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## ANTITRUST AND REGULATING BIG DATA

*D. Daniel Sokol\* & Roisin Comerford\*\**

## INTRODUCTION

The collection of user data online has seen enormous growth in recent years. Consumers have benefitted from this growth through an increase in free or heavily subsidized services, better quality offerings, and rapid innovation. At the same time, the debate about Big Data, and what it really means for consumers and competition, has grown louder. Many have focused on whether Big Data even presents an antitrust issue, and whether and how harms resulting from Big Data should be analyzed and remedied under the antitrust laws. The academic literature, however, has somewhat lagged behind the policy debate, and a closer inspection of existing scholarly works reveals a dearth of thorough study of the issue. Commentators generally are split into two camps: one in favor of more proactive antitrust enforcement in the Big Data realm, and one opposing such intervention, considering antitrust inappropriate for regulation of Big Data. The academic case for the former has not, as yet, been fully developed, and is relatively light at present. Meanwhile, policy-focused work by academics and practitioners in this arena suggests that antitrust intervention in Big Data would be premature and misguided, especially considering the myriad pro-competitive benefits offered by Big Data.

This article reviews the scholarly work on the implications of Big Data on competition, and considers the potential role of antitrust in the regulation of Big Data. Part I provides an overview of the scarce, academic literature specifically addressing the role of antitrust in Big Data issues. Parts II and III delve into the policy issues surrounding Big Data and whether it poses a risk to competition that warrants antitrust intervention. Part II details the ways in which Big Data may prove pro-competitive while Part III reviews and critiques the suggested potential harms to competition from Big Data. Part IV discusses the suitability of antitrust as the institutional choice for Big Data issues, and Part V concludes that, at present, antitrust is ill suited as the institutional choice. Further, the scholarly case for such harm has not

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yet been adequately established. Overall, this Article finds much noise as to potential “problems” around whether current antitrust tools and policy are adequate to deal with a Big Data “challenge.” In reality, there is no challenge at all, as the arguments for antitrust intervention when Big Data has come up as an issue have never carried the day for any merger or decided conduct case in any Department of Justice Antitrust Division (“DOJ”), Federal Trade Commission (“FTC”) or Directorate-General for Competition (“DG Competition”) case to date.

## I. EXISTING ACADEMIC LITERATURE

A review of the academic literature addressing the intersection of Big Data and antitrust law reveals relatively few articles on the topic.<sup>1</sup> Scholars have yet to conduct an in-depth analysis of *why* Big Data issues are antitrust issues, and if so, *how* they may be best addressed by the antitrust laws as opposed to the consumer protection laws.<sup>2</sup> Work to-date suggests instead that while antitrust and consumer protection laws are complementary, they still comprise distinct areas of law, and consumer protection remains the correct institutional choice to address potential Big Data harms. “Big is bad” has been a bogeyman of antitrust since the time of *Standard Oil*.<sup>3</sup> However, bigness is not an antitrust offense. Rather, antitrust focuses on consumer welfare loss and there has not been a decided merger or a litigated conduct decision that has said otherwise for at least a generation.

Arguably the most comprehensive contribution to the academic debate on the topic of Big Data and competition is an article by Ohlhausen and Okuliar.<sup>4</sup> Ohlhausen and Okuliar present a three-part framework for analyzing Big Data concerns. First, they focus on the character of the harm—

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<sup>1</sup> See generally Avi Goldfarb & Catherine Tucker, *Online Advertising*, in 81 ADVANCES IN COMPUTERS, 289 (Marvin V. Zelkowitz ed., 1st ed. 2011) (providing a summary and literature review of Big Data concerns); David S. Evans, *The Online Advertising Industry: Economics, Evolution, and Privacy*, 23 J. ECON. PERSP. 37, 38 (2009). Much of the scholarly work to date on two-sided online markets traces back to work by Jean-Charles Rochet and Jean Tirole. See, e.g., Jean-Charles Rochet & Jean Tirole, *Platform Competition in Two-Sided Markets*, 1 J. EUR. ECON. ASS'N, 990, 993 (2003); Jean-Charles Rochet & Jean Tirole, *Cooperation Among Competitors: Some Economics of Payment Card Associations*, 33 RAND J. ECON. 549, 549 (2002). For an overview of the two sided market literature, see David S. Evans & Richard Schmalensee, *The Antitrust Analysis of Multi-Sided Platform Businesses*, in 1 OXFORD HANDBOOK OF INTERNATIONAL ANTITRUST ECONOMICS 407, 408–10 (Roger D. Blair & D. Daniel Sokol, eds. 2015).

<sup>2</sup> For an overall analysis of how economics can better explain empirics in the age of Big Data, see Liran Einav & Jonathan Levin, *Economics in the Age of Big Data*, 346 SCIENCE 1243089, 1243089-1 (2014) (providing a literature review and analysis); Hal R. Varian, *Big Data: New Tricks for Econometrics*, 28 J. ECON. PERSP. 3, 4 (2014) (analyzing the uses of big data in economics).

<sup>3</sup> Barak Orbach & D. Daniel Sokol, *Antitrust Energy*, 85 S. CAL. L. REV. 429, 439 (2012).

<sup>4</sup> See Maureen K. Ohlhausen & Alexander P. Okuliar, *Competition, Consumer Protection, and The Right [Approach] to Privacy*, 80 ANTITRUST L.J. 121, 123 (2015).

whether it is commercial, personal, or otherwise.<sup>5</sup> They conclude that where there is harm to consumer welfare or to economic efficiency, antitrust should prevail over consumer protection law as a matter of institutional choice.<sup>6</sup> Second, they examine the nature of the relationship between the user and the data collector, and determine that issues arising from the bargain between a firm and an individual consumer are more likely to fall within the realm of consumer protection law than antitrust.<sup>7</sup> Third, they consider the nature of available remedies and their presumed efficiency in resolving particular violations.<sup>8</sup> Ultimately, the authors advise that trying to fit consumer protection concerns within the antitrust framework is “unnecessary,” “could lead to confusion and doctrinal issues in antitrust,” and would not afford “true gains to consumer protection.”<sup>9</sup> Ohlhausen and Okuliar also note four important features of Big Data that caution against an antitrust application over consumer protection law, which are explored in more detail in Part IV of this article below. First, Big Data creates efficiency gains.<sup>10</sup> Second, an antitrust institutional choice would increase subjectivity into antitrust analysis.<sup>11</sup> Third, using antitrust would create opportunities for strategic gaming by firms of the legal system.<sup>12</sup> Finally, Ohlhausen and Okuliar warn that using an antitrust lens may threaten innovation for new products and services.<sup>13</sup>

James Cooper echoes that antitrust law is an inappropriate tool to regulate Big Data. He writes:

The problem with contentions that antitrust laws should directly consider how conduct affects privacy, irrespective of competitive effects, can be addressed rather easily. Absent amendment of the antitrust laws or serious departure from *stare decisis*, courts are unlikely to accommodate privacy effects in an antitrust analysis . . . . Further, even if one were to accept the analogy between enhanced personal data collection and prices (or equivalently, lower quality) at face value, there is nothing in the antitrust laws to prevent a firm from unilaterally engaging in this conduct. Antitrust’s longstanding aversion to price regulation means that a legal monopolist is free to charge whatever price the market will bear.<sup>14</sup>

Cooper also suggests that privacy in Big Data as an antitrust concern would raise certain First Amendment issues, as well as muddle the goal of en-

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<sup>5</sup> *Id.* at 153–54.

<sup>6</sup> *Id.* at 154.

<sup>7</sup> *Id.* at 154–55.

<sup>8</sup> *Id.* at 155–56.

<sup>9</sup> *Id.* at 138.

<sup>10</sup> Ohlhausen & Okuliar, *supra* note 4, at 151.

<sup>11</sup> *Id.* at 151–52.

<sup>12</sup> *Id.* at 152.

<sup>13</sup> *Id.*

<sup>14</sup> James C. Cooper, *Privacy and Antitrust: Underpants Gnomes, the First Amendment, and Subjectivity*, 20 GEO. MASON L. REV. 1129, 1133–34 (2013) (internal footnote omitted).

forcement, thereby introducing unnecessary subjectivity into the analysis and lending itself to Virginia School-styled rent seeking in antitrust.<sup>15</sup>

Andres Lerner argues that claims of Big Data presenting competitive concerns are unsupported by real world evidence.<sup>16</sup> In particular, Lerner argues that in practice the oft-cited “feedback loops” do not have the strong effects with which they are commonly credited.<sup>17</sup> Lerner discusses the pro-competitive rationales for collection and use of consumer data online, including the potential for improved services, and the ability of firms to monetize effectively on the paid side so as to provide better services at lower prices or for free.<sup>18</sup> He dismisses the idea that firms’ may have the incentive or ability to use data to entrench their dominant position (e.g., user data is non-rivalrous and no one firm controls a significant share of data), citing attributes of data similar to those listed by Ohlhausen and Okuliar.<sup>19</sup> Lerner maintains that there is a complete lack of evidence that online markets have “tipped” to dominant firms, due in most part to the differentiated nature of online offerings.<sup>20</sup> He concludes that without strong real-world evidence of anticompetitive effects, aggressive antitrust enforcement would hamper competition and chill innovation, injuring consumer welfare in the process.<sup>21</sup>

Although policy makers have dipped their toe into the antitrust in Big Data debate,<sup>22</sup> antitrust agencies and the courts have not found a Big Data competition problem. In fact, the FTC and DG Competition have thoroughly considered Big Data as an antitrust problem and completely dismissed it.<sup>23</sup> The antitrust authorities in the United States, at DG Competition

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<sup>15</sup> *Id.* at 1138–44. *See also* Fred S. McChesney et al., *Competition Policy in Public Choice Perspective*, in 1 OXFORD HANDBOOK OF INTERNATIONAL ANTITRUST ECONOMICS 156, 163 (Roger D. Blair & D. Daniel Sokol eds., 2015).

<sup>16</sup> Andres V. Lerner, *The Role of “Big Data” in Online Platform Competition* 4–5 (2014), <http://ssrn.com/abstract=2482780>.

<sup>17</sup> *Id.* at 20.

<sup>18</sup> *Id.* at 10–12.

<sup>19</sup> *Id.* at 20–23.

<sup>20</sup> *Id.* at 46–53.

<sup>21</sup> *Id.* at 62.

<sup>22</sup> *See* European Data Protection Supervisor, *Preliminary Opinion of the European Data Protection Supervisor: Privacy and Competitiveness in the Age of Big Data: The Interplay Between Data Protection, Competition Law and Consumer Protection in the Digital Economy*, at 6–7 (Mar. 2014), [https://secure.edps.europa.eu/EDPSWEB/webdav/shared/Documents/Consultation/Opinions/2014/14-03-26\\_competition\\_law\\_big\\_data\\_EN.pdf](https://secure.edps.europa.eu/EDPSWEB/webdav/shared/Documents/Consultation/Opinions/2014/14-03-26_competition_law_big_data_EN.pdf); Debbie Feinstein, *The Not-So-Big News About Big Data*, FED. TRADE COMM’N (Jun. 16, 2015), <https://www.ftc.gov/news-events/blogs/competition-matters/2015/06/not-so-big-news-about-big-data>; Darren S. Tucker & Hill B. Wellford, *Big Mistakes Regarding Big Data*, ANTITRUST SOURCE, Dec. 2014, at 5.

