inc., No. 10-00139 (D.D.C. filed Jan. 25, 2010), available at <http://www.justice.gov/atr/cases/f254500/254558.pdf>.

⁶⁹ *Ticketmaster Competitive Impact Statement*, *supra* note 67, at 17.

⁷⁰ Adam Satariano, *Live Nation Rivals See Hard Rain from Dylan Data*, BLOOMBERG.COM, Mar. 4, 2009, <http://www.bloomberg.com/apps/news?pid=20601103&sid=AZ.ptvj54zIU&refer=US>.

tion regarding how fast tickets sell and at what prices, the most popular time of year for concerts, the ages and addresses of ticket buyers, and perhaps even their contact information. Historically, these types of data have been provided to promoters by Ticketmaster, the largest ticketing system. After combining with Live Nation, the biggest concert promoter, Ticketmaster might not have the same incentives to share its vast collection of ticketing data with rival concert promoters. Moreover, if Ticketmaster's incentives were to change as a result of the merger, it is unclear whether any other market participant would be able to amass or offer a dataset as extensive as Ticketmaster's.⁷¹ The Proposed Final Judgment addresses this concern by restricting the combined firm's ability to use its valuable ticketing data in its promotion and artist management lines of business, unless those data are made available on the same terms to other promoters or artist managers not affiliated with Ticketmaster. As explained in the Competitive Impact Statement, this provision will prevent the combined Ticketmaster/Live Nation "from abusing their position in the primary ticketing market to impede competition among promoters and artist managers."⁷²

With respect to the data mining concerns, the DOJ investigation appears to have yielded sufficient evidence to justify relief based on vertical foreclosure concerns—namely, Ticketmaster's changed incentives as a primary ticketer upon vertically integrating with a concert promoter. If the evidence had not been strong enough to support a vertical theory of harm, a data market definition might have provided a horizontal "hook" to address the data mining concerns. The DOJ might have defined a market comprising the frequently-mined historical ticketing data them-

⁷¹ *The Ticketmaster/Live Nation Merger: What Does It Mean for Consumers and the Future of the Concert Business?: Hearing Before the S. Comm. on the Judiciary, Subcomm. on Antitrust, Competition Policy and Consumer Rights*, 111th Cong. (Feb. 24, 2009) (statement of Seth Hurwitz, Co-Owner, I.M.P. Productions and 9:30 Club, Washington, DC), available at http://judiciary.senate.gov/hearings/testimony.cfm?id=3674&wit_id=7625:

[T]here are situations where I may be forced to use TicketMaster, either by a venue contract, or perhaps where TicketMaster would be the unquestionably better provider of ticket service. And here is the big problem with that: If this merger is allowed to happen, my biggest competitor will have access to all of my sales records, customer information, on sale dates for tentative shows, my ticket counts, they can control which shows are promoted and much more. This will put ALL independent promoters at an irreparable competitive disadvantage. This would be like Pepsi forcing Coke to use its services as its distributor, and pretend that the intelligence Pepsi gathers won't harm Coke. It just can't happen and maintain a fair and level playing field.

⁷² *Ticketmaster Competitive Impact Statement*, *supra* note 67, at 17.

selves, and imposed relief provisions targeted directly at preserving current and future competition in that market.⁷³

III. MARKETS RELATED TO PRIVACY PROTECTION

In addition to data markets, there may be other types of relevant product markets that make particular sense in cyberspace. In her *Google/DoubleClick* dissent, Commissioner Harbour raised the idea of competition on privacy dimensions, and suggested that privacy should be “cognizable” under the antitrust laws.⁷⁴ Defining relevant product markets that recognize privacy as a dimension of competition might provide the missing link for such cognizability.

A. PRIVACY PROTECTION AS A FORM OF NON-PRICE COMPETITION

It is widely accepted that firms compete not only on price, but also on various non-price dimensions that are important to consumers. In a thought-provoking 2001 essay, then-FTC Commissioner Thomas Leary discussed the challenges of defining relevant product markets when dealing with differentiated product markets that are influenced by individual consumer tastes.⁷⁵ Commissioner Leary questioned whether traditional models of market definition would continue to make sense “as the assumption of homogeneous commodity products becomes progressively less realistic in the real world” of non-homogeneous products, services, and experiences.⁷⁶ He warned, however, that it would be “equally unappealing to ignore potentially growing areas of antitrust concern simply because the traditional approaches are inadequate.”⁷⁷

A similar message may apply to the antitrust analysis of privacy protections.⁷⁸ It would be entirely inappropriate to ignore consumers’ con-

⁷³ Lacking the detailed confidential information available to the DOJ, and with great respect for the comprehensive settlement the DOJ obtained in this matter, we do not claim that our data market approach would have yielded better relief. We raise the *Ticketmaster/Live Nation* example primarily to demonstrate that enforcers should think creatively about market definition when facing a situation where competitive harm seems likely, but traditional market definitions do not appear to provide a path toward needed relief.

