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COMPETITION AND DATA: POTENTIAL REMEDIES

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ABSTRACT

Firms with disproportionately large data holdings are unlikely to willingly share their data with rivals because access to large amounts of data may provide a firm with an advantage over its competitors. As a result, large asymmetries in data holdings are likely to raise competitive concerns. This article addresses the types of antitrust and regulatory interventions that may be used to address these concerns. Specifically, it examines past efforts to remedy data-related competition issues by: (1) preventing asymmetries from developing, for example by blocking mergers that would lead to that result; (2) conditioning the approval of mergers on an agreement by the merging parties to divest some of their data; (3) requiring existing data access arrangements to be maintained; (4) requiring firms to keep their data holdings in separate “silos”; or (5) mandating that a firm provide access to its data to its competitors. This article also explains how past efforts to address the competitive effects of data asymmetries may have to be adapted to deal with the effects of the large differences in data holdings that have developed more recently.

I. INTRODUCTION

Antitrust scholars and practitioners have recently advanced the view that large data holdings can be a source of market power. Careful studies published over the last two years by governments,¹ the academy,² and non-governmental organizations³ have highlighted the competitive importance of data both as a final product and as an input. For example, as illustrated in a study commissioned for the European Commission Directorate General for Competition:

Data is a core input factor for production processes, logistics, targeted marketing, smart products and services, as well as Artificial Intelligence (AI). It drives interoperability in interconnected environments and will

¹ U.K. COMPETITION & MKTS. AUTH., ONLINE PLATFORMS AND DIGITAL ADVERTISING: MARKET STUDY FINAL REPORT 1 (2020) [hereinafter CMA Report]; JACQUES CREMER ET AL., EUROPEAN COMM’N, COMPETITION POLICY FOR THE DIGITAL ERA (2019) [hereinafter Vestager Report]; JASON FURMAN ET AL., UNLOCKING DIGITAL COMPETITION: REPORT OF THE DIGITAL COMPETITION EXPERT PANEL (2019) [hereinafter Furman Report].

² LUIGI ZINGALES & FILIPPO MARIA LANCIERI, UNIV. OF CHI. BOOTH SCH. OF BUS.: STIGLER CTR., STIGLER COMMITTEE ON DIGITAL PLATFORMS: FINAL REPORT (2019).

³ Fiona M. Scott Morton & David C. Dinielli, *Roadmap for an Antitrust Case Against Facebook*, OMIDYAR NETWORK (June 2020), <https://omidyar.com/wp-content/uploads/2020/06/Roadmap-for-an-Antitrust-Case-Against-Facebook.pdf>.

revolutionise sectors such as mobility and healthcare. The competitive relevance of data is consequently very important. The competitiveness of firms will increasingly depend on timely access to relevant data and the ability to use that data to develop new, innovative applications and products.⁴

Possessing more data than a firm's rival is widely, if not universally, believed to give that firm a competitive advantage that may provide the firm with the opportunity and incentive to engage in anticompetitive behavior by denying access to its data to rivals.⁵

This new perspective raises questions about whether traditional competitive considerations need to be addressed in new ways. For example, should the existence of large data holdings change the way in which the competitive effects of mergers are addressed? Should commercial practices that deny access to data to some firms be a source of competitive concern? Should firms with large accumulations of data be required to share their data with their competitors? Would large accumulations of data significantly increase barriers to entry for firms that do not have access to similar data? Finally, the focus of this article, what remedies can be employed to deal with concerns that are raised by competitively significant data accumulations in any given case?

Of course, consideration of access to data is not entirely new to antitrust, although until very recently, it more often would be referred to as "information" where data would appear as, or be included in, a finished product.⁶ The more recent view, that data itself—collections of heterogeneous facts—might constitute a source of market power appears to have emerged from two related developments.⁷ First, there is the commercial significance of targeted advertising, exemplified in the marketplace by Google, Facebook, and Amazon.⁸ As Federal Trade Commissioner Harbour noted, the success of these companies is based,

⁴ Vestager Report, *supra* note 1, at 73. Among the recommendations of the United Kingdom Competition & Markets Authority, the CMA recently proposed that the UK government "should pursue significant reforms to the markets regime to ensure that it can be most effectively utilised to promote competition and innovation across digital markets, for example by pursuing measures like data mobility and interoperability." COMPETITION & MARKETS AUTHORITY, A NEW PRO-COMPETITION REGIME FOR DIGITAL MARKETS 86 (2020).

⁵ CMA Report, *supra* note 1, at 16.

⁶ *See, e.g.*, *Associated Press v. United States*, 326 U.S. 1, 14 n.14 (1945).

⁷ Dissenting Statement of Commissioner Pamela Jones Harbour Concerning Google/DoubleClick, FTC File No. 071-0170 at 8 (Dec. 20, 2007); Furman Report, *supra* note 1, at 4.

⁸ Statement of Federal Trade Commission Concerning Google/DoubleClick, F.T.C. File No. 071-0170 at 10 (Dec. 20, 2007).

in part, on their ability to exploit the data that their platforms accumulate to improve their products.⁹ Second, there is the recognition of the indispensable nature of large data accumulations for purposes of machine learning and artificial intelligence.¹⁰ In both cases, the focus is less on data as a final product and more on its role as an input to the production of other goods and services.¹¹

In addition to the distinction between data as a product and data as an input, data have other characteristics that differ among them.¹² The Stigler Antitrust Subcommittee Report describes the relevant data categories in some detail:

The Vestager Report and the Furman Report categorize data as volunteered, observed, or inferred. Volunteered data is intentionally provided by the user to the service — for example, when a user provides their favorite TV shows to a service in order to receive recommendations. Observed data, such as the history of shows that the consumer actually watches, are automatically gathered by a service. Some observed data may not be intentionally provided by users if they do not understand the privacy protections in the service -- for example, location tracking of a person using a video app. Finally, the service can process volunteered and observed data to infer additional information about the user or a group of users.¹³

Distinguishing between the data itself and the means by which the data are acquired is also necessary. In particular, a firm may have more data than its rivals because it has exclusive access to the means by which the data are accumulated.¹⁴ In some of the cases addressed below, that is the source of the asymmetry in data holdings with which antitrust

⁹ *Id.* at 6.

¹⁰ Furman Report, *supra* note 1, at 4.

¹¹ *Id.* (“[T]o the degree that the next technological revolution centres around artificial intelligence and machine learning, then the companies most able to take advantage of it may well be the existing large companies because of the importance of data for the successful use of these tools. New entry may still be possible in some markets, but to the degree that entrants are acquired by the largest companies—with little or no scrutiny—that channel is also not operative.”).

¹² See generally *id.* (describing the use of data as tools by large companies); see also *infra* note 14 (describing differing data characteristics).

¹³ UNIV. OF CHI. BOOTH SCH. OF BUS.: STIGLER CTR., COMMITTEE FOR THE DIGITAL PLATFORMS MARKET STRUCTURE AND ANTITRUST SUBCOMMITTEE: REPORT 26 (2019) [hereinafter Stigler Report].

¹⁴ Vestager Report, *supra* note 1, at 31.

authorities or regulators are concerned. Moreover, providing access only to the data will be often be insufficient to produce a significant increase in competition.¹⁵ In many cases, an effective remedy will require the provision of complementary resources, those that make it possible to use the data effectively.¹⁶

Finally, distinguishing between situations in which data are used directly for the value of the information that they contain and those in which data are employed, using machine learning or artificial intelligence, to produce other useful information is necessary. Many of the examples of government intervention discussed below involve the direct use of data, but increasingly, the data whose ownership raise competitive concerns are better thought of as inputs to the production of information that is then used by firms to increase their productivity and improve their profitability.¹⁷

Whether highly asymmetric data holdings raise competitive concerns differs from case to case and judgments about them will often be controversial. This article does not take positions about those issues in the cases discussed. Rather, the purpose is to identify remedies that are likely to be practicable and effective in those cases where regulators, antitrust authorities, or courts have concluded that remedies are needed to allay such concerns. This article approaches this task through identification and examination of cases in which the competitive significance of data has been addressed.¹⁸ In some cases, structural remedies, in which a proposed transaction has been blocked entirely or a partial divestiture has been required, have been employed.¹⁹ In others, conduct-based remedies, ranging from requirements to continue existing data sharing arrangements to creating entirely new access regimes, have been used.²⁰

¹⁵ *Id.* at 8 (“The significance of data and data access for competition will thus always depend on an analysis of the specificities of a given market, the type of data, and data usage in a given case.”).

¹⁶ *Id.* at 6.

¹⁷ See *infra* pp. 7–11.

¹⁸ See Case COMP/M.8788–Apple/Shazam, Comm’n Decision (Sept. 6, 2018) (illustrating a matter in which the authorities concluded that acquisition of user data would *not* create a competition concern by stating that although the “Commission considers that the merged entity is likely to have the technical ability and the incentive to use the Shazam User Data to improve its digital music streaming,” “[S]hazam User Data does not appear to be a key element of success of digital music streaming apps,” and “[e]ven if the merged entity were to deny access to Shazam User data to competitors of Apple Music, the impact on the ability to compete of those rivals would likely be negligible.”).

¹⁹ Stigler Report, *supra* note 1, at 95; see also *infra* pp. 20–25.

²⁰ CMA Report, *supra* note 1, at 24, app. T (referring to the latter types of remedies as “data-related interventions” including: (1) increased consumer control

This article accepts the proposition that large asymmetries in the amounts of data held by firms can raise competitive concerns and addresses the question of what, if anything, can or should be done by regulators or competition agencies to deal with those concerns. In some of the scenarios considered, the highly asymmetric data holdings are the result of mergers that combine the holdings of different firms. In others, they are the result of anticompetitive behavior by a single firm that denies access to data to its rivals. Finally, they may result from the fact that the holder was either a government-sanctioned monopolist or a “natural” monopolist that could now face competition if other firms were provided access to the data that it alone possesses.

The focus throughout this article is identifying remedies that might be effective in addressing these concerns. This article does not consider whether there are circumstances in which a denial of data to rivals may be efficient, such as creating incentives for the accumulation of data in the first place. Moreover, this article does not take a position on whether the remedies analyzed are best implemented in any given circumstance by a specialized regulatory agency, through consent decrees negotiated by an antitrust authority, or by a court in responding to a complaint brought either by a government agency or a private party.²¹

The growing recognition of the importance of data as an input or as a line of commerce in its own right coincides with assertions that the Federal Trade Commission should tighten merger enforcement, as evidenced by its review of prior acquisitions by the major digital platforms.²² Similarly, recognizing that data-related remedies will be complicated reinforces the desirability of avoiding circumstances in which markets “tip” and, instead, preserving incentives for firms to

over the use of data; (2) mandating interoperability; (3) mandating third-party access to data; and (4) mandating data separation/data silos).

²¹ We recognize that the ability of antitrust authorities and regulators to employ the remedies that we discuss, especially the mandating of data sharing, may be constrained by their need to take privacy considerations into account. For an analysis of the relationship between competition and privacy concerns in connection with the use of data, see Stanley M. Besen, *Competition, Privacy, and Big Data*, 28 CATHOLIC U. J.L. & TECH. 63 (2020). In this regard, it is interesting to note that the United Kingdom’s Competition and Markets Authority has observed that “The case for user ID and data access interventions is stronger where there are strong competition and efficiency benefits in sharing the data, and privacy concerns can be managed through aggregation or anonymisation.” CMA Report, *supra* note 1, at 29–30.