<sup>23</sup> *See* Deborah Feinstein, *Big Data in a Competition Environment*, CPI ANTITRUST CHRON., May 2015, at 2; Abir Roy, *European Antitrust Enforcers Move on Holders of Big Data*, KLUWER COMPETITION L. BLOG (May 26, 2016), <http://kluwercompetitionlawblog.com/2016/05/26/european-antitrust-enforcers-move-on-holders-of-big-data/>.

and at the national level French and German Competition authorities<sup>24</sup> and Europe have moved cautiously so far. This forbearance is not only proper, but also serves as a reminder that the distinct issues addressed by antitrust and consumer protection law, and the solutions that may be applied by each set of laws to prohibited behavior, are distinct for good reason, and are complements, rather than substitutes.<sup>25</sup>

## II. CAN BIG DATA LEAD TO PRO-COMPETITIVE BENEFITS?

Unprecedented consumer benefits have already been realized through the use of Big Data, chief among them free user services (as a number of the cases have noted),<sup>26</sup> improved quality, and a rapid increase in innovation. Furthermore, fears surrounding Big Data and its use by large online firms are unwarranted, as the economic traits of Big Data ameliorate concerns that such data can be manipulated for anticompetitive gains.

### A. *Monetization of Data Subsidizes Free Products for Consumers*

Perhaps the most obvious and pervasive benefit to be realized in the Big Data era has been the ability of firms to offer heavily subsidized, often free, services to consumers as consumers give those firms permission to monetize consumer data on the other side of their business.<sup>27</sup> In a competition law regime where lower prices for consumers are deemed highly desirable, this is undoubtedly a benefit to consumers.

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<sup>24</sup> Bundeskartellamt (German Federal Cartel Office) and the Autorité de la concurrence (French Competition Authority), *Competition Law and Data*, at 53 (May 10, 2016), [http://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?\\_\\_blob=publicationFile&v=2](http://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?__blob=publicationFile&v=2) (Finding that “[a] case-specific assessment of the reality and extent of the ‘data advantage’ needs to be undertaken to bear out or reject this premise [of market power]” and that no specific real world case has of yet been identified.)

<sup>25</sup> See Neil W. Averitt & Robert H. Lande, *Consumer Sovereignty: A Unified Theory of Antitrust and Consumer Protection Law*, 65 ANTITRUST L. J. 713, 718 (1997); Timothy J. Muris & Paloma Zepeda, *The Benefits, and Potential Costs, of FTC-Style Regulation in Protecting Consumers*, 8 COMPETITION L. INT’L 11, 11 (2012) (“Like peanut butter and jelly, competition and consumer protection regulation work better when combined.”).

<sup>26</sup> See, e.g., Case T-79/12, *Cisco Sys. Inc. v. Comm’n*, ¶ 73 (Dec. 11, 2013), <http://curia.europa.eu/juris/document/document.jsf?text=&docid=145461&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&part=1&cid=44480>; *Streetmap.eu Ltd. v. Google Inc.* [2016] EWHC 253 (Ch) [22] (Eng.); Case COMP/M.7217—*Facebook/WhatsApp*, Comm’n Decision, 2014 O.J. (C 7239) 24-25, ¶ 90.

<sup>27</sup> See RUSSELL WALKER, FROM BIG DATA TO BIG PROFITS: SUCCESS WITH DATA AND ANALYTICS 141–42 (2015); Lerner, *supra* note 16, at 12. See also, Case COMP/M.7217—*Facebook/WhatsApp*, Comm’n Decision, ¶ 47 (Mar. 10, 2014) (noting that “[t]he vast majority of social networking services are provided free of monetary charges”).

The monetization of the data in the form of targeted advertising sales for antitrust purposes is not suspect or harmful, but rather “economically-rational, profit-maximizing behavior,” that results in obvious consumer benefit.<sup>28</sup> Were online platforms prevented or restricted from collecting and monetizing consumer data, competition for users would be inhibited, and harm to consumers would result, in the form of higher prices for services.<sup>29</sup> Indeed switching costs are low regarding data and search.<sup>30</sup>

Some criticize the provision of free services, claiming that this makes it more difficult for rivals that cannot initially monetize as effectively to compete with established rivals,<sup>31</sup> but cases show that this argument misses the point completely.<sup>32</sup> The ability to offer high-quality services to consumers for free is a procompetitive effect of Big Data monetization, not an anticompetitive harm.<sup>33</sup> Also, the assertion is simply untrue—it is not more difficult for new entrants to compete with established rivals in free services.<sup>34</sup>

#### B. *Improved Quality and Enhanced Innovation*

As an input, online firms use data to improve and refine products and services in a number of ways, and to develop brand new innovative product offerings. For example, search engines, both general and niche, can use data to deliver more relevant, high quality search results.<sup>35</sup> By learning from user search queries and clicks, search engines can identify the most relevant results for a particular query. “Click-and-query” data, as it is known, is a highly valuable input in delivering high quality search results.<sup>36</sup> Outside of just relevant results, search engines can use data to provide additional

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<sup>28</sup> Lerner, *supra* note 16, at 13.

<sup>29</sup> *Id.* at 15.

<sup>30</sup> *Id.* at 50; Aaron S. Edlin & Robert G. Harris, *The Role of Switching Costs in Antitrust Analysis: A Comparison of Microsoft and Google*, 15 YALE J.L. & TECH. 169, 177 (2013); *see also*, Case COMP/M.7217—Facebook/WhatsApp, Comm’n Decision, ¶ 73 (Mar. 10, 2014) (noting that data sets should not have an impact in a market for online advertising because there are so many different sources of user data available on the web).

<sup>31</sup> Nathan Newman, *Search, Antitrust, and the Economics of the Control of User Data*, 31 YALE J. ON REG. 401, 427–28 (2014).

<sup>32</sup> *See, e.g.*, Judgment, *Streetmap.eu Ltd. v. Google Inc.* [2016] EWHC 253 (Ch), [138]–[39] (Eng.).

<sup>33</sup> Lerner, *supra* note 16, at 17; Torsten Körber, *Common Errors Regarding Search Engine Regulation—and How to Avoid Them*, 36 EURO. COMPETITION L. REV. 239, 240 (2015).

<sup>34</sup> *See generally* Case COMP/M.7217—Facebook/WhatsApp, Comm’n Decision (Mar. 10, 2014).

<sup>35</sup> Michael A. Salinger and Robert J. Levinson, *Economics and the FTC’s Google Investigation*, 46 REV. INDUSTRIAL ORG. 25, 47 (2015).

<sup>36</sup> *Id.*

“value-added” services to users.<sup>37</sup> For example, travel search engines can use data to forecast price trends on flights for specific routes.<sup>38</sup> Amazon and multiple other e-commerce sites use past purchase information and browsing history to make personalized shopping recommendations for users.<sup>39</sup> Social networking platforms use data collected from users to suggest friends, celebrity or business pages, or articles that customers might be interested in.<sup>40</sup> Online media outlets use browsing history and personal information to recommend other articles that a reader may be interested in.

### C. *Economic Characteristics of Big Data Protect Against Competitive Harm*

In addition to the affirmative pro-competitive benefits of Big Data expounded above, the economics of how Big Data works, as described below, damages claims that it should be feared or reined in by antitrust. Additionally, the unique economic characteristics of data mean that its accumulation does not, by itself, create a barrier to entry, and does not automatically endow a firm with either the incentive or the ability to foreclose rivals, expand or sustain its own monopoly, or harm competition in other ways.<sup>41</sup> Lambrecht and Tucker explain that “[f]or there to be a sustainable competitive advantage, the firm’s rivals must be unable realistically to duplicate the benefits of [the] strategy or input.”<sup>42</sup> As suggested below, both theory and actual cases support a finding that the characteristics of data are such that larger online firms cannot foreclose rivals from replicating the benefits of Big Data they enjoy, and that Big Data in the hands of large firms does not necessarily pose a significant antitrust risk.

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<sup>37</sup> See generally RUSSELL WALKER, FROM BIG DATA TO BIG PROFITS: SUCCESS WITH DATA AND ANALYTICS (2015).

<sup>38</sup> Brian Honigman, *How Big Data Is Transforming The Travel Industry*, FORBES (Apr. 30, 2014), <http://www.forbes.com/sites/centurylink/2014/04/30/how-big-data-is-transforming-the-travel-industry/#1d9907a5423c>.

<sup>39</sup> Mark Milian, *Retailers Use Big Data to Turn You Into a Big Spender*, BLOOMBERG (Jun. 4, 2014), <http://www.bloomberg.com/news/2014-06-03/retailers-use-big-data-to-turn-you-into-a-big-spender.html>; see also Phil Simon, *How to Get Over Your Inaction on Big Data*, HARV. BUS. REV., Feb. 2014, <https://hbr.org/2014/02/how-to-get-over-your-inaction-on-big-data-2>.

<sup>40</sup> For a detailed study extracting (sampling) and characterizing Facebook user data, see Minas Gjoka et al., *Walking in Facebook: A Case Study of Unbiased Sampling of OSNs*, 29 INST. OF ELEC. AND ELEC. ENG’RS (2010), <http://www.minasgjoka.com/papers/unbiasedsampling-infocom2010.pdf>.

<sup>41</sup> See generally Anja Lambrecht & Catherine E. Tucker, *Can Big Data Protect a Firm from Competition?* (2015), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2705530](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2705530) (evaluating the strategic role of big data as a source of sustainable competitive advantage).

<sup>42</sup> *Id.* at 4–5.



## 1. Low Barriers to Entry

Data driven markets are typically characterized by low entry barriers, as evidenced by innovative challengers emerging rapidly and displacing established firms with much greater data resources than themselves.<sup>43</sup> While the existence or lack thereof of barriers to entry can, and will, differ from market to market, and a blanket determination cannot be made in the abstract, the history of the digital economy offers many examples, like Slack, Facebook, Snapchat, and Tinder, where a simple insight into customer needs enabled entry and rapid success despite established network effects.<sup>44</sup>

The data requirements of new competitors are far more modest and qualitatively different than those of more established firms.<sup>45</sup> Little, if any, user data is required as a starting point for most online services. Instead, firms may enter with innovative new products that skillfully address customer needs, and quickly collect data from users, which they can then use for further product improvement and success.<sup>46</sup> As such, new entrants are unlikely to be at a significant competitive disadvantage relative to incumbents in terms of data collection or analysis.<sup>47</sup>

And, while a firm that has been operational for ten years may have a larger data store than a new entrant, lack of asset equivalence has never been a sufficient basis to define a barrier to entry in any cases as of yet.<sup>48</sup> In brick-and-mortar retail, a new entrant may have a smaller showroom than an established competitor, but this does not render the need for a physical store an insurmountable barrier to entry. Indeed, an established brick-and-mortar store could have much more data on local customer preferences, but that has never been viewed as prohibitive to entry.

## 2. Data is Ubiquitous, Inexpensive, and Easy to Collect

Data is ubiquitous, inexpensive, and easy to collect.<sup>49</sup> Users are constantly creating data, as increased internet and smartphone usage means customers are continuously leaving behind traces of their needs and preferences.<sup>50</sup> Firms can easily and quickly collect data from consumers upon launch, and both data and the tools needed to store and analyze it are read-

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<sup>43</sup> Tucker & Wellford, *supra* note 22, at 1–2.

<sup>44</sup> Lambrecht & Tucker, *supra* note 41, at 11–15.

<sup>45</sup> Tucker & Wellford, *supra* note 22, at 6–9.

<sup>46</sup> *Id.*

<sup>47</sup> *Id.*

<sup>48</sup> *See id.*

<sup>49</sup> Catherine Tucker, *The Implications of Improved Attribution and Measurability for Antitrust and Privacy in Online Advertising Markets*, 20 GEO. MASON L. REV. 1025, 1030 (2013).

<sup>50</sup> *See* Lambrecht & Tucker, *supra* note 41, at 6–7.

ily available from numerous third party sources. Big Data has near-zero marginal costs of production and distribution.<sup>51</sup> Firms are able to collect data from many different sources, demonstrating the reality that users leave “multiple digital footprints” wherever they tread online.<sup>52</sup> The fact that data can, therefore, be acquired from third party sources means that even on the first day of product launch, before any user has interacted with the platform, a provider can already have benefitted from insights into consumer preferences and designed a platform that can act quickly as data is collected and processed.

