# DATA, INNOVATION, AND POTENTIAL COMPETITION IN DIGITAL MARKETS – LOOKING BEYOND SHORT-TERM PRICE EFFECTS IN MERGER ANALYSIS

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# I. INTRODUCTION

Often, it is possible to analyze the competitive effects of a merger by focusing on price and quantity. If a particular merger is likely to raise prices or reduce quantity, we can generally be reasonably confident that the merger is anticompetitive. The virtues of price and quantity are that they tend to be readily observable and to lend themselves to empirical analysis. Antitrust practitioners have a variety of tools to model price and quantity effects based on sales and diversion data.

For many digital markets, however, relying solely on traditional price-based modeling in merger analysis is likely to be ineffective. This is particularly true in two-sided markets, which involve two distinct sets of customers. Two-sided markets are nothing new. Newspapers have sought to attract both readers and advertisers for centuries. Banks have sought to attract both creditors and borrowers for millennia.

It is common in two-sided markets for users on one side to subsidize those on the other side. Digital markets are no exception. Indeed, digital products and services are often offered to customers for "free." Examples include Internet search engines, social networks like Facebook and Twitter, booking engines such as OpenTable and Expedia, and even software such as Adobe PDF.

Modeling price effects on the "free" side of these digital markets is of little value. So how should antitrust enforcers proceed? The easiest approach would be to zero in on just the paying side of these markets in merger investigations and to treat that as a proxy for overall competition.

But such an approach would fail to capture substantial possibilities for harm to users on the "free" side of the market. Competition can be vigorous even where products or services are offered for "free." Often that competition takes the form of innovation to provide customers with quality improvements or new products. Mergers in digital markets can threaten that competition – even in situations where users on the "paying" side of the market may be neutral or even supportive of the transactions. The U.S. antitrust agencies' 2010 *Horizontal Merger Guidelines'* section on innovation makes clear that enforcers should look at both sides of two-sided markets in the merger enforcement context and carefully examine the possibility for harm to innovation and quality effects in mergers involving digital markets. Enforcers should also look closely for evidence that mergers in digital markets may eliminate potential competition and pursue cases aggressively in this area, including under Section 2 of the Sherman Act where appropriate. Finally, competition enforcers should be attuned to the competitive significance of data, which may operate as a barrier to entry that may be strengthened by mergers in digital markets.

# II. THE COMPETITIVE SIGNIFICANCE OF DATA

It is no secret that digital markets run on data. Data are a competitive asset. Some data are public or can be obtained from data brokers for a fairly nominal cost. But a lot of valuable data are proprietary and can operate as a barrier to entry. Some have argued that the aggregation of data is unlikely to present a competitive problem because data are non-rivalrous, meaning that their collection or use by one company does not prevent simultaneous use by another.[2] While it is technically true that data are non-rivalrous, that fact may in practice prove irrelevant. 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.

In some cases, a particular category of data may itself constitute an appropriate relevant market. In *Dun & Bradstreet/Quality Education Data* (2010), for example, the FTC found that the merging parties "were the only significant U.S. suppliers of [K-12] educational marketing data."[3]

More commonly, data may operate as a key input for the delivery of a digital product or service. The FTC treated data as an input in the market for electronic public records services for law enforcement customers in *Reed Elsevier-ChoicePoint* (2008). The parties were the largest suppliers of public records services and offered a combination of data and analytics capabilities to customers. Other firms also possessed relevant data. But the quality of those data (in terms of breadth and depth), and the analytics offered in connection with those data were insufficient to

2 See, e.g. Tucker & Wellford, *Big Mistakes Regarding Big Data*, Antitrust Source 3-4 (Dec. 2014).

3 Analysis of Agreement Containing Consent Order to Aid Public Comment, *In the Matter of The Dun & Bradstreet Corporation*, Dkt. No. 9342, at 1 (Sept. 10, 2010), https://www.ftc.gov/sites/default/files/documents/cases/2010/09/100910dunbradstreetanal.pdf.

serve law enforcement customers, who demanded "the most complete database of public records" and "sophisticated search algorithms . . . that identify and display non-obvious relationships between records."[4] The case demonstrates that even when a firm is able to replicate a substantial share of the data collected by a market leader, that might still not be enough to compete effectively.