⁷⁴ Harbour Google Dissent, *supra* note 46, at 9–11.

⁷⁵ See Thomas B. Leary, *The Significance of Variety in Antitrust Analysis*, 68 ANTITRUST L.J. 1007 (2001).

⁷⁶ *Id.* at 1008.

⁷⁷ *Id.* at 1008–09.

⁷⁸ See Peter P. Swire, Testimony Submitted to the Federal Trade Commission Behavioral Advertising Town Hall (Oct. 18, 2007), *available at* <http://www.ftc.gov/os/comments/behavioraladvertising/071018peterswire.pdf>. Professor Swire points out that as more data are collected, individuals with high privacy preferences may perceive a significant reduction in the quality of the search product. Echoing themes set forth by Commissioner

cerns about privacy-based competition, simply because product market definition might prove difficult. As demonstrated by recent studies, online privacy is an important issue for many consumers, especially with regard to targeted behavioral advertising.⁷⁹ Moreover, consumer awareness of privacy issues continues to grow, driven in large part by enforcers' increased scrutiny and consumer education efforts, which have led firms to improve transparency regarding their privacy policies. Apparently, the online firms are listening—many of the biggest Internet names publicize their privacy policies as a way to attract and retain users. Even more importantly, these firms react directly to each other's privacy policy changes. At one point in 2008, Google, Yahoo!, and Microsoft each shortened the amount of time they would retain personal data gathered from users' Web surfing.⁸⁰ Interestingly, Microsoft announced that it would anonymize its data after six months—compared to the firm's then-existing eighteen-month policy—but only if its rivals would

Leary, Professor Swire contends that this sort of quality reduction is a logical component of antitrust analysis. *Id.* at 5.

Professor Robert Lande has expressed similar thoughts.

Antitrust is actually about consumer choice, and price is only one type of choice. The ultimate purpose of the antitrust laws is to help ensure that the free market will bring to consumers everything they want from competition. This starts with competitive prices, of course, but consumers also want an optimal level of variety, innovation, quality, and other forms of nonprice competition. Including privacy protection.

Robert H. Lande, *The Microsoft-Yahoo Merger: Yes, Privacy Is an Antitrust Concern*, FTC:WATCH, Feb. 25, 2008, at 1; *see also* Averitt & Lande, *supra* note 14, at 713 ("Consumer sovereignty exists when two fundamental conditions are present. There must be a range of consumer options made possible through competition, and consumers must be able to choose effectively among these options.").

⁷⁹ *See* Joseph Turow et al., *Americans Reject Tailored Advertising and Three Activities that Enable It* (Sept. 29, 2009) (majority of consumers would prefer not to be subjected to behavioral targeting, including 66 percent overall and 55 percent of 18-to-24 year olds; significantly higher percentages of people, between 73–86 percent, object to specific types of tailored advertising), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1478214; *see also* Stephanie Clifford, *Two-Thirds of Americans Object to Online Tracking*, N.Y. TIMES (Sept. 29, 2009) (discussing Turow study), *available at* <http://www.nytimes.com/2009/09/30/business/media/30adco.html>; Press Release, TRUSTe *Behavioral Targeting: Not that Bad?! TRUSTe Survey Shows Decline in Concern for Behavioral Targeting; Consumers Want Relevant Ads Online, But Still Worry About Their Online Privacy* (Mar. 4, 2009) (while consumer "discomfort" with behavioral advertising declined from 57 percent to 41 percent between 2008 and 2009, 72 percent of those surveyed said that online advertising was "intrusive and annoying" when they were faced with irrelevant ads); Stephanie Clifford, *Many See Privacy on Web as Big Issue, Survey Says*, N.Y. TIMES, Mar. 16, 2009, at B5, (reporting results of TRUSTe survey; noting conclusion that the vast majority of Americans view online privacy as a "really" or "somewhat" important issue), *available at* <http://www.nytimes.com/2009/03/16/technology/internet/16privacy.html>.