²² Press Release, Fed. Trade Comm’n, FTC to Examine Past Acquisitions by Large Technology Companies (Feb. 11, 2020) (on file with author); Carl Shapiro, *Antitrust in a Time of Populism*, 61 INT’L J. INDUS. ORG. 714, 716 (2018); JONATHAN B. BARKER ET AL., JOINT RESPONSE TO THE HOUSE JUDICIARY COMMITTEE ON THE STATE OF ANTITRUST LAW AND IMPLICATIONS FOR PROTECTING COMPETITION IN DIGITAL MARKETS (2020); C. Scott Hemphill & Tim Wu, *Nascent Competitors*, 168 U. PENN. L. REV. (forthcoming 2020).

compete to acquire data and, in appropriate circumstances, to share data.²³

II. BACKGROUND

A. Recent Government Efforts That Address the Competitive Effects of Data Holdings

Issues that involve the competitive effects of data holding have recently arisen in connection with proposed transactions, legislative proposals, and government investigations.²⁴

For example, the European Commission recently closed an investigation into Google's acquisition of Fitbit, in which the emphasis on data accumulation converted what before now would have been a vertical analysis into a horizontal one. To secure clearance of the acquisition, Google agreed to a series of limitations on its data usage.²⁵ In commencing its investigation, the Commission had expressed concern "that the proposed transaction would further entrench Google's market position in the online advertising markets by increasing the already vast amount of data that Google could use for personalization of the ads it serves and displays."²⁶ Executive Vice-President Margrethe Vestager indicated that the investigation "aims to ensure that control by Google over data collected through wearable devices as a result of the transaction does not distort competition."²⁷

The Australian Competition & Consumer Commission recently noted a similar concern in connection with its investigation of the Fitbit

²³ See Furman Report, *supra* note 3, at 56; see *infra* notes 22–24 and 26–31 and accompanying text.

²⁴ See Furman Report, *supra* note 1, at 16, 68, 73–74, 93; see generally *infra* note 25 and accompanying text.

²⁵ Google committed, among other things, not to use the data it collected from Fitbit devices in its advertising businesses, to maintain a technical separation between Fitbit user data and Google's other data, and to give users the ability to either grant or deny the use of the health and wellness data stored in their Google or Fitbit accounts by other Google services. Google also committed to make health and wellness data collected through the Fitbit app to other software applications without charge. European Commission Press Release IP/20/2484, Mergers: Commission Clears Acquisition of Fitbit by Google, Subject to Conditions (Dec. 17, 2020). Google recently announced that it has closed the transaction [See <https://blog.google/products/devices-services/fitbit-acquisition>] even though it had not yet been cleared by the Department of Justice.

²⁶ European Commission Press Release IP/20/1446, Mergers: Commission Opens In-Depth Investigation Into the Proposed Acquisition of Fitbit by Google (Aug. 4, 2020) [hereinafter Press Release IP/20/1446].

²⁷ *Id.*

acquisition.²⁸ The Commission noted that “[t]he accumulation of additional, individual user data via this transaction in an entity which already benefits from substantial market power in multiple markets may contribute to reduced competitive outcomes in the future.”²⁹

Germany’s January 2021 amendment of the Act Against Restraints of Competition (Competition Act – GWB) provides the Federal Cartel Office additional enforcement ability with respect to intracompany sharing of data and data interoperability and portability.³⁰ And in discussing its approach to digital markets, the U.S. Antitrust Division has noted the importance of “remaining vigilant about possible use of data to collude or otherwise interfere with the competitive process.”³¹

In the complaint brought by the United States Department of Justice (DOJ) against Google, DOJ quotes Google’s former CEO stating, “Scale is the key. We just have so much scale in terms of the data we can bring to bear.”³² DOJ goes on to note that “[b]y using distribution agreements to lock up scale for itself and deny it to others, Google unlawfully maintains its monopolies.”³³ Further noting that “[t]he additional data from scale allows improved automated learning for algorithms to deliver more relevant results, particularly on ‘fresh’ queries (queries seeking recent information), location-based queries (queries asking about something in the searcher’s vicinity), and ‘long-tail’ queries (queries used infrequently).”³⁴

In connection with the announcement of an “antitrust competition inquiry into the sector of Internet of Things (IoT) for consumer-related products and services in the European Union,” Executive Vice-President Vestager stated that:

[A]ccess to large amounts of user data appears to be the key for success in this sector, so we have to make sure that market players are not using their control over such

²⁸ AUSTL. COMPETITION & CONSUMER COMM’N, STATEMENT OF ISSUES, GOOGLE LLC — PROPOSED ACQUISITION OF FITBIT INC 2 (2020).

²⁹ *Id.*

³⁰ Act Against Restraints of Competition, June 26, 2013, Federal Law Gazette (Bundesgesetzblatt), last amended by 10th Amendment to the Act Against Restraints of Competition (GWB Digitalisation Act), Jan. 18, 2021, https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBI&jumpTo=bgbl121s0002.pdf#_bgbl_%2F%2F*%5B%40attr_id%3D%27bgbl121s0002.pdf%27%5D__1611336355712.

³¹ *The Division Tackles Digital Markets: Digital Markets Update Spring 2019*, U.S. DEP’T OF JUSTICE (Sept. 30, 2019), <https://www.justice.gov/atr/division-operations/division-update-spring-2019/division-tackles-digital-markets>.

³² Complaint at 5, *United States v. Google LLC*, No. 1:20-cv-3010 APM (D.D.C. Oct. 20, 2020).

³³ *Id.*

³⁴ *Id.* at 13.

data to distort competition, or otherwise close off these markets for competitors. This sector inquiry will help us better understand the nature and likely effects of the possible competition problems in this sector.³⁵

Recently, the European Commission issued a Statement of Objections in which it noted that its:

[P]reliminary findings show that very large quantities of non-public seller data are available to employees of Amazon’s retail business and flow directly into the automated systems of that business, which aggregate these data and use them to calibrate Amazon’s retail offers and strategic business decisions to the detriment of the other marketplace sellers.³⁶

The Commission went on to state that its “preliminary view . . . is that the use of non-public marketplace seller data allows Amazon to avoid the normal risks of retail competition and to leverage its dominance in the market for the provision of marketplace services in France and Germany—the biggest markets for Amazon in the EU.”³⁷

The recent monopolization complaints in *United States v. Google*, *Colorado v. Google*, and *Federal Trade Commission v. Facebook* all allege that the control of substantially more data than its rivals gives a firm a competitive advantage. For example, the *United States v. Google* complaint states:

[G]oogle’s anticompetitive practices are especially pernicious because they deny rivals scale to compete effectively. General search services, search advertising, and general search text advertising require complex algorithms that are constantly learning which organic results and ads best respond to user queries; the volume, variety, and velocity of data accelerates the automated learning of search and search advertising algorithms. When asked to name Google’s biggest strength in search, Google’s former CEO explained: “Scale is the key. We just have so much scale in terms of the data we

³⁵ European Commission Press Release IP/20/1326, Antitrust: Commission Launches Sector Inquiry Into the Consumer Internet of Things (IoT) (July 16, 2020).

³⁶ European Commission Press Release IP/20/2077, Antitrust: Commission Sends Statement of Objections to Amazon for the Use of Non-Public Independent Data and Open Second Investigation Into its E-Commerce Business Practices (Nov. 10, 2020).

³⁷ *Id.*

can bring to bear.” By using distribution agreements to lock up scale for itself and deny it to others, Google unlawfully maintains its monopolies.³⁸

Similarly, in *Colorado v. Google*, the plaintiffs allege that Google’s business and resulting monopolies come from data about the people who utilize the search engine. These data are collected by means of closely tracking and analyzing each user’s search. In 2010, Google’s then-CEO Eric Schmidt boasted: “We know where you are. We know where you’ve been. We can more or less know what you have been thinking about.”³⁹

The *Federal Trade Commission v. Facebook* complaint notes that “[F]acebook has chosen to monetize its businesses by selling advertising that is displayed to users based on the personal data about their lives that Facebook collects”⁴⁰ and that “[b]y acquiring Onavo, Facebook obtained control of data that it used to track the growth and popularity of other apps, with an eye towards identifying competitive threats for acquisition or for targeting under its anticompetitive platform policies.”⁴¹

Finally, a recent Congressional Staff Report addresses “[t]he data advantages that dominant online platform companies have over smaller competitors and startups, and how those data advantages can reinforce dominance and serve as a barrier to entry.”⁴² The report concludes “[t]he accumulation of data can serve as... [a] powerful barrier to entry for firms in the digital economy”⁴³ and that:

While data is non-rivalrous—meaning that one party’s use does not prevent or diminish use by another—firms may nonetheless exclude rivals from using their data through technical restrictions and legal contracts. These

³⁸ Complaint, *United States v. Google*, *supra* note 32, ¶ 8; *see also id.* ¶¶ 35–36; *see also* Complaint ¶ 45, *New York v. Facebook*, 1:20-cv-03589 JEB (D.D.C., Dec. 9, 2020) (“The volume, velocity (freshness), and variety of Facebook’s user data give it an unprecedented, virtually 360-degree view of the user and her contacts, interests, preferences, and activities, which allows Facebook to personalize content to its users that other platforms are not able to provide.”).

³⁹ Complaint ¶ 5, *Colorado v. Google*, 1:20-cv-3175 APM (D.D.C., Dec. 17, 2020).

⁴⁰ Complaint ¶ 43, *Federal Trade Commission v. Facebook*, 1:20-cv-03590 CRC (D.D.C. Dec. 9, 2020) [hereinafter *Facebook Complaint*].

⁴¹ *Id.* ¶ 75.

⁴² SUBCOMM. ON ANTITRUST, COMMERCIAL & ADMIN. LAW OF THE HOUSE OF REPRESENTATIVES OF THE COMM. ON THE JUDICIARY, 116TH CONG., INVESTIGATION OF COMPETITION IN DIGITAL MARKETS 31 (Comm. Print 2020).

⁴³ *Id.* at 42.

exclusionary tactics can close off markets and shield incumbents from competition.⁴⁴

B. Why Asymmetries in Data Holdings May Be Important for Competition

McSweeney and O’Dea observe that:

Data of particular competitive significance may often be difficult and costly to obtain. The firm that does obtain those data will often have little incentive to share. An incumbent firm may have a significant advantage over entrants if it possesses a valuable database that would be difficult, costly, or time consuming for a new firm to match or replicate. In those situations, competition enforcers can and should assess the competitive implications of data.⁴⁵

Similarly, Kathuria and Globocnik observe that:

Data-driven markets are often characterized by network effects where the quantity of data (scale) and variety of data (scope) have a positive influence on the market share of a platform. By depriving its rivals of gaining scale in data, a dominant player can successfully exploit demand-side scale economies, i.e. network effects, to its benefit in a two-sided market. Competition agencies have long been vigilant against the practices of a dominant undertaking that restrict rivals from gaining the ‘critical mass’ to stay viable in a market characterized by network effects.⁴⁶

⁴⁴ *Id.* at 42–43 (footnotes omitted).

⁴⁵ Terrell McSweeney & Brian O’Dea, *Data, Innovation, and Potential Competition in Digital Markets—Looking Beyond Short-Term Price Effects in Merger Analysis*, FED. TRADE COMM’N: ANTITRUST CHRON. (Feb. 2018), https://www.ftc.gov/system/files/documents/public_statements/1321373/cpi-mcsweeney-odea.pdf. McSweeney was a member of the Federal Trade Commission from 2014 to 2018. Recognition that data accretions may produce reduced incentives to voluntarily share applies an important insight from earlier merger cases. *See infra* note 25 and accompanying text.

⁴⁶ Vikas Kathuria & Jure Globocnik, *Exclusionary Conduct in Data-Driven Markets: Limitations of Data Sharing Remedy*, J. OF ANTITRUST ENFORCEMENT 2 (2020). It should be noted, however, that these authors are skeptical about mandatory data sharing as a remedy to this situation, raising concerns about its effects on the incentives of the dominant firm, its administrative feasibility, and its effects on user privacy, among others.

