

Antitrust in Digital Markets

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Antitrust law has largely failed to address the challenges posed by digital markets. At the turn of the millennium, the antitrust enterprise engaged in intense debate over whether antitrust doctrine, much of it developed during a bygone era of smokestack industries, could or should evolve to address digital markets. Eventually, a consensus emerged: although the basic doctrine is supple enough to apply to new technologies, courts and enforcers should adopt a defendant-friendly, hands-off approach.

But this pro-defendant position is deeply—and dangerously—flawed. Economic theory, empirical research, and extant judicial and regulatory authority all contradict the prevailing views regarding power, conduct, and efficiencies in digital markets. Far from being self-correcting, digital markets facilitate the creation and maintenance of uniquely durable market power. Digital markets are conducive to complex anticompetitive strategies that have largely escaped regulatory scrutiny. Perhaps most importantly, digital-market conduct tends to lack significant offsetting efficiencies.

As a result, the consensus view is ripe for rejection. Digital markets do require a different approach, but it must be uniquely interventionist, not unusually laissez-faire. This Article concludes by offering a set of doctrinal and policy proposals aimed at creating a more robust, vigilant, and welfare-enhancing digital antitrust enterprise.

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I was surprised to read . . . that there are criticisms being made of Amazon, Microsoft, and Google. I was shocked. That's blasphemy.

—Richard Posner¹

INTRODUCTION

At the turn of the millennium, the antitrust enterprise underwent an intense bout of soul-searching. This introspective turn was prompted by the high-profile litigation against Microsoft in the United States, one of the earliest instances of antitrust law being used to target strategic conduct in a digital market.² Was antitrust doctrine—developed primarily in a bygone era of smokestack industries—appropriately designed for the digital age?

In a widely influential essay published in 2000, Richard Posner provided what became the consensus view: “[A]ntitrust doctrine is supple enough . . . to take in stride the competitive issues presented by the new economy.”³ Even so, he argued, the risk of false positives dictates a hands-off approach to digital markets.⁴ Posner’s position, in other words, was that digital markets are not novel enough to warrant explicitly different antitrust rules, but *are* novel enough to warrant unusually defendant-friendly treatment.

No explicitly different rules for digital markets emerged in subsequent years,⁵ and there is widespread agreement that none are

1. Stigler Center, *Judge Richard A. Posner in Conversation with Professor Luigi Zingales*, YOUTUBE (Mar. 30, 2017), https://youtu.be/JRCm_gJ2EOk [<https://perma.cc/5K5G-RN2R>] (remarks of Judge Posner at 5:26).

2. Most previous antitrust cases involving personal computers had involved, at least in part, hardware markets. See *United States v. Microsoft Corp. (Microsoft III)*, 253 F.3d 34, 91 (D.C. Cir. 2001). The Microsoft antitrust litigation, which culminated in 2001 with the D.C. Circuit’s *Microsoft III* decision, immediately produced an outpouring of scholarly analysis. See, e.g., Ronald A. Cass & Keith N. Hylton, *Antitrust Intent*, 74 S. CAL. L. REV. 657 (2001); Robin Cooper Feldman, *Defensive Leveraging in Antitrust*, 87 GEO. L.J. 2079 (1999); Franklin M. Fisher, *The IBM and Microsoft Cases: What’s the Difference?*, 90 AM. ECON. REV. 180 (2000); Howard A. Shelanski & J. Gregory Sidak, *Antitrust Divestiture in Network Industries*, 68 U. CHI. L. REV. 1 (2001); Philip J. Weiser, *The Internet, Innovation, and Intellectual Property Policy*, 103 COLUM. L. REV. 534 (2003).

3. Richard A. Posner, *Antitrust in the New Economy*, 68 ANTITRUST L.J. 925, 925 (2001). Posner’s essay was, as of September 2019, one of the twelve most-downloaded antitrust papers of all time on the Social Science Research Network. *Antitrust & Regulated Industries eJournals*, SSRN, https://papers.ssrn.com/sol3/JELJOUR_Results.cfm?form_name=journalBrowse&journal_id=305488&SortOrder=numHits%20desc (last visited Sept. 3, 2019) [<https://perma.cc/D687-MGG9>].

4. On the influential error-cost framework for antitrust analysis, see Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1 (1984).

5. The lone judicial exception was *Microsoft III* itself, in which the D.C. Circuit decided that the markets at issue were novel enough to warrant rule-of-reason treatment for a tying arrangement, instead of the long-standing *quasi-per-se*-illegality rule. 253 F.3d at 89–90.

needed.⁶ Of course, analysts continue to take the unique characteristics of each relevant market into account on a case-by-case basis.⁷ But the rules themselves do not (in theory, at least) vary based on the type of market at issue.⁸

Posner's preferred pro-defendant position also became the order of the day. Since the U.S. Court of Appeals for the D.C. Circuit issued its *Microsoft III* decision in 2001, the United States has experienced a near-total lack of antitrust enforcement in digital markets.⁹ The general consensus seems to be that power in digital markets will be rare

6. See, e.g., ANTITRUST MODERNIZATION COMM'N, REPORT AND RECOMMENDATIONS 9 (2007), https://govinfo.library.unt.edu/amc/report_recommendation/amc_final_report.pdf [<https://perma.cc/4PL6-KDQC>] ("There is no need to revise the antitrust laws to apply different rules to industries in which innovation, intellectual property, and technological change are central features."); Adam Candebub, *Behavioral Economics, Internet Search, and Antitrust*, 9 I/S: J.L. & POL'Y FOR INFO. SOC'Y 407, 408 (2014) ("[R]egulators appear to rely upon traditional approaches, not specific to online behavior, assuming that market behavior online is not distinguishable from behavior in the brick and mortar world."); Timothy J. Muris & Jonathan E. Nuechterlein, *Antitrust in the Internet Era: The Legacy of United States v. A&P*, at i (Geo. Mason Univ. Law & Econ. Research Paper Series, Paper No. 18-15, 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3186569 [<https://perma.cc/87SN-Q7TN>] ("[A]ntitrust doctrine does not need an overhaul. It is . . . flexible enough to address any monopoly abuses in today's economy."); Pablo Ibáñez Colomo, A Contribution to 'Shaping Competition Policy in the Era of Digitisation' 2 (Sept. 30, 2018) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3257998 [<https://perma.cc/3PQZ-2DF9>] ("The phenomena that have been identified in digital markets are in no way unique to them."). Mainstream institutional analysts generally favor a transsubstantive approach to crafting antitrust doctrine. Consider, for example, the influential Horizontal Merger Guidelines ("HMGs") promulgated jointly by the U.S. Department of Justice ("DOJ") and Federal Trade Commission ("FTC"): the HMGs purport to apply to *all* horizontal mergers that fall under these Agencies' broad purview. U.S. DEPT OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES 1 (2010), <https://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf> [<https://perma.cc/Q67D-LNV8>] [hereinafter HMGs]. Similarly, the "rule of reason" that dominates modern civil conduct analysis purports to offer a unified framework that applies regardless of the relevant market at issue. See, e.g., PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION ¶ 1500 (2017) ("Ever since [the U.S. Supreme Court's 1911 *Standard Oil* decision], antitrust law has been governed by the 'rule of reason.'").

7. See, e.g., ANTITRUST MODERNIZATION COMM'N, *supra* note 6 ("In industries in which innovation, intellectual property, and technological change are central features, just as in other industries, antitrust enforcers should . . . ensure proper attention to economic and other characteristics of particular industries that may, depending on the facts at issue, have an important bearing on a valid antitrust analysis.").

8. Whether this universality remains (or, indeed, was ever) an accurate description of antitrust in action is debatable. See, e.g., Spencer Weber Waller, *How Much of Health Care Antitrust Is Really Antitrust?*, 48 LOY. U. CHI. L.J. 643 (2017) (documenting "distortions" of antitrust law as applied to healthcare industries); see also Mark A. Lemley, *Industry-Specific Antitrust Policy for Innovation*, 2011 COLUM. BUS. L. REV. 637 (arguing in favor of industry-specific antitrust policy as a means of better promoting dynamic efficiency). That said, analysts from the centrist, see, for example, Daniel A. Crane, *Antitrust Modesty*, 105 MICH. L. REV. 1193, 1195 (2007) ("Hovenkamp defends the antitrust status quo . . ."), to the right, see, for example, Joshua D. Wright, *The Roberts Court and the Chicago School of Antitrust: The 2006 Term and Beyond*, 3 COMP. POL'Y INT'L 24, 54 (2007) (noting the Roberts Court's "familiarity and expertise with [antitrust] subject matter"), appear to be basically satisfied with the current state of antitrust doctrine.

9. The few exceptions are discussed *infra*, in Sections III.A and IV.A.

and fleeting, and that enforcement efforts would entail a prohibitively high risk of chilling innovation.¹⁰

But is the consensus correct? Or are digital markets fundamentally different, such that different rules are appropriate? Moreover, even if antitrust rules are “supple enough” to address digital markets, is purposefully lax enforcement an effective means of promoting the goals of antitrust law?

Today, antitrust doctrine finds itself again confronting a “new economy.” The concerns about desktop computer operating systems that motivated the Microsoft litigation appear ever more quaint. Computers are vastly more capable, yet can now fit into users’ pockets and be worn as bracelets or eyeglasses.¹¹ Software is increasingly delivered as a service, rather than installed as a product.¹² Is antitrust doctrine “supple enough” to address manipulation of search results?¹³ Algorithm-based collusion?¹⁴ Markets without prices?¹⁵ Markets wherein digital data acts as currency,¹⁶ a competitive advantage,¹⁷ a means of increasing product quality,¹⁸ or all three at once?¹⁹

10. See, e.g., Geoffrey A. Manne & Joshua D. Wright, *Google and the Limits of Antitrust: The Case Against the Case Against Google*, 34 HARV. J.L. & PUB. POL’Y 171, 178 (2011) (denouncing even the theoretical possibility of a case against Google as creating a “substantial risk for a false positive” that would chill innovation).

11. See generally WEARABLES, <http://www.wearables.com/> (last visited Sept. 10, 2019) [<https://perma.cc/X9WV-A8BQ>] (displaying news regarding and product reviews of wearable technology).

12. See Jennifer Daskal, *The Un-Territoriality of Data*, 125 YALE L.J. 326, 329–31 (2015) (highlighting the unique intangibility of data).

13. See, e.g., James D. Ratliff & Daniel L. Rubinfeld, *Is There a Market for Organic Search Engine Results and Can Their Manipulation Give Rise to Antitrust Liability?*, 10 J. COMPETITION L. & ECON. 517 (2014).

14. See Salil K. Mehra, *Antitrust and the Robo-Seller: Competition in the Time of Algorithms*, 100 MINN. L. REV. 1323 (2016).

15. See, e.g., Magali Eben, *Market Definition and Free Online Services: The Prospect of Personal Data as Price*, 14 I/S: J.L. & POL’Y FOR INFO. SOC’Y 227 (2018); David S. Evans, *The Antitrust Economics of Free*, 7 COMPETITION POL’Y INT’L 71 (2011); Michal S. Gal & Daniel L. Rubinfeld, *The Hidden Costs of Free Goods: Implications for Antitrust Enforcement*, 80 ANTITRUST L.J. 521 (2016); Salil K. Mehra, *Competition Law for a Post-Scarcity World*, 4 TEX. A&M L. REV. 1 (2016); John M. Newman, *Antitrust in Zero-Price Markets: Applications*, 94 WASH U. L. REV. 49 (2016) [hereinafter Newman, *Applications*]; John M. Newman, *Antitrust in Zero-Price Markets: Foundations*, 164 U. PA. L. REV. 149 (2015) [hereinafter Newman, *Foundations*].