⁸⁰ Kim Dixon, *Yahoo Cuts Data Retention to Three Months*, REUTERS, Dec. 17, 2008, *available at* <http://www.reuters.com/article/technologyNews/idUSTRE4BG2VP20081217>.

follow suit.⁸¹ Yahoo! subsequently announced that it would retain data for only three months, albeit according to a different anonymization standard.⁸² And one industry commentator noted that first-mover Google had “started this competition,” putting other firms in a position where they needed to respond.⁸³

To bring this discussion back to potential Section 2 applications, consider whether a dominant or potentially dominant firm would have the same incentives to adapt its privacy policies—either in response to consumer demand or as a reaction to competition from other firms. If achieving a dominant market position might change the firm’s incentives to compete on privacy dimensions, this is a consequence that antitrust enforcers might wish to explore further.⁸⁴ Defining a privacy-based relevant product market would be one way to frame the analysis according to traditional antitrust principles, while still accounting for the real-world priorities of today’s Internet consumers.⁸⁵

B. INNOVATION COMPETITION

As suggested by the different anonymization standards applied by the big Internet firms, another form of privacy-related competition may involve the underlying technologies used to protect privacy.

The use of consumer data for behavioral advertising and similar applications can be highly efficient. But these efficiencies must be reconciled with the demand for privacy protection. Currently, there is innovation competition to introduce technological solutions that strike an acceptable balance between these two objectives, and the pace of such innova-

⁸¹ *Id.*; see also Thomas Claburn, *Microsoft Reduces Search Data Retention to Six Months*, INFO. WK., Dec. 8, 2008, available at <http://www.informationweek.com/news/internet/search/showArticle.jhtml?articleID=212300250>.

⁸² Dixon, *supra* note 80. Yahoo! said it would delete the final segment of the Internet Protocol (IP) address to make it no longer unique or identifiable, while Microsoft decided to delete the entire IP address to cut off any link to identifying information.

⁸³ *Id.* (quoting Ari Schwartz, Vice President, Center for Democracy and Technology).

⁸⁴ See Dietrich, *supra* note 39, text accompanying note 36 (setting forth a hypothetical scenario of how a merger might affect incentives to compete based on privacy policies).

⁸⁵ Privacy-based relevant product markets might also provide a way to reconcile the fact that consumers—whose data are collected, and whose privacy is at stake—frequently are not the customers of the services that exploit data troves. See Harbour Google Dissent, *supra* note 46, at 10 (because individual consumers had no financial or business relationship with Google and DoubleClick, the majority’s product market approach did not adequately reflect the values of the consumers whose data were at stake). But see Dietrich, *supra* note 39, at 5–6 (“mainstream antitrust thinking” unlikely to make a “radical departure from accepted antitrust analysis” to embrace a “privacy-interest proxy” that circumvents the disconnect between the interests of data-supplying users and those of potentially impacted customers).

tion is likely to be accelerated in the coming years.⁸⁶ While there is not yet a clear consensus on the optimal level of competition to incentivize innovation,⁸⁷ intuitively it would seem that innovation competition is more likely to be robust in a competitive market, where multiple firms are racing to commercialize their innovations, win market share, and reap profits.⁸⁸ Again, going back to the Section 2 context, it makes sense to ask whether a dominant or potentially dominant firm is likely to have the same incentives to develop, or otherwise seek out, innovative new technologies for the efficient protection of privacy. Absent pressure from competitors who might provide more attractive alternatives to privacy-prioritizing consumers, a dominant firm might rationally choose to innovate less vigorously around privacy or, perhaps, to dole out privacy-protective technologies to the marketplace more slowly.

C. EFFECT OF PRIVACY REGULATION ON COMPETITION

Professor Randal Picker opines that choices on how to regulate online datastreams will have consequences beyond privacy.⁸⁹ As he explains, restrictions on the use of data will directly influence how much competition is able to emerge in related technology markets.⁹⁰ In other words, decisions about privacy regulation affect not only privacy; these decisions have broader competitive significance as well. Competing philoso-

⁸⁶ See Harbour Behavioral Advertising Concurrence, *supra* note 38, at 4–5 (inadequate privacy protection technologies, such as the opt-out cookie, offer the illusion of consumer choice but are confusing and unreliable; the industry should focus its efforts on “developing viable and transparent alternatives”); see also *id.* at 8 (increased attention to privacy will create opportunities for firms to develop attractive new privacy tools and to market these features to distinguish themselves from competitors).

⁸⁷ Compare, e.g., Statement of Commissioner Pamela Jones Harbour, Genzyme Corp., FTC File No. 021-0026, (Jan. 13, 2004) (laying out theoretical basis for favoring a “general presumption of anticompetitive effects . . . in the extreme case of a merger to monopoly that eliminates all competition and diversity in [an] innovation market”), with Statement of Chairman Timothy J. Muris, Genzyme Corp., FTC File No. 021-0026, (Jan. 13, 2004) (explaining lack of theoretical or empirical link between increased competition and reduced innovation) (citing COUNCIL OF ECONOMIC ADVISERS, ECONOMIC REPORT OF THE PRESIDENT 176 (1999) (“To the extent there is consensus, it is that neither the presence of many competitors nor pure monopoly correlates systematically with optimal levels of innovation.”)).