While some argue that the resources and effort expended by companies in pursuit of data is evidence enough that data collection and processing is both “costly” and “time-consuming,”<sup>53</sup> it is important to distinguish between the collection of raw data and the analysis any given firm puts the data through, which is what makes the data valuable. This is the firm’s “secret sauce.” This analysis is also, incidentally, the part of a firm’s Big Data usage that requires the most resources.<sup>54</sup> There is also plenty of off-the-shelf and open source analytics software that could give small firms a head start.

### 3. Data is Non-Exclusive and Non-Rivalrous

Data is non-exclusive and non-rivalrous. No one firm can, or does, control all of the world’s data. Collection of a piece of data by one firm does not occur at the expense of another firm. “Multi-homing” is the norm among internet users—users can, and do, spread their data around the internet, using multiple different providers for multiple different services, or sometimes the same service.<sup>55</sup> While multi-homing, a user shares data with multiple providers.<sup>56</sup> Multi-homing also serves to reduce market power.<sup>57</sup>

Big Data has been likened to other inputs as it becomes an increasingly important asset.<sup>58</sup> However, Big Data’s non-rivalrous and non-exclusive nature sets it apart from other key inputs. If one provider has a piece of data, another provider is not prevented from collecting that very same piece of data. Similarly, while one provider could at least theoretically

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<sup>51</sup> CARL SHAPIRO & HAL R. VARIAN, *INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY* 24 (1999).

<sup>52</sup> Lambrecht & Tucker, *supra* note 41, at 3.

<sup>53</sup> Maurice E. Stucke & Allen P. Grunes, *Debunking the Myths over Big Data and Antitrust*, CPI ANTITRUST CHRON., May 2015, at 7.

<sup>54</sup> John Bantleman, *The Big Cost of Big Data*, FORBES (Apr. 16, 2012), <http://www.forbes.com/sites/ciocentral/2012/04/16/the-big-cost-of-big-data/#3ecaa8286a21>.

<sup>55</sup> Lambrecht & Tucker, *supra* 41, at 7.

<sup>56</sup> *Id.*

<sup>57</sup> See Mark Armstrong, *Competition in Two-Sided Markets*, 37 RAND J. ECON. 668, 669-70 (2006).

<sup>58</sup> See Tucker & Welford, *supra* note 22, at 4.

hold all of the world's oil resources, for example, no one provider can amass all available data. Furthermore, incumbent online providers do not have explicit or de facto exclusivity over user data. There are no exclusivity clauses in terms of service with users, and there are no structures (pricing or otherwise) that lock users into sharing their data with only one provider.<sup>59</sup>

#### 4. Data's Value is Short-Lived

Data has a limited lifespan—old data is not nearly as valuable as new data—and the value of data lessens considerably over time.<sup>60</sup> Additionally, the returns on scale diminish over time.<sup>61</sup> Therefore, any competitive advantage that data provides is fleeting, and entrants are unlikely to be significantly disadvantaged relative to incumbents in terms of data collection and analysis.<sup>62</sup> The need for fresh, differentiated data means that a holding a large volume of stale or generalized data does not, necessarily, benefit the holder and disadvantage a potential challenger. Potential competitors do not need to create a data store “equivalent to the size of the incumbent”; they rather need to devise a strategy to accumulate highly relevant and timely data.<sup>63</sup>

#### 5. Data Alone is Not Enough

Data does not typically provide value on a standalone basis. Mere possession of data alone therefore, even in large volume, does not secure com-

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<sup>59</sup> See Andrea Renda, *Searching for Harm or Harming Search? A Look at the European Commission's Antitrust Investigation Against Google* 30, (Ctr. for European Policy Studies, Working Paper No. 118, 2015) (“The existence of widespread multi-homing makes barriers to entry and switching even more evanescent.”), <https://www.ceps.eu/system/files/AR%20Antitrust%20Investigation%20Google.pdf>.

<sup>60</sup> Lockwood Lyon, *The End of Big Data*, DATABASE J. (May 16, 2016), <http://www.databasejournal.com/features/db2/the-end-of-big-data.html> (“As data ages it tends to become less relevant for the following reasons: Newly implemented operational applications will not have a data history; Older products are removed and replaced by new products; Older customers may no longer exist; As you apply maintenance to current operational systems, some analyses of ‘old’ behavior becomes irrelevant; Older data tends to be less accurate and sometimes is missing altogether, [and] as operational systems are adjusted to fix these problems, inaccurate or missing historical data will skew analyses.”).

<sup>61</sup> William Terdoslavich, *Big Data & The Law Of Diminishing Returns*, INFORMATIONWEEK (Nov. 27, 2015), <http://www.informationweek.com/big-data/big-data-analytics/big-data-and-the-law-of-diminishing-returns/d/d-id/1323310>.

<sup>62</sup> See generally Lesley Chiou & Catherine Tucker, *Search Engines and Data Retention: Implications for Privacy and Antitrust* (MIT Sloan Sch. of Mgmt., Working Paper No. 5094-14, May 2014), <http://ssrn.com/abstract=2441333>.

<sup>63</sup> Nils-Peter Schepp & Achim Wambach, *On Big Data and Its Relevance for Market Power Assessment*, 7 J. EUR. COMP. L. & PRAC. 120, 122 (2016).

petitive success—that can only be achieved through engineering talent, quality of service, speed of innovation, and attention to consumer needs. As such, the firm with the most data does not necessarily win. Take the online dating application, Tinder, initially launched in September 2012, as an example. Data is of particular value in industries where personalized experience is important, such as online dating.<sup>64</sup> When Tinder launched, it had no access to user data, but nevertheless it became the market leader within a couple of years.<sup>65</sup> Lambrecht and Tucker explain that even in this highly data driven industry, Tinder succeeded not through reliance on Big Data, but due to the strength of its underlying solution.<sup>66</sup> A simple user interface and a precise attention to consumer needs resulted in massive gains for the new entrant. Similarly, despite facing competition from long established incumbents with access to huge volumes of data, amassed over years of customer service, WhatsApp was able to take on more established messaging and social networks because of its low cost and easy-to-use interface.<sup>67</sup> Examination of these industries leads Lambrecht and Tucker to conclude that to build a sustainable competitive advantage from Big Data, a firm needs to focus on developing both the managerial toolkit and organizational competence that allows them to turn Big Data into value to consumers in previously impossible ways, rather than simply amassing tremendous amounts of data.<sup>68</sup>

## 6. Highly Differentiated Platforms Need Highly Differentiated Data

Online platforms are highly differentiated, even in the provision of the same type of service, and as each entrant carves out a niche, the most useful data to them differs more and more from the data most useful to their rivals.<sup>69</sup> Consumers are moving towards meeting more precise, niche consumer needs. A consumer looking to book a flight could use Kayak, Expedia, Orbitz, or a multitude of other travel-dedicated search engines. The same is true in internet shopping, online dating, social networking, product and service reviews, and a host of other online markets. In today's online environment, successful firms must carve out their own niche, and increasingly, data that is useful (even crucial) to one firm may not be useful to its

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<sup>64</sup> See Paul Rubens, *Is Big Data Dating the Key to Long-lasting Romance?*, BBC NEWS (Mar. 24, 2014), <http://www.bbc.com/news/business-26613909>.

<sup>65</sup> Emily Witt, *Love Me Tinder*, GQ (Feb. 11, 2014), <http://www.gq.com/story/tinder-online-dating-sex-app> (“Until recently, hookup apps were straightforward but sleazy. Then along came Tinder, the dating-hookup hybrid that made things simpler, sexier, and particularly lady-friendly. In just fifteen months, it seems to have cracked the code and caught fire.”).

<sup>66</sup> Lambrecht & Tucker, *supra* note 41, at 14.

<sup>67</sup> *Id.* at 12.

<sup>68</sup> *Id.* at 16.

<sup>69</sup> See Schepp & Wambach, *supra* note 63, at 122.

competitors.<sup>70</sup> An astute and innovative entrant will identify a niche where the incumbent does not have requisite data, and can very quickly “catch up” to the incumbent in terms of valuable data amassed.

### III. DOES BIG DATA POSE HARM TO COMPETITION?

Although data as a potential antitrust concern is not a particularly new issue, what has changed dramatically in recent years is the size and scope of the data that firms collect, store, and use. As Deborah Feinsein, head of the FTC’s Bureau of Competition put it, “What is new is the explosion in the collection and use of data about consumers, from their shopping habits to their sensitive health information.”<sup>71</sup> With the growth in the amount of data and the advent of Big Data, the importance of that data as an input in online platforms has also increased. The growing importance of Big Data as an input, and the consistent increase in the 4 Vs of data—volume, velocity, variety, and value<sup>72</sup>—means that companies are now more than ever undertaking data-driven strategies to gain operational efficiencies,<sup>73</sup> and, some argue, to gain and sustain an unfair competitive advantage.<sup>74</sup>

This section describes a number of ways in which some have argued that firms can use Big Data to perpetuate an unfair competitive advantage and consequently distort competition and harm consumers. These commentators argue that Big Data arms online providers with the incentive and ability to erect barriers to entry and maintain dominance by “limit[ing] their competitors’ access to data, prevent[ing] others from sharing the data, and oppos[ing] data-portability policies that threaten data-related competitive advantages.”<sup>75</sup> The resulting harm, according to such critics, is “not necessarily higher price[s]” (considering most of these services are provided for free), but rather a “loss of quality, innovation, and privacy.”<sup>76</sup>

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<sup>70</sup> *See id.*

<sup>71</sup> Feinsein, *supra* note 22.

<sup>72</sup> Allen P. Grunes & Maurice E. Stucke, *No Mistake About It: The Important Role of Antitrust in the Era of Big Data*, ANTITRUST SOURCE, Apr. 2015, at 2 n.13 (quoting ORG. FOR ECON. CO-OPERATION & DEV. (OECD), SUPPORTING INVESTMENT IN KNOWLEDGE CAPITAL, GROWTH AND INNOVATION 12 (2013) (“Value is a fourth V which is related to the increasing socioeconomic value to be obtained from the use of big data. It is the potential economic and social value that ultimately motivates the accumulation, processing and use of data.”)); *see also* EXEC. OFFICE OF THE PRESIDENT, BIG DATA: SEIZING OPPORTUNITIES, PRESERVING VALUES 2 (2014), [http://www.whitehouse.gov/sites/default/files/docs/big\\_data\\_privacy\\_report\\_may\\_1\\_2014.pdf](http://www.whitehouse.gov/sites/default/files/docs/big_data_privacy_report_may_1_2014.pdf) (“Most definitions [of “big data”] reflect the growing technological ability to capture, aggregate, and process an ever-greater volume, velocity, and variety of data.”).

<sup>73</sup> *See* Lambrecht & Tucker, *supra* note 41, at 12.

<sup>74</sup> Stucke & Grunes, *supra* note 53, at 2.

<sup>75</sup> *Id.*; *see also* Newman, *supra* note 31, at 403.

<sup>76</sup> Maurice E. Stucke & Allen Grunes, *Dancing Around Data*, THE HILL: CONG. BLOG. (Dec. 10, 2014, 11:30 A.M.), <http://thehill.com/blogs/congress-blog/technology/226502-dancing-around-data>.