16. See Newman, *Foundations*, *supra* note 15.

17. MAURICE E. STUCKE & ALLEN P. GRUNES, *BIG DATA AND COMPETITION POLICY* § 4.34 (2016) (“Big Data has important competitive and privacy implications. Companies will compete for a data-advantage.”).

18. See James C. Cooper, *Privacy and Antitrust: Underpants Gnomes, the First Amendment, and Subjectivity*, 20 GEO. MASON L. REV. 1129, 1129 (2013) (“The analogy between privacy and quality begins to break down once we recognize that, as opposed to selecting lower quality levels to enjoy lower costs, firms invest in collecting and analyzing data to improve content and to enhance matching between sellers and consumers who have heterogeneous tastes for privacy.”).

19. See *id.*

This Article contends that digital markets are different, such that they deserve—indeed, demand—unique treatment under the antitrust laws. Three concepts are of primary importance to the institutional design of modern antitrust: power, harm, and efficiencies. In each of these areas, proponents of the status quo have overlooked, ignored, and sometimes distorted reality.

Part I of this Article demonstrates that digital markets facilitate uniquely durable market power, in ways that reach far beyond what previous analyses have imagined.²⁰ Part II develops novel theories of digital-market harm and—proceeding beyond theory—draws on original analysis of dominant firms’ investor statements to identify real-world instances in which such harms appear to have occurred.²¹ Part II also identifies multiple features that render digital markets uniquely susceptible to more familiar types of harm.²² Through examination and application of the extant case law and formal agency guidance, Part III establishes that digital-market conduct tends to lack any significant offsetting efficiencies.²³

All of this suggests that the pro-defendant status quo is deeply misguided. The balance of error costs is the inverse of what orthodox analysts previously assumed: false positives are relatively rare and costless, while false negatives are relatively common and costly. Thus, digital markets require a more interventionist approach.

Unfortunately, the antitrust enterprise has thus far chosen to maintain a hands-off approach to digital markets. Digital defendants have received, and continue to receive, a free pass in the form of de jure and de facto immunity and leniency.²⁴ This Article proposes an immediate reversal of that mistaken course. The ground beneath antitrust law’s consumer-welfare standard—firmly settled for decades—may be shifting.²⁵ But regardless of which goal is preferred,

20. See *infra* Part I.

21. See *infra* Sections II.A–B.

22. See *infra* Sections II.C–D.

23. See *infra* Part III.

24. For an excellent description of how regulatory action (and nonaction) can produce de facto legal immunity, see Rory Van Loo, *Regulatory Monitors: Policing Firms in the Compliance Era*, 119 COLUM. L. REV. 369 (2019); see also Rory Van Loo, *The Missing Regulatory State: Monitoring Businesses in an Age of Surveillance*, 72 VAND. L. REV. 1563 (2019).

25. See, e.g., Mark Glick, *The Unsound Theory Behind the Consumer (and Total) Welfare Goal in Antitrust*, 63 ANTITRUST BULL. 455 (2018) (identifying the deeply flawed theoretical underpinnings of the consumer-welfare standard); Marshall Steinbaum, *The Consumer Welfare Standard Is an Outdated Holdover from a Discredited Economic Theory*, ROOSEVELT INST. BLOG (Dec. 11, 2017), <http://rooseveltinstitute.org/consumer-welfare-standard-outdated-holdover-discredited-economic-theory/> [<https://perma.cc/TL43-QVK3>] (“This week, the Senate Judiciary Committee is holding a hearing about the consumer welfare standard to determine whether it is outdated or remains the worthwhile core principle of antitrust enforcement. The hearing comes amid widespread questioning about antitrust’s effectiveness in recent decades.”).

the status quo has frequently failed in this vital area, and it continues to do so with alarming regularity.²⁶ The laissez-faire approach advocated for by scholars and adopted by courts and enforcers has allowed potentially massive harms to go unchecked.

Part IV of this Article offers a set of concrete policy proposals, ranging from agency enforcement strategies to statutory and quasi-regulatory solutions, designed to invert the current hands-off approach in favor of welfare-enhancing vigilance. If the antitrust enterprise is to play a meaningful role in years to come, it must evolve to address the unique challenges posed by digital markets.

I. DURABLE MARKET POWER

Many digital markets are highly concentrated, with a single dominant firm possessing a massive share. Various industry sources have identified Google, for example, as owning more than 90% of the “search” or “search engine” market.²⁷ In the first quarter of 2019, Amazon reportedly captured 74% of all e-commerce transactions in the United States.²⁸ Its share of certain categories like e-books may be higher still.²⁹ As of October 2018, Facebook, Instagram, and Messenger were the three largest (in terms of users) mobile social networking apps in the United States.³⁰ All three are controlled by the same firm: Facebook, Inc.³¹ Facebook’s dominance extends to the advertiser side of its social networking platforms, where it has consistently held a market share of more than 70%.³² Even global geographic markets are susceptible to surprisingly high concentration levels: by 2016, for

26. See, e.g., John M. Newman, *Complex Antitrust Harm in Platform Markets*, CPI ANTITRUST CHRON. 5–8 (May 2017), <https://www.competitionpolicyinternational.com/complex-antitrust-harm-in-platform-markets-2/> [<https://perma.cc/8CDY-EP82>] (identifying the FTC’s unconditional clearance of the Zillow/Trulia acquisition as a likely false negative).

27. See, e.g., *Search Engine Market Share Worldwide: June 2018-June 2019*, STATCOUNTER, <http://gs.statcounter.com/search-engine-market-share> (last visited July 27, 2019) [<https://perma.cc/MN6S-R7LQ>].

28. Kimberly Collins, *Google + Amazon: Data on Market Share, Trends, Searches from Jumpshot*, SEARCH ENGINE WATCH (Aug. 1, 2019), <https://searchenginewatch.com/2019/07/30/google-and-amazon-jumpshot-data-market-share-trends-and-searches/> [<https://perma.cc/EUD4-KYAA>].

29. Phil Wahba, *Walmart is Bringing the Fight to Amazon’s Turf: E-books*, FORTUNE (Jan. 26, 2018), <http://fortune.com/2018/01/25/walmart-ebooks/> [<https://perma.cc/P7KN-875U>].

30. *Top U.S. Mobile Social Apps by Users 2018*, STATISTA, <https://www.statista.com/statistics/248074/most-popular-us-social-networking-apps-ranked-by-audience/> (last visited July 27, 2019) [<https://perma.cc/3DNK-R69Y>].

31. *Id.* Another Facebook-owned service, WhatsApp, ranked in the top ten. *Id.*

32. *U.S. Facebook Social Network Ad Spend Share 2018*, STATISTA, <https://www.statista.com/statistics/241805/market-share-of-facebooks-us-social-network-ad-revenue/> (last visited Sept. 10, 2019) [<https://perma.cc/69YD-W9BQ>].

example, Google's Android had captured 87.5% of the worldwide market for smartphone operating systems.³³

Even in narrower digital spaces, which are less likely to attract negative headlines and neo-Brandeisian condemnation,³⁴ massive market shares are often the norm. In the market for digital real estate portals, for example, Zillow Group self-professedly controls 67% across all platforms and 78% of mobile users.³⁵ The market for online mapping services is similarly dominated by a single firm, Alphabet, with its popular Google Maps.³⁶ Though often overlooked due to the rise in popularity of smartphones, Microsoft continues to enjoy a nearly 80% market share of desktop operating systems³⁷ two decades after a federal district court first held that Microsoft had monopolized that market.

Certain unique features of digital markets allow for such high concentration levels. Some are relatively well-recognized. Some, however—particularly the crucial role of human attention—have only recently begun to be noticed by antitrust analysts.³⁸ The following discussion identifies several contributing factors that can lead to uniquely durable power in digital markets. It also considers and rejects the primary arguments made by anti-enforcement scholars and stakeholders.

A. Scarce Attention and Ecosystem Building

As the amount of available information continues to increase exponentially, humans' cognitive resources become ever-increasingly overloaded. The implications for market analysis and policy design are

33. Arjun Kharpal, *Google Android Hits Market Share Record with Nearly 9 in Every 10 Smartphones Using It*, CNBC (Nov. 3, 2016, 5:03 AM), <https://www.cnbc.com/2016/11/03/google-android-hits-market-share-record-with-nearly-9-in-every-10-smartphones-using-it.html> [<https://perma.cc/GAD7-TTDDK>].

34. For an impassioned attack on the neo-Brandeisian movement, see Herbert J. Hovenkamp, *Is Antitrust's Consumer Welfare Principle Imperiled?* (Univ. Pa. L. Sch. Inst. for Law & Econ., Research Paper No. 18-15, 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3197329 [<https://perma.cc/W6J9-YT6S>].

35. Newman, *supra* note 26, at 5.

36. One recent user survey revealed that nearly 80% of Android OS users cite Google Maps as their "favorite" map application. Greg Sterling, *New Survey Says Google Maps Favored by Nearly 70 Percent of iPhone Users*, SEARCH ENGINE LAND (June 15, 2016, 11:37 AM), <https://searchengineland.com/new-survey-says-google-maps-favored-nearly-70-percent-iphone-users-251955> [<https://perma.cc/6Z4K-N3EA>]. Nearly 70% of Apple iPhone users also preferred Google Maps over Apple Maps. *Id.*

37. *Desktop Operating System Market Share Worldwide: June 2018-June 2019*, STATCOUNTER, <http://gs.statcounter.com/os-market-share/desktop/worldwide> (last visited July 27, 2019) [<https://perma.cc/5XA8-S27Z>].

38. See, e.g., Newman, *Foundations, supra* note 15 (developing the concept of "attention costs"); Tim Wu, *Blind Spot: The Attention Economy and the Law*, ANTITRUST L.J. (forthcoming), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2941094 [<https://perma.cc/2F6T-AAE6>].

enormous. Humans possess limited amounts of cognitive capacity.³⁹ On an individual level, this scarcity manifests in two ways. First, mental processes can be overloaded by a surplus of distractions being present at a given time.⁴⁰ Second, engaging in mental processes can reduce available cognitive capacity over time, much like driving a vehicle depletes its available fuel reserves.⁴¹

In the world as it existed for untold millennia predating the Digital Era, information was relatively scarce.⁴² As a result, human attention and available cognitive load were relatively abundant.⁴³ The limited nature of attention presented relatively few problems for decisionmaking.⁴⁴ But in just a few short decades, that relationship inverted. Today, information has become abundant, and attention has grown scarce.⁴⁵ By drastically lowering the marginal costs of reproducing and distributing information, the Internet became “the world’s largest copy machine.”⁴⁶ Viewed through this lens, the convergence of digital computing and networking was perhaps the single most important event in the evolution of information technology.⁴⁷

The rising tide of information quickly became a flood. With it, the limited nature of attention was brought forcefully, even jarringly, to prominence.⁴⁸ For the first time in human history, the amount of

39. Herbert A. Simon, *Designing Organizations for an Information-Rich World*, in COMPUTERS, COMMUNICATIONS, AND THE PUBLIC INTEREST 37, 40–41 (M. Greenberger ed., 1971).

40. See, e.g., Daniel T. Gilbert & J. Gregory Hixon, *The Trouble of Thinking: Activation and Application of Stereotypic Beliefs*, 60 J. PERSONALITY & SOC. PSYCHOL. 509, 509 (1991) (summarizing empirical findings that cognitive “busyness,” in the form of rehearsing an eight-digit number, can increase the likelihood that a test subject would apply an “activated” racial stereotype).