In an analogous situation, DOJ conditioned its approval of the merger of WorldCom and MCI on agreement of the parties to divest one of their top-level Internet backbones to maintain the incentives of each of the backbones to continue to “peer”, i.e., interconnect, with its rivals.⁴⁷ As DOJ official Constance Robinson explained:

Prior to the MCI/WorldCom merger, no single backbone provider reached a disproportionate amount of destinations on the Internet relative to other major players. There was a rough equality, with each backbone provider depending on the other. Each backbone provider, therefore, had an incentive to support efficient interconnections because its failure to do so would have caused such a degradation of quality that it risked losing customers to the other networks. That incentive would change, however, if the two largest backbone providers were combined.... By giving MCI/WorldCom a disproportionately large customer base, the merger would have changed MCI/WorldCom's incentives from favoring compatibility toward favoring incompatibility.⁴⁸

The unwillingness of a firm with disproportionately large data holdings to share its data with rivals can thus be seen as an example of a more general phenomenon. As Ian Brown puts it, “Where one firm has a dominant position in a market with strong network effects, it will have strong disincentives to allow interoperability.”⁴⁹ This article focuses on interventions that either encourage data sharing among firms by preventing transactions that would create disincentives for sharing, or that require data sharing in order to promote competition. However, the underlying economic analysis is equally applicable to situations in which cooperation among firms takes the form of physical interconnection. For example, in the case of communications networks,⁵⁰ or providing access to intellectual property, firms whose

⁴⁷ See Constance K. Robinson, Dir. of Operations & Merger Enf't, U.S. Dep't of Justice Antitrust Div., Keynote Address at the Practising Law Institute: Network Effects in Telecommunications Mergers—MCI WorldCom Merger: Protecting the Future of the Internet (Aug. 23, 1999).

⁴⁸ *Id.*

⁴⁹ IAN BROWN, INTEROPERABILITY AS A TOOL FOR COMPETITION REGULATION 16 (2020), <https://www.ianbrown.tech/2020/08/01/interoperability-as-a-tool-for-competition-regulation/>.

⁵⁰ For a discussion on interconnection in communications networks see Eli M. Noam, *Chapter 9: Interconnection Practices*, in 1 HANDBOOK OF TELECOMMUNICATIONS ECONOMICS (Elsevier ed., 2002). Noam has observed that

patented technologies are incorporated into standards developed by private Standards Development Organizations are required to license those technologies to implementers of those standards.⁵¹

Moreover, although most recent situations in which the accumulation of data has raised competitive concerns have involved firms with detailed access to the characteristics and purchasing behavior of their users, as in the case of internet search engines such as Google,⁵² social media sites such as Facebook,⁵³ and online shopping platforms such as Amazon,⁵⁴ they have arisen in other circumstances, as well. For example, in announcing the opening of an investigation into the proposed acquisition of Refinitiv by the London Stock Exchange Group, the European Commission noted its “preliminary concerns that following the proposed transaction, competitors in consolidated real-

voluntary interconnection is most *unlikely* to occur when there is “an asymmetry in bargaining strength and in the urgency for interconnection.” *Id* § 1.2

⁵¹ See, e.g., Joseph Farrell et al., *Standard Setting, Patents and Hold-Up*, 74 ANTITRUST L. J. 603 (2007) (discussing standard essential patents). The UK Competition and Markets Authority also has raised concerns about “coordination failures”: “[b]eneficial coordination may sometimes fail to arise where individual firms do not account for the benefits such coordination would provide customers, either in the short or long term, and/or do not have incentives to reach the same outcome (in fact, in many cases companies have strong incentives to build ‘moats’ around their services to protect future revenues).” COMPETITION & MARKETS AUTHORITY, *supra* note 4, at 21.

⁵² Complaint, *Colorado v. Google*, *supra* note 39; see also Foo Y. Chee, *EU Antitrust Regulators Say They Are Investigating Google’s Data Collection*, REUTERS (Nov. 30, 2019), <https://www.reuters.com/article/us-eu-alphabet-antitrust-exclusive/exclusive-eu-antitrust-regulators-say-they-are-investigating-googles-data-collection-idUSKBN1Y40NX>.

⁵³ Complaint, *New York v. Facebook*, *supra* note 38; see *Bundeskartellamt Prohibits Facebook from Combining User Data from Different Sources*, BUNDESKARTELLAMT (July 2, 2019), https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Pressemitteilungen/2019/07_02_2019_Facebook_FAQs.pdf?blob=publicationFile&v=6; Facebook has appealed the decision but is required to observe its requirements during the pendency of the appeal. See Adam Satariano, *Facebook Loses Antitrust Decision in Germany Over Data Collection*, N.Y. TIMES (June 23, 2020), <https://www.nytimes.com/2020/06/23/technology/facebook-antitrust-germany.html>; Press Release, Fed. Court of Justice, *The Federal Court of Justice Provisionally Confirms the Allegation of Abuse of a Dominant Position by Facebook* (June 23, 2020) (on file with author) (“[a]ccess to data is not only an important competitive parameter in the advertising market, but also in the social network market.”) [hereinafter Federal Court of Justice Press Release].

⁵⁴ See, e.g., European Commission Press Release IP 20/20771, *Antitrust: Commission sends Statement of Objections to Amazon for the use of non-public independent seller data and opens second investigation into its e-commerce business practices*. (Nov. 10, 2020).

time datafeeds and desktop services could be shut out from accessing LSEG's input data.”⁵⁵

C. Past Efforts to Address Data-Related Competition Concerns

Although the focus on data as a potential source of market power is relatively new, competition authorities and regulators have addressed concentrations of data holdings in numerous past instances. Unsurprisingly, the circumstances that give rise to data-related or information-related competitive concerns vary widely, so adopted remedies vary widely, as well.⁵⁶ The following analysis considers some of these remedies as useful models, looking specifically at how well the remedies matched their asserted purposes and how useful they are as exemplars for future interventions by an antitrust authority. It begins by discussing remedies that are both administratively straightforward and clearly effective in dealing with the problems that they are intended to address. It then discusses remedies in more complicated situations and where there is less certainty about their effectiveness.

Broadly speaking, the analysis is divided into three parts. The first addresses the issue of how competition agencies should deal with concerns about the competitive effects of data consolidation that arise in the context of merger reviews. There, the issue is whether to approve the merger and, if approved, whether to impose behavioral conditions on it or to require divestitures of certain assets held by the merging parties. The second part of the article addresses situations in which a large firm attempts to terminate an existing data sharing arrangement

⁵⁵ European Commission Press Release IP/20/1140, Mergers: Commission Opens In-Depth Investigation Into Proposed Acquisition of Refinitiv by London Stock Exchange Group (June 22, 2020). The Commission recently cleared the transaction citing the commitments made by LSE to divest its stake in Borsa Italiana, to continue to offer its global OTC IRD clearing services on an open access basis, and to provide access to the LSE venue data, FTSE UK Equity Indices, and WM/R FX Benchmarks to all existing and future downstream competitors. [Press Release, 13 January 2021, Mergers: Commission clears acquisition of Refinitiv by London Stock Exchange Group, subject to conditions, https://ec.europa.eu/commission/presscorner/detail/en/IP_21_103.] The United States Department of Justice had earlier closed its investigation of the transaction without taking any action. Statement of the Department of Justice Antitrust Division on the Closing of Its Investigation of London Stock Exchange Group and Refinitiv. *See* Press Release, Dep't of Justice: Office of Pub. Affairs, Statement of the Department of Justice Antitrust Division on the Closing of its Investigation of London Stock Exchange Group and Refinitiv (July 31, 2020) (on file with author).

⁵⁶ *See generally* Alden F. Abbott, *Big Data and Competition Policy: A US FTC Perspective*, FED. TRADE COMM'N (July 6, 2019), https://www.ftc.gov/system/files/documents/public_statements/1543858/big_data_and_competition_policy_china_presentation_2019.pdf.

with its smaller rivals in order to obtain a competitive advantage. The final part of the article examines situations in which the asymmetries in data holdings have arisen either “organically,” that is they are not the product of mergers, they are the result of past mergers that were not challenged or conditioned when they originally occurred, or they are the result of other factors, the influence of network effects prominent among them.⁵⁷ In those cases, antitrust authorities and regulators do not have a proposed merger that they can either block or on which they can impose conditions nor do they have preexisting commercial arrangements to guide their efforts, so dealing with the asymmetries may require the use of different tools.

III. MERGER-RELATED REMEDIES

A. Treatment of Mergers that Raise Data-Related Competitive Concerns

Suppose an antitrust authority is presented with a proposed merger in which the acquiring entity proposes to combine its own data with those of the entity that it proposes to acquire. In such cases, the acquirer could easily argue that the combination of the data would permit it to offer new products or services, or lower the price or improve the quality of its current offerings, that would not be possible without access to its merging party’s data.⁵⁸ The agency would presumably approve the merger if the efficiencies, including those that arise from combining the data of the two entities, exceed any anticompetitive effects from the merger, including those that arise from the combination of the data. The situation becomes more complex, however, if, for example, the combination of the data raises significant anticompetitive concerns that, unless remedied, would result in the merger-related efficiencies being insufficient to offset the anticompetitive effects of the merger. These concerns include those that result from the changed incentives of the merging firms to share their data with other firms, thus weakening those

⁵⁷ The Federal Trade Commission recently announced that it has requested information about past acquisitions by five large technology firms: Google, Amazon, Apple, Facebook, and Microsoft. *See supra* note 12. The Commission stated that it “plans to use the information obtained in this study to examine trends in acquisitions and the structure of deals, including whether acquisitions not subject to HSR notification might have raised competitive concerns, and the nature and extent of other agreements that may restrict competition.”

⁵⁸ D. Daniel Sokol & Roisin Comerford, *Antitrust and Regulating Big Data*, 23 GEO. MASON L. REV. 1129 (2016) (reporting several cases in which merging entities or parties to a data sharing agreement claimed efficiencies that would result from combining data from different sources, although those claims were not always credited by the antitrust authorities).

firms as competitors. Antitrust authorities have taken a number of different approaches to such mergers.⁵⁹

B. Challenging the Merger Itself

In some cases, the antitrust authorities have blocked proposed mergers on the grounds that the data that were held by the merging firms were critical inputs in that no one could compete effectively without access to them and, at the same time, no other firm could reproduce those inputs in a timely manner.⁶⁰ In such cases, the government's objective in blocking the merger was to preserve the previous competition between the merging firms.⁶¹

In other cases, one or both of the merging firms had an existing data sharing arrangement with another firm or firms and the antitrust authorities were concerned that, after the merger, the merged firm would have an incentive to terminate those third-party arrangements.⁶² In such cases, the objective of the antitrust authorities was to preserve the beneficiary of the data sharing arrangement as a competitor so that, as an alternative to preventing the merger, the authorities might instead require that the merged firm maintain the existing arrangement. In either of these circumstances, there are several possible fixes to the merger.⁶³ The most straightforward, of course, is for the acquisition to be blocked entirely.

An example of this approach is the DOJ's successful challenge to the consummated merger of Bazaarvoice and PowerReviews, the two leading companies in the provision of customer ratings and reviews platforms.⁶⁴ In opposing the transaction, DOJ argued that Bazaarvoice "failed to demonstrate that the merger was necessary to improve the quality of its data analytics offerings" and that "without the merger, Bazaarvoice and PowerReviews could have shared their data to improve their respective data analytics offerings."⁶⁵ Bazaarvoice eventually agreed to divest "[a]ll tangible and intangible assets that were acquired by Bazaarvoice when it purchased the PowerReviews business,"⁶⁶ in effect a complete reversal of the original transaction. This both

⁵⁹ See *infra* notes 50–108 and accompanying text.

⁶⁰ Plaintiff's Trial Brief and Motion in Limine, *United States of America v. Bazaarvoice*, No. 13-cv-00133 WHO (N.D. Cal. Sept. 9, 2013) [hereinafter Motion in Limine].

⁶¹ *Id.* at 29.

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *United States v. Bazaarvoice, Inc.* Case No. 13-cv-00133-WHO 2014 WL 11297188 (N.D. Cal. January 8, 2014).