*Nielsen-Arbitron* (2013) is another case in which the FTC found data to be a significant barrier to entry.[5] Nielsen and Arbitron possessed "the most accurate and preferred sources of individual-level demographic data for [television and radio] audience measurement purposes."[6] The FTC determined that the proprietary data of Nielsen and Arbitron were key inputs to offering downstream cross-platform audience measurement services – services, it should be noted, which had "yet to be developed and marketed."[7] The evidence demonstrated that it would be difficult for other firms to replicate the data generated internally by Nielsen or Arbitron. The consent required divestiture of assets related to Arbitron's cross-platform audience measurement business, including data from Arbitron's representative panel.

In short, data and analytics capability can be significant barriers to entry in digital markets. What's more, those barriers may become self-reinforcing, which presents a serious issue from a competition perspective. The leading digital incumbents collect massive quantities of proprietary data on a real-time basis and use those data continually to refine their offerings. For a new entrant, gathering "enough" data and building "enough" analytics capability to challenge an incumbent is likely to be a monumental undertaking. And that undertaking may become harder still as time goes by as network effects take hold. Moreover, increasingly sophisticated machine learning and artificial intelligence technologies that require massive data sets on which to train may raise additional barriers to entry. Roger McNamee of Elevation Partners, a private equity firm that focuses on technology markets, recently explained that once a firm reaches critical mass in a digital market, "the venture capital looks elsewhere" and that "[t]here's no point taking on someone with a three or four years head start."[8] In light of these dynamics, competition enforcers should pay particularly close attention to whether a merger would enhance data-related barriers to entry – even if short-term price effects are unlikely.

## III. ASSESSING INNOVATION AND QUALITY EFFECTS

While we all agree that innovation is important, there has long been a debate over the circumstances that best promote innovation. Joseph Schumpeter famously claimed that an innovator required market power to fund costly research and development.[9] In contrast, Kenneth J. Arrow argued that competition best promotes innovation.[10] Arrow observed that a monopolist has already largely maximized its earnings in a particular market. The monopolist has a limited incentive to innovate according to Arrow due to cannibalization – it will only gain from its innovation to the extent that it expands the market, whereas a firm with a smaller share stands to gain by capturing sales previously made by others.[11] The modern economic literature tends to suggest that most industries align more closely with Arrow's view. As Professor Chad Syverson of the University of Chicago explained at the Federal Trade Commission's 2016 microeconomics conference, the general pattern is that "competition tends to

4 Analysis of Agreement Containing Consent Order to Aid Public Comment, *In the Matter of Reed Elsevier and ChoicePoint*, File No. 081-0133 (Sept. 16, 2008) at 2-3, https://www.ftc.gov/sites/default/files/documents/cases/2008/09/080916reedelseviercpanal.pdf.

5 Analysis of Agreement Containing Consent Order to Aid Public Comment, *In the Matter of Nielsen Holdings N.V. and Arbitron Inc.*, File No. 131-0058 (Sept. 20, 2013) at 3, https://www.ftc.gov/sites/default/files/documents/cases/2013/09/130920nielsenarbitronanalysis.pdf.

6 Id. at 2.

7 Statement of the Fed. Trade Comm'n, *In the Matter of Nielsen Holdings N.V. and Arbitron Inc.*, File No. 131-0058, at 1 (Sept. 20, 2013), http://www.ftc.gov/system/files/documents/cases/140228nielsenholdingstatement.pdf.

8 McNamee, as quoted in Ip, *The Antitrust Case Against Facebook, Google, Amazon and Apple*, Wall St. J., Jan. 16, 2018, https://www.wsj.com/articles/the-antitrust-case-against-facebook-google-amazon-and-apple-1516121561.