41. See, e.g., Roy F. Baumeister et al., *The Strength Model of Self-Control*, 16 CURRENT DIRECTIONS PSYCHOL. SCI. 351, 351 (2007) (“We observed that self-control appeared vulnerable to deterioration over time from repeated exertions, resembling a muscle that gets tired.”).

42. See generally TIM WU, *THE ATTENTION MERCHANTS: THE EPIC SCRAMBLE TO GET INSIDE OUR HEADS* (2016) (describing how the progression from print, to broadcast media, to personal computers and mobile phones eventually devoured nearly every available piece of human attention).

43. See Simon, *supra* note 39.

44. See *id.*

45. Prescient observers foresaw that the Internet would drastically accelerate this shift. See, e.g., Today, *Flashback! The Internet in 1995*, YOUTUBE (June 13, 2014), <https://www.youtube.com/watch?v=95-yZ-31j9A> [<https://perma.cc/3YA8-64PT>] (“I have no desire to be a part of the Internet because I feel like I’m so inundated with information all the time that I . . . don’t want more.”).

46. Lena Groeger, *Kevin Kelly’s 6 Words for the Modern Internet*, WIRED (June 22, 2011, 3:17 PM), <https://www.wired.com/2011/06/kevin-kellys-internet-words/> [<https://perma.cc/5DLF-2V9B>].

47. See Damon C. Andrews & John M. Newman, *Personal Jurisdiction and Choice of Law in the Cloud*, 73 MD. L. REV. 313, 322 (2013) (“The importance of the dawn of the Network Era for content, communication, and now computing, cannot be overstated.”).

48. See Simon, *supra* note 39.

information available has swamped our ability to process it.⁴⁹ As distractions increase, decisionmaking changes—and not for the better.⁵⁰ Cognitive load impacts human behavior in ways that antitrust analysts have never before grappled with, having never needed to do so.⁵¹ Nowhere are those impacts felt as strongly as in digital markets, the central source of information overload in modern society.

1. The Importance of Digital Portals

The downside of information abundance—information overload—prompted the meteoric rise of services that compile and refine information into a more useful finished product. In the past, collection and production were often the most valuable roles played by suppliers. Today's digital-focused firms instead play a reductionist role: they act as portals through which one can access only desired information and services.⁵² The most successful firms are those that offer the lowest-cognitive-burden means of doing so.⁵³

Google's mission statement—to “organize the world's information and make it universally accessible and useful”—reflects the importance of portals in digital markets.⁵⁴ Google Search is a portal, albeit one with explicit designs on becoming *the* portal.⁵⁵ Zillow, the leading online real estate portal, performs a similar function for real estate listings.⁵⁶

49. See, e.g., Ellen P. Goodman, *Media Policy Out of the Box: Content Abundance, Attention Scarcity, and the Failures of Digital Markets*, 19 BERKELEY TECH. L.J. 1389, 1467 (2004) (arguing that information abundance had already led to attention scarcity as early as 2004 and that the resulting overload was producing market failures in digital contexts).

50. See, e.g., 2 DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY § 17:39 (2018) (“When decision makers are under *cognitive load*, that is, they are distracted by other tasks or concerns, they tend to be more likely to rely on judgment shortcuts, including stereotypes, to direct information processing and simplify decisions.”); Alexander Chernev, *When More Is Less and Less Is More: The Role of Ideal Point Availability and Assortment in Consumer Choice*, 30 J. CONSUMER RES. 170 (2003) (identifying the paradox of choice: increasing the number of options available can counterintuitively lead to suboptimal decisionmaking).

51. See Candeub, *supra* note 6, at 410–11.

52. See MARK R. PATTERSON, ANTITRUST LAW IN THE NEW ECONOMY: GOOGLE, YELP, LIBOR, AND THE CONTROL OF INFORMATION 37 (2017); Lina M. Khan, *Three Forms and Sources of Tech Platform Power*, 2 GEO. L. TECH. REV. 325, 326 (2018) (describing the power that large technology companies possess as a “gatekeeping power”).

53. See Candeub, *supra* note 6, at 410–11; cf. Simon, *supra* note 39, at 42 (“An information-processing subsystem . . . will reduce the net demand on the rest of the organization's attention only if it absorbs more information previously received by others than it produces . . .”).

54. *About*, GOOGLE, <https://www.google.com/about/our-company/> (last visited Sept. 11, 2019) [<https://perma.cc/6ZC8-7V33>].

55. See *id.*

56. See Newman, *supra* note 26, at 5.

Somewhat less well-recognized, though no less important, is the portal function served by online retailers like Amazon. As an industry analyst observes, Amazon has “mastered the art of selling me products I just don’t want to think about.”⁵⁷ Of course, Amazon’s Prime subscription service does offer financial benefits. In fact, Amazon has displayed a somewhat unique willingness to forgo profits—and even to incur losses—in order to offer consumers a compelling value proposition.⁵⁸ But Prime’s real attraction may be less financial and more psychological.⁵⁹ It is a portal that offers all-you-can-eat, on-demand, one-click access to anything consumers need—a vital service “in an era of too many choices.”⁶⁰

A substantial portion, perhaps even the lion’s share, of these portals’ power derives from their ability to assess and filter information. A digital portal lowers cognitive burden—and performs that service at a point in history when humans are desperately in need of it.⁶¹ As the flood of available data and information rises ever higher, the power of portals will continue to increase.

Cognitive burden plays another crucial role in digital-portal markets. Not only does it help to explain the rise to prominence of the portal business model, but it also helps to explain why certain portals have emerged as such “sticky” market leaders.⁶² At the same time, it helps to explain why many sectors of the digital economy no longer exhibit much (if any) entry. Choosing and switching among different portals entails cognitive costs.⁶³ Thus, if a given portal is able to acquire a leading position—whether via first-mover advantage, direct or indirect network effects, offering a superior product, or some

57. Geoffrey A. Fowler, *Why You Cannot Quit Amazon Prime—Even if Maybe You Should*, WASH. POST (Jan. 31, 2018), <https://www.washingtonpost.com/news/the-switch/wp/2018/01/31/why-you-cannot-quit-amazon-prime-even-if-maybe-you-should/> [<https://perma.cc/4TQZ-HLBF>].

58. See, e.g., Lina M. Khan, Note, *Amazon’s Antitrust Paradox*, 126 YALE L.J. 710, 746 (2017) (“Amazon has established dominance as an online platform thanks to two elements of its business strategy: a willingness to sustain losses and invest aggressively at the expense of profits, and integration across multiple business lines.”).

59. See, e.g., Fowler, *supra* note 57.

60. *Id.*

61. See Goodman, *supra* note 49, at 1421.

62. On sticky digital services in general, see Paul T. Moura, *The Sticky Case of Sticky Data: An Examination of the Rationale, Legality, and Implementation of a Right to Data Portability Under European Competition Law (2014)* (unpublished MSc Dissertation, London School of Economics), <https://www.lse.ac.uk/media@lse/research/mediaWorkingPapers/MScDissertationSeries/2013/118-Moura.pdf> [<https://perma.cc/JR75-Y2GR>].

63. See, e.g., Daniel C. McFarlane & Kara A. Latorella, *The Scope and Importance of Human Interruption in Human–Computer Interaction Design*, 17 HUM.–COMPUTER INTERACTION 1, 6–7 (2002) (surveying the literature on deleterious effects of interruptions and task-switching).

combination thereof—its advantage is magnified by users’ aversion to the cognitive costs of switching.⁶⁴

2. The Rise of Private Digital Ecosystems

A firm that controls the primary portal to a particular digital product—general search results, for example—can protect its dominant position by creating an ecosystem comprising multiple portals among which users can easily switch. Alphabet-owned Google provides a ready example: As Candeub observes, “Google is more than a search engine. Through its links to services such as news, email, and YouTube, Google provides a gateway to the web that minimizes search time—and thereby the cognitive and time costs of using the web.”⁶⁵

Can creating a private digital ecosystem enhance an incumbent’s market power? Under a traditional antitrust analysis, Google’s acquisition of YouTube may not have appeared problematic. The Federal Trade Commission (“FTC”) cleared the transaction without conditions.⁶⁶ Google, at the time, primarily provided general search results to users and users’ attention to advertisers. YouTube provided video hosting and streaming services to users and users’ attention to advertisers. Standard analysis apparently failed to indicate harm to either customer group.

Using standard market-definition tools, an analyst could easily have concluded that the two firms did not directly compete for users.⁶⁷ General search results and video hosting/streaming services, in other words, may have appeared to constitute distinct antitrust “relevant markets” as that concept is traditionally employed.⁶⁸ If so, the Horizontal Merger Guidelines (“HMGs”) would have indicated that the

64. The dynamic at play is somewhat analogous to the unique power of “default” status in digital contexts. While eye-level shelf space in a brick-and-mortar store attracts around 35% more consumer attention than other shelves, “the first *page* of results on Google Search may receive 99 times more clicks (effectively 9800% more clicks) than the second page of search results.” Cecilia (Yixi) Cheng, *Competition for Defaults: The Fight for Virtual Shelf Space 2–3* (July 26, 2018) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3220267 [<https://perma.cc/7WSJ-9MRU>].

65. Candeub, *supra* note 6, at 410.

66. See Dawn Kawamoto, *Google–YouTube Merger Clears Antitrust Review*, CNET (Nov. 6, 2006, 7:28 AM), <https://www.cnet.com/news/google-youtube-merger-clears-antitrust-review/> [<https://perma.cc/N62E-HJSZ>].

67. An SSNIP-based hypothetical-monopolist test would have been difficult to apply. See Newman, *Applications*, *supra* note 15. But, alternative methodologies are available. The two products offer quite different functional characteristics, a factor the U.S. Supreme Court has relied on when defining markets. See, e.g., *United States v. Grinnell Corp.*, 384 U.S. 563, 574 (1966) (finding that different levels of reliability as among different property-protection services justified a market definition narrower than the entire universe of property-protection services).

68. See HMGs, *supra* note 6, § 2.1.3.

proposed acquisition presented no competitive concerns vis-à-vis users. Absent competitive overlap, deals are exceedingly unlikely to draw agency challenges.⁶⁹

As to advertisers, the FTC may have concluded that demand was fairly elastic as between different digital avenues for display—perhaps even as between online and offline delivery.⁷⁰ If so, standard antitrust analysis would likely have suggested a very broad relevant market. As a result, the merged firm would have appeared to possess a miniscule market share, and the HMGs would have again indicated that the proposed acquisition presented no competitive concerns.⁷¹ The deal would have appeared benign, as it apparently did to the FTC.⁷²

But Google may well have acquired YouTube in order to create a “lowest cognitive load” ecosystem around its core area of dominance, general search results.⁷³ By lowering the cognitive load required to switch among portals, the YouTube acquisition may have entrenched, and even enhanced, Google’s dominance in its core search portal. Put another way, Google may have been constructing a moat around its castle. Industry observers have suggested as much.⁷⁴

The larger the private ecosystem, the lower the cognitive cost of switching among internally owned portals—but the larger the cost of switching to an externally owned portal. Digital markets are uniquely rife with opportunities to engage in this sort of ecosystem building. Amazon, Apple, Facebook, and Google, for example, have all made substantial expenditures in order to launch personal digital assistants (“PDAs”) like Alexa and Siri.⁷⁵ The competitive goal is to lower the amount of cognitive load required by users to navigate everyday decisionmaking: “[T]hese firms’ plans make clear they envision a future where humans do less thinking when it comes to the small decisions

69. *But see* Complaint, United States v. AT&T Inc., 310 F. Supp. 3d 161 (D.D.C. 2018) (No. 17-2511), 2017 WL 5564815 (challenging a vertical merger).