To properly assess the antitrust implications of Big Data, we must understand fully the ways in which online platforms use Big Data and the nature of competition among them. A crucial starting point in this endeavor is a solid understanding of two-sided platforms. A two-sided platform exists when one provider caters to two different customer groups on different sides of the same platform.<sup>77</sup> For example, social media platforms give users free access to social networking services on one side of the platform and rely on the provision of advertising services to businesses on the other side of the platform for revenue.<sup>78</sup> A proper antitrust assessment of any two-sided platform must take into account competition on each side of the platform.<sup>79</sup> It is important to recognize that certain actions may cause procompetitive effects for the platform as a whole, while initially appearing anticompetitive on one side of the platform. A comprehensive antitrust analysis cannot look at one side of the platform in a vacuum—it must weigh the benefits and harm to the platform as a whole.<sup>80</sup>

#### A. *Loss of Quality and Innovation*

While firms with access to troves of Big Data can use it to improve the quality of their products in several ways, a number of practitioners have argued that misuse of Big Data may result in a loss of quality.<sup>81</sup> While the exact parameters of this proposition are open to debate, scale in data is, indisputably, important in improving the quality of online services. Smaller firms, the argument goes, often cannot adequately compete with larger firms because they lack access to the same volume of data as the larger firm. As the data gap, and consequently the quality gap, widens between the dominant firm and a smaller rival, the competitive constraint the rival poses to the dominant firm in terms of quality and innovation is diminished. The

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<sup>77</sup> Evans & Schmalensee, *supra* note 1, at 408–10.

<sup>78</sup> Inge Graef, *Market Definition and Market Power in Data: The Case of Online Platforms*, 38 *WORLD COMPETITION: LAW AND ECON. REV.* 473, 476–77 (2015).

<sup>79</sup> Note, however, that the analytical appropriateness of the two-sided market is not without debate. See Marcela Mattiuzzo, *Online Advertising Platforms and Personal Data Retail: Consequences for Antitrust Law*, *CPI ANTITRUST CHRON.*, July 2015, at 2 (“[O]ne should question whether continuing to apply [the two-sided model] without qualification is the most suitable course forward . . . . There are platforms that fit the two-sided model poorly and whose antitrust analysis could thus profit from a different framework.”).

<sup>80</sup> See Salinger & Levinson, *supra* note 35, at 49–50; Hemant K. Bhargava et al., *The Move to Smart Mobile and Its Implications for Antitrust Analysis of Online Markets*, *U.C. Davis L. Rev.* (forthcoming) (manuscript at 36), <http://ssrn.com/abstract=2721394>.

<sup>81</sup> See Grunes & Stucke, *supra* note 72, at 5. *But see* Michal S. Gal & Daniel L. Rubinfeld, *Access Barriers to Big Data* (forthcoming) (manuscript at 38) (on file with author) (“In other situations, big data advantages may increase the incentives of other firms to compete not only on the big-data-based-information, but on other dimensions of the product, including quality and price.”).

larger firm, in this scenario, is not driven to innovate or to maximize quality for the consumer.<sup>82</sup>

Stucke and Ezrachi argue that inequality in access to data can lead to the potential degradation of quality for consumers in search engines in particular.<sup>83</sup> They claim that large search engines have the incentive and ability to prioritize paid advertising over more relevant, better quality, organic search results.<sup>84</sup> On a search engine, more advertisements, displayed more prominently, benefit both the advertiser and the search provider. More ads increase the opportunities for user clicks. This in turn means a greater likelihood of a pay-per-click conversion for the platform provider and a better chance of a product sale for the advertiser. Where this becomes an antitrust problem, Stucke and Ezrachi suggest, is where Big Data has widened the gap between large and small providers to the extent that a smaller provider cannot provide adequate quality competition to prevent its larger rival from sacrificing some degree of search quality in favor of expanding profits on the paid side.<sup>85</sup> The fact that a large search engine has access to so much data, and therefore the ability to improve search quality to such a high degree, means it can afford to sacrifice a higher level of search quality than a smaller search engine (who is already struggling on quality due to lower data levels) could.<sup>86</sup> Additionally, the disparity in data volume means that users are generally unable to detect small degradations in quality—they just know that Google is giving a better result than Bing, but not *how much* better.<sup>87</sup>

In addition to the lack of real world supporting evidence, this theory of harm also begs the question whether incremental degradation in quality by a search provider whose quality is still superior to rivals is an antitrust concern. Does a firm have an obligation to provide the absolute best quality product it can, even if not profit maximizing? No court or antitrust regulator has ever imposed such a requirement. And, in this example, how does a regulator measure the “best quality search results,” since quality is relative and users are said to not be able to accurately assess quality?

These questions aside, this loss of quality theory also overlooks the importance of analyzing both sides of the two-sided platform. While no ads at all would certainly improve search quality, it would clearly be very detrimental to advertisers. Increasing ad space might be beneficial to advertisers, but could admittedly lead to search quality degradation for users. Antitrust analysis requires a balancing act and an understanding of the inherent

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<sup>82</sup> Stucke & Grunes, *supra* note 76.

<sup>83</sup> Maurice E. Stucke & Ariel Ezrachi, *When Competition Fails to Optimize Quality: A Look at Search Engines*, 18 YALE J.L. & TECH. 70, 103 (2016).

<sup>84</sup> *Id.* at 91–92.

<sup>85</sup> *See id.* at 96–97.

<sup>86</sup> *Id.*

<sup>87</sup> *Id.* at 101–02.

tradeoffs between both sides of the platform. A holistic approach to the economic efficiency of the conduct is required, as opposed to delegating to antitrust the responsibility (instead of properly assigned to the market itself) to police whether search quality dips below “levels that consumers prefer,” as Stucke and Ezrachi claim.<sup>88</sup>

In addition to the alleged degradation in quality that can occur, Big Data can also, some allege, stifle innovation. Where a firm’s value proposition is built on collecting and monetizing user data, if that firm collects so much user data that it becomes entrenched, it may gain both the ability and the incentive to use that data in a number of ways to eliminate potential challengers.<sup>89</sup> As this happens, smaller rivals are prevented from accessing necessary data, and the incentive for these firms to innovate and to compete with larger dominant firms is reduced. For example, a dominant firm with access to Big Data could conceivably look to trends in data to identify potential challengers and devise strategies to quickly stamp out any rising competition by limiting or preventing their access to necessary data, or by acquiring them.<sup>90</sup> Where market leaders with deep pockets acquire potential or actual new entrants, a source of innovation is removed, and competition suffers.<sup>91</sup> Of course, such a discernment of trends may also be beneficial to competition where it forces a market leader to further invest in innovation itself, as antitrust law fundamentals contemplate.<sup>92</sup> It is also worth bearing in mind that acquiring a smaller rival is not, without proof that such acquisition is likely to substantially lessen competition, prohibited under the antitrust laws. Indeed, the potential for such acquisitions incentivizes entry.<sup>93</sup>

#### B. *Harm to Privacy*

Proponents of antitrust involvement in Big Data suggest that consumers feel they do not have control over how online platform providers use

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<sup>88</sup> *Id.* at 91.

<sup>89</sup> Stucke & Grunes, *supra* note 76.

<sup>90</sup> Stucke & Grunes, *supra* note 53, at 8.

<sup>91</sup> U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES § 6.4 (2010) (“The Agencies also consider whether a merger is likely to give the merged firm an incentive to cease offering one of the relevant products sold by the merging parties.”).

<sup>92</sup> *Id.* (“The Agencies also consider whether the merger is likely to enable innovation that would not otherwise take place, by bringing together complementary capabilities that cannot be otherwise combined or for some other merger-specific reason.”).

<sup>93</sup> *Id.* (“Competition often spurs firms to innovate. The Agencies may consider whether a merger is likely to diminish innovation competition by encouraging the merged firm to curtail its innovative efforts below the level that would prevail in the absence of the merger.”)



and collect their data.<sup>94</sup> Ohlhausen and Okuliar agree that “many consumers . . . are worried about the privacy losses associated with extensive collection and manipulation of consumer information online.”<sup>95</sup> Some argue that consumers continue to utilize free services provided by “internet giants” only because they are faced with no viable alternative than to use these services and “pay” by divulging their personal information.<sup>96</sup> As users create more and more data, and firms continue to collect it, the safeguards protecting its collection and use may well become more important and more vulnerable to attack. The economics literature shows that, in fact, the collection of data may provide improved services,<sup>97</sup> product recommendations,<sup>98</sup> or free content.<sup>99</sup>

Privacy protections can be considered a form of non-price competition, which is especially important in industries where the service itself is offered for free.<sup>100</sup> Firms may compete by offering tighter or more transparent privacy policies.<sup>101</sup> Yet Jones Harbour and Koslov argue that consumers can be harmed when a dominant firm has no incentive to invest in privacy protections (especially where it may harm the firm’s ability to monetize on the paid side), and its competitors are too small, or their quality too inferior, to exert competitive pressure significant enough to discipline the dominant firm.<sup>102</sup> Consumers may feel they have no choice but to use the dominant firm in order to get good quality results. Alternatively, the lack of viable good quality alternatives may endow users with a higher “tolerance” for weaker results. Acquisti offers a literature review that provides a more nuanced view of different ways consumers value privacy.<sup>103</sup> His analysis

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<sup>94</sup> Pamela Jones Harbour & Tara Isa Koslov, *Section 2 in a Web 2.0 World: An Expanded Vision of Relevant Product Markets*, 76 ANTITRUST L.J. 769, 782 (2010); Stucke & Grunes, *supra* note 53, at 6.

<sup>95</sup> Ohlhausen & Okuliar, *supra* note 4, at 122.

<sup>96</sup> Stucke & Grunes, *supra* note 76.

<sup>97</sup> Alessandro Acquisti & Hal R. Varian, *Conditioning Prices on Purchase History*, 24 MARKETING SCI. 367, 368 (2005).

<sup>98</sup> James Bennett & Stan Lanning, *The Netflix Prize*, 2007 PROC. OF KDD CUP & WORKSHOP, <https://www.cs.uic.edu/~liub/KDD-cup-2007/NetflixPrize-description.pdf>.

<sup>99</sup> See Avi Goldfarb & Catherine Tucker, *Privacy Regulation and Online Advertising*, 57 MGMT. SCI. 57, 61 (2011).

<sup>100</sup> Ohlhausen & Okuliar, *supra* note 4, at 133 (“[P]rivacy protection has emerged as a small, but rapidly expanding, dimension of price competition among digital platforms.”).

<sup>101</sup> David S. Evans, *The Online Advertising Industry: Economics, Evolution, and Privacy*, 23 J. ECON. PERSP. 37, 57 (2009); Scott J. Savage & Donald M. Waldman, *Privacy Tradeoffs in Smartphone Applications*, 137 ECON. LETTERS 171, 171 (2015).

<sup>102</sup> Harbour & Koslov, *supra* note 94, at 785 n. 50.

<sup>103</sup> Alessandro Acquisti, *From the Economics of Privacy to the Economics of Big Data*, in PRIVACY, BIG DATA, AND THE PUBLIC GOOD: FRAMEWORKS FOR ENGAGEMENT 91 (Stefan Bender et al. eds., 2014) (“Evaluations and conclusions regarding the economic value of privacy and the optimal balance between disclosure and protection are, therefore, far from simple.”).

shows that issues involving privacy trade-offs are more complex than Jones Harbour and Koslov advocate.

It is important to note however that harm to privacy does not, without more, equal harm to competition. And, as discussed in more detail below, antitrust is ill-equipped to solve consumer law problems. In a recent speech, FTC Chairwoman Ramirez correctly characterized these issues as risks best addressed by consumer protection and privacy laws:

As you can see, every step in the life cycle of big data raises the potential for significant privacy and other risks. First, despite the potential for big data's positive impact on the lives of consumers, there is a real risk of lack of transparency and loss of consumer control . . . . Second, there is a risk of unexpected and unwelcome use of data [such as data being used without consent] . . . . Third, big data raises concerns about data security."<sup>104</sup>

The major data issues are thus not antitrust issues at all!