⁸⁸ Cf. SMARTPRIVACY FOR THE SMART GRID, *supra* note 43, at 7 (beyond sizeable public investment in smart grid technology, significant private sector investment has been devoted to developing new products and services in a market projected to reach \$100 billion by 2030; venture capital valued at over \$900 million was invested between 2000 and 2008).

⁸⁹ Randal C. Picker, *Competition and Privacy in Web 2.0 and the Cloud*, 103 NW. U. L. REV. COLLOQUY 1 (2008), <http://www.law.northwestern.edu/lawreview/colloquy/2008/25/LRColl2008n25Picker.pdf>.

⁹⁰ *Id.* at 3 (“How we choose to regulate these datastreams is the central regulatory issue of the emerging computer infrastructure. Our choices here obviously have privacy consequences but also for how much competition will emerge. These are tightly linked.”).

phies of privacy regulation, and resulting changes in the legal regime, should play a role in establishing product market definitions based on privacy protections.

Around the world, privacy laws are evolving in response to new learning about the psychology of consumer behavior, greater understanding of consumer preferences, and deeper insights regarding the value of consumer data, all buoyed by a steady undercurrent of technological innovation and changing business practices.⁹¹ Ideally, among various factors, legislators will consider whether a given set of privacy regulations would be likely to facilitate the creation or maintenance of a monopoly—either by entrenching a dominant firm, or by establishing mechanisms that would enable a dominant firm to engage in exclusionary conduct.

One example might be the issue of data portability. Imagine that a given legal regime were to encourage greater consumer control over data (e.g., through open standards), such that a market emerged to accommodate the porting of data relatively easily among applications. In that entry-friendly environment, if consumers were unhappy with the level of privacy protection offered by a popular application or service, consumers would be better able to “vote with their feet” (or, more accurately, their data) and switch to competing providers, without losing the accrued value of their personal datasets. Under those circumstances, dominance would be hard to achieve and even harder to illegally maintain. But in a regime without easy data portability, it would be more difficult for dissatisfied consumers to shop around for a competitor offering a different balance between data exploitation and privacy protection.

⁹¹ In the United States, for example, the FTC recently launched a roundtable series to explore, and obtain public input on, various models for promoting consumer privacy, consistent with core values of transparency, consumer control, and accountability that should govern any approach to privacy. FTC Privacy Roundtables, *supra* note 39. A key area of inquiry will be whether existing legal requirements and self-regulatory regimes provide an adequate framework for the protection of consumer privacy interests, both today and in the future. For example, it is possible that the well-accepted reliance on notice and choice regimes, combined with harm-based approaches to enforcement, does not work well in the realm of behavioral advertising. See David C. Vladeck, Director, Bureau of Consumer Protection, Fed. Trade Comm’n, Promoting Consumer Privacy: Accountability and Transparency in the Modern World, Keynote Address at the New York University School of Law Information Law Institute Workshop on Federal Privacy Legislation (Oct. 2, 2009), available at <http://www.ftc.gov/speeches/vladeck/091002nyu.pdf>; David C. Vladeck, Director, Bureau of Consumer Protection, Fed. Trade Comm’n, Privacy: Where Do We Go from Here?, Address at the International Conference of Data Protection and Privacy Commissioners (Nov. 6, 2009), available at <http://ftc.gov/speeches/vladeck/091106dataprotection.pdf>.

IV. CONCLUSION

It is our hope that the Commission and other antitrust enforcement agencies will seriously consider the ramifications of Internet markets driven by troves of data—in the Web 2.0 world, the cloud computing environment, and whatever comes next. Internet markets continue to evolve rapidly, as Internet firms gain enhanced abilities to collect and process vast quantities of data. We encourage the agencies to think creatively about how best to enforce the antitrust laws in this environment. One principled approach may involve defining data-based relevant product markets that fully capture current and future marketplace realities. In the spirit of sound competition policy, the law should be encouraged to develop in ways that honor a dynamic approach to market definition and analysis.

Second, we believe that it is important to recognize and explore the nexus between competition and privacy, regardless of how privacy ultimately is incorporated into antitrust analysis. Going forward, we hope that the Commission will indeed leverage its greatest resource—the expertise of its talented staff—to take a more integrated approach to privacy and competition and to more aggressively pursue issues at the intersection of privacy and competition in a variety of industries (including, for example, health care and electricity markets). This approach should include the definition of privacy-based relevant product markets, where applicable, if such definitions will help to make privacy cognizable under the antitrust laws. The Commission is perfectly positioned to capitalize on its dual competition and consumer protection expertise, and fulfill its critical advocacy mission on behalf of consumers, as it grapples with these cutting-edge issues.