⁶⁵ Motion in Limine, *supra* note 60, at 37.

⁶⁶ Third Amended Final Judgement at 2, *Bazaarvoice, Inc.*, 2014 WL 11297188.

preserved competition and preserved the incentive for the companies to engage in lawful data-sharing arrangements.

C. Imposing a “Hold Separate” Requirement

Another approach is to approve the transaction if the merged entity agrees not to combine the data of two merging parties or to do so only under limited conditions. Although not instigated by a transaction, an example of this type of “hold separate fix” occurred when the German competition authority, Bundeskartellamt, allowed Facebook to combine data from various Facebook-owned services, including WhatsApp and Instagram, only with the consent of users.⁶⁷ The Bundeskartellamt noted that “[w]here consent is not given, the data must remain with the respective service and cannot be processed in combination with Facebook data.”⁶⁸

As a remedy, conditioning data aggregation on user consent presents well-understood difficulties.⁶⁹ For example, notwithstanding Facebook’s commitment not to combine a user’s data without consent, the Italian Competition Authority found that Facebook:

[E]xerts undue influence on registered consumers, who suffer, without express and prior consent and therefore unconsciously and automatically, the transmission of their data from Facebook to third-party websites/apps for commercial purposes, and vice versa. The undue influence is caused by the pre-selection by Facebook of the broadest consent to data sharing. When users decide to limit their consent, they are faced with significant restrictions on the use of the social network and third-party websites/apps, which induce users to maintain their pre-selected choice.⁷⁰

⁶⁷ Press Release, Bundeskartellamt, Bundeskartellamt Prohibits Facebook From Combining User Data From Different Sources (Feb. 7, 2019) (on file with author) [hereinafter Bundeskartellamt Press Release], *affirmed*, Bundesgerichtshof [BGH] [Federal Court of Justice] June 23, 2020, KVR 69/19, juris (Ger.) <http://juris.bundesgerichtshof.de/cgi-bin/rechtsprechung/document.py?Gericht=bgh&Art=en&Datum=2020-6-23&nr=109506&pos=12&anz=27>.

⁶⁸ *Id.*

⁶⁹ Daniel J. Solove, *Introduction: Privacy Self-Management and the Consent Dilemma*, 126 HARV. L. REV. 1880, 1882–93 (2013).

⁷⁰ Press Release, Autorità Garante della Concorrenza e del Mercato, Facebook Fined 10 Million Euros by the ICA for Unfair Commercial Practices for Using its Subscribers’ Data for Commercial Purposes (Dec. 7, 2018) (on file with author). PRESIDENT’S COUNCIL OF ADVISORS ON SCI. & TECH., BIG DATA AND PRIVACY: A TECHNOLOGICAL PERSPECTIVE xi (2014) (observing that “[n]otice and consent is the

Thus, at least in this case, Facebook’s “commitment” proved to be unenforceable.⁷¹

In an apparent attempt to deal with this concern, the German competition authority:

[P]rohibited Facebook from stipulating in its terms of service that the use of the social network Facebook.com is subject to the company being able to collect and use data generated by the use of Facebook-owned services such as WhatsApp and Instagram and assign them to the user accounts of the social network without the consent of the users. Facebook was also prohibited from using terms and conditions allowing the company to collect user data generated by calling up third party websites or using mobile apps via interfaces (Facebook Business Tools), and to use and assign them to Facebook user accounts. The Bundeskartellamt not only prohibited the relevant parts of the terms of service and the explanatory data and cookie policies, but also *the actual processing of data* carried out by Facebook on the basis of these terms.⁷²

The Bundeskartellamt went on to note that “Facebook must explicitly undertake not to process data or not to process them without consent. *This must be enforceable by the users.*”⁷³ The German Federal Court of Justice recently ruled that the prohibition on combining data without consent will remain in effect pending the outcome of an appeal.⁷⁴

Facebook is not the only entity that is able to combine data from several of its own services. For example, the Australian Competition and Consumer Commission (ACCC) has noted that:

practice of requiring individuals to give positive consent to the personal data collection practices of each individual app, program, or web service. Only in some fantasy world do users actually read these notices and understand their implications before clicking to indicate their consent”).

⁷¹ CMA Report, *supra* note 1, at app. Z at 30–31, (noting that “Google and Facebook have wide ecosystems, and several routes exist by which data can be shared within their ecosystems. In order to implement a remedy which only restricted the sharing of data that had an overall adverse effect on consumers taking into account the trade-offs between efficiency, privacy and competition, the [regulatory authority] would need to have confidence that it could design a restriction that could be made effective within these complex ecosystems.”). Even in less complex settings, mandated sharing obligations can present significant challenges. *See infra* notes 99–100 and accompanying text.

⁷² Bundeskartellamt Press Release, *supra* note 67 (emphasis added).

⁷³ *Id.* at 8 (emphasis added).

⁷⁴ Federal Court of Justice Press Release, *supra* note 53.

Google also enjoys advantages of scope in accumulating data from consumers using its wide range of services, including Google Search, Google Maps, YouTube and Gmail; and most mobile phones that use the Android operating system. The advantages are compounded by Google's ability to track consumers on the more than two million websites that use Google advertising services or offer sign-in options through Google.⁷⁵

Although Google could make a “hold separate” commitment like that applied to Facebook, regulators are naturally likely to be skeptical about its effectiveness.⁷⁶ ACCC Chair Rod Sims stated:

At the time of Google's acquisition of DoubleClick, DoubleClick reportedly denied that the data it collects through its system for serving ads would be combined with Google's search data. Eight years later, Google updated its privacy policy and removed a commitment not to combine DoubleClick data with personally identifiable data held by Google.⁷⁷

The Facebook and Google experiences with “hold separate” remedies suggest the extent to which they are subject to evasion.⁷⁸

The “hold separate” approach, what the British Competition & Markets Authority refers to as the creation of “silos,”⁷⁹ may reduce the quality of the services that can be provided by its owner to the extent that there are significant complementarities in data use. That is, allowing the owner to combine data from different sources may result in efficiencies that would not otherwise be available. On the other hand, to the extent that the combination reduces competition between the owner of the data and other firms, it may be anticompetitive. For that reason, where data combinations are *not* prevented or where hold

⁷⁵ AUSTL. COMPETITION & CONSUMER COMM'N, DIGITAL PLATFORMS INQUIRY: FINAL REPORT 8 (2019).

⁷⁶ Javier Espinosa, *EU Demands Major Concessions from Google Over Fitbit Deal*, ARS TECHNICA (July 23, 2020), <https://arstechnica.com/tech-policy/2020/07/eu-demands-major-concessions-from-google-over-fitbit-deal/>.

⁷⁷ Rod Sims, Chair, Austl. Competition & Consumer Comm'n, Address at the Consumer Policy Research Centre 2019 Conference: Data (R)Evolution: Consumer Welfare and Growth in the Digital Economy (Nov. 19, 2019).

⁷⁸ CMA Report, *supra* note 1, at Appendix Z 30–31.

⁷⁹ *See, e.g.*, CMA Report, *supra* note 1, at 24, (referring to “[m]andating data separation/data silos, in particular where the data has been collected by the platforms through the leveraging of market power.”).

separate remedies are ineffective, there may be stronger reasons to compel data sharing between firms.

D. Requiring a Partial Divestiture

In some cases, instead of mandating a complete reversal of a merger, a divestment of data may suffice to address competitive concerns. An example of this occurred when the Federal Trade Commission challenged the completed acquisition of Quality Education Data by Dun & Bradstreet.⁸⁰ In its Complaint, the Commission noted that:

Market Data Retrieval (“MDR”), a company of D&B, is the leading provider of data for marketing to kindergarten through twelfth-grade teachers, administrators, schools and school districts (“K-12 data”) in the United States. K-12 data includes but is not limited to contact, demographic and other information relating to K-12 educators. K-12 data is sold or leased to customers that use the data to market products and services to educators. In early 2009, D&B acquired the assets of QED, MDR’s primary competitor. As a result of the acquisition, MDR now holds over 90% of the relevant market, with only a small fringe consisting of two firms accounting for the remainder.⁸¹

The Commission went on to note that:

New entry or fringe firm expansion at the scale necessary to restore the competition lost as a result of the Acquisition, or to create a competitively significant firm, is unlikely. A new entrant or expanded fringe firm would need an up-to-date database with the size, breadth and scope of market coverage comparable, at a minimum, to that held by QED prior to the Acquisition. Any such entry or fringe firm expansion would take more than two years and require substantial sunk costs, which are high relative to the size of a profit stream that the new entrant or fringe firm might anticipate.⁸²

⁸⁰ Complaint, In re Dun & Bradstreet Corp., No. 9342 (F.T.C. May 6, 2010).

⁸¹ *Id.* at 1.

⁸² *Id.* at 4.

Dun & Bradstreet subsequently agreed to divest the MDR database as augmented and updated to MCH.⁸³ It also agreed to “purge or remove” certain data from its own database, essentially any data that it transferred from the MDR database to its own during the pendency of the FTC complaint.⁸⁴ The FTC noted that the purpose of the divestiture was “to create a viable and effective competitor for the development, marketing, updating, correction, lease and sale of K-12 Data who is independent of [Dun & Bradstreet] and is able to provide a range of data products at least equivalent to those provided by QED.”⁸⁵ The result was that Dun & Bradstreet retained, with the noted limited exception, the additional data it acquired as a result of the original transaction, but it also divested a copy to MCH.⁸⁶

Another example of this approach was the requirement by the DOJ that Cox Automotive divest Dealertrack Technologies Inc.’s automobile dealership full-featured inventory management system (IMS) business as a condition for approving Cox’s acquisition of Dealertrack.⁸⁷ Inventory management systems used by automobile dealers to augment their dealer management systems depend on the breadth and quality of constantly refreshing data to perform their functions. In this case, although the IMS was a relatively small part of the Dealertrack acquisition, the transaction brought together the two largest competitors in the industry, with a combined share of 86% of a full-featured inventory management systems market. To maintain the pre-acquisition level of competition in that market, Cox agreed to divest the Dealertrack IMS and to continue to make data available on the same terms and conditions that prevailed prior to the acquisition for at least three years.⁸⁸

⁸³ Decision and Order at 6, In re Dun & Bradstreet Corp., No. 9342 (F.T.C. 2010).

⁸⁴ *Id.*; see also 75 Fed. Reg. 57272 (Sept. 20, 2010). The order also required the transfer of intellectual property designed to enable more effective use of the divested information.

⁸⁵ *Id.* at 7.

⁸⁶ *Id.* at 6.

⁸⁷ Press Release, U.S. Dep’t of Justice, Justice Department Requires Cox Automotive to Divest Inventory Management Solution in Order to Complete Acquisition of Dealertrack (Sept. 29, 2015) (on file with author). The concern in this case, as well as in some of the other cases in which data divestitures were required to obtain the approval of the antitrust authorities for a merger that are discussed below, appears to have been primarily about the effect of the increased market concentration occasioned by the merger on the prices charged to users, not with the ability of the merged entity to use the combination of data to disadvantage its rivals. These cases do, however, demonstrate the feasibility of data divestiture when that is the primary competitive concern.

⁸⁸ United States v. Cox Enterprises, No. 15-01583TFH, 2016 WL 805627, *5–6 (D.D.C. Jan. 21, 2016).