### C. *Data-Driven Mergers and Data Driven Defenses*

The number of Big Data related merger cases has increased over time. In this context, further potential harms could, some argue, arise from data-driven mergers where the transaction rationale rests on the acquirer gaining access to the underlying data set of the target undertaking.<sup>105</sup> Stucke and Grunes argue that such data driven mergers can “potentially lessen non-price competition in terms of the array of privacy protections offered to consumers.”<sup>106</sup> They and others suggest that where privacy constitutes an important dimension of competition in a given market,<sup>107</sup> or represents an important element of transaction rationale, antitrust agencies should closely examine transactions to determine whether the combination is likely to reduce incentives to compete in providing privacy protections to consumers. An early example of this argument can be found in then-Commissioner Harbour’s dissenting statement in the investigation of Google’s acquisition of DoubleClick, which suggested that privacy could be “‘cognizable’ under the antitrust laws,” and should have been considered by the Commission

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<sup>104</sup> Edith Ramirez, Chairwoman, FED. TRADE COMM’N, Remarks at the International Conference on Big Data from a Privacy Perspective: Protecting Privacy in the Era of Big Data (June 10, 2015), <https://www.ftc.gov/public-statements/2015/06/protecting-privacy-era-big-data-remarks-ftc-chairwoman-edith-ramirez>.

<sup>105</sup> Graef, *supra* note 78, at 19-20.

<sup>106</sup> Stucke & Grunes, *supra* note 53, at 5.

<sup>107</sup> *See generally* Graef, *supra* note 78.

“as part of its antitrust analysis of the transaction.”<sup>108</sup> The former Commissioner’s statement cited a theory that network effects could lead to fewer search engines, reducing “incentives of search firms to compete based on privacy protections or related non-price dimensions.”<sup>109</sup>

These concerns have not been born out yet by any actual cases. In the U.S., the antitrust agencies have had occasion to consider the role of Big Data in a number high profile mergers, and merging parties have increasingly put forth data driven efficiencies in defense of mergers, with varying degrees of success.<sup>110</sup> For example, with respect to ratings and reviews platform provider Bazaarvoice’s 2012 acquisition of rival PowerReviews, both the Department of Justice and the trial court rejected the parties’ efficiency claims, citing a lack of evidence that the transaction had resulted in data gains that lead to an improved product, lower prices, or greater innovation.<sup>111</sup> On the other hand, during the Department of Justice’s 2010 investigation into a search-related partnership between Microsoft and Yahoo!, the Justice Department did accept the parties’ data driven efficiency argument, suggesting that the transaction might be pro-competitive where increased access to data enabled more rapid improvements in Microsoft’s search offering, thereby creating a more viable competitive alternative to Google.<sup>112</sup>

In Europe, although the Commission did not ultimately opine on this particular issue, the parties to the TomTom/TeleAtlas merger argued that customer feedback data would allow the combined firm to produce better digital maps at a faster pace.<sup>113</sup> The Commission noted low switching costs and limited pass through to consumers.<sup>114</sup> As such, the Commission found that there was no incentive to foreclose competitors.<sup>115</sup> In another case, the Commission found that the Telefonica/Vodafone/Everything Everywhere joint venture posed no Big Data problem with regard to the data analytics services because of robust competition in the market to store data and alter-

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<sup>108</sup> Pamela Jones Harbour, Comm’r, Fed. Trade Comm’n, Dissenting Statement Regarding *In re Google/DoubleClick*, FTC File No. 071-0170 (Dec. 20, 2007), at 10, [http://www.ftc.gov/sites/default/files/documents/public\\_statements/statementmattergoogle/doubleclick/071220harbour\\_0.pdf](http://www.ftc.gov/sites/default/files/documents/public_statements/statementmattergoogle/doubleclick/071220harbour_0.pdf) [hereinafter Harbour Dissenting Statement].

<sup>109</sup> *Id.* at 10 n. 25.

<sup>110</sup> See generally Grunes & Stucke, *supra* note 72, at 3. Precedential cases involving Big Data are explored more thoroughly in Part IV below.

<sup>111</sup> *Id.* (citing *United States v. Bazaarvoice, Inc.*, Case No. 13-cv-00133-WHO, 2014 WL 203966, at \*62–64 (N.D. Cal. Jan. 8, 2014)).

<sup>112</sup> 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), <http://www.justice.gov/opa/pr/statement-department-justice-antitrust-division-its-decision-close-its-investigation-internet>.

<sup>113</sup> Case COMP/M.4854, *TomTom/TeleAtlas*, Comm’n Decision, 2008 O.J. (C 237) 53–54, ¶¶ 245–50.

<sup>114</sup> *Id.* at 22, ¶ 106 ([T]he Commission considers barriers to switching to be relatively limited.”).

<sup>115</sup> *Id.* at 50, ¶ 230

natives.<sup>116</sup> Similarly, the Commission did not find a Big Data problem in *Publicis/Omnicom*, where the Commission noted competition from alternative providers of big data analytics.<sup>117</sup>

D. *The Perceived Strength of Scale, Network Effects, and Barriers to Entry*

Many, if not all, of the theories of harm attributed to Big Data rest on the perceived strength of the “feedback loop” and the consequential network effects enjoyed by large firms with access to tremendous amounts of data.<sup>118</sup> Big Data can give rise to network effects, and certainly, network effects can play a significant role in a sound antitrust analysis. However, agencies, policy makers, and scholars must resist any foregone conclusion that the presence of network effects in Big Data automatically results in anticompetitive harm.

Big Data can lead to economies of scale via the alleged “feedback loop.” In search, some argue, “the availability of data on previous search queries is crucial” to competitive success.<sup>119</sup> There are two ways the “feed-

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<sup>116</sup> Case COMP/M.6314, *Telefónica UK/Vodafone UK/Everything Everywhere/JV*, Comm’n Decision, 2012 O.J. (C 66) 122, ¶ 543 (noting that “[c]ustomers generally tend to give their personal data to many market players, which gather and market it. Therefore, this type of data is generally understood to be a commodity.”). *See also* European Commission Press Release IP/12/938, *Mergers: Commission Clears the Creation of a Mobile Commerce Joint Venture by UK Mobile Operators Telefónica, Vodafone and Everything Everywhere* (Sept. 5, 2012), [http://europa.eu/rapid/press-release\\_IP-12-938\\_en.htm](http://europa.eu/rapid/press-release_IP-12-938_en.htm) (“The market investigation revealed that a number of alternatives already exist and much more are very likely to emerge in the near future to ensure adequate competitive pressure on the joint venture’s mobile wallet platform. Some of these alternatives may rely on a secure access to the SIM card of the mobile handsets in order to store sensitive data like bank account numbers, etc. This access will be controlled by the mobile network operators, including in particular the three parents of the joint venture. However, other alternatives exist which do not store sensitive data on SIM-cards and it is unlikely that the creation of the joint venture will allow the parent mobile network operators to block these alternative routes to market using technical or commercial means.”).

<sup>117</sup> Case COMP/M.7023, *Publicis/Omnicom*, Comm’n Decision, 2014 O.J. (C 84) 122, ¶ 640. *See also* Paul McGeown & Aude Barthelemy, *Recent Developments in EU Merger Control 2014*, 6 J. EURO. COMPETITION L. & PRACTICE 440, 445 (2015) (“One of the important factors given weight by the Commission in deciding not to challenge the transaction was the ability of customers to cut out (or at least threaten to cut out) intermediary agencies such as the parties and purchase directly from media vendors. While the market investigation suggested that the proportion of direct purchases was relatively small, a large majority of media owners replied that they do make direct sales and half of the customers who replied to questionnaires said that they had in fact bought directly from media vendors in the preceding 3 years.”).

<sup>118</sup> European Data Protection Supervisor Press Release EDPS/2014/06, *Privacy and Competitiveness in the Age of Big Data* (Mar. 26, 2014), [http://europa.eu/rapid/press-release\\_EDPS-14-6\\_en.htm?locale=en](http://europa.eu/rapid/press-release_EDPS-14-6_en.htm?locale=en) (“The collection and control of massive amounts of personal data are a source of market power for the biggest players in the global market for internet services.”).

<sup>119</sup> Graef, *supra* note 78, at 10.

back loop” can lead to greater economies of scale. The “user feedback loop” theory presumes that as a platform gains more users it can collect more user data, leading to better insights into consumers and their needs, which the firm can use to improve quality and attract even more users.<sup>120</sup> The “monetization feedback loop” theory claims that as a platform gains more users and collects more user data, the firm is better able to target and sell ads, and so is better able to monetize its platform and gain revenues that can be invested in improving quality of service, thereby attracting more users.<sup>121</sup>

Alongside these feedback loops, a number of distinct network effects come into play in online platforms that collect and use Big Data. Direct network effects occur when a product or service becomes more valuable to an individual user as more people use that particular product or service, such as in telecommunications networks or the electric grid. In a high tech context, social networking platforms, photo sharing platforms, and chat applications may enjoy significant direct network effects.<sup>122</sup> Indirect network effects occur when more users make the use of a product or service better or more attractive to consumers, though not because of direct interaction between users. Search engines benefit from indirect network effects as more users allow the search engine to gain insight from user clicks into what users want, essentially learning by trial and error, and therefore improving the quality of search results.<sup>123</sup>

Some argue that network effects are particularly strong in two-sided platforms.<sup>124</sup> A firm operating a two-sided platform can, it is argued, benefit from not only from traditional network effects, but also from cross platform network effects, where more users on one side of the platform makes the platform more attractive to users on the other side of the market.<sup>125</sup> While entry barriers naturally vary from industry to industry, and indeed change over time, these practitioners suggest that the economies of scale and network effects that characterize data-driven markets lead to a “winner takes all” result, and present insurmountable barriers to entry.<sup>126</sup>

In reality, the strength of the feedback loop may be grossly overstated. The feedback loop theory assumes smaller rivals and challengers will not

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<sup>120</sup> Lerner, *supra* note 16, at 19.

<sup>121</sup> *Id.* at 39.

<sup>122</sup> See Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424, 424–26 (1985) (discussing direct and indirect network effects).

<sup>123</sup> Lerner, *supra* note 16, at 10–11.

<sup>124</sup> Christopher S. Yoo, *When Antitrust Met Facebook*, 19 GEO. MASON L. REV. 1147, 1153 (2012) (“The current success enjoyed by social networking sites makes concerns that adapters might forestall investment in establishing social networks seem remote. However, the theoretical literature indicating that the deployment of adapters may decrease the incentives to invest in social networks suggests that it may be a concern worth monitoring.”).

<sup>125</sup> Graef, *supra* note 78, at 3–4; Stucke & Grunes (May 2015), *supra* note 53, at 6.

<sup>126</sup> Stucke & Grunes, *supra* note 53, at 7.

be able to compete effectively, as they lack comparable amounts of users, and therefore data, which inhibits their ability to improve quality and attract more users. As Lerner points out, however, these assumptions are “unsupported by real-world evidence.”<sup>127</sup> The economic characteristics of Big Data weaken the claimed strength of the feedback loop.<sup>128</sup> Chief among these characteristics is the fact that online providers can gain scale in users in ways that do not involve user data, and that access to data alone is not enough to improve quality and gain scale in users.<sup>129</sup> Additionally, firms can gather data from sources other than users (e.g. data brokers),<sup>130</sup> and can gain scale in data in alternative ways, such as by entering into strategic distribution arrangements.<sup>131</sup> In one such partnership between Microsoft and Yahoo regarding search results and advertising, the European Commission notes that “it is plausible that the merged entity through innovation and through its access to a larger index will be able to provide personalized search results better aligned to users' preferences.”<sup>132</sup>

As to network effects, even in classic cases of direct network effects such as social networking and communications applications, innovation can be strong enough to upend the market, and network effects have time and time again proven insufficient to prevent newcomers from disrupting established market leaders. In social networking for example, Friendster, the original “market leader” was replaced quickly by MySpace, which has now been rendered almost completely obsolete by Facebook. An innovative product is enough to cause users to switch, notwithstanding any network effect enjoyed by the incumbent.