70. *See, e.g.*, Avi Goldfarb & Catherine Tucker, *Advertising Bans and the Substitutability of Online and Offline Advertising*, 48 J. MARKETING RES. 207 (2011).

71. *See* HMGs, *supra* note 6, § 5.

72. *See* Kawamoto, *supra* note 66.

73. Analogizing to graph theory, Candeub calls this a “minimum spanning tree.” Candeub, *supra* note 6, at 410.

74. Erick Schonfeld, *Search Is Google’s Castle, Everything Else Is a Moat*, TECHCRUNCH (Mar. 25, 2011), <https://techcrunch.com/2011/03/25/search-googles-castle-moat/> [<https://perma.cc/FQ2P-3PGR>].

75. Maurice E. Stucke & Ariel Ezechai, *Is Your Digital Assistant Devious?* 3 (Univ. of Tenn. Coll. of Law, Research Paper No. 304, 2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2828117 [<https://perma.cc/M8E8-LNJV>].

that make up daily life.”⁷⁶ PDA-based digital ecosystems allow users to interact with a firm’s various consumer-facing products more seamlessly.⁷⁷ Yet PDAs can also act as defensive bulwarks around core strongholds, further entrenching their creators’ dominant market positions.⁷⁸

For another example, consider Google’s expansion into the mobile operating system (“OS”) market via its acquisition of Android. The purchase price, estimated at \$50 million, likely allowed the deal to escape formal agency antitrust review.⁷⁹ Even if the deal had triggered a review, however, traditional antitrust analysis might well have yielded no competitive concerns. Given their different functional characteristics, general search results and mobile OSs would likely constitute different relevant markets.⁸⁰ But Google’s acquisition of Android proved to be a pivotal step toward building out Google’s proprietary ecosystem. In a world of scarce attention, owning a mobile OS—even one touted as being “free” to smartphone manufacturers—has proven quite valuable. Android became the dominant mobile OS available for installation on non-Apple smartphones.⁸¹ Google was able to use its control over mobile OSs to make its own search service the default on the vast majority of the world’s smartphones.⁸² In a world of scarce attention, “defaults matter.”⁸³ This is particularly true in digital markets.⁸⁴

76. Danny Yadron, *Google Assistant Takes on Amazon and Apple to Be the Ultimate Digital Butler*, GUARDIAN (May 18, 2016, 2:17 PM), <https://www.theguardian.com/technology/2016/may/18/google-home-assistant-amazon-echo-apple-siri> [<https://perma.cc/J84F-42NW>].

77. PDAs may also accelerate interbrand substitution, by automating and therefore lowering the search and switching costs required for consumers to substitute one seller’s consumer goods for another. See Rory Van Loo, *Digital Market Perfection*, 117 MICH. L. REV. 815 (2019).

78. See Stucke & Ezrachi, *supra* note 75, at 4 (“As our personal assistant becomes our default, so too will its operating platform’s applications and functions.”).

79. In 2005, the relevant Hart-Scott-Rodino Act threshold for reporting deals appears to have been \$53.1 million. See Wayne Dale Collins & Kenneth S. Prince, *Revised HSR Act Thresholds*, SHEARMAN & STERLING LLP 1, 1 (2005), https://www.shearman.com/~media/Files/News-Insights/Publications/2005/02/Revised-HSR-Act-Thresholds/Files/Download-PDF-Revised-HSR-Act-Thresholds/FileAttachment/AT_022005.pdf [<https://perma.cc/F4L5-3FEQ>].

80. See, e.g., *United States v. Grinnell Corp.*, 384 U.S. 563, 574 (1966) (finding functional differences relevant to product-market definition); *Microsoft III*, 253 F.3d 34, 91 (D.C. Cir. 2001) (similarly relying on different functional characteristics to exclude products from the candidate relevant market).

81. See Benjamin Edelman, *Does Google Leverage Market Power Through Tying and Bundling?*, 11 J. COMP. L. & ECON. 365, 389 (2015) (“Google Android is the dominant mobile OS available for installation on third-party hardware.”).

82. See *id.* at 390 (“They noted that Google made its own search service the default, and they said individual users found it ‘virtually impossible’ to switch.”).

83. *Id.* at 371.

84. See Cheng, *supra* note 64, at 2 (“[E]merging evidence about consumer behavior indicates that the role of defaults can apply with particular force in the online sector.”). Self-driving cars may present yet another opportunity for digital-focused firms to build out their ecosystems. Google,

Many digital-focused firms rely heavily on a strategy of acquisitions. But their targets typically compete in separate relevant markets, at least as traditional antitrust analysts employ that concept. As long as the target does not compete directly against the dominant firm's core business (and even sometimes when the target does so⁸⁵), modern antitrust law has had little to say. Yet private ecosystem building carries with it the obvious likelihood of increased entry barriers, market concentration, reduced innovation, and assorted other welfare harms.

B. Barriers to Entry

Having noted the important role played by consumers' attention in digital markets, let us turn now to more traditional entry barriers. Many prominent commentators and powerful institutional actors have claimed that digital markets are characterized by uniquely low entry barriers.⁸⁶ Multiple U.S. courts have taken this view,⁸⁷ as have dozens of enforcers and legal scholars.⁸⁸ But, even assuming this claim was once correct, is it accurate today?

for example, invested more than \$1.1 billion over a six-year period in efforts to develop a self-driving car. Danielle Muoio, *Google Spent at Least \$1.1 Billion on Self-Driving Cars Before It Became Waymo*, BUS. INSIDER (Sept. 15, 2017), <http://www.businessinsider.com/google-self-driving-car-investment-exceeds-1-billion-2017-9> [<https://perma.cc/8FUB-AQD9>]. Under a traditional antitrust analysis, self-driving cars and Google's core competitive product, general search, would likely constitute separate product markets. Even a narrower focus on self-driving cars' OSs would not likely change this outcome. Yet, here again, the opportunity and incentive to engage in ecosystem building is readily apparent. Time spent driving is one of the few remaining untapped reserves of human attention. The firm that is able to mine such a reserve would gain a substantial competitive edge in the race to build out its digital ecosystem. *Cf.* WU, *supra* note 42, at 309–10 (analogizing the development of smartphones to the way that fracking allowed the recovery of substantial oil reserves previously thought to be inaccessible).

85. See *infra* Section II.B (describing Facebook's acquisition of Instagram and Zillow's acquisition of Trulia).

86. *E.g.*, Posner, *supra* note 3, at 938: "Because of the extraordinary pace of innovation, . . . the extraordinary amount of capital that is available . . . , and the rapidity with which new networks that are primarily electronic can be put into service, the networks that have emerged in the new economy do not seem particularly secure against competition."

87. See, *e.g.*, *Am. Library Ass'n v. United States*, 201 F. Supp. 2d 401, 416 (E.D. Pa. 2002), *rev'd*, 539 U.S. 194 (2003) ("The Internet presents low entry barriers to anyone who wishes to provide or distribute information."); *Shea ex rel. Am. Reporter v. Reno*, 930 F. Supp. 916, 929 (S.D.N.Y. 1996) ("[T]he Internet presents extremely low entry barriers to those who wish to convey Internet content or gain access to it."); *Am. Civil Liberties Union v. Reno*, 929 F. Supp. 824, 877 (E.D. Pa. 1996) ("[T]he Internet presents very low barriers to entry.").

88. See, *e.g.*, Ilene Knable Gotts & Joseph G. Krauss, *Antitrust Review of New Economy Acquisitions*, 15 ANTITRUST 59, 59 (2000) (referring to "the low entry barriers in the Internet space"); Manne & Wright, *supra* note 10, at 195 (asserting, as to online search, "that competition really is 'just a click away' for a significant number of users"); Henry H. Perritt, Jr., *Cyberspace and State Sovereignty*, 3 J. INT'L LEGAL STUD. 155, 161 (1997) ("[T]he most important differentiating charac-

1. Dispelling the Myth of the Garage

Silicon Valley's many enthusiastic proponents paint idyllic visions of digital markets as incredibly dynamic, susceptible to complete creative disruption by a few hackers in a garage. As with most fallacies, this one contains a kernel of truth: Google, Microsoft, Amazon, and others got their start in actual garages.⁸⁹ But these firms did not develop into giants in their respective garages. Untold billions of dollars in sunk costs, acquisitions of direct rivals, leveraging of massive proprietary datasets—the story of their growth is the story of overcoming (and erecting) staggeringly high barriers to entry. The Aluminum Company of America, a monopolist of an earlier time, likewise started in a garage.⁹⁰ Alcoa was nonetheless able to dominate a vital industry for decades.⁹¹ Humble historical origins do not indicate that entry is easy in the present.

Many of the entry barriers that exist in offline markets are often present in digital markets as well. Complex digital products can “require years of time, considerable expertise, and hundreds of millions of dollars (much of this in the form of sunk costs coupled with substantial risk of [loss]) to launch and maintain.”⁹²

teristic of the Internet is its extremely low barriers to entry.”); D. Daniel Sokol & Roisin Comerford, *Antitrust and Regulating Big Data*, 23 GEO. MASON L. REV. 1129, 1136 (2016) (“Data driven markets are typically characterized by low entry barriers . . .”); Deborah T. Tate, *Net Neutrality 10 Years Later: A Still Unconvinced Commissioner*, 66 FED. COMM. L.J. 509, 518 (2014) (“The Internet’s low entry costs and lack of barriers to create, upload, start up, and sell goods and services are especially beneficial to women and minorities with less access to capital than established firms.”); Yana Welinder, *A Face Tells More Than a Thousand Posts: Developing Face Recognition Privacy in Social Networks*, 26 HARV. J.L. & TECH. 165, 189 (2012) (“[T]he Internet offers a platform for projects that require very little capital investment—thus lowering the barriers to entry.”); *Barriers to Entry, Exit and Mobility*, ECONOMIST (July 13, 2009), <http://www.economist.com/node/14025576> [<https://perma.cc/8JBU-G222>] (“Old ideas about barriers to entry were given a new twist with the development of e-commerce. By using the internet, firms can sometimes surmount traditional barriers with an ease not previously available.”); Renato Nazzini, *Online Platforms and Antitrust: Evolution or Revolution?*, CPI ANTITRUST CHRON. 1, 4 (Sept. 2018), <https://www.competitionpolicyinternational.com/wp-content/uploads/2018/09/CPI-Nazzini.pdf> [<https://perma.cc/FMJ8-MB4M>] (“Evidence does indeed suggest that barriers to entry in online markets are not necessarily significant.”).

89. Drew Hendricks, *6 \$25 Billion Companies That Started in a Garage*, INC. (July 24, 2014), <https://www.inc.com/drew-hendricks/6-25-billion-companies-that-started-in-a-garage.html> [<https://perma.cc/KCE8-HZCY>] (“Apple is another insanely popular international brand, but few people realize that it was started in a California garage by three young men.”).

90. *Our History*, ALCOA, <http://www.alcoa.com/global/en/who-we-are/history/default.asp> (last visited July 28, 2019) [<https://perma.cc/M5LH-QDG9>] (“Working with his sister Julia in a shed attached to the family home in Oberlin, Ohio, chemistry student Charles Martin Hall discovers a way to produce aluminum through electrolysis that drastically reduces its cost.”).