Earlier, the DOJ had challenged the Thomson Corporation's proposed acquisition of Reuters Group, which created one of the world's largest financial reporting organizations, on the grounds that "the proposed transaction . . . would lessen competition substantially in the markets for fundamentals data, earnings estimates data, and aftermarket research reports."⁸⁹ The accumulations of these three types of information, much of it historical, are relied upon by the investment and financial services sectors.⁹⁰ Thomson and Reuters constituted two of the three principal vendors of each of the types of information.⁹¹ In order to obtain DOJ approval for the transaction, the merging parties agreed to divest "complete, identical database(s) as maintained by Defendants in the ordinary course of their business."⁹² Unlike the Cox decree, the Thomson decree did not include a requirement to continue to provide data to the entity acquiring the divested assets.⁹³

In a later transaction, the Federal Trade Commission challenged the proposed acquisition of Arbitron, Inc. by Nielsen, arguing that, unless conditioned, "the effects of the Acquisition . . . may be to substantially lessen competition and tend to create a monopoly in the market for national syndicated cross-platform audience measurement services."⁹⁴ In approving the transaction, the Commission required the divestiture of assets related to Arbitron's cross-platform audience measurement business to a Commission-approved buyer.⁹⁵

Finally, among the relief sought by the Federal Trade Commission in its monopolization suit against Facebook, the Commission requested:

[D]ivestiture of assets, divestiture or reconstruction of businesses (including, but not limited to, Instagram and/or WhatsApp), and such other relief sufficient to restore the competition that would exist absent the conduct alleged in the Complaint, including, to the

⁸⁹ Competitive Impact Statement at ¶ II.A, *United States v. Thomson Corp.*, No. 1:08-cv-00262, 2008 WL 2910467 (D.D.C. February 19, 2008).

⁹⁰ *Id.* ¶ II.B.1.

⁹¹ *Id.* ¶ II.B.4.a.

⁹² *United States v. Thomson Corp.*, No. 1:08-cv-00262, 2008 WL 2910467, *4 (D.D.C. June 17, 2008).

⁹³ See *Cox Enterprises*, 2016 WL 805627 at *5; *Thomson Corp.*, 2008 WL 2910467 at *7.

⁹⁴ Complaint at 1, *Nielsen Holdings N.V. and Arbitron, Inc.*, Docket No. C-4439, 2014 WL 869523 (F.T.C. Feb. 24, 2014). Nielsen was a major factor in television audience measurement. Arbitron was a major factor in radio audience measurement. Each was involved in efforts to extend audience ratings to include mobile, tablet, and online platforms.

⁹⁵ *Nielsen Holdings N.V. and Arbitron, Inc.*, File No. 131 0058, (F.T.C. Apr. 2, 2014).

extent reasonably necessary, the provision of ongoing support or services from Facebook to one or more viable and independent business(es).⁹⁶

As the Facebook prayer for relief shows, even straightforward divestitures will be complicated when one of the important assets is data. For example, in the Dun & Bradstreet/Quality Education matter, the FTC required Dun & Bradstreet to “take all steps reasonably necessary to facilitate the ability of the Acquirer to enter into a contract with a QED Vendor that is equivalent in terms and scope to the most recent contract between QED and such QED Vendor.”⁹⁷ The Redacted Public Version of the Decision and Order, which describes the assets to be divested and the process for doing so, runs to twenty-eight pages.⁹⁸

Similarly, in the data-centric Nielsen/Arbitron matter, there is an eighteen-page Decision and Order that specifies in detail the ongoing obligation to provide information necessary to continue “Project Blueprint,” a collaboration to update audience measurements, and to compete with the merging firms in the emerging product market.⁹⁹ Specifically, the FTC required Nielsen to:

[P]rovide the Television Data, Radio Data, and Calibration Panel Data (except for five-digit zip code data) to the Acquirer on a respondent-level basis and an aggregated basis by specified customers’ stations, networks, websites, and/or other media distribution platforms, as identified by the Acquirer, in such form, at such frequency as reasonably requested by the Acquirer, but in no event less frequent than the frequency Arbitron used for reporting data for Project Blueprint, and according to such metrics as reasonably requested by the Acquirer; provided, however, that, with respect to five-digit zip code data, Respondents shall provide the total number of individuals by zip code as reasonably requested by the Acquirer (but at least monthly); and if Respondents make any zip code data, or any segment reporting derived from zip codes, available to its customers of national Cross-Platform Services, then Respondents shall provide five-digit zip code data to the

⁹⁶ Facebook Complaint, *supra* note 40, ¶ 175.

⁹⁷ Decision and Order, Dun & Bradstreet Corp., FTC Docket No. 9342 (Sept. 10, 2010).

⁹⁸ *See generally id.*

⁹⁹ Decision and Order, Nielsen Holdings N.V. and Arbitron, Inc., FTC Docket No. C-4439, (Feb. 24, 2014).

Acquirer sufficient to provide similar information to Acquirer's customers, as reasonably requested by the Acquirer.¹⁰⁰

In another matter that involved the acquisition of data, the Federal Trade Commission required Solera Holdings to sell the United States and Canada yard management systems used by automotive recycling yards that it had acquired in its purchase of Actual Systems of America.¹⁰¹ The Federal Trade Commission alleged that:

[T]he acquisition significantly harmed the market for [Yard Management Systems], which was already highly concentrated. Combining the two firms eliminated direct and substantial competition between Solera and Actual Systems, likely reducing innovation in YMS and leading to higher prices for its automotive recycling industry customers.¹⁰²

In addition to software, which constituted the largest part of the divested assets, Solera was required to license its Hollander Interexchange, "an auto parts database required to compete in the YMS market," for the ten-year term of the consent agreement.¹⁰³

Under the terms of the Commission's Order, Solera was required to:

[D]ivest the Actual Systems North American Business, grant a royalty-free, fully-paid-up, irrevocable, perpetual exclusive license or equivalent grant... in North America to the Actual Systems Intellectual Property, with rights to sublicense in North America; and...grant a license to the Hollander Interchange, absolutely and in good faith, to ASA Holdings.¹⁰⁴

Significantly, the Order also provided that "Solera is not prohibited from creating similar products to the Actual Systems Products and

¹⁰⁰ *Id.* ¶ II.C.3.

¹⁰¹ Decision and Order, Solera Holdings, Inc., FTC Docket No. C-4415 (Oct. 22, 2013). A yard management system (YMS) is a software system that uses real time data to oversee the movement of trucks and trailers in the yard of a manufacturing facility, warehouse, or distribution center.

¹⁰² Press Release, Fed. Trade Comm'n, FTC Order Restores Competition in Market for Software Used in Automotive Recycling (July 22, 2013) (on file with author).

¹⁰³ FED. TRADE COMM'N, FILE NO. 121-0165, ANALYSIS OF PROPOSED AGREEMENT CONTAINING CONSENT ORDER TO AID PUBLIC COMMENT IN THE MATTER OF SOLERA HOLDINGS, INC. 2 (2013).

¹⁰⁴ Decision and Order, Solera Holdings, *supra* note 101, ¶ II.A.

selling, marketing, or otherwise distributing such products as part of the current Yard Management System products sold by Respondent Solera.”¹⁰⁵ This is thus an example of a senior FTC official’s observation that “when dealing with data, it may be possible to both retain and divest an asset.”¹⁰⁶

E. Requiring Data Sharing with Rivals

Finally, the antitrust authorities could deal with a concern that the merged entity would use the resulting data combination to disadvantage its rivals by requiring the entity to share its data with them, either by continuing an existing data sharing arrangement or by agreeing to negotiate a new one. Mandated sharing in this circumstance is different from sharing requirements applicable to preexisting data accumulations because of the unavailability of temporally-proximate courses of dealing as models.

For example, in the Cox/Dealertrack transaction discussed above, the consent decree required Cox “to enable the continuing exchange of data and content between the divested [Inventory Management System] business and other data sources, internet sites and automotive solutions that Cox will control.”¹⁰⁷ Of note, the automotive-related solutions that Cox controlled were very extensive.¹⁰⁸

¹⁰⁵ *Id.* ¶ III.

¹⁰⁶ Ian Conner, Director, Bureau of Competition, Address at the GCR Live 9th Annual Antitrust Law Leader Forum: Fixer Upper: Using the FTC’s Remedial Toolbox to Restore Competition (Feb. 8, 2020). At the time of his speech, Conner was the Director of the Bureau of Competition of the Federal Trade Commission. Although Conner characterizes such arrangements as divestitures, they can also be thought of as mandating access to data, which we discuss below.

¹⁰⁷ Press Release, Dep’t of Justice: Office of Pub. Affairs, Justice Department Requires Cox Automotive to Divest Inventory Management Solution in Order to Complete Acquisition of Dealertrack (Sept. 29, 2015) (on file with author) [hereinafter Justice Department Press Release].

¹⁰⁸ *See* Competitive Impact Statement, at 3. “The automotive products managed by Cox encompass a broad portfolio of automated solutions and services for automotive dealers and consumers, including vAuto, a full-featured IMS. Cox’s total annual automotive revenue in 2014 was about \$4.9 billion, of which its U.S. IMS revenue was a small part.” For example, Cox “own[s] or otherwise control access to many significant data sources and destinations for full-featured IMSs. Cox’s Manheim Market Report is the most comprehensive and widely used source of data from auction services. With AutoTrader, Cox controls the leading online solution for buying and selling new and used vehicles. With Kelly Blue Book, Cox controls the most widely used consumer-facing vehicle book value guide.” *Id.* at 6. The decree required the “continuing exchange of data between the divested IMS products and, for example, Cox’s Manheim, AutoTrader, and KBB [Kelly Blue Book] products.” *Id.* at 10.

Similarly, in approving CoreLogic's proposed acquisition of DataQuick Information Systems, the Federal Trade Commission required CoreLogic:

[T]o license to Renwood RealtyTrac (RealtyTrac) national tax assessor and property recorder bulk data as well as several ancillary data sets that DataQuick provides to its customers. [This] allows RealtyTrac to offer customers the data and services that DataQuick now offers and to become an effective competitor in the market.¹⁰⁹

Subsequently, the FTC found that CoreLogic "did not provide all the required data and information by the deadlines in [its] order" and extended the time-period covered by the order beyond its initial term.¹¹⁰

Another example arose in connection with the proposed acquisition by IMS Health of Cegedim S.A.'s Customer Relationship Management and Strategic Data businesses, both of which had extensive healthcare-related databases.¹¹¹ The European Commission noted that:

Several respondents to the market investigation have expressed concerns with regard to the concentration of both healthcare professional databases and sales tracking data in the hands of IMS....The same respondents are concerned that, post-Transaction, once IMS will become a provider of both healthcare professional databases and sales tracking data in the EEA, it will no longer have any incentive to cooperate with other providers of healthcare professional databases and to provide them access to the brick structure underlying its sales tracking data....This

¹⁰⁹ Press Release, Fed. Trade Comm'n, FTC Puts Conditions on CoreLogic, Inc.'s Proposed Acquisition of DataQuick Information Systems (Mar. 24, 2014) (on file with author); see also Press Release, Fed. Trade Comm'n, FTC Approves Final Order Settling Charges That CoreLogic's Acquisition of DataQuick Was Likely to Harm Competition (May 21, 2014) (on file with author).

¹¹⁰ Order to Show Cause and Order Modifying Order, Corelogic Inc., FTC Docket No. C-4458 (June 14, 2018). Under the modified order, the Commission required CoreLogic to provide bulk data to RealtyTrac for three additional years. *See also* Press Release, Fed. Trade Comm'n, FTC Approves Final Order Adding Requirements to 2014 Order to Remedy CoreLogic Inc.'s Compliance Deficiencies (June 15, 2018); *further modified*, Letter from April Tabor, Acting Secretary, Fed. Trade Comm'n, to Courtney Dyer, Esquire, O'Melveny & Myers LLP (Nov. 30, 2020) (on file with author).