Among advertisers, network effects are diminished by the pricing structures employed by most online platforms, by advertiser multi-homing due to the low cost in advertising on multiple platforms, and by advertiser “congestion.”<sup>133</sup> The pay-per-click model means that while advertising on a “busier” platform may result in better conversion rates for an advertiser, it also involves proportionally higher costs, and more clicks means the advertiser has to pay more.<sup>134</sup> As such, it may actually not be as economically advantageous for an advertiser to choose a larger online platform over a smaller one (contrary to real world platforms that are priced differently).<sup>135</sup> Additionally, since fixed costs to advertise on any particular platform are low, advertisers may be incentivized to advertise on multiple different plat-

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<sup>127</sup> Lerner, *supra* note 16, at 20.

<sup>128</sup> See Part II for a more detailed discussion of the characteristics of Big Data.

<sup>129</sup> Lerner, *supra* note 16, at 28.

<sup>130</sup> *Id.* at 8.

<sup>131</sup> *Id.* at 28.

<sup>132</sup> Case COMP/M.5727, Microsoft/Yahoo Search Business, Comm'n Decision, 2010 O.J. (C) 37,

¶ 225.

<sup>133</sup> Lerner, *supra* note 16, at 6.

<sup>134</sup> *See id.*

<sup>135</sup> *Id.* at 58.

forms as opposed to putting all their eggs in one basket. Finally, while more users on a platform might be good for advertisers, more advertisers on the platform can actually be detrimental. Limited available space for online ads and competition for users' attention means that advertisers may be better off on smaller platforms with less congestion.<sup>136</sup>

Perhaps most importantly, cross platform network effects are also commonly overstated, and are actually one-sided. While advertisers certainly may flock to a search engine (or other online platform) with a strong user base with the hope of gaining more impressions and hopefully more conversions, users, on the other hand, do not choose a search engine based on a greater number of advertisements. This weakening of the cross platform network effects argument in turn weakens the potential for a strong "feedback loop that locks users and advertisers to a dominant platform."<sup>137</sup> If a smaller entrant offers a better product or service to users, users will switch, uninhibited by network effects, and advertisers will soon follow.<sup>138</sup>

The above discussion demonstrates how the feedback loop is not as effective as suggested in gaining scale, but many commentators also misjudge the importance of scale. Big Data industries typically experience diminishing returns of scale. Statistically, as Lerner illustrates, "the value of user data in returning relevant results to user search queries is subject to diminishing returns," as the "advantages of scale weaken or even disappear at a low level."<sup>139</sup> While returns are greater for less frequent queries (known as "tail" queries), both large and small search providers are faced with queries they have never seen before on daily basis, where both small and large platforms are at an equal disadvantage in delivering relevant results.<sup>140</sup> Because of these rapidly diminishing returns, a larger provider may gain zero marginal value from incremental data after a certain point, and a smaller player may glean greater value from incremental data, incentivizing it to compete to attract users at the margin by investing in quality and innovation.<sup>141</sup>

Even if scale is crucial to competitive success, smaller rivals do maintain both the ability and the incentive to compete.<sup>142</sup> As to *ability*, many online players are well-funded, or at least have access to additional funding from investors, which they can use to improve quality and performance of their platform. Furthermore, all online players have access to stores of data from third parties, which is readily available and affordable, and can be deftly used to increase quality. As to *incentive*, economics tells us that investment incentive is based on marginal, not average effects. An investment

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<sup>136</sup> *Id.* at 59.

<sup>137</sup> *Id.* at 6.

<sup>138</sup> *Id.* at 61.

<sup>139</sup> Lerner, *supra* note 16, at 6, 36.

<sup>140</sup> *Id.* at 37–38.

<sup>141</sup> *Id.* at 38.

<sup>142</sup> *Id.*

in quality by a smaller firm will attract more incremental users than a similar investment by a larger firm. As such, the smaller firm's incentives to invest in quality may actually be greater than those of its larger rival.

A final note on scale as a proxy for harm is articulated best by Lerner when he cautions that

the mere existence of economies of scale does not, by itself, establish that large providers have monopoly power, that large providers have acted anticompetitively, or that consumers or competition have been harmed. Neither does the fact that there are economies of scale means that large online providers should be subject to greater antitrust scrutiny . . . . Regulating large firms simply because there are economies of scale would serve as a tax on competitive success, distorting competition and harming consumers.<sup>143</sup>

#### IV. IS ANTITRUST ENFORCEMENT THE RIGHT WAY TO REGULATE BIG DATA?

In order to consider whether antitrust is the most appropriate institutional choice within which to explore, and potentially address, Big Data concerns, one should consider how antitrust case law has treated Big Data issues to date, how Big Data might fit within existing antitrust analysis framework or remedies, what legal or practical dangers might result from applying antitrust to Big Data, and whether an alternative framework is better suited to these issues.

##### A. *Case Law Does Not Support the Contention that Big Data Is an Antitrust Problem*

A thorough search of case law and agency actions reveals no case law on Big Data, nor have the antitrust agency consents ever affirmatively concluded that consumer data constitutes a barrier to entry. While competition agencies and courts have concluded that data-related entry barriers *may* exist for the sale of data that cannot be sourced from consumers or big data marketplaces, they have yet to come to the same conclusion regarding data collected from consumers over the internet. Over the last five to ten years, antitrust agencies, and to a lesser extent the courts, have considered a number of mergers and instances of conduct involving potential theories of harm built around Big Data. One of the earliest examples of this was Google's acquisition of DoubleClick in 2007.<sup>144</sup> At the time, both parties were large players in the market for search advertising—Google was a large on-

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<sup>143</sup> *Id.* at 20.

<sup>144</sup> Michael Baye et al., *Economics at the FTC: The Google-DoubleClick Merger, Resale Price Maintenance, Mortgage Disclosures, and Credit Scoring in Auto Insurance*, 33 REV. IND. ORG. 211, 213 (2008) (providing an economic analysis of the Google-DoubleClick merger).



line advertising intermediary, and DoubleClick was a leading online ad server. Both parties had vast stores of data relating to user search and browsing history.

Both the FTC and the EC cleared the merger unconditionally, deciding that Google and DoubleClick were not close, actual, or potential competitors in any markets for online advertising or services, and concluding that an incumbent's access to user information was not a barrier to entry in online advertising.<sup>145</sup> Both authorities concluded that even if Google were to use DoubleClick's user data in targeting advertisements, the data at issue was not an essential input to a successful online advertising product, and similar data of similar scope and quantity were available to rivals from other sources.<sup>146</sup> The FTC stated that the antitrust laws did not provide a basis to block or impose conditions on a merger purely to safeguard privacy.<sup>147</sup> The FTC further concluded that harm to competition on privacy grounds was no more likely than harm to competition on price or other dimensions, and determined therefore that "privacy considerations, as such, do not provide a basis to challenge this transaction."<sup>148</sup> As briefly discussed earlier in this article, then Commissioner Pamela Jones Harbour dissented from the Commission's statement, arguing that the FTC forewent an opportunity to examine the effects of the merger on privacy as a form on non-price competition.<sup>149</sup> The European Commission's evaluation of the merger focused solely on an analysis of competitive effects, and did not directly address privacy concerns.<sup>150</sup> The EC stressed that its decision was without prejudice to the parties' separate obligations under European data protection law.<sup>151</sup>

Subsequently, in 2011 Google acquired ITA, an online electronic pricing and shopping platform sold to comparison flight engines like Bing Travel, Kayak, and Orbitz.<sup>152</sup> The Department of Justice considered data access as a potential vertical restraint in that case, and asked whether Google would gain the incentive and ability to engage in data driven exclusionary conduct that would foreclose its travel search rivals.<sup>153</sup> Specifically, the Department of Justice asked whether Google would be able to degrade or

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<sup>145</sup> Fed. Trade Comm'n, Statement Concerning Google/DoubleClick, FTC File No. 071-0170, at 12 (Dec. 20, 2007), [https://www.ftc.gov/system/files/documents/public\\_statements/418081/071220google\\_dc-commstmt.pdf](https://www.ftc.gov/system/files/documents/public_statements/418081/071220google_dc-commstmt.pdf) [hereinafter FTC DoubleClick Statement].

<sup>146</sup> *Id.*

<sup>147</sup> *Id.* at 2.

<sup>148</sup> *Id.*

<sup>149</sup> Harbour Dissenting Statement, *supra* note 108, at 10 n. 25.

<sup>150</sup> Case COMP/M.4731, Google/DoubleClick, Comm'n Decision, 2008 O.J. (C 927) 5, ¶ 2-3.

<sup>151</sup> *Id.* at 97, ¶ 368.

<sup>152</sup> Complaint at 2, ¶ 1, United States v. Google Inc, Case No. 1:11 cv-00688 (D.D.C. Apr. 8, 2011), <https://www.justice.gov/atr/case-document/complaint-115>.

<sup>153</sup> *Id.* at 12-13, ¶ 38.

raise the cost of data, a necessarily input in its rivals' platforms.<sup>154</sup> Ultimately, these issues were resolved with a consent decree requiring Google to continue licensing access to ITA's system on fair, reasonable, and non-discriminatory terms, and prohibiting Google from using consumer data for its own benefit.<sup>155</sup>

Similarly, both the FTC and the European Commission examined Facebook's 2014 acquisition of web-based messaging platform WhatsApp. Upon announcement of the transaction, several consumer groups complained to the FTC that the transaction would bolster Facebook's access to data which the company could monetize through advertising, contradicting prior statements by WhatsApp.<sup>156</sup> The FTC cleared the transaction within two months, and sent a clear indication that the issues raised rested squarely within consumer protection law by sending a letter to the parties from the Director of the Bureau of Consumer Protection reminding them of their continuing obligations under privacy law.<sup>157</sup>

The European Commission also reviewed the Facebook/WhatsApp merger, and in doing so provided an analytical framework for exclusionary behavior in Big Data industries, ultimately clearing the transaction without conditions.<sup>158</sup> While the Commission acknowledged that network effects could sometimes pose a barrier to entry in communications markets, it concluded that this particular transaction was not likely to raise barriers to entry, noting "consumers can and do use multiple apps at the same time and can easily switch from one to another,"<sup>159</sup> and adding that "there are currently a significant number of market participants that collect user data alongside Facebook," including Google, Apple, Amazon, eBay, Microsoft, AOL, Yahoo, Twitter, IAC, LinkedIn, Adobe and Yelp."<sup>160</sup>

That investigation was significant, as it recognized the factual inexistence of network effects as a barrier to entry in such a fast moving online market. The Commission based this conclusion on:

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<sup>154</sup> *Id.* at 13.

<sup>155</sup> Competitive Impact Statement at 13–14, *Google Inc.*, No. 1:11-cv-00688, <http://www.justice.gov/atr/cases/t269600/269620.pdf>.

<sup>156</sup> See Complaint, Request for Investigation, Injunction, and Other Relief, *In re WhatsApp, Inc.* (F.T.C. Mar. 6, 2014) at 1, ¶ 1, <http://www.centerfordigitaldemocracy.org/sites/default/files/WhatsApp%20Complaint.pdf>.

<sup>157</sup> Letter from Jessica L. Rich, Dir., Bureau of Consumer Protection, Fed. Trade Comm'n, to Erin Egan, Chief Privacy Officer, Facebook, Inc. & Anne Hoge, Gen. Counsel, WhatsApp Inc. (Apr. 10, 2014), [https://www.ftc.gov/system/files/documents/public\\_statements/297701/140410facebookwhatappltr.pdf](https://www.ftc.gov/system/files/documents/public_statements/297701/140410facebookwhatappltr.pdf).