91. See *United States v. Aluminum Co. of Am.*, 148 F.2d 416 (2d Cir. 1945) (discussing Alcoa’s monopoly power).

92. John M. Newman, *The Myth of Free*, 86 GEO. WASH. L. REV. 513, 545 (2018).

Moreover, the proper focus is not merely on whether some type of rudimentary entry can occur. Instead, the question is whether the type of entry that would provide a meaningful competitive check on dominant firms can occur.⁹³ In many digital markets, such meaningful entry is surprisingly difficult.

Consider, for example, Google Maps, the leading online map application. Google developed the present iteration of Maps over a period of several years by acquiring several smaller firms at considerable cost. These acquisition targets included Waze, a direct horizontal rival with access to a unique treasure trove of self-reported user data.⁹⁴ Developing Maps also required creating specially outfitted camera cars; collecting more than 21.5 billion megabytes of street-view imagery from around the world; employing computer-vision techniques to transform satellite and aerial imagery into three-dimensional building shapes;⁹⁵ combining multiple sources of place data to identify the locations of bars, restaurants, shops, and even clustered “areas of interest”;⁹⁶ leveraging proprietary user location data to determine how busy a given bar or restaurant is in real time;⁹⁷ and much more.

In theory, it may be possible for a small team of programmers to rapidly develop a rudimentary online mapping service that would “compete” with Google Maps. But developing a meaningful constraint on Google Maps would be—to put it mildly—no small task. As of 2018, Apple had more than \$285 billion in cash on hand,⁹⁸ as well as unique access to millions of individuals’ personal data via its own proprietary mobile OS. Yet even Apple, with all of its distinct competitive advantages, struggled mightily to gain traction against Google Maps.

93. See HMGs, *supra* note 6, § 9 (“The prospect of entry into the relevant market will alleviate concerns about adverse competitive effects only if such entry will deter or counteract any competitive effects of concern so the merger will not substantially harm customers.”).

94. See Rip Empson, *WTF Is Waze and Why Did Google Just Pay a Billion+ for It?*, TECHCRUNCH (June 11, 2013), <https://techcrunch.com/2013/06/11/behind-the-maps-whats-in-a-waze-and-why-did-google-just-pay-a-billion-for-it/> [<https://perma.cc/G4MY-NKLS>] (“Waze relies on its millions of users to act as traffic cops.”).

95. Justin O’Beirne, *Google Maps’s Moat: How Far Ahead of Apple Maps Is Google Maps?*, JUSTIN O’BIERNE (2017), <https://www.justinobeirne.com/google-maps-moat/> [<https://perma.cc/6YF5-5SKG>] (providing a multitude of examples in support of Google Map’s superiority to other map companies).

96. *Id.*

97. *Popular Times, Wait Times, and Visit Duration*, GOOGLE, <https://support.google.com/business/answer/6263531?hl=en> (last visited Sept. 11, 2019) [<https://perma.cc/2A9L-75KA>].

98. Matt Hunter & Anita Balakrishnan, *Apple’s Cash Pile Hits \$285.1 Billion, a Record*, CNBC (Feb. 1, 2018), <https://www.cnbc.com/2018/02/01/apple-earnings-q1-2018-how-much-money-does-apple-have.html> [<https://perma.cc/W93R-NVZ4>] (“Apple’s cash reserves hit \$285.1 billion in the quarter ended in December.”).

The launch of Apple Maps in 2012 was widely derided as a “debacle.”⁹⁹ Four years later, nearly 70% of Apple’s own smartphone users still identified Google Maps as their preferred map application.¹⁰⁰

2. Network Effects in Mature Markets

Network effects often constitute a particularly salient barrier to entering digital markets.¹⁰¹ Network effects pose relatively little difficulty to first movers. It is subsequent rivals who must offer not only a product that is better *ceteris paribus*, but a product that is so clearly better as to outweigh the incumbent’s network advantage. Nonetheless, anti-enforcement commentators often downplay the importance of network effects by pointing out high-profile examples of disruptive entry in networked markets.¹⁰² Such arguments overlook or ignore an important point: while a given market is still in flux, network effects are relatively less powerful. But when the market has matured, they become much more salient.¹⁰³ Landline telephone markets, for example, were at first characterized by intense rivalry, but the mature industry grew increasingly stagnant under the heavy hand of AT&T.¹⁰⁴

Digital markets offer many modern analogues. These markets are often characterized by positive direct and indirect network effects. Social networks attract new users by presenting them with the opportunity to interact with other users.¹⁰⁵ The value of a given network to users thus increases along with the size of the network, an example

99. David Phelan, *Are We There Yet—Apple Maps Comes of Age. Oh, Finally*, FORBES (May 14, 2017), <https://www.forbes.com/sites/davidphelan/2017/05/14/are-we-there-yet-apple-maps-comes-of-age-oh-finally/#1da5360b4550> [<https://perma.cc/FS24-94TU>]. Characters from the sitcom *Silicon Valley* once mocked a fictional new product by calling it “Apple Maps bad.” Damesh Kwanti, *Silicon Valley—“It’s Apple Maps Bad”*, YOUTUBE (May 18, 2015), <https://www.youtube.com/watch?v=tVq1wgIN62E> [<https://perma.cc/8ZSZ-SXYE>].

100. Greg Sterling, *New Survey Says Google Maps Favored by Nearly 70 Percent of iPhone Users*, SEARCH ENGINE LAND (June 15, 2016), <https://searchengineland.com/new-survey-says-google-maps-favored-nearly-70-percent-iphone-users-251955> [<https://perma.cc/7BK2-ZGL2>].

101. Stucke and Grunes offer a comprehensive analysis of network effects in data-driven markets, many of which involve “free” products. STUCKE & GRUNES, *supra* note 17, § 11.06 (discussing the way network effects work in companies like Facebook and Whatsapp). Posner was aware of this dynamic, but underappreciated its power. *See* Posner, *supra* note 3, at 929.

102. *See infra* Section I.D (discussing the myth of constant creative destruction).

103. Spencer Weber Waller, *Antitrust and Social Networking*, 90 N.C. L. REV. 1771, 1788 (2012) (“[F]ew network effects exist until that critical mass is achieved and, until then, create little value to the network.”).

104. *See, e.g.*, *Hush-A-Phone Corp. v. United States*, 238 F.2d 266 (D.C. Cir. 1956) (reversing a Federal Communications Commission decision that had previously upheld AT&T’s right to prevent a small device manufacturer from selling a telephone attachment designed to muffle background noise).

105. Waller, *supra* note 103, at 1788 (discussing the importance of “a critical mass of users” for social media websites).

of direct positive network effects.¹⁰⁶ Some social networks allow third parties to develop compatible applications, thereby introducing the possibility of indirect network effects. Online search engines may enjoy a type of indirect network effect if “users [do] not consider, when deciding whether to run another query, that the results of their query and subsequent clicking behavior on suggested links are stored by the search engine.”¹⁰⁷ Thus, each “next” user benefits from the behavior of past users.¹⁰⁸

At the time Posner published his influential essay, many digital markets were in their infancy. Today, those markets have matured considerably. Network effects can, at any stage of a given market’s lifecycle, exert a powerful influence on its direction and performance. In mature markets, those effects tend to be stronger still.

3. The Long Shadow of Digital Giants

Due in no small part to the entry barriers described above, digital giants cast long shadows. Even the mere presence—and certainly the activities—of an incumbent like Google or Facebook in a given market can hinder entry and stifle innovation. This dynamic may not be entirely unique to, but does appear to be particularly acute in, digital markets. Yet, perhaps because collecting sufficiently rigorous empirical evidence of consumer-welfare harm is difficult in this context,¹⁰⁹ it has gone largely overlooked.

The evidence gathered to date suggests that the presence of Google or Facebook in a market can hinder innovation in that market. Recent empirical work indicates that after Google vertically integrates into the market for an app that runs on its Android mobile OS, the developers of existing apps in that market reduce their own efforts to continue innovating.¹¹⁰ More broadly, angel and seed investment

106. See STUCKE & GRUNES, *supra* note 17, § 11.09 (“The more users a texting or social network has, the more attractive it becomes to new members looking to connect with them.”).

107. Cédric Argenton & Jens Prüfer, *Search Engine Competition with Network Externalities*, 8 J. COMP. L. & ECON. 73, 76 (2012).

108. *Id.*

109. See Kevin Caves & Hal Singer, *When the Econometrician Shrugged: Identifying and Plugging Gaps in the Consumer Welfare Standard*, 26 GEO. MASON L. REV. (forthcoming 2019) (manuscript at 7), http://georgemasonlawreview.org/wp-content/uploads/2019/08/26-2_CavesSinger-Web.pdf [<https://perma.cc/MJ6Z-SCQC>] (“The empirical evidence that edge innovation has been diminished by dominant tech platforms is partially anecdotal and not dispositive but is nevertheless consistent with our prior that there is a gap in antitrust enforcement relating to innovation harms.”).

110. Wen Wen & Feng Zhu, *Threat of Platform-Owner Entry and Complementor Responses: Evidence from the Mobile App Market*, 40 STRATEGIC MGMT. J. 1336 (2019). The author thanks Hal Singer for the central insight, as well as the pointer to Wen and Zhu’s work.

activity in the United States has declined since 2015, both in terms of overall deal value and (more precipitously) number of deals closed.¹¹¹ As market concentration continues to rise, in part due to relatively lax antitrust enforcement, start-up rates are declining across all sectors of the economy.¹¹²

A particular type of strategic conduct by an incumbent—even if legal—can also disincentivize entry and innovation. Dominant digital firms are in a unique position to clone, or mimic, small startups' features.¹¹³ Over time, such free-riding may dissuade startups from even attempting entry. A hypothetical illustrates the problem. Suppose a new platform, *E*, enters the social networking space with hopes of attracting users via an attractive, unique feature. If the social networking space were characterized by vigorous competition, *E* might stand a good chance of success. Even if an existing rival were to mimic *E*'s feature, *E* would remain the first mover as to that feature.¹¹⁴ The would-be copycat has no unique strategic advantage to exploit, leaving *E* free to compete on the merits.

But, in the real world, the general social networking space has matured and yielded one dominant player, Facebook, Inc. Copycat strategies are far more likely to be successful when employed by a dominant incumbent with an installed base of over two billion users.¹¹⁵ The saga of Snapchat, a multimedia messaging app, provides a ready example. Noticing the traction Snapchat was gaining among teenage

111. See MasonLEC, *Panel 4: What Are the Goals of Antitrust? What Should They Be?*, VIMEO (Feb. 19, 2018), <https://vimeo.com/256528231> [<https://perma.cc/2QM3-4SW5>] (remarks of Hal Singer at 32:29).

112. See JAY SHAMBAUGH ET AL., THE STATE OF COMPETITION AND DYNAMISM: FACTS ABOUT CONCENTRATION, START-UPS, AND RELATED POLICIES 9, 19 (2018), https://www.brookings.edu/wp-content/uploads/2018/06/ES_THP_20180611_CompetitionFacts_20180611.pdf [<https://perma.cc/U48R-3DFE>] (“At the same time that markets are becoming more concentrated, they are also becoming less dynamic: the number of business start-ups is falling.”).

113. See generally Josh Obear, Note, *Move Fast and Take Things: Facebook and Predatory Copying*, 2018 COLUM. BUS. L. REV. 994, 994 (describing Facebook’s “copycat strategy”).