¹¹¹ Case COMP/M.7337-IMS Health/Cegedim Business, Comm'n Decision at ¶ 1 (Dec. 19, 2014).

would effectively hamper the quality of these competitors' healthcare professional databases and make them less competitive.¹¹²

To deal with this concern, “IMS committed, upon request by an EEA healthcare customer, to enter into a [Third-Party Access Agreement] based on a standard form attached to the commitments.”¹¹³

Significantly, this apparently straightforward commitment is described in considerable detail in the EU’s order. For example, IMS was required to divest its:

[S]yndicated promotional audit business in the EEA and Switzerland, known as *Promo.Track* (the "Divestment Business"). The Divestment Business included both data and complementary assets:

- a. Panel and recruitment management assets: contact details of doctors participating in *Promo.Track* during the last 3 years; panel design information and statistics; and (at option of the purchaser) panel management personnel;
- b. Data collection assets: copies of the latest version of questionnaires and (at option of the purchaser) data collection personnel;

¹¹² *Id.* ¶ 239, 241.

¹¹³ *Id.* ¶ 283. According to the EU, “IMS provides its sales tracking data to pharmaceutical companies on the basis of a predefined geographical segmentation known as ‘brick structure.’ The brick structure allows sales data to be broken down into a small, useful geographic areas with equal sales potential, called ‘bricks’, while avoiding the identification of sales to individual pharmacies/customers Sales data are thus organized and formatted according to the brick structure and delivered to pharmaceutical companies, which then process the data internally or pass them on to service providers for analysis The IMS brick structure is used by pharmaceutical companies to organise their sales forces and marketing efforts, and has been acknowledged as the de facto standard for the pharmaceutical industry.” *Id.* ¶¶ 20–21. Earlier, the European Commission had adopted an interim measure—equivalent to a preliminary injunction – that would have required IMS to grant licenses “to all undertakings currently present on the market for German regional sales data services . . . for the use of the 1860 brick structure, in order to permit the use of and sales by such undertakings of regional sales data formatted according to this structure.” Case COMP D3/38.044–NDC Health/IMS Health, Comm’n Decision (July 3, 2001). But that measure was subsequently withdrawn when the Commission concluded that, after a decision by the Frankfurt Higher Regional Court, “other brick structures very similar to the 1860 structure could be developed for the collection of pharmaceutical sales data and used legitimately to produce and market pharmaceutical sales reports.” European Commission Press Release IP/03/1159, Commission Intervention No Longer Necessary to Enable NDC Health to Compete with IMS Health (Aug. 13, 2003).

- c. Data processing and delivery: copy of historical data for the relevant countries (last six years) and (at option of the purchaser) data production personnel;
- d. Sales assets: existing customer contracts; customer book; trademarks used in the EEA and local markets; and (at option of the purchaser) sales personnel;
- e. All intellectual property rights necessary for the operation of the Divestment Business; and
- f. Any other asset which would have been necessary for the continued viability and competitiveness of the Divestment Business.¹¹⁴

IMS was also required to assign customers to the Divestment Business.¹¹⁵ In addition, the order provided for both a Monitoring Trustee and an Arbitral Tribunal to deal with possible future enforcement disputes.¹¹⁶

Of further note, among the obligations that the recent European Commission proposal would place on core platform services is that these services shall make data created by the activity of a user easily portable. Further, the services shall provide users with free, high-quality, continuous and live access to the data.¹¹⁷ Lastly, when the holder of a large amount of data is required to share those data with smaller rivals, the question naturally arises as to whether the smaller rivals should be required to share their own data with the larger rival. Although reciprocity may sometimes be appropriate, that will not always be the case. For example, where the data holding disparities are very large and where the smaller rivals face other significant barriers as competitors, *not* requiring the smaller entities to share their data may be the correct policy.

Significantly, the European Commission's recent proposal for regulating digital services focuses only on what it calls "core platform services." These services are those where there are a small number of large online platforms through which businesses can reach their customers as well as evidence that these platforms have used their power to disadvantage their business rivals.¹¹⁸

¹¹⁴ Case COMP/M.7337–IMS Health/Cegedim Business, Comm'n Decision at ¶ 278 (Dec. 19, 2014).

¹¹⁵ *Id.* ¶ 279.

¹¹⁶ *Id.* ¶ 15.

¹¹⁷ European Commission Proposal for a Regulation of the European Parliament and of the Council 2020/0374, Digital Markets Act 40–41 (Dec. 15, 2020).

¹¹⁸ *Id.* at 5–6. The Commission goes on to note (at 14–15) that "Core platform services...feature a number of characteristics that can be exploited by their providers. These characteristics of core platform services include among others extreme scale

IV. REMEDIES THAT ARE UNRELATED TO MERGERS

A. Remedies for the Termination of an Existing Data Access Arrangement

What if one of the parties to an existing data access arrangement, presumably the larger of the two, chooses to terminate the arrangement? Whereas the smaller party had previously benefitted from access to the data of its larger partner, it now potentially faces a competitive disadvantage because of the larger data holdings of its rival. The question arises, therefore, as to what, if anything, the antitrust authorities should do to overcome this asymmetry.¹¹⁹

Here, an existing yet controversial precedent may be instructive. Aspen Skiing Co., the larger of two ski lift operators in Aspen, Colorado, changed the terms of an existing multi-area ticketing arrangement with its smaller rival, Aspen Highlands, whose share of the “downhill skiing market” subsequently declined significantly.¹²⁰ The United States Supreme Court rejected Aspen Skiing’s efficiency justifications for its behavior and affirmed the judgement for money damages and an injunction requiring continuation of the previously established collaboration.¹²¹

Although there have been many criticisms of the Aspen Skiing decision, and the scope of its application has been substantially

economies, which often result from nearly zero marginal costs to add business users or end users. Other characteristics of core platform services are very strong network effects, an ability to connect many business users with many end users through the multi-sidedness of these services, a significant degree of dependence of both business users and end users, lock-in effects, a lack of multihoming for the same purpose by end users, vertical integration, and data driven advantages. All these characteristics combined with unfair conduct by providers of these services can have the effect of substantially undermining the contestability of the core platform services, as well as impacting the fairness of the commercial relationship between providers of such services and their business users and end users, leading to rapid and potentially far-reaching decreases in business users’ and end users’ choice in practice, and therefore can confer to the provider of those services the position of a so-called gatekeeper.” *Accord*, UK Competition and Markets Authority’s proposal for a Digital Markets Unit, *supra* note 4, at 8.

¹¹⁹ See *infra* note 124. Below, we consider the case in which the larger party refuses to enter into a data sharing arrangement where one did not previously exist. Note that if the asymmetry has arisen as a result of past acquisitions by the larger party, it raises many of the same issues that were discussed above in connection with merger reviews.

¹²⁰ Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 585 (1985).

¹²¹ *Id.* at 608–11.

narrowed in subsequent years,¹²² it may be applicable to a case in which an existing data sharing arrangement is terminated. Much of the criticism is based on the argument that mandated cooperative arrangements are unnecessary because firms have the incentive to enter into such arrangements if they are efficient.¹²³ However, as explained above, because of network effects, a firm may obtain a competitive advantage if it has substantially more data than its rivals, which may motivate the firm to terminate an existing data access arrangement, notwithstanding any efficiencies it obtains from the arrangement.¹²⁴ Indeed, as Shapiro and Varian noted, “If the dominant firm has promised to be open and has reneged on that promise, you should attack its bait-and-switch approach.”¹²⁵ They also note that “[y]our network is far more valuable if you can control the ability of others to interconnect with you,”¹²⁶ which might discourage a larger firm from entering a data access arrangement in the first place.

A case that involved an attempt to terminate an existing data access contract—arguably an example of “bait-and-switch”—was *PeopleBrowsr Inc. v. Twitter Inc.*¹²⁷ In that case, PeopleBrowsr argued that it:

[H]as invested millions of dollars and years of work in building a business based on the [Twitter] Firehose. It did so in reliance on Twitter’s representation that it would maintain an ‘open ecosystem’ for the use of its data, in which PeopleBrowsr could freely compete without fear that Twitter would cut off its access to data in order to influence which businesses succeed or to usurp business opportunities for itself...Now, after years in a mutually beneficial relationship, Twitter has threatened to cut off PeopleBrowsr’s access to the Firehose....It is now using its control over its data to take over the Twitter Big Data Analytics market.¹²⁸

¹²² See, e.g., *Verizon Communications v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 408–09 (2004); see also *Pacific Bell Telephone Co. v. linkLine Communications, Inc.*, 555 U.S. 438, 448–51 (2009).

¹²³ See *Verizon Communications*, 540 U.S. at 409.

¹²⁴ See *supra* note 25 and accompanying text.

¹²⁵ CARL SHAPIRO & HAL VARIAN, *INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY* 288 (1999).

¹²⁶ *Id.* at 197.

¹²⁷ Complaint at 2, *PeopleBrowsr, Inc. v. Twitter, Inc.*, No. 3:12-cv-6120 EMC 2013 U.S. Dist. LEXIS 31786 (N.D. Cal. Dec. 3, 2012).

¹²⁸ *Id.*

The case was settled after the court granted PeopleBrowsr a temporary restraining order that prevented Twitter from terminating access to its data.¹²⁹ In announcing the settlement of the suit, PeopleBrowsr stated “it ha[d] resolved its dispute with Twitter, and . . . have continued Firehose access through the end of the year, after which it will transition to data access from an authorized Twitter Data Reseller.”¹³⁰

In another matter that preserved access to data, hiQ Labs used automated bots to scrape public LinkedIn user profiles and processed the data with a proprietary predictive algorithm to produce work force analyses for business customers.¹³¹ The district court granted hiQ a preliminary injunction after LinkedIn had attempted to deny hiQ access to its publicly available member profiles.¹³² The Court of Appeals held that the district court:

[D]id not abuse its discretion in concluding on the preliminary injunction record that hiQ currently has no viable way to remain in business other than using LinkedIn public profile data for its Keeper and Skill Mapper services, and that HiQ therefore has demonstrated a likelihood of irreparable harm absent a preliminary injunction.¹³³

Unlike cases in which regulators or antitrust authorities attempt to create data sharing agreements *de novo*, responding to situations in which an existing data access arrangement is terminated has important practical advantages. Specifically, regulators can attempt in these cases to restore the *status quo ex ante* instead of having to develop an entirely new arrangement. Although not without difficulties, as discussed above in connection with some merger-related remedies, here the authorities can use past agreements as starting points for their regulatory interventions. Although they arose in connection with merger reviews, the concessions obtained by the Department of Justice in the Cox/Dealertrack merger and by the Federal Trade Commission in the CoreLogic/DataQuick merger are examples of remedies that could be

¹²⁹ *Twitter, Peoplebrowsr Settle Data Access Lawsuit*, COMPUTER BUS. R., cbronline.com/uncategorised/twitter-peoplebrowsr-settle-firehose-data-lawsuit-260413/amp/ (last visited Dec. 15, 2020).

¹³⁰ Andrew Gill, *PeopleBrowsr and Twitter settle Firehose dispute*, PEOPLEBROWSER, <https://www.peoplebrowsr.com/blog/2013/04/peoplebrowsr-and-twitter-settle-firehose-dispute> (last visited Dec. 15, 2020).

¹³¹ *hiQ Labs, Inc. v. LinkedIn Corp.*, 273 F.Supp.3d 1099, 1104–05 (N.D. Cal. 2017).

¹³² *Id.*

¹³³ *hiQ Labs, Inc. v. LinkedIn Corp.*, 938 F.3d 985, 994 (9th Cir. 2019).

imposed in response to the termination of existing data access arrangements that occur outside the merger context.

Finally, the holder of large amounts of data might not only deny access to those data to its smaller rivals directly, but it might also engage in behavior that accomplishes the same end indirectly. For example, the plaintiffs in *Texas v. Google* allege that,

In 2009, Google’s ad server started hashing or encrypting publishers’ ad server user IDs and giving publishers and advertisers different IDs for the same user. Thus, Google strategically prevents the user from being easily identified with one critical caveat: Google is able to use that very same information for its own trade decisions.... At a high level, the encryption of publishers’ user IDs forecloses competition for publishers’ inventory from non-Google exchanges and ad buying tools.¹³⁴

If this allegation is correct, although other users have access to the same *amount* of data as does Google, the *value* of those data is far less.