<sup>158</sup> See Case COMP/M.7217, Facebook/WhatsApp, Comm'n Decision, ¶ 191 (Mar. 20, 2014).

<sup>159</sup> European Commission Press Release IP/14/1088, Mergers: Commission Approves Acquisition of WhatsApp by Facebook (Oct. 3, 2014), [http://europa.eu/rapid/press-release\\_IP-14-1088\\_en.pdf](http://europa.eu/rapid/press-release_IP-14-1088_en.pdf).

<sup>160</sup> Tucker & Wellford, *supra* note 22, at 8 (quoting Case COMP/M.7217, Facebook/WhatsApp, Comm'n Decision, ¶ 188).

(1) The finding that messaging apps were a “fast-moving sector” with low switching costs, and therefore, “any leading market position even if assisted by network effects is unlikely to be incontestable;”<sup>161</sup>

(2) The finding that usage of one particular messaging app did not “exclude the use of competing [messaging] apps by the same user;” in this context, multi-homing was common and facilitated by the “ease of downloading a consumer communications app;”<sup>162</sup> and

(3) Acknowledgment that users of messaging apps “are not locked-in” to a given network.<sup>163</sup>

The Commission found that even if Facebook were to begin collecting data from WhatsApp users, competitive harm would not result, as “there will continue to be a large amount of Internet user data that are valuable for advertising purposes and that are not within Facebook’s exclusive control.”<sup>164</sup> The Commission’s decision also explicitly rejected the idea of considering a potential market for personal data in this case, citing the fact that the parties were not actually engaged in the sale of data to third parties.<sup>165</sup>

In the US, there was a similar outcome with regard to the Nielsen/Arbitron merger,<sup>166</sup> where the data was merely an input and the data itself was not for sale.<sup>167</sup> Such cases where data is merely an input are different from cases where data is a market that firms sell to consumers.<sup>168</sup>

Outside the merger context, the Federal Trade Commission’s 2011-2012 investigation of Google centered at least partially on the competitive significance of data.<sup>169</sup> In a recent statement responding to the inadvertently released portions of the FTC’s Bureau of Competition Staff Report, Chairwoman Ramirez and Commissioners Brill and Ohlhausen noted that the Commission’s “exhaustive” investigation into Google’s internet search practices, including agreements for syndicated search and advertising services were not, “on balance, demonstrably anticompetitive.”<sup>170</sup>

<sup>161</sup> Case COMP/M.7217, Facebook/WhatsApp, Comm’n Decision, ¶ 132 (Mar. 20, 2014).

<sup>162</sup> *Id.* at 24, ¶ 133.

<sup>163</sup> *Id.* at 24, ¶ 134.

<sup>164</sup> Tucker & Wellford, *supra* note 22, at 8 (quoting Case COMP/M.7217, Facebook/WhatsApp, Comm’n Decision, ¶ 189 (Mar. 10, 2014)).

<sup>165</sup> Case COMP/M.7217, Facebook/WhatsApp, ¶ 72 (Mar. 10, 2014).

<sup>166</sup> *In re Nielsen Holdings N.V. & Arbitron Inc.*, No. C-4439 (F.T.C. Feb. 24, 2014), <https://www.ftc.gov/system/files/documents/cases/140228nielsenholdingsdo.pdf>.

<sup>167</sup> FED. TRADE COMM’N, FTC FILE NO. 131 0058, ANALYSIS OF AGREEMENT CONTAINING CONSENT ORDER TO AID PUBLIC COMMENT, *IN RE NIELSEN HOLDINGS N.V. & ARBITRON INC.*, at 2 (2013).

<sup>168</sup> Tucker & Wellford, *supra* note 22, at 8.

<sup>169</sup> Press Release, Fed. Trade Comm’n, Statement of Chairwoman Edith Ramirez and Commissioners Julie Brill and Maureen K. Ohlhausen Regarding Google Investigation (Mar. 25, 2015), <https://www.ftc.gov/news-events/press-releases/2015/03/statementchairwoman-edith-ramirez-commissioners-julie-brill>.

<sup>170</sup> *Id.*

### B. *Big Data as Its Own Product Market*

Antitrust enforcement is also not suited to regulating Big Data due to the difficulty inherent in defining the relevant market for data. Market definition and market power still form the backbone of antitrust analysis under the current law. Some practitioners have suggested that data collection should form its own product market for the purpose of antitrust analysis.<sup>171</sup> The precise contours of such a market would be difficult, if not impossible, to define.

In both the U.S. and Europe, substitution, via the hypothetical monopolist test, is an essential prerequisite to defining a market.<sup>172</sup> The primary goal of defining a market is to measure a firm's ability to exercise market power. The relevant market determines which goods or services potentially compete, to the exclusion of those that do not.<sup>173</sup> Applying this determination to the advertising industry, we see that data itself is not a relevant product in the sale of online advertising. Advertising services are the relevant product. For the most part, online providers use data as an *input* in their service, as opposed to selling it as a product to consumers.<sup>174</sup> There is, therefore, no competition between providers for the actual sale of data, and no substitution. As such, under current antitrust law, no relevant market can be defined for the collection of consumer data.<sup>175</sup>

This was illustrated in the European Commission's review of the Facebook/WhatsApp acquisition, where the Commission overtly declined to define a market for Big Data since neither party was active in the provision of data to third parties.<sup>176</sup> The Commission explained that it "has not investigated any possible market definition with respect to the provision of data or data analytics services, since . . . neither of the Parties is currently active in any such potential markets."<sup>177</sup> Graef points out, however, that the

<sup>171</sup> European Parliament, Competition & Privacy in Markets of Data, Speech by Pamela Jones Harbour, former Comm'r, Fed. Trade Comm'n (Nov. 2012), <http://www.nortonrosefulbright.com/files/us/images/publications/121127PJHarbourEUParliamentCompetitionPrivacy.pdf> ("Defining a market for user data may . . . better reflect how firms, their competitors, their customers, and their users interact in the real world . . . Defining a product market for user data may affect the structure and scope of a regulator's investigations."); Harbour & Koslov, *supra* note 94, 773.

<sup>172</sup> Tucker & Wellford, *supra* note 22, at 4.

<sup>173</sup> *Id.* at 4–5.

<sup>174</sup> Note however that data can be collected for sale directly to advertisers or data brokers for repackaging. See, e.g. FED. TRADE COMM'N, DATA BROKERS: A CALL FOR TRANSPARENCY AND ACCOUNTABILITY, at ii (May 2014), <http://www.ftc.gov/system/files/documents/reports/data-brokers-calltransparency-accountability-report-federal-trade-commission-may-2014/140527databrokerreport.pdf>. For example, Twitter licenses data to other companies interested in developing applications or analyzing data for other commercial purposes. See Graef, *supra* note 78, at 5, 15.

<sup>175</sup> Graef, *supra* note 78, at 16–17.

<sup>176</sup> Case COMP/M.7217, Facebook/WhatsApp, Comm'n Decision, ¶¶ 70–71 (Mar. 10, 2014).

<sup>177</sup> *Id.* at ¶ 72.

Commission's rejection of personal data as a relevant market did not preclude a review of concerns raised relating to the concentration of data as a result of this merger.<sup>178</sup>

### C. *Consumer Protection Should Address Big Data Issues*

The laws of consumer protection and antitrust serve different goals, protect consumers from different harms, and operate via different spheres of the same agency.<sup>179</sup> As Deborah Feinsein, head of the Bureau of Competition at the Federal Trade Commission explains, “any potential competition concerns would be distinct from the obligations either firm has to safeguard consumer privacy.”<sup>180</sup> A recent review of the economics of privacy illustrates the complexity inherent in regulating privacy issues, but this review does not find a theoretical or empirical bases for using antitrust as a policy tool to address privacy concerns.<sup>181</sup>

There have been a number of different suggested approaches for how and when antitrust regulators should intervene in Big Data or privacy issues.<sup>182</sup> One group advocates for a hybrid approach to policing Big Data, where the costs and benefits of consumer protection are balanced against the effect on competition where “conduct-distorting commerce implicates *both* consumer protection and competition principles.”<sup>183</sup> In support of this approach, Harbour and Koslov have described the separation of competition and consumer protection as an “artificial dichotomy.”<sup>184</sup>

Others suggest that because privacy protections constitute a form of non-price competition, regulators should apply antitrust principles to analyze privacy issues in a variety of different circumstances, such as when a merger might lead to reduced privacy competition,<sup>185</sup> or where companies may mislead customers regarding data collection policies in order to gain

<sup>178</sup> Graef, *supra* note 78, at 16–17.

<sup>179</sup> See Fed. Trade Comm'n, Workshop: Big Data: A Tool for Inclusion or Exclusion?, Event Description (Sept. 15, 2014), <https://www.ftc.gov/news-events/events-calendar/2014/09/big-data-tool-inclusion-or-exclusion> (discussing the issues around Big Data).

<sup>180</sup> Feinsein, *supra* note 22.

<sup>181</sup> See generally Alessandro Acquisti et al., *The Economics of Privacy*, 54 J. ECON. LITERATURE 442 (2016).

<sup>182</sup> Ohlhausen & Okuliar, *supra* note 4, at 122–24.

<sup>183</sup> Julie Brill, *The Intersection of Consumer Protection and Competition in the New World of Privacy*, 7 COMPETITION POL'Y INT'L 7, 10 (2011); Julie Brill, *Competition and Consumer Protection: Strange Bedfellows or Best Friends?*, ANTITRUST SOURCE, Dec. 2010, at 3 (“[B]efore competition principles can trump consumer protection concerns, any legitimate consumer protection issues must be identified and balanced against the competitive harm.”).

<sup>184</sup> Harbour & Koslov, *supra* note 94, at 773.

<sup>185</sup> See Harbour Dissenting Statement, *supra* note 108, at 10 n. 25.

an unfair advantage or sustain dominance over competitors.<sup>186</sup> However, other product elements such as product safety and efficacy also constitute forms of non-price competition, but are not primarily policed by the anti-trust agencies. As Schepp and Wambach opine, “The most direct way to address worries about data protection and privacy is actually to tighten data protection law.”<sup>187</sup> In this sense, institutional choice plays a role in how best to address a particular problem, and the optimal solution is to choose the institution best suited for this task.<sup>188</sup> The antitrust laws’ only task is to maintain an environment within which products may compete, with the understanding that, as Ohlhausen and Okuliar put it, “competition is the best way to allocate resources in a free market.”<sup>189</sup> The antitrust laws are not designed to address harms to privacy, but an efficient market, bolstered by the consumer protection laws, would provide adequate protection from those harms, with each legal area (antitrust and consumer protection) using their distinct institutional competencies to promote increased consumer welfare.

Consumer protection is an effective way to address issues of privacy.<sup>190</sup> There are a number of existing methods that govern how the FTC regulates privacy on the consumer protection side and does so relatively effectively.<sup>191</sup> Suggested safeguards intended to prevent the misuse of Big Data by a dominant firm, such as enabling the consumer to more easily select privacy preferences or to identify providers that match their privacy preferences, sit squarely within the remit of the consumer protection agencies.<sup>192</sup> Where an “imbalance of power” between users and online firms leads to diminished data portability, individual consumers or competitors

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<sup>186</sup> See Ron Knox, *An Interview with Tom Rosch*, GLOBAL COMPETITION REV. 51 (2013). See generally J. Thomas Rosch, Comm’r, Fed. Trade. Comm’n, Concurring and Dissenting Statement Regarding Google’s Search Practices, *In re Google Inc.*, FTC File No. 111-0163 (Jan. 3, 2012), [http://www.ftc.gov/sites/default/files/documents/public\\_statements/concurring-and-dissenting-statement-commissionerj.thomas-rosch-regarding-googles-search-practices/130103googlesearchstmt.pdf](http://www.ftc.gov/sites/default/files/documents/public_statements/concurring-and-dissenting-statement-commissionerj.thomas-rosch-regarding-googles-search-practices/130103googlesearchstmt.pdf).