114. On first-mover advantages, see ROBERT S. PINDYCK & DANIEL L. RUBINFELD, MICROECONOMICS 496 (7th ed. 2009) (“In this product-choice game, there is a clear advantage to moving first.”).

115. See Anita Balakrishnan, *2 Billion People Now Use Facebook Each Month, CEO Mark Zuckerberg Says*, CNBC (June 27, 2017), <https://www.cnbc.com/2017/06/27/how-many-users-does-facebook-have-2-billion-a-month-ceo-mark-zuckerberg-says.html> [<https://perma.cc/PA75-MRES>]. Facebook’s ability to spot nascent rivals—and then neutralize them via acquisition and/or mimicry—has likely been accelerated by its growing ability to monitor even non-Facebook-users’ habits. Sarah Perez, *Facebook Is Pushing Its Data-Tracking Onavo VPN Within Its Main Mobile App*, TECHCRUNCH (Feb. 12, 2018), <https://techcrunch.com/2018/02/12/facebook-starts-pushing-its-data-tracking-onavo-vpn-within-its-main-mobile-app/> [<https://perma.cc/RGC3-NUCR>]. Onavo (yet another Facebook acquisition) offers users a VPN service—yet also allows Facebook to track those users’ online activities. *Id.* Industry analysts pin Facebook’s successful mimicry of tbb, Snapchat, and others in part on the Onavo-derived ability to monitor users in real-time, even when they are not using Facebook. *Id.*

users, Facebook offered to buy it.¹¹⁶ When that attempt failed, Facebook turned instead to mimicking Snapchat's features.¹¹⁷ Google reportedly offered to buy Snapchat as well,¹¹⁸ then similarly pivoted toward mimicry.¹¹⁹ Multiple analysts credited these tactics with depressing Snapchat's user growth and share price.¹²⁰

Emerging empirical evidence suggests this is not an isolated example.¹²¹ After surveying dozens of investors and entrepreneurs, one technology reporter concluded that Facebook's free-riding "is having a profound impact on innovation in Silicon Valley, by creating a strong disincentive for investors and start-ups to put money and effort into creating products Facebook might copy."¹²² According to a founder, Amazon casts a similarly long shadow: "People are not getting funded because Amazon might one day compete with them."¹²³ At a University of Chicago panel discussion, venture capitalist Albert Wenger depicted the shadows around digital giants like Google, Facebook, and Amazon as "Kill Zones," that is, "areas not worth operating or investing in, since defeat is guaranteed."¹²⁴

116. See Olivia Solon, *As Tech Companies Get Richer, Is It 'Game Over' for Startups?*, GUARDIAN (Oct. 20, 2017), <https://www.theguardian.com/technology/2017/oct/20/tech-startups-facebook-amazon-google-apple> [https://perma.cc/4YB5-8ZGX].

117. *Id.*

118. Alex Heath, *Insiders Say Google Was Interested in Buying Snap for At Least \$30 Billion Last Year*, BUS. INSIDER (Aug. 3, 2017), <http://www.businessinsider.com/google-offered-to-buy-snapchat-for-at-least-30-in-early-2016-insiders-say-2017-8> [https://perma.cc/7G2M-RW4Q].

119. Todd Spangler, *Google Is Reportedly Copying Snapchat's Discover Feature*, VARIETY (Aug. 4, 2017), <https://variety.com/2017/digital/news/google-copying-snapchat-discover-1202516102/> [https://perma.cc/A2JF-6MA9] ("Google is working on a project to let publishers package content for mobile devices in a way that mimics Snapchat Discover . . .").

120. *E.g.*, Paul R. La Monica, *The Worst May Be Over for Snapchat: Even a Short Seller Likes It*, CNN MONEY (June 1, 2018, 1:30 PM), <http://money.cnn.com/2018/06/01/investing/snapchat-stock-citron/index.html> [https://perma.cc/A4RG-7L68] ("The biggest complaint that many investors have is that there's not much unique about Snapchat. Instagram has copied many of its features—and posted stronger user growth as a result.").

121. Elizabeth Dwoskin, *Facebook's Willingness to Copy Rivals' Apps Seen as Hurting Innovation*, WASH. POST (Aug. 10, 2017), https://www.washingtonpost.com/business/economy/facebook-willingness-to-copy-rivals-apps-seen-as-hurting-innovation/2017/08/10/ea7188ea-7df6-11e7-a669-b400c5c7e1cc_story.html [https://perma.cc/QR9P-SN5U].

122. *Id.*; see also *American Tech Giants Are Making Life Tough for Startups*, ECONOMIST (June 2, 2018), <https://www.economist.com/business/2018/06/02/american-tech-giants-are-making-life-tough-for-startups> [https://perma.cc/Q88J-R3R2] ("The dominance of the big platforms has had a meaningful effect on the entrepreneurial culture of Silicon Valley.").

123. Solon, *supra* note 116.

124. Asher Schecter, *Google and Facebook's 'Kill Zone': 'We've Taken the Focus Off of Rewarding Genius and Innovation to Rewarding Capital and Scale'*, PROMARKET (May 25, 2018), <https://promarket.org/google-facebooks-kill-zone-weve-taken-focus-off-rewarding-genius-innovation-rewarding-capital-scale/> [https://perma.cc/AL3M-S7GJ].

C. Competition Is More Than “Just a Click Away”

Nevertheless, anti-enforcement scholars and stakeholders contend that digital markets should evade antitrust scrutiny because “competition is just [a] click away.”¹²⁵ The claim is, essentially, that demand is extremely elastic in digital markets because low switching costs allow customers to substitute easily among competing products.¹²⁶

Is competition really “just a click away” in digital markets? As with the Myth of the Garage, this platitude turns out to be a half-truth at best. In a technical sense, of course, a user can physically click (or tap) her way from one search engine, social network, or online retailer to the next. But in reality, the cost of that click can be much higher than orthodox antitrust analysts have previously imagined.

If an incumbent has created the lowest-cognitive-load ecosystem, a user will find it relatively easy to click from (for example) Google’s search engine to Google’s email service to Google’s video-sharing platform to Google’s map application, and so forth. But those are not the “clicks” anti-enforcement commentators invoke to defend their pro-defendant position. The sort of click that would matter—away from using one search engine and toward using another—entails a level of cognitive burden much higher than what is required to simply click around within Google’s ecosystem.¹²⁷

125. Adam Kovacevich, *Google’s Approach to Competition*, GOOGLE PUB. POL’Y BLOG (May 8, 2009), <https://publicpolicy.googleblog.com/2009/05/googles-approach-to-competition.html> [<https://perma.cc/WYP8-4UKD>]; e.g., Manne & Wright, *supra* note 10, at 25 (quoting with approval a website’s claim that “as Google so often asserts, . . . competition really is ‘just a click away’ for a significant number of users”); see also Jonathan M. Barnett, *Thanks to Smart Antitrust, Whole Foods Is No Longer ‘Whole Paycheck’*, THE HILL (Apr. 8, 2019), <https://thehill.com/opinion/finance/437775-thank-smart-antitrust-for-your-cheaper-whole-foods-tab> [<https://perma.cc/8LYT-98BL>] (“Google’s almost 90-percent share of the U.S. search engine market . . . may be a cause for concern but only if users cannot easily switch . . .”). Perhaps unsurprisingly, this argument has appeared in articles funded by Google. See, e.g., Manne & Wright, *supra* note 10, at 171 n.** (acknowledging a grant from the Google-sponsored International Center for Law & Economics). But even those making pro-regulatory arguments occasionally reiterate this mantra. See, e.g., Rory Van Loo, *Helping Buyers Beware: The Need for Supervision of Big Retail*, 163 U. PA. L. REV. 1311, 1319 (2015) (describing online shopping as “the most seemingly consumer-friendly venue . . . , where comparison information is just a click away”). That minor quibble aside, Van Loo’s article is an excellent treatment of a neglected topic.

126. Pasquale dubs this narrative “[t]he Myth of Easy Platform Switching.” Frank Pasquale, *When Antitrust Becomes Pro-Trust: The Digital Deformation of U.S. Competition Policy*, CPI ANTITRUST CHRON., 1, 2 (May 2017), <https://www.competitionpolicyinternational.com/wp-content/uploads/2017/05/CPI-Pasquale.pdf> [<https://perma.cc/6QNE-RVQ2>].

127. Candeub, *supra* note 6, at 432 (“The Article does not suggest Google is behaving according to System 1. Rather, it is cleverly taking advantage of System 1 behavior of consumers who face high search costs.”).

Lack of data portability may raise users' switching costs higher still. To illustrate, consider a given social network user.¹²⁸ At the outset, the user makes her choice among the available networks based on a range of quality and price considerations.¹²⁹ But once an individual starts to use a particular service, that service becomes a repository for her photos, conversations, status updates, contacts, and more.¹³⁰ Unless her data is portable across platforms—and it generally is not¹³¹—she cannot easily switch to a different social network, even if she would otherwise prefer to do so.¹³² Moreover, because most digital products can be improved by personalization based on past user experience, the passage of time makes it increasingly difficult for rival networks to offer an equally valuable product.¹³³ The argument that “competition is just a click away” in digital markets is overly simplistic, bordering on naive.

An even more fundamental problem becomes apparent when this argument is taken to its logical conclusion. Stripped to its essence, the argument is that low switching costs indicate that there is no need for antitrust oversight. But low switching costs in a market do not eliminate the need for antitrust. To illustrate, consider the U.S. market for toothpaste, a familiar consumer good. Grocery stores, pharmacies, and other retailers typically display multiple branded and generic toothpaste varieties in very close proximity to one another, such that one variety may be no more than a few inches from another. To consumers, then, the cost to switch among varieties is vanishingly low. Suppose now that Colgate were to propose a merger with Crest, a deal

128. On data portability and social networks, see Waller, *supra* note 103, at 1789 (explaining how “sticky” Facebook is with its users).

129. See Peter Swire & Yianni Lagos, *Why the Right to Data Portability Likely Reduces Consumer Welfare: Antitrust and Privacy Critique*, 72 MD. L. REV. 335, 338 (2013) (“[U]sers start to use one service, such as Facebook, and then find it costly or technically difficult to shift to another service, even if they prefer the other service.”).

130. See *id.* at 337–38 (explaining the lack of data portability for companies like Facebook).

131. At least in the United States it is not. The European Union’s General Data Protection Regulation provides for some limited rights to data portability. See, e.g., Gabe Maldoff, *Top 10 Operational Impacts of the GDPR: Part 6—RTBF and Data Portability*, INT’L ASS’N PRIVACY PROF. (Jan. 25, 2016), <https://iapp.org/news/a/top-10-operational-impacts-of-the-gdpr-part-6-rtbf-and-data-portability/> [<https://perma.cc/7UP6-L96K>] (“[T]he right to data portability requires controllers to provide personal data to the data subject in a commonly used format and to transfer that data to another controller if the data subject so requests.”).

132. Swire & Lagos, *supra* note 129, at 338 (“[U]sers start to use one service, such as Facebook, and then find it costly or technically difficult to shift to another service, even if they prefer the other service.”). To be clear, the thrust of the present argument is not that antitrust law has never confronted high switching costs. It has. See *id.* at 339 (“The concerns about lock-in and high switching costs have been extensively addressed in antitrust law.”). The point is instead to identify switching costs as a key problem with assuming that users can freely substitute among digital products.

133. Pasquale, *supra* note 126, at 3 (discussing user “lock-in” and the obstacles associated with switching platforms after years of use).

that would give the combined firm more than 75% of the U.S. toothpaste market.¹³⁴ No serious analyst would suggest that enforcers should simply turn a blind eye to such a transaction. The same is true of digital markets. Even if switching costs were exceedingly low, the potential for anticompetitive conduct and effects would remain.