9 See Schumpeter, Capitalism, Socialism and Democracy, VIII (3d ed. 1950).

10 Arrow, *Economic Welfare and the Allocation of Resources for Invention*, *in* The Rate and Direction of Inventive Activity: Economic and Social Factors 609 (1962), as cited in David McGowan, *Innovation, Uncertainty, and Stability in Antitrust Law*, 16 Berkeley Tech. L.J. 729, 732 (2001).

11 Note that a monopolist would still have an incentive to innovate defensively if it anticipates that another firm could successfully innovate and displace its current market position. At the same time, depending on market characteristics, a monopolist may believe that it has sufficient time to identify innovative competitive threats and copy or coopt them before an entrant gains a substantial market presence.

increase innovative activity."[12]

Antitrust enforcers should and do incorporate innovation effects into our analysis, and the U.S. antitrust agencies' revised 2010 *Horizontal Merger Guidelines* include a section that specifically addresses innovation effects.[13] Innovation in the merger context may be a non-price dimension of current competition. It may also be an important factor in assessing the prospects for future competition, particularly where a firm is planning to enter a market with a new technology.

One argument made against aggressive antitrust enforcement in digital merger cases is that competition enforcers are unlikely to be able to assess the competitive effects of a particular transaction with sufficient accuracy and across a sufficiently long time horizon to justify antitrust intervention. While digital markets are often dynamic and fast-moving, the underlying market structure in these markets can prove to be remarkably durable – particularly once a firm achieves a dominant position. The dynamic nature of a market is not, by itself, a good reason for refraining from aggressive antitrust enforcement in these markets.

Issues of both innovation and market dynamism were front and center in the U.S. DOJ's challenge to Bazaarvoice's consummated acquisition of PowerReviews, a case that involved online product review and ratings platforms. The DOJ alleged that the two companies had previously engaged in "feature driven one-upmanship," and that the transaction "significantly reduced incentives to . . . invest in innovation."[14] An exhibit featured company executives commenting on how Bazaarvoice and PowerReviews had "pushed each other to innovate in ways that help[ed] consumers and retailers."[15]

The court in *Bazaarvoice* acknowledged that the social commerce industry was "at an early stage of development, rapidly evolving, fragmented, and subject to potential disruption by technological innovations" and that "the future composition of the industry as a whole is unpredictable."[16] Judge Orrick held, however, that "while Bazaarvoice indisputably operates in a dynamic and evolving field, it did not present evidence that the evolving nature of the market itself precludes the merger's likely anticompetitive effects."[17]

The FTC confronted the issue of innovation in the context of two-sided markets in its review of *Zillow-Trulia*. Zillow and Trulia both operated websites and mobile apps that provided consumers with free access to residential real estate listings and information. These consumer-facing offerings made up one side of the two-sided platforms managed by Zillow and Trulia; the companies supported these free offerings by selling advertising products to real estate agents looking to reach those consumers. FTC staff conducted a thorough investigation that yielded some important conclusions. On the paying side of the platform, staff investigated whether a merged Zillow-Trulia could profitably raise advertising prices to real estate agents. The evidence, however, suggested that real estate agents use numerous methods in addition to the platforms operated by Zillow and Trulia to attract customers.[18] Staff also examined whether the merger would reduce the combined entity's incentives to innovate by developing new features attractive to consumers, ultimately concluding that it would not.[19] While the Commission voted unanimously to close that case, if evidence in a future case suggests that a merger is likely to result in negative quality or innovation effects, the mere fact that those effects occur on the "free" side of the market should matter little to an antitrust enforcer.

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12 Syverson, as quoted in McConnell, *Top Economists Debate Competition-Innovation Connection*, Global Competition Rev., Nov. 4, 2016, http://globalcompetitionreview.com/article/1073077/top-economists-debate-competition-innovation-connection.

13 See U.S. Dep't of Justice & Fed. Trade Comm'n, 2010 Horizontal Merger Guidelines § 6.4.

14 Complaint, *U.S. v. Bazaarvoice*, Inc., C-13-0133 ¶¶ 8, 62 (N.D. Cal. Jan. 10, 2013), https://www.justice.gov/atr/case-document/file/488911/download.