B. Remedies for Existing Anticompetitive Data Accumulations

The European Commission has recently indicated that it would “explore, in the context of the Digital Services Act package, ex ante rules to ensure that markets characterised by large platforms with significant network effects acting as gate-keepers, remain fair and contestable for innovators, businesses, and new market entrants.”¹³⁵ Significantly, the Commission points to the ability of some firms to “accumulate large quantities of data” and the fact that these firms “benefit from the use of data gathered from one area of their activity to improve or develop new services in these adjacent markets, [which] increases a risk of these adjacent markets also tipping in favour of these platforms to the detriment of innovation and consumer choice.”¹³⁶

¹³⁴ Complaint ¶¶ 125–27, *Texas v. Google*, No. 4:20-cv-00957 (E.D. Tex. 2020).

¹³⁵ EUROPEAN COMM’N, SHAPING EUROPE’S DIGITAL FUTURE 5 (2020).

¹³⁶ *Digital Services Act Package: Ex Ante Regulatory Instrument for Large Online Platforms with Significant Network Effects Acting as Gate-Keepers in the European Union’s Internal Market*, EUR. COMM’N (Feb. 6, 2020), <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12418-Digital-Services-Act-package-ex-ante-regulatory-instrument-of-very-large-online-platforms-acting-as-gatekeepers>. For a U.S. perspective, see Stigler, *supra* note 2, at 6, 11–12. For a United Kingdom perspective, see CMA Report, *supra* note 1, at 5, 11–16.

This section examines the possible *ex ante* rules that the European Commission might consider, as well as remedies that could be undertaken by U.S. antitrust officials and regulators. Because they often will have to deal with long-standing arrangements, applying those remedies is likely to be far more complicated than if they were applied before or soon after the consummation of a merger.¹³⁷

Importantly, the accumulations of data discussed here might have several possible sources. First, they may be the result of past mergers that, for any of a number of reasons, the antitrust authorities at the time did not oppose, but, in retrospect, the authorities wish they had prevented these combinations.¹³⁸ The rationales for attempting to undo these mergers are like those discussed above in connection with pending or proposed mergers, but because the combinations that they are intended to address are long-standing, effecting the remedies would likely be more difficult. Nonetheless, as the Director of the FTC's Bureau of Competition has noted "even when it is hard and may require [divestiture of] assets and services beyond those acquired, breakup of the merged company to reestablish competition is still the most likely remedy for a consummated merger."¹³⁹

Second, the accumulations of data may be the result of longstanding anticompetitive behavior by the holder, particularly behavior that was intended to, and had the effect of, denying access to the data to its rivals. For example, the holder of the data may have terminated an earlier data sharing arrangement or it may have adopted policies that made it difficult for its rivals to obtain data from the same sources that it employs.¹⁴⁰ In these cases, blocking the anticompetitive behavior alone may be insufficient to restore competition. Consequently, additional

¹³⁷ See, e.g., Darren S. Tucker & Hill B. Wellford, *Big Mistakes Regarding Big Data*, 14 A.B.A. THE ANTITRUST SOURCE 1, 10–11 (2014), https://www.americanbar.org/content/dam/aba/publishing/antitrust_source/dec14_full_source.pdf ("There are also difficult administrative issues with the suggestion that dominant online firms should share their user data. For example, with whom should data be shared, how long should this obligation last, how far back must the company go in providing data, under what conditions (e.g., price, format) should the sharing take place, what restrictions on the use of the data will be placed on the recipients, and who will enforce these obligations?").

¹³⁸ Scott Morton & Dinielli, *supra* note 3, at 30 (describing "Facebook's . . . active hunt for rivals to acquire" as part of its strategy for the "purposeful acquisition or maintenance of monopoly power.").

¹³⁹ Conner, *supra* note 106, at 4.

¹⁴⁰ Scott Morton & Dinielli, *supra* note 3 (contending that "Google . . . deployed a number of . . . anticompetitive levers such as exclusive contracts and denial of interoperability to exclude and prevent entry by ad tech competitors and/or raise their costs, cementing its place as the dominant provider of digital advertising placement in both search and display for most publishers and advertisers.").

measures may be needed, perhaps by imposing data sharing obligations or requiring divestitures.

Finally, the accumulation of data may not be the result either of past mergers or anticompetitive behavior but instead the result of the entirely legitimate actions of its holders.¹⁴¹ As the European Commission has noted, “Certain market structures do not deliver competitive outcomes...even without companies acting anti-competitively.”¹⁴² The remedies for these outcomes are likely to be the same as, or similar to those, that are adopted in response to mergers or anticompetitive behavior—structural changes that create incentives for voluntary sharing or mandate access. Understandably, antitrust authorities or regulators are likely to be more cautious in adopting them in such cases.

In principle, the remedies employed to deal with the potential anticompetitive effects of large data holdings that arose in connection with mergers or acquisitions could be employed to address concentrated data holdings that arose, for example, as the result of past mergers or acquisitions that were not challenged or are the result of unilateral actions by a firm. However, in such cases, the use of such remedies is likely to prove difficult.¹⁴³ Consider, the “hold separate” approach discussed above. Even when this approach has been applied to a newly merged entity, it has proven to be problematic and in some circumstances, easily circumvented.¹⁴⁴ Trying to “unscramble eggs” that were “scrambled” long ago will surely present enormous, if not insurmountable, difficulties if the remedy is to require a firm to divest *some* of its data holdings to a competitor or competitors where, unlike in the Dun & Bradstreet-QED case,¹⁴⁵ the data combination is long-standing.

¹⁴¹ For example, they could be the result of a superior product, business acumen, or historical accident in the classic statement in United States jurisprudence. *See* *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966).

¹⁴² European Commission Press Release IP/20/977, Antitrust: Commission Consults Stakeholders On A Possible New Competition Tool (June 2, 2020).

¹⁴³ In a similar matter, the German Chamber of Tax Consultants, which had previously exclusively commissioned the company Datev with the operation of an electronic database, agreed to provide access to the database to other providers of tax advisory software. *See* Press Release, German Chamber of Tax Consultants, More Competition on the Tax Advisory Software Market in Future (Dec. 4, 2019) (on file with author) (noting that “Datev used to be the only company commissioned by the chambers to operate the mandate database, which resulted in a considerable competitive advantage for Datev, as it was the only company able to offer the database and software from a single source.”).

¹⁴⁴ *See supra* notes 63–75 and accompanying text. The problem is particularly acute when the hold separate requirement is contingent in the sense that it can be overcome if customers or consumers consent to the commingling of data.

¹⁴⁵ *See supra* notes 76–82 and accompanying text.

However, there may be circumstances in which mandating the sharing of long-held data may, nonetheless, be feasible. Among other things, this depends on the nature of the data so that, for example, straightforward data accumulations can be easily transferred or copied. This can be seen in the Dun & Bradstreet-QED case, where the divested assets consisted, among other things, of a comprehensive sales contact or prospect list.¹⁴⁶

Subscriber lists compiled in the normal course of business constitute another example of data transfer that can be accomplished relatively easily. A case in which this occurred outside the context of a merger and in which anticompetitive behavior was not alleged was the requirement imposed by the Autorite de la concurrence that the incumbent French gas distributor GDF Suez share parts of its database with new entrants into the gas market.¹⁴⁷ Although these data had been held by GDF Suez for a long time, the data sharing arrangement was presumably relatively easy to implement as it required only that GDF Suez disclose “the customer name and address and the technical characteristics of his consumption,” including the location of his gas meter and annual gas consumption.¹⁴⁸ Antitrust authorities and regulators should, therefore, be alert to the possibility that, in some circumstances, mandating data sharing may not be difficult.

A United States counterpart involved the subscriber list information that local telephone companies secure in the normal course of business in establishing a subscriber relationship.¹⁴⁹ Access to that information was necessary to enable competition in the provision of “Yellow Pages” advertising directories.¹⁵⁰ Local telephone companies’ withholding of the information from actual and potential competitors produced a good deal of antitrust and copyright litigation in the latter part of the twentieth century.¹⁵¹ In response, Congress required local telephone companies to provide the data “on a timely and unbundled basis, under nondiscriminatory and reasonable rates, terms, and conditions to any person upon request for the purpose of publishing directories.”¹⁵² Note, however, that even in these situations, the issue of what constitutes “reasonable rates, terms, and conditions” can be contentious.¹⁵³

¹⁴⁶ In re Dun & Bradstreet Corporation, *supra* note 80.

¹⁴⁷ 9 September 2014: *Gas Market*, AUTORITÉ DE LA CONCURRENCE (Sept. 10, 2014), <https://www.autoritedelaconcurrence.fr/en/communiqués-de-presse/9-septembre-2014-gas-market>.

¹⁴⁸ *Id.*

¹⁴⁹ Feist Publ’ns, Inc v. Rural Tel. Service Co., 499 U.S. 340, 342–43 (1991).

¹⁵⁰ *Id.* at 343–44.

¹⁵¹ See, e.g., *id.* at 342–44; BellSouth Advert. & Publ’g Corp. v. Donnelley Info. Publ’g, Inc., 999 F.2d 1436, 1438 (11th Cir. 1993).

¹⁵² 47 U.S.C. § 222(e) (2018).

¹⁵³ *Id.*

Forbidding its use by the party that holds the data constitutes a different resolution of the competition concerns. In a matter in which this occurred, the Belgian Competition Authority investigated the use by the Belgian National Lottery of contact details of persons registered in its database to contact those persons when it launched a sports betting service.¹⁵⁴ The Authority found the Lottery “did not acquire these contact details following *competition on the merits* but in the context of its legal monopoly.”¹⁵⁵ Significantly, the Authority also concluded that “these data, having regard to their nature and size, could not be reproduced by competitors on the market at reasonable financial condition and within a reasonable period of time.”¹⁵⁶ Although the Authority did not mandate that the user contact data be shared with other sports betting services, it did impose a fine on the Lottery.¹⁵⁷ This decision was partially motivated by the fact that “the infringement consisted in the one-off use” of the data.¹⁵⁸

The case of *eBay, Inc. v. Bidder’s Edge, Inc.* (BE)¹⁵⁹ illustrates both the importance of norms or customs of the trade in designing data-related remedies and the importance, in at least some circumstances, of specifying the “how” as well as the “what” in data-related remedies. In the case:

[T]he primary dispute was over the method BE uses to search the eBay database. eBay wanted BE to conduct a search of the eBay system only when the BE system was queried by a BE user . . . BE wanted to recursively crawl the eBay system to compile its own auction database.¹⁶⁰

The District Court found, among other things, that, “If BE’s activity is allowed to continue unchecked, it would encourage other auction aggregators to engage in similar recursive searching of the eBay system such that eBay would suffer irreparable harm from reduced system performance, system unavailability, or data losses.”¹⁶¹ Although the Court enjoined BE from using “any automated query program, robot, web crawler or other similar device, without written authorization, to

¹⁵⁴ Press Release, Belgian Competition Auth., The Belgian Competition Authority Imposes a Fine of 1.190.000 EUR on the National Lottery for Having Abused its Dominant Position When Launching its Sports Betting Product Scoore! (Sept. 23, 2015) (on file with author).

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ See *Ebay, Inc. v. Bidder’s Edge, Inc.*, 100 F. Supp.2d 1058 (N.D. Cal 2000).

¹⁶⁰ *Id.* at 1062.

¹⁶¹ *Id.* at 1066.

access eBay's computer systems or networks, for the purpose of copying any part of eBay's auction database" it did not preclude BE "from utilizing information obtained from eBay's site other than by automated query program, robot, web crawler or similar device."¹⁶² Because the Court found that "major Internet search engines, such as Yahoo!, Google, Excite and AltaVista, respect [eBay's] Robot Exclusion Standard,"¹⁶³ this eliminated any unfair competitive advantage Bidder's Edge had obtained and placed it in the same competitive position as these other users of eBay's data.¹⁶⁴ To the extent that an owner of data can point to users that respect its access terms and conditions, it may be able to use that behavior as a standard against which an antitrust authority or court can assess claims for different access conditions by other users.