D. The Vanishing Gale of Creative Destruction

Despite the fact that digital markets frequently exhibit high barriers to entry, skeptics of antitrust enforcement have one card left to play: they portray digital markets as nonetheless being characterized by intense innovative rivalry.¹³⁵ As a result, the argument runs, antitrust would move too slowly to correct any problems and is unnecessary because the relevant markets will quickly correct themselves.¹³⁶ Under this view, the lure of monopoly profits will inevitably attract disruptive upstarts seeking to replace dominant incumbents—and monopoly is actually good and desirable because it is necessary to spur technological progress.¹³⁷ This unorthodox vision traces its roots to Schumpeter's decades-old invocation of “creative destruction,”¹³⁸ which became a favorite trope among those associated with the Austrian and Chicago schools.¹³⁹

For empirical support, proponents of this digital creative-destruction narrative commonly point to Facebook's “disruption” of MySpace and Google's “disruption” of Yahoo.¹⁴⁰ Thus, for example,

134. See Avalon Jones, *Colgate–Palmolive Competitive Analysis*, SLIDESHARE (Mar. 1, 2016), <https://www.slideshare.net/AvalonJones/colgatepalmolive-competitive-analysis> [<https://perma.cc/ETD7-W8YH>].

135. See, e.g., Alan Devlin, *Antitrust as Regulation*, 49 SAN DIEGO L. REV. 823, 868 (2012) (“[E]nforcement actions against dominant-firm conduct in high-technology markets display unique difficulties.”); *id.* at 869 (“[E]nforcers should err on the side of nonenforcement in situations of uncertainty.”); Glen O. Robinson, *On Refusing to Deal with Rivals*, 87 CORNELL L. REV. 1177, 1230 (2002) (concluding that refusals to deal should never give rise to antitrust liability).

136. See, e.g., Daniel A. Crane, *Optimizing Private Antitrust Enforcement*, 63 VAND. L. REV. 675, 688 (2010) (observing that “some economists in the Schumpeterian tradition doubt whether antitrust law does much to advance consumer welfare”).

137. See, e.g., *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2003) (“The opportunity to charge monopoly prices—at least for a short period—is what attracts ‘business acumen’ in the first place; it induces risk taking that produces innovation and economic growth.”).

138. See JOSEPH A. SCHUMPETER, *CAPITALISM, SOCIALISM AND DEMOCRACY* 81–87 (3d ed. 1950, rev. ed. 2008) (describing a process of “creative destruction” and calling it “the essential fact about capitalism”).

139. Posner, unsurprisingly, is a member of the latter group. See Posner, *supra* note 3, at 930 (“The gale of creative destruction that Schumpeter described . . . may be the reality of the new economy.”).

140. See, e.g., Nicolas Colin, *It's Time for a Real Discussion About Antitrust*, FORBES (Oct. 2, 2018), <https://www.forbes.com/sites/nicolascolin/2018/10/02/its-time-for-a-real-discussion-about->

Robert Bork and Gregory Sidak argued that Google should not face antitrust liability because “[i]t surpassed Yahoo, just as Yahoo surpassed others before it.”¹⁴¹ Put another way, if Facebook and Google could supplant their predecessors, they must themselves face the constant risk of disruption—their perch at the top is a precarious one.

Let us pause to revisit these two commonly cited examples of digital disruption. It is true that Facebook supplanted MySpace as the largest social network—in April 2008.¹⁴² That was, to put it rather mildly, some time ago.¹⁴³ Facebook’s reach continuously expanded during the following decade. As of 2018, Facebook, Inc. controlled the three largest mobile social networking apps in the United States¹⁴⁴ and boasted a combined user base over five times larger than that of its nearest rival.¹⁴⁵ With each passing year, the creative-destruction narrative becomes ever less credible.

The Google example fares even worse. Google was already the world’s second most popular search provider by 2000.¹⁴⁶ That same

antitrust/#7d32cb092086 [https://perma.cc/NPP5-3D54] (“Antitrust doesn’t need to focus on breaking up tech firms . . . [because] users are already able to switch to the competition in an instant, as they’ve demonstrated many times in the past (remember Yahoo?).”); Nazzini, *supra* note 88, at 4 (identifying “Facebook’s success over MySpace in social networks” and “Google’s success over Yahoo! and AltaVista in search” as evidence that barriers to entry in digital markets “are not necessarily significant”); *see also* Swire & Lagos, *supra* note 129, at 358:

In general, a major theme of innovation theory is the Schumpeterian idea of creative destruction. Dynamic competition in the technology space has resulted in ‘successive waves of creative destruction.’ For example, MySpace replaced Friendster as the dominant social network, only for Facebook to later usurp MySpace’s position as the market leader.

(footnotes omitted).

141. Robert H. Bork & J. Gregory Sidak, *What Does the Chicago School Teach About Internet Search and the Antitrust Treatment of Google?*, 8 J. COMPETITION L. & ECON. 663, 666 (2012). It may come as little surprise that their article was funded by Google itself. *See id.* at 663 (“Google commissioned this report, but the views expressed are solely our own.”).

142. Michael Arrington, *Facebook No Longer the Second Largest Social Network*, TECHCRUNCH (June 13, 2008), <https://techcrunch.com/2008/06/12/facebook-no-longer-the-second-largest-social-network/> [https://perma.cc/AG68-BUF5].

143. As points of reference, consider that in 2008, Lehman Brothers was still a viable entity and Miley Cyrus was able to cause a controversy by baring her shoulders on the cover of *Vanity Fair*. How naive we were. *See generally* Brittany Spanos, *Miley Cyrus’ 10 Biggest Scandals*, ROLLING STONE (May 8, 2017), <https://www.rollingstone.com/music/lists/miley-cyrus-10-biggest-scandals-w481179> [https://perma.cc/PTC3-N7JM] (collecting some of Cyrus’ more memorable moments of negative publicity).

144. *Most Popular Mobile Social Networking Apps in the United States as of February 2018 by Monthly Users (in Millions)*, STATISTA, <https://www.statista.com/statistics/248074/most-popular-us-social-networking-apps-ranked-by-audience/> (last visited June 15, 2019) [https://perma.cc/943K-KRDM].

145. *Id.*

146. Tom Hormby, *The Rise of Google: Beating Yahoo at Its Own Game*, LOW END MAC (Aug. 15, 2013), <http://lowendmac.com/2013/the-rise-of-google-beating-yahoo-at-its-own-game/> [https://perma.cc/N28Y-9LMU]. Google was already the largest search engine in terms of pages indexed.

year, Yahoo (previously the most popular provider) announced that Google would begin serving as the search engine for Yahoo's web portal,¹⁴⁷ effectively making Google the dominant global search provider.¹⁴⁸ As with Facebook, Google's stranglehold over search only increased with the passage of time—as of 2018, after nearly two decades of dominance, Google still controlled more than 90% of the global market for general search results.¹⁴⁹

The anecdotes of MySpace and Yahoo, still commonly cited by those who argue that digital markets are epicenters of creative destruction,¹⁵⁰ look increasingly creaky with age. The relevant markets have been characterized not by the “gale” of creative destruction described by Schumpeter, but by entrenched and unchecked dominance. It is high time to abandon the “romantic but naïve Schumpeterian [notion] that giant” monopolists and concentrated oligopolies are necessary for technological progress.¹⁵¹ In fact, a more sophisticated reading of Schumpeter suggests that he was not nearly so opposed to government intervention—particularly in the form of antitrust enforcement—as his modern-day adherents tend to be.¹⁵² An antitrust enterprise that somehow came to view monopoly as good and necessary has rather clearly lost its way.¹⁵³

Durable market power is the precise evil antitrust laws are meant to prevent. Far from being self-correcting, digital markets often facilitate such power. This suggests that the orthodox position rests in

See Google Launches World's Largest Search Engine, GOOGLE NEWS (June 26, 2000) <http://googlepress.blogspot.com/2000/06/google-launches-worlds-largest-search.html> [<https://perma.cc/PVV8-XQKR>].

147. *Yahoo! Selects Google as Its Default Search Engine Provider*, GOOGLE NEWS (June 16, 2000) <http://googlepress.blogspot.com/2000/06/yahoo-selects-google-as-its-default.html> [<https://perma.cc/8BF5-P7BX>].

148. It is worth noting that at the time, network effects and the importance of scale were less salient, because search engines' indexing functions did not yet incorporate data on users' behavior. *See Case AT.39740, Google Search (Shopping)*, 2017 E.C. 1/2003, ¶ 290, http://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf [<https://perma.cc/9U7T-CTSA>] [hereinafter *Google Search (Shopping)*].

149. *Search Engine Market Share Worldwide: May 2017-May 2018*, STATCOUNTER <http://gs.statcounter.com/search-engine-market-share> (last visited June 15, 2019) [<https://perma.cc/QH48-XLMY>].

150. *See Posner, supra* note 3, at 930 (“The gale of creative destruction that Schumpeter described . . . may be the reality of the new economy.”).

151. F.M. Scherer, *Antitrust, Efficiency, and Progress*, 62 N.Y.U. L. REV. 998, 1014 (1987).

152. *See Waller, supra* note 103, at 1802–03 (Schumpeter himself did not advocate the complete absence of a government role in the formulation of competition policy). That alternate reading inevitably invites speculation about an alternate world that might have been, a world in which Instagram, Messenger, WhatsApp, YouTube, Android, Waze, and a host of others has continued to flourish instead of being snapped up by Facebook and Google.

153. *See Pasquale, supra* note 126, at 1–2 (describing the FTC's “curious turn toward trying to help Google and other massive digital platforms to consolidate market power, rather than policing them”).

part upon a flawed assumption about the balance of error costs in this context. The societal cost from false negatives is substantially higher than pro-defendant analysts have previously assumed. Normatively, this militates in favor of an invigorated approach to digital markets.

II. UNIQUE ANTICOMPETITIVE STRATEGIES

Digital markets are susceptible to at least two (and likely many more) unique anticompetitive strategies. These are referred to herein as “no escape” and “split-the-rents.”¹⁵⁴ To date, these strategies have gone unnoticed, or at least unremedied, by the antitrust enterprise. This failure suggests that the consensus view regarding the balance of error costs in this context rests on yet another flawed assumption. The likelihood of false negatives occurring is higher than previously imagined.

Moreover, at least two types of anticompetitive conduct are—although not strictly exclusive to the digital context—relatively more viable and therefore likely to occur in digital markets. These include product redesign and what is referred to herein as “digital blackmail.”¹⁵⁵ The attractiveness of these anticompetitive strategies further tips the balance away from the pro-defendant stance preferred by proponents of the status quo.

A. “No Escape”

When a dominant firm gains control of multiple platforms, and users frequently engage with two or more of those platforms concurrently, the dominant firm may be able to impose “no-escape” harm. Consider, for example, digital social networks. It is not uncommon for individuals to concurrently use multiple, differentiated social networking platforms, a practice known as “multihoming.”¹⁵⁶ Suppose firm *A* owns and operates a popular social network. Rival social networks impose at least some competitive constraints on the attention costs *A* can charge its users. If *A* attempts to display too many (or overly intrusive) advertisements to its users, its users will respond by spending more time on rival networks. This substitution (or the threat

154. See *infra* Sections II.A–B.

155. See *infra* Sections II.C–D.

156. See Jean-Charles Rochet & Jean Tirole, *Platform Competition in Two-Sided Markets*, 1 J. EUR. ECON. ASS'N 990, 991–92 (2003) (“In a number of markets, a fraction of end users on one or the two sides connect to several platforms. Using the Internet terminology, we will say that they ‘multihome.’”).

thereof) will to some extent discipline *A*'s ability to raise attention costs above a competitive level.