<sup>187</sup> Schepp & Wambach, *supra* note 63, at 124.

<sup>188</sup> See D. Daniel Sokol, *Antitrust, Institutions, and Merger Control*, 17 GEO. MASON L. REV. 1055, 1140–41 (2010).

<sup>189</sup> Ohlhausen & Okuliar, *supra* note 4, at 142.

<sup>190</sup> Edith Ramirez et al., *Big Data: A Tool for Inclusion or Exclusion? Understanding the Issues*, in FED. TRADE COMM’N REPORT 10 (2016), <https://www.ftc.gov/system/files/documents/reports/big-data-tool-inclusion-or-exclusion-understanding-issues/160106big-data-rpt.pdf>.

<sup>191</sup> Woodrow Hartzog & Daniel J. Solove, *The Scope and Potential of FTC Data Protection*, 83 GEO. WASH. L. REV. 2230, 2230 (2015) (“[T]he FTC’s current scope of data protection authority is essential to the United States data protection regime and should be fully embraced to respond to the privacy harms unaddressed by existing remedies available in tort or contract, or by various statutes. In contrast to the legal theories underlying these other claims of action, the FTC can regulate with a much different and more flexible understanding of harm than one focused on monetary or physical injury.”).

<sup>192</sup> Stucke & Grunes, *supra* note 72, at 13–14.

might suffer,<sup>193</sup> but the mechanics of data collection is not for the antitrust laws to govern. Antitrust law is only a suitable choice where there is harm to competition— its role is not to fill gaps in the privacy laws.

In its decision clearing the Facebook/WhatsApp merger, the European Commission also underscored the importance of appropriate institutional choice in addressing the harms explored in this article, noting, “Any privacy-related concerns flowing from the increased concentration of data within the control of Facebook as a result of the Transaction do not fall within the scope of the EU competition law rules but within the scope of the EU data protection rules.”<sup>194</sup>

### 1. Are Antitrust Remedies Appropriate?

Some have suggested that antitrust remedies may be appropriate where a dominant firm has misused Big Data to gain or sustain an improper competitive advantage.<sup>195</sup> The imposition of such remedies presents obvious problems. From an antitrust perspective, forced sharing of information with rivals infers the essential facilities doctrine,<sup>196</sup> and such forced dealing with competitors in the Big Data environment is far beyond the limits of what a duty to deal would require,<sup>197</sup> and may improperly skew competitive incentives. As Tucker and Wellford, quoting the Supreme Court in *Trinko*,<sup>198</sup> remind us, compelling firms “to share the source of their advantage is in some tension with the underlying purpose of antitrust law, since it may lessen the incentive for the monopolist, the rival, or both to invest in those economically beneficial facilities.”<sup>199</sup> If Big Data were deemed an essential

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<sup>193</sup> *Id.* at 12–13.

<sup>194</sup> Case COMP/M.7217, Facebook/WhatsApp, Comm’n Decision, ¶ 164 (Mar. 10, 2014).

<sup>195</sup> See Stucke & Grunes, *supra* note 72, at 9–10.

<sup>196</sup> Phillip Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 ANTITRUST L.J. 841, 853 (1990) (“No court should impose a duty to deal that it cannot explain or adequately and reasonably supervise. The problem should be deemed irremedial by antitrust law when compulsory access requires the court to assume the day-to-day controls characteristic of a regulatory agency. Remedies may be practical (a) when admission to a consortium is at stake, especially at the outset, (b) when divestiture is otherwise appropriate and effective, or (c) when, as in *Otter Tail*, a regulatory agency already exists to control the terms of dealing. However, the availability of a remedy is not reason to grant one. Compulsory sharing should remain exceptional.”); Robert Pitofsky et al., *The Essential Facilities Doctrine Under U.S. Antitrust Law*, 70 ANTITRUST L.J. 443, 443 (2002) (“Right of access to an essential facility controlled by a monopolist has long been a controversial subject under U.S. antitrust law . . . . If U.S. scholarship were the last word on the subject, one would be led to conclude that the essential facilities doctrine should be described narrowly or fully abandoned.”);

<sup>197</sup> See Barak Orbach & Raphael Avraham, *Squeeze Claims: Refusals to Deal, Essentials Facilities, and Price Squeezes*, in 2 OXFORD HANDBOOK OF INTERNATIONAL ANTITRUST ECON. 120, 121 (Roger D. Blair & D. Daniel Sokol eds., 2014).

<sup>198</sup> Verizon Comm. Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398 (2004).

<sup>199</sup> *Id.* at 407–08.

facility and a duty to deal imposed, the competitive dynamics of the market would be dramatically altered.<sup>200</sup> Such an extreme and far-reaching remedy is out of line with current antitrust policy.<sup>201</sup>

Practically speaking, requiring affirmative user consent before data is collected may detract from the user experience and lessen quality. Similarly, prohibiting or restricting data collection may stifle innovation and present users with lower quality services; and divestiture or separation of distinct product lines may also stifle innovation and hinder a firm's ability to offer personalized services.<sup>202</sup>

Antitrust remedies haphazardly applied to the collection and use of consumer data may not only harm competition, but also may in fact raise separate, legitimate, privacy issues.<sup>203</sup> Antitrust remedies may also create privacy concerns, as they would require data to be shared among rival firms even though consumers have not consented to their data being used in this way.<sup>204</sup> Likewise, a forced sharing of data could violate a company's already existing consent decrees with the FTC.<sup>205</sup>

The FTC, in the Closing Statement from its investigation into the Google/DoubleClick merger, rejected the notion that antitrust remedies should be imposed to address privacy harms:

[T]he sole purpose of federal antitrust review of mergers and acquisitions is to identify and remedy transactions that harm competition. Not only does the Commission lack legal authority to require conditions to this merger that do not relate to antitrust, regulating the privacy requirements of just one company could itself pose a serious detriment to competition in this vast and rapidly evolving industry.<sup>206</sup>

Difficulty in administering such remedies also counsels against their application. Informing consumers of the intricate details of data collection can

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<sup>200</sup> See Mark A. Jamison, *Should Google be Regulated as a Public Utility?*, 9 J.L. ECON. & POL'Y 223, 224 (2013); Mattiuzzo, *supra* note 79, at 5.

<sup>201</sup> Marina Lao, *Search, Essential Facilities, and the Antitrust Duty to Deal*, 11 NW. J. TECH. & INTELL. PROP. 275, 319 (2013) ("In an effort to find an antitrust basis to prohibit [Google's] practice, some have invoked the essential facilities doctrine or the more general antitrust duty to deal. However, these two principles simply do not fit in the context of search results. Google's absolute size and involvement in many segments of the information market tend to obscure the fact that it probably lacks monopoly power in an antitrust sense. It is doubtful that Google can foreclose competition in search, let alone in the dynamic and free-form information market in which it faces competitors such as Facebook, Apple, Amazon, and others. If the past is any guide, competitive challenge could also come from some as yet unknown tech visionary—a future Steve Jobs, Larry Page, Sergei Brin, or Mark Zuckerberg."); Orbach & Avraham, *supra* note 197, at 129–30.

<sup>202</sup> Ohlhausen and Okuliar, *supra* note 4, at 151; Tucker & Wellford, *supra* note 22, at 10.

<sup>203</sup> See generally Avi Goldfarb & Catherine Tucker, *Privacy and Innovation, in INNOVATION POLICY AND THE ECONOMY* 65–90 (Josh Lerner and Scott Stern eds., 2012).

<sup>204</sup> *Id.*

<sup>205</sup> Tucker & Wellford, *supra* note 22, at 11.

<sup>206</sup> FTC DoubleClick Statement, *supra* note 145, at 2.



actually be misleading to consumers, and result in more confusion.<sup>207</sup> Firms may legitimately be unable to adequately inform a consumer at the outset of how exactly the firm will use their data.<sup>208</sup> As with all remedies, the agencies and the courts will not, and should not, want to become too involved in specifically shaping the minutiae of a firm's data sharing policies, which presents even further administrative issues.<sup>209</sup>

## 2. Practical and Legal Dangers of Antitrust Intervention

Using antitrust as a sword to address Big Data concerns risks reducing competition and innovation from new products.<sup>210</sup> Antitrust enforcement agencies are well advised to proceed cautiously in areas of rapid innovation, in order to avoid stifling competition and the natural unfolding of the marketplace. As Lerner puts it, “Antitrust intervention in markets characterized by innovation and rapid technological change is often a questionable proposition, but it is especially so when concerns are based on supported assumptions rather than fact-based inquiry.”<sup>211</sup> While an industry is in its relative infancy, it can be difficult to distinguish between procompetitive innovation and changes that are designed to (or actually do) stifle competition. Even in established markets, antitrust should never be used as a replacement for sound business judgment. As the FTC's closing statement in the Google investigation explained, “Challenging Google's product design decisions in this case would require the Commission—or a court—to second-guess a firm's product design decisions where plausible procompetitive justifications have been offered, and where those justifications are supported by ample evidence.”<sup>212</sup>

Consumer welfare is enhanced most dramatically by “leapfrog” competition, as opposed to incremental improvements. It is crucial that the antitrust laws cultivate and maintain an environment in which robust and rapid innovation is not only possible, but also incentivized. A paternalistic approach to Big Data will neither cultivate nor maintain such an environment, and may instead lead to stagnation and fear among platform providers.

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<sup>207</sup> Tucker & Wellford, *supra* note 22, at 10.

<sup>208</sup> *Id.*

<sup>209</sup> *Id.* at 4.

<sup>210</sup> Ohlhausen & Okuliar, *supra* note 4, at 10.

<sup>211</sup> Lerner, *supra* note 16, at 6.

<sup>212</sup> Fed. Trade Comm'n, Statement Regarding Google's Search Practices, *In re Google Inc.*, FTC File No. 111-0163, at 3 (Jan. 3, 2013), [https://www.ftc.gov/system/files/documents/public\\_statements/295971/130103googlesearchstmttoftcomm.pdf](https://www.ftc.gov/system/files/documents/public_statements/295971/130103googlesearchstmttoftcomm.pdf).

## CONCLUSION

This literature review suggests that antitrust law is ill-suited to police Big Data and its use by online firms. The empirical case for regulating Big Data as an antitrust concern is still lacking.<sup>213</sup> Further, from a theoretical perspective, not enough work has yet been done to thoughtfully study and analyze how antitrust could, or should, be applied to specific issues involving Big Data. In fact, the lack of empirical evidence, robust theories, or, indeed, legal precedent suggests that there is no cause for concern in this arena with regard to antitrust law and Big Data. All that is available at present are general theories of exclusion applied to this new area. Until antitrust authorities can match theories of harm with specific factual circumstances and show negative competitive harm to consumers, the antitrust case against Big Data is a weak one. The existing theories of harm conflict with the realities of Big Data (e.g., non-rivalrous, ubiquitous, low barriers to entry noted above) and consumer online behavior (e.g., multi-homing).<sup>214</sup> And while the case is weak, and the theories uncertain, antitrust authorities should proceed with caution. Antitrust intervention over market forces threatens consumer welfare, especially in fast moving markets, and proposed remedies, such as limiting the collection and use of Big Data or forcing large firms to share with rivals, are likely to harm competition and innovation, and in fact may raise privacy concerns.

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<sup>213</sup> Lerner, *supra* note 16, at 63.

<sup>214</sup> Salinger & Levinson, *supra* note 35, at 55.