15 Plaintiff United States of America's Post-Trial Proposed Findings of Fact ¶ 198, *United States v. Bazaarvoice,* No.13-cv-00133 (N.D. Cal. Jan. 8, 2014) (filed Oct. 31, 2013), http://www.justice.gov/atr/cases/f301400/301437.pdf.

16 *U.S. v. Bazaarvoice*, 2014 U.S. Dist. LEXIS 3284 *34 (N.D. Cal. Jan. 8, 2014).

17 Id. *261.

18 See Statement of Commissioners Ohlhausen, Wright, and McSweeny Concerning Zillow, Inc. / Trulia, Inc., File No. 141-0214 (Feb. 19, 2015), https://www.ftc.gov/system/files/documents/public_statements/625671/150219zillowmko-jdw-tmstmt.pdf.

19 See id.

## IV. SAFEGUARDING POTENTIAL COMPETITION

Enforcers should look closely for evidence that mergers in digital markets may eliminate potential or future competition. The FTC has obtained numerous divestitures over the years in pharmaceutical markets based on potential competition concerns. Notably, the concern in these instances is not that any current measurable competition between the parties will be lost – but rather, that the loss of a potential entrant could lead to less competitive outcomes in the future. As noted above, this is the approach the FTC took in *Nielsen/Arbitron*, a case in which the FTC required a divestiture of competitive assets to protect future competition in the market for cross-platform audience measurement even though the service itself was still in development.

In 2015, the FTC challenged the merger between Steris and Synergy, the second and third-largest sterilization companies in the world. At the time of the merger, Steris was a leading provider of sterilization services in the United States. The Commission alleged that Synergy planned to enter the United States with a promising new x-ray sterilization technology. According to the Commission, the merger would harm future competition by terminating Synergy's entry plans, thereby depriving customers of additional competition and a promising new sterilization technology.[20] The district court judge denied the FTC's request for injunctive relief. There was no dispute that Synergy had engaged in considerable planning to enter the U.S. market, nor that Synergy's decision to abandon those efforts came only after the company agreed to merge with Steris. The district court disagreed with the FTC, however, that the merger played a role in Synergy's change of heart. It thus held that the FTC had failed to show that Synergy "probably would have entered the U.S. contract sterilization market . . . within a reasonable period of time" absent the merger.[21]

Several commentators have suggested that the U.S. antitrust agencies haven't been aggressive enough in blocking acquisitions by dominant firms in the digital space. Some have gone so far as to call on the FTC to "put a hold on all future mergers and acquisitions by Facebook – and potentially Google and Amazon."[22]

The FTC lacks the authority to categorically ban or "put a hold on" acquisitions by individual companies. Moreover, the *Steris* case illustrates the practical limitations of potential competition doctrine under the Clayton Act from a litigation perspective. The FTC lost that case even though the potential competitor was a large, established company with over half a billion in annual revenues that had engaged in definitive planning to enter the market at issue. Quite often, acquisitions in digital markets involve start-ups that have no or negligible revenues and no concrete plans to challenge the incumbent directly.

One concern in digital markets is that a powerful incumbent will identify firms that may pose only a small risk of potentially challenging its dominant position and acquire them. Let's say a dominant digital incumbent acquires 20 firms, each with just a five percent chance of someday competing directly against it. Much of the debate in this area has to do with disagreement over how *much* of a threat the upstart must present to the current incumbent to justify blocking a merger. If the question is whether it is probable or likely that any *individual* firm would have directly challenged the incumbent, the answer is clearly no.

At the same time, if we look at the twenty acquisitions collectively, there's a roughly 64 percent chance that at least *one* of those firms would have grown to challenge the incumbent but for its acquisition. Looking at each acquisition individually under Section 7 of the Clayton Act is likely to miss the forest for the trees.