Although mandating access to data may often be the only feasible alternative for overcoming the anticompetitive effects of highly asymmetric data holdings, the difficulties involved in employing such an approach should not be minimized. Indeed, as the above discussion of mandatory access to data that occurred in the context of a merger review has shown, even where the data are relatively easy to identify, detailed obligations and complex oversight regimes were deemed necessary to assure that the remedies could not be evaded.¹⁶⁵

Rubinfeld and Gal have identified what they call the "four primary characteristics of big data – volume, velocity, variety, and veracity."¹⁶⁶ Volume refers to whether data "can only be analyzed through the establishment of a unique platform that can manage substantial volumes of information in a reasonable timeframe," velocity refers to the "freshness" of the data, variety reflects "the number of different sources from which the data are gathered," and veracity refers to the "truthfulness" of the data.¹⁶⁷ Each of these characteristics of data would have to be addressed in any mandatory data sharing arrangement.

We are in agreement with Kathuria and Globocnik that:

An access remedy in such a situation would need to be much more sophisticated, as, among other things, data would most probably need to be provided in real time or at least in regular intervals. This will further burden the courts and antitrust regulators. Regardless of the

¹⁶² *Id.* at 1073.

¹⁶³ *Id.* at 1063.

¹⁶⁴ *See id.* at 1060–63.

¹⁶⁵ *See supra* Part IV.D.

¹⁶⁶ Daniel L. Rubinfeld & Michal S. Gal, *Access Barriers to Big Data*, 59 ARIZ. L. REV. 339, 345–47 (2017).

¹⁶⁷ *Id.*

mechanism to mandate data sharing, either as an essential facility or at the remedy stage, there remains a big challenge to ensure the efficient sharing of data.¹⁶⁸

Despite these difficulties, there may be situations in which past or present data access arrangements, especially those that dealt with relatively new data combinations, provide useful information about the types of arrangements that are likely to be effective. As one example, the CoreLogic/DataQuick consent decree dealing with an accumulation of real estate data derived from public records—and thus relatively easy to identify—provides, among other things, that

1. The Licensed Data shall include at least the *same scope and quality* of Assessor Data, Recorder Data and Other Related Data as was collected, acquired, licensed, and generated by DataQuick prior to the Acquisition;
2. [CoreLogic] shall deliver the Licensed Data to the Acquirer in a manner that is at least as *timely and accurate*, and provides the same level of service, as Respondent provided to DataQuick prior to the Acquisition;
3. [t]he Licensed Data [shall be delivered] to the Acquirer in a *manner* that conforms with the requirement of the Remedial Agreement and this Order;
4. [CoreLogic] shall deliver the Licensed Data to the Acquirer in a *format (including record layout) and manner* that is acceptable to the Acquirer¹⁶⁹

Significantly, these provisions, involving what, when, and how, reference a recent agreement, which would not always, or even often, be available in attempting to remedy the effects of data concentration of long standing.

As another example, the Cox/Dealertrack consent decree provides that Cox “shall provide for the exchange of . . . data or content on the

¹⁶⁸ Kathuria & Globocnik, *supra* note 46, at 11–12. In the United States, the availability of a regulatory agency to oversee mandated sharing has been recognized as a solution. *See, e.g.*, Phillip Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 ANTITRUST L. J. 841, 853 (1990). The United Kingdom’s Competition and Markets Authority has reached a similar conclusion. *See generally*, CMA Final Report, *supra* note 1.

¹⁶⁹ CoreLogic, Inc., 2014 FTC LEXIS ¶ II (emphasis added).

same terms that were applicable to such data or content exchanges . . . as of August 1, 2015.”¹⁷⁰ It also provides the following “non-exhaustive list of terms” that cannot be offered to another licensee on better terms than to the acquirer of the divested assets: “(1) speed and frequency of content transmission; (2) server lag time and/or uptime; (3) database or API synchronization; and (4) data content or data fields transmitted or utilized.”¹⁷¹

A final example of a mandated data access arrangement based on an existing arrangement is the consent decree negotiated in connection with Google’s acquisition of ITA Software, a company providing airline pricing and shopping information and functionality to websites.¹⁷² The decree required the licensing of both software and the ongoing very large stream of information it processed by reference to contract terms that the acquired company made available to its customers at the time of the acquisition. Indicative of the complications inherent in mandated technology and data sharing arrangements, the Final Judgment required thirty-three pages to describe the obligations and foreseeable contingencies over its five-year life.¹⁷³ The following provision is indicative of the type of contingencies that were anticipated:

All [airfare pricing and shopping engine] Agreements with [online travel intermediaries] shall include the right to use ordinary course upgrades to [the airfare pricing and shopping engine] that [Google and ITA Software] make available to [their] Customers without additional charge... [Google and ITA Software] shall make available to [online travel intermediaries] the same version of [the airfare pricing and shopping engine] they make available to [their] Customers.¹⁷⁴

¹⁷⁰ Justice Department Press Release, *supra* note 107.

¹⁷¹ United States v. Cox Enters., No. 15-01583, 2016 U.S. Dist. LEXIS 31596 at *16 (D.D.C. Jan. 21, 2016).

¹⁷² Complaint at 25, United States v. Google Inc., No. 1:11-cv-00688, 2011 U.S. Dist. LEXIS 124151 (D.D.C. Oct. 5, 2011).

¹⁷³ *Id.*; see also Competitive Impact Statement at 9, United States of America v. Google Inc., 2011 U.S. Dist. LEXIS 124151 (2011) (describing the obligations and safeguards in terms of (1) requirements regarding the parties’ continued licensing and improvement of QPX; (2) requirements regarding the parties’ licensing of InstaSearch, a new flight search technology under development by ITA; (3) procedures for resolving disputes between OTIs and the parties regarding licensing of QPX or InstaSearch; (4) requirements for the creation of a firewall at the parties’ business regarding use of competitively sensitive information gained through provision of QPX or InstaSearch services; and (5) oversight procedures the United States may use to ensure compliance with the proposed Final Judgment.).

¹⁷⁴ *Id.* at 19; see also *id.* at 22.

As the Department of Justice noted “the proposed settlement will protect competition for airfare comparison and booking websites and ensure those websites using ITA’s software will be able to power their websites to compete against any airfare website Google may introduce.”¹⁷⁵ The cited provision, and others, are intended to ensure that competing travel websites have access to the same information at the same time as it is provided by Google to its own customers.¹⁷⁶

C. The Difficulties of Adapting Past Remedies to a New Environment

The previous descriptions of efforts by regulators and antitrust authorities make clear that it is feasible to remedy competition issues associated with large asymmetries in data holdings. Nonetheless, considerable extrapolation will be required to employ these approaches where entities such as Google, Facebook, and Amazon have accumulated extraordinarily large and diverse datasets over very long periods of time.

First, because of the large amounts and wide varieties of data that are held by these entities, it will be extremely difficult to characterize the elements of any data sharing remedy in any written agreement as well as to enforce any “hold separate” provisions. Second, unlike many of the cases described, the number and variety of entities that would have to be accommodated in any data access remedy would be very large. Third, because the data accumulations have occurred over very long periods of time, identifying discrete pieces of data for a possible divestiture is likely to be very difficult. Fourth, unlike some of the cases that have been described, there are unlikely to be contemporary models that can be employed by the authorities in fashioning remedies. Finally, because access to real time data will be an important element of many data sharing remedies, the “one time” data transfers that occurred in some of the cases that we have described will provide only limited guidance. Despite these difficulties, the cases described are both instructive and encouraging as competition law and policy is required to deal with a newer and much more complex reality.

In addressing remedial considerations associated with the new reality of large, heterogeneous data collections, two familiar issues present themselves prominently: defining the obligations and protecting against evasion. As noted, even relatively simple divestiture and sharing remedies in the nature of one-time events are complicated.

¹⁷⁵ Press Release, Dep’t of Justice, Justice Department Requires Google Inc. to Develop and License Travel Software in Order to Proceed with its Acquisition of ITA Software Inc. (Apr. 8, 2011) (on file with author).

¹⁷⁶ *Id.*

They have required extensive decrees and often the appointment of monitors in an effort to assure that they will be implemented. Varying circumstances require varying degrees of access for competitive outcomes to eventuate. “[A]ny discussion of access to data must take into account the heterogeneity of data (along many dimensions), of use cases, of desired access conditions, etc. Discussing access to data in the abstract is futile.”¹⁷⁷

The Vestager Report identifies and describes four alternative forms of access—data portability, protocol interoperability, data interoperability, and full protocol interoperability¹⁷⁸—which range from simple transfers of data to systems that depend on high degrees of technical standardization and integration. The issues that must be addressed in any mandated access scenario include the types of data—personal or nonpersonal, historical or continuing, volunteered, observed (including location), or inferred—and the appropriate recipients, intervals, limitations on use, and assurances that transferred data would be afforded suitable levels of protection. If access is mandated through application program interfaces (APIs), as would likely be required in the case of frequent or continuous access, there would be further issues involving the appropriate technical standards both initially and as they would be amended to accommodate new functionalities and innovation. As mandated access in at least some circumstances would involve nontrivial costs, the issue of who pays and how much also would be important. Finally, once determined, all of these particulars would have to be monitored and enforced.

At the more complex end of the mandated access spectrum, a specialized regulatory authority may be required. As the Vestager Report points out,

[C]ompetition authorities or courts will need to specify the conditions of access. This, and the concomitant necessity to monitor, may be feasible where access requests are relatively standard and where the conditions of access are relatively stable. Where this is not the case, in particular where a dominant firm is required to grant access to continuous data (i.e. to ensure data interoperability), there may be a need for regulation – which must, at times, be sector specific. Nonetheless, competition law can specify the general preconditions and inform the possible regulatory regimes.¹⁷⁹

¹⁷⁷ Vestager Report, *supra* note 3, at 73.

¹⁷⁸ *Id.* at 83–85.

¹⁷⁹ *Id.* at 9–10, 107. See Stigler Report, *supra* note 13, at 78–99; Furman Report, *supra* note 1, at 5–6, 77–78, 82–83; TOM WHEELER ET AL., HARV. KENNEDY SCH.:

V. CONCLUSION

The objective of this article has been to identify and evaluate remedies for harm to competition that arise from large disparities in data holdings among competing, or potentially competing, firms. Although these disparities may stem from a variety of sources—mergers, behaviors that have the effect of denying access to data to rivals, and “natural” market forces—the types of remedies are remarkably similar. These include preventing or undoing mergers that result in especially large differences in the amounts of data held by competing firms, placing limits on the ability of a firm to combine data that it acquires from different sources, mandating data sharing among competitors, and challenging behaviors, for example the termination of existing data sharing arrangements, that, anticompetitively, bring about large imbalances in data holdings. These remedies can be, and in certain circumstances have been, effective in promoting competition, but as review of these experiences makes clear, employing them will often not be easy. In particular, to be effective, remedies are likely to have to be specified in considerable detail, they may have to be employed in combinations, and they may require extensive monitoring, including new institutional arrangements, to be certain that they have the intended effects

SHORENSTEIN CTR., *NEW DIGITAL REALITIES: NEW OVERSIGHT SOLUTIONS IN THE U.S.* (2020); CMA Report, *supra* note 1, at 5, app. Z at 10–11 (discussing how interoperability would require a regulator to oversee both the set-up of arrangements and its operation in practice. It would require ongoing regulatory oversight, both to ensure that the remedy was effective, and also to ensure that the access to data was being provided in a way that is consistent with data protection requirements. There would therefore need to be new regulatory controls on firms which operate in digital advertising markets to address these risks, and restrictions on firms which do not comply with these controls.).