To the extent that the acquiring firm possesses monopoly power in a relevant market, that firm's acquisitions should be evaluated as potential Sherman Act Section 2 violations. In 2017, the FTC challenged Mallinckrodt ADR's acquisition of synthetic therapeutic hormone assets from Novartis under Section 2. The FTC's complaint referred to the acquisition as a "defensive move" by Mallinckrodt to "extinguish[] a

20 Complaint, *In the Matter of Steris Corp. and Synergy Health PLC*, Dkt. No. 9365 ¶¶ 68-70 (May 29, 2015), https://www.ftc.gov/system/files/documents/cases/150529sterissynergypart3cmpt.pdf.

21 *FTC v. Steris Corp.*, 133 F. Supp. 3d 962, 978 (N. D. Ohio 2015).

22 Lynn & Stoller, *How to Stop Google and Facebook from Becoming Even More Powerful*, The Guardian, Nov. 2, 2017, https://www.theguardian.com/commentisfree/2017/nov/02/facebook-google-monopoly-companies.

nascent competitive threat to its monopoly" for a therapeutic hormone product used to treat rare but serious disorders.[23] To settle the charges, Mallinckrodt agreed to pay $100 million and to grant a license to a third party to develop the synthetic assets.[24] While that case did not involve digital markets, it is a model for how the agencies should evaluate acquisitions involving dominant digital firms.

Provided the acquirer possesses monopoly power, the acquisition of a potential competitor is properly held to a considerably stricter standard under Section 2 of the Sherman Act than it would be under Section 7 of the Clayton Act. Areeda and Hovenkamp advocate for a "relatively severe approach" in this situation with a presumption of illegality:

> It will commonly be difficult if not impossible to prove that a firm is a "unique" and "truly probable" potential entrant. And even if it seems clearly to be one of several firms that are "equally probable" potential entrants, it is important to preserve all those significant possibilities of eroding the monopoly and to prevent possible reinforcement of the monopolist's position via the assets acquired. Accordingly, we would adopt a relatively severe approach to holders of significant monopoly power: the acquisition of any firm that has the economic capabilities for entry and is a more-than-fanciful possible entrant is presumptively anticompetitive, unless the acquired firm is no different in these respects from many other firms.[25]

Several points are worth highlighting. First, "more-than-fanciful" is a low bar. Evidence that a dominant digital firm was motivated by "defensive" reasons alone might show that the competitive threat posed by the acquired firm was "more than fanciful." Second, the acquired firm need not represent a truly unique threat to trigger condemnation; even if there are "several" firms more or less equally situated, the acquisition would still be presumed illegal. The burden would be on the incumbent to prove that there are in fact "many" firms that are indistinguishable from the acquired firm from a competitive perspective. More generally, this approach reflects a focus on preserving the *possibilities* of future competition and a concern that acquisitions by a monopolist may strengthen barriers to entry and make it more difficult for other firms to challenge the monopolist's position.

The challenge, from a litigation perspective, is to show that the dominant digital firm possesses monopoly power in some relevant market. Demonstrating "monopoly power" under U.S. case law is more art than science. Courts have generally held that a market share of 70 percent is sufficient to establish a *prima facie* case of monopoly power.[26] But courts have also found monopoly power for shares between 40 and 70 percent based on additional factors, such as strength of competition, entry barriers, and the ability to sustain supracompetitive profits. Entry barriers may be unusually high in digital markets given strong network effects and the self-reinforcing cycle of proprietary data aggregation and increasing analytics sophistication. Whereas the standard economic assumption is that the consolidation of power will attract new entry, statements by private equity and venture capital investors suggest that the consolidation of power in digital markets may actually chase capital away. Competition enforcers should be prepared to explain these unique features of digital markets to courts. We believe that they counsel in favor of challenging mergers in digital markets on Section 2 potential competition grounds even when the acquirer's nominal share is substantially below 70 percent, depending of course on the facts of the specific case.

Given the substantial difference between the standards applicable to a potential competition challenge under Section 7 of the Clayton Act versus Section 2 of the Sherman Act, certain problematic acquisitions may fall through the cracks. An acquirer may be dominant, but yet not quite a "monopolist" in the eyes of a court, and the prospects for future direct entry may be possible, but not quite "reasonably probable." If courts prove reluctant to recognize the unique features of digital markets and are overly restrictive in recognizing the harm associated with the loss of potential competition, a legislative solution may be required. That solution could involve explicitly recognizing and strengthening the actual potential competition doctrine under the Clayton Act (particularly given that the Supreme Court has failed to endorse the doctrine). Or it might involve clarifying the indirect evidence necessary to establish "monopoly" power under Section 2 of the Sherman Act. Finally, the FTC could potentially examine serial defensive acquisitions by a dominant digital firm as a course of conduct under its Section 5 "unfair method of competition" authority.

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23 Complaint, *In the Matter of Mallinckrodt Ard Inc.*, Civil Action No. 1:17-cv-00120 ¶¶ 1, 8 (Jan. 18, 2017), https://www.ftc.gov/system/files/documents/cases/170118mallinckrodt_complaint_public.pdf.

24 See Press Release, Fed. Trade Comm'n, Mallinckrodt Will Pay $100 Million to Settle FTC, State Charges It Illegally Maintained its Monopoly of Specialty Drug Used to Treat Infants (Jan. 18, 2017), https://www.ftc.gov/news-events/press-releases/2017/01/mallinckrodt-will-pay-100-million-settle-ftc-state-charges-it.

25 Areeda & Hovenkamp, Antitrust Law: An Analysis of Antitrust Principles and their Application ¶ 701d (4th ed. 2015).

26 See ABA Section of Antitrust Law, Antitrust Law Developments 230 (8th ed. 2017).

There would be costs associated with a more aggressive approach towards potential competition. Acquisitions may generate efficiencies. And the ability of startups to "cash in" by selling to an incumbent may itself motivate some innovation. As Areeda & Hovenkamp explain, "if a dominant firm habitually purchases new rivals at attractive prices, investors would have an added incentive to enter."[27] Some argue that it would be shortsighted and harmful to block this avenue of monetization based on uncertain forecasts of whether a particular firm might, one day, grow to challenge its acquirer.

Nonetheless, as Carl Shaprio notes in the draft of a forthcoming paper, "there would be a big payoff in terms of competition and innovation if the DOJ and FTC could selectively prevent mergers that serve to solidify the positions of leading incumbent firms, including dominant technology firms, by eliminating future challengers."[28] The difficulty of identifying those mergers does not counsel against bringing *any* challenges in the face of uncertainty. Shapiro explains that "[s]ound competition policy would tolerate some false positives – blocking mergers involving targets, only to find that they do not grow to challenge the incumbent – in order to avoid some false negatives – allowing mergers that eliminate targets that would indeed have grown to challenge the dominant incumbent."[29] We agree and believe that such an approach is consistent with the underlying purpose of the antitrust laws. We would also note, in the context of digital markets, that the elimination of a firm that *would have* challenged a dominant incumbent is likely to be far more consequential from a competition perspective than the consumer welfare loss associated with an individual false positive.

## V. CONCLUSION

Digital markets are often characterized by network effects, which can lead to barriers to entry that grow over time rather than diminishing. Close consideration of data, innovation, and potential competition are important for sound enforcement in digital markets. It is also worth thinking about other ways to reduce barriers to entry in these markets. For example, increasing consumers' rights to and control over their data might foster competition to improve quality of services in order to retain customer data. Regulations permitting consumers to withdraw their data in a usable format when they want to use a different service may also lower barriers to entry for less data-rich innovators. While these possibilities are outside the field of antitrust, antitrust is not a panacea for ensuring competitive markets. Well-tailored regulation can work hand in hand with antitrust enforcement to foster competition and innovation.

27 Areeda & Hovenkamp, supra ¶ 701b.

28 Shapiro, "Antitrust in an Age of Populism," (Oct. 24, 2017, forthcoming in *International Journal of Industrial Organization*), http://faculty.haas.berkeley.edu/shapiro/antitrustpopulism.pdf.

29 Id.