Continuing the example, suppose further that *A* proposes to acquire its biggest rival, *B*. If the two networks are differentiated enough, an antitrust enforcer applying the traditional market-definition toolkit may conclude that they operate in different relevant markets.¹⁵⁷ As a result, the analyst would likely conclude that the proposed acquisition poses little to no likelihood of harming competition, or that, in any event, litigation would be too risky to pursue.¹⁵⁸

But might such an acquisition harm users' welfare?¹⁵⁹ With *B* no longer acting as a distinct competitive force, the merged firm would face lessened constraints on its ability to extract users' attention. Control of multiple differentiated platforms can prevent multihoming users from escaping a targeted advertising strategy. The merged firm could exercise its newfound power in at least two ways, one relatively familiar to the antitrust enterprise, the second less so.

First, the merged firm could simply raise the attention costs of using *A* by increasing advertising load on that platform. Some users will switch to *B* in response; the merged firm thus recovers some of the diverted users. If the diversion ratio is high enough, and repositioning or entry are unlikely enough, the cost increase will be profitable.¹⁶⁰ This possible avenue of anticompetitive harm is relatively familiar to analysts. The HMGs, for example, contemplate using diversion ratios to assess price effects in differentiated-product contexts.¹⁶¹ That said, it is worth noting that the lack of obvious prices in many digital markets may complicate matters considerably. The HMGs explicitly focus on

157. See HMGs, *supra* note 6, § 4.1.1 (describing the hypothetical-monopolist test commonly used by the Agencies to define relevant markets).

158. Merger analysis in differentiated-product markets is relatively (though not entirely) unfamiliar ground for antitrust enforcers. See, e.g., Carl Shapiro, *Mergers with Differentiated Products*, ANTITRUST 23 (Spring 1996), <https://pdfs.semanticscholar.org/0334/1cb7a9d50bbb2d6aa396106e0f9123cbe665.pdf> [<https://perma.cc/CUT8-DELQ>] ("For homogeneous products, the traditional structural approach of defining markets and measuring market shares and market concentration has deep roots, along with a rich empirical tradition linking market structure to performance. . . . This traditional structural approach towards merger policy . . . dates back to the 1960s . . .").

159. Here, the term "welfare" is used in a broad sense to mean something like "well-being," rather than as a signifier for the illogical and impractical concept that term generally represents in orthodox antitrust discourse. For a thorough unpacking of the problematic nature of "welfare" as used in the latter sense, see Glick, *supra* note 25.

160. See Shapiro, *supra* note 158, at 24.

161. HMGs, *supra* note 6, § 6.1 ("[T]he Agencies may seek to quantify the extent of direct competition between a product sold by one merging firm and a second product sold by the other merging firm by estimating the diversion ratio from the first product to the second product.").

“price effects.”¹⁶² The formulas used to calculate diversion ratios require quantification, which is relatively difficult in zero-price markets.¹⁶³ Of course, not all digital markets are zero-price markets, but the two categories overlap considerably. Thus, even this familiar type of harm may be relatively difficult to analyze (and, if necessary, prove during litigation) using traditional econometric tools.

The second, more complex, way for the merged firm to exercise its power involves cross-platform targeted advertising. Humans’ ability to make optimal decisions can be depleted over time.¹⁶⁴ Thus, repeatedly targeting a particular advertisement to a particular user may be more persuasive (and less informative) than an isolated exposure.¹⁶⁵ Repeated targeting can be viewed, then, as a form of increased attention cost. To illustrate how this can become a competitive concern, consider Facebook’s many acquisitions of rival social platforms and related technologies. In 2016, Sheryl Sandberg, Facebook’s Chief Operating Officer, boasted to investors that “all of these platforms together really help . . . us . . . use the targeting . . . capabilities we’ve invested in across multiple platforms.”¹⁶⁶ Sandberg went on to explain how Facebook allowed an advertising client, Garmin, to target Facebook’s users across its various platforms:

[Garmin] targeted outdoor enthusiasts, then retargeted people who viewed the Instagram videos with carousel ads on Facebook Then they extended those ads on Audience Network That’s a really good example of how you can take targeting and the ability

162. *See id.*

163. *See generally* Newman, *Applications*, *supra* note 15 (discussing various approaches and effects to zero-price markets).

164. In psychology literature, “ego depletion” describes the theory, supported by empirical evidence, that exercising willpower eventually exhausts our supply, rendering us more likely to make suboptimal choices. For the seminal article, see Roy F. Baumeister et al., *Ego Depletion: Is the Active Self a Limited Resource?*, 74 J. PERSONALITY & SOC. PSYCHOL. 1252 (1998). Closely related is the concept of “decision fatigue,” which holds that the very act of making decisions can, over time, reduce the quality of the decisions being made. *See, e.g.*, John Tierney, *Do You Suffer from Decision Fatigue?*, N.Y. TIMES MAG. (Aug. 17, 2011), <https://www.nytimes.com/2011/08/21/magazine/do-you-suffer-from-decision-fatigue.html> [<https://perma.cc/K6UZ-4EJW>].

165. It is worth noting that the traditional defense of advertisements—that they function primarily to provide consumers with important information—looks increasingly shaky in the information age. In fact, one scholar provocatively calls for a return to antitrust scrutiny of commercial advertising on the grounds that advertising’s supposed information-delivering function has become obsolete in the digital era, leaving only anticompetitive effects to explain the continued prevalence of advertisements. *See* Ramsi A. Woodcock, *The Obsolescence of Advertising in the Information Age*, 127 YALE L.J. 1270, 1278 (2018) (“Advertising is anticompetitive relative to that world, because advertising differentiates the advertised product from those of competitors.”).

166. *Second Quarter 2016 Results Conference Call*, FACEBOOK, INC., 1, 18 (July 27, 2016), https://s21.q4cdn.com/399680738/files/doc_financials/2016/q2/FB-Q216-Earnings-Transcript.pdf [<https://perma.cc/8JAZ-RAEC>].

to target across Audience Network, Facebook, and Instagram and *drive people all the way down the funnel*¹⁶⁷

This statement illustrates, rather vividly, the possibility of harm that can occur when users can no longer escape the reach of a dominant platform and are instead driven “down the funnel.”¹⁶⁸

This “no escape” harm is different from the more traditional type of harm that diversion-ratio analysis is meant to address. Suppose Coke were to merge with Pepsi. The traditional problem would arise if the merged firm could profitably raise the price of Coke because most buyers would switch to Pepsi instead of rival products. No-escape harm from cross-platform targeted advertising, however, is what would happen if the merged firm could somehow degrade buyers’ ability to make optimal decisions regarding cola consumption, then raise the price of *both* Coke *and* Pepsi as a result.

Digital markets appear rife with opportunities for no-escape harm to occur. Antitrust authorities, however, have largely turned a blind eye. Facebook was cleared to acquire Instagram without conditions in 2012,¹⁶⁹ WhatsApp with minor conditions in 2014,¹⁷⁰ messaging-app *tbh* without conditions in 2017,¹⁷¹ and dozens more companies whose products were either substitutes for or complements to Facebook’s core social network.¹⁷² Even under traditional antitrust analysis, some of these acquisitions should have raised eyebrows.¹⁷³ When the possibility of no-escape harm is factored in, their clearance becomes yet more worrisome.

167. *Id.* at 16 (emphasis added).

168. In advertising-speak, driving a user “down the funnel” means driving her closer and closer to a purchase decision. *See, e.g.,* Justas Markus, *Conversion Funnel*, OBERLO (Jan. 17, 2019), <https://www.oberlo.com/ecommerce-wiki/conversion-funnel> [<https://perma.cc/4AEA-6UPF>].

169. Alexei Oreskovic, *FTC Clears Facebook’s Acquisition of Instagram*, REUTERS (Aug. 22, 2012), <https://www.reuters.com/article/us-facebook-instagram/ftc-clears-facebooks-acquisition-of-instagram-idUSBRE87L14W20120823> [<https://perma.cc/FUH7-8E92>].

170. Alexei Oreskovic, *Facebook Says WhatsApp Deal Cleared by FTC*, REUTERS (Apr. 10, 2014), <https://www.reuters.com/article/us-facebook-whatsapp/facebook-says-whatsapp-deal-cleared-by-ftc-idUSBREA391VA20140410> [<https://perma.cc/2C8T-XRML>].

171. *See* Sara Ashley O’Brien, *Facebook Acquires Beloved Teen App ‘tbh’*, CNN (Oct. 16, 2017), <http://money.cnn.com/2017/10/16/technology/business/facebook-tbh/index.html> [<https://perma.cc/K8WN-MRTR>].

172. *See generally* Steve Toth, *66 Facebook Acquisitions—The Complete List (2018)*, TECHWYSE (Jan. 4, 2018), <https://www.techwyse.com/blog/infographics/facebook-acquisitions-the-complete-list-infographic/> [<https://perma.cc/2PJG-DF83>].

173. Although they involved modern markets and digital technology, these deals nonetheless combined direct horizontal competitors. And horizontal mergers are traditionally viewed as particularly likely to yield anticompetitive effects.

B. “Split the Rents”

When a digital-product provider attains a dominant position in its own market, it may be able to steer its users to a favored counterparty operating in a different market. If such steering causes consolidation of that distinct market, the dominant firm and its favored counterparty may be able to share in the resulting rents. This ability to split the rents from a different market would make the steering strategy rational for the platform.

Many digital markets feature a relatively simple business model that entails bringing together advertisers and users.¹⁷⁴ Online publishers, for example, attract readers with content and advertisers with access to those readers. Such firms supply two distinct products to two distinct customer groups: content to readers (in exchange for readers’ attention) and readers’ attention to advertisers (in exchange for monetary payments).¹⁷⁵ Antitrust doctrine is certainly still developing in this area,¹⁷⁶ but it is relatively comfortable with some of the simple types of harm that can occur in advertising-supported markets. For example, a dominant provider might increase attention costs to readers, increase prices to advertisers, or both.¹⁷⁷

Other business models, however, are more complex. General search providers (like Google) similarly bring together advertisers and users—but also indirectly bring together sellers and buyers of other products. Thus, for example, a search user might search for “local restaurants” and be shown a display ad next to the search results. But that search user is likely also seeking to engage in an offline transaction: the purchase of a meal from a restaurant. The search provider facilitates this offline transaction, though the latter occurs in a market distinct from the provider’s core business.

A unique risk of harm arises when the offline counterparty to consumers assumes a dualistic role: when it begins to function also as an advertising counterparty to the search provider. Continuing the above example, this would occur if local restaurants were to begin paying the search provider for access to its users’ attention. Such

174. The economics and business literature refers to such markets as “two-sided.” *See, e.g.*, Rochet & Tirole, *supra* note 156, at 991.

175. *See generally, e.g.*, PATTERSON, *supra* note 52, at 45 (“[P]roviders like television networks and Internet search engines operate in markets with two sets of customers, the viewers or users whom they attract by providing information for free and the advertisers that pay to reach those viewers and users.”).

176. *See, e.g.*, *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2277 (2018) (taking up fundamental questions relating to market definition and power in a two-sided context).

177. Newman, *Applications, supra* note 15, at 67 (“Firms in zero-price markets often make their profits by extracting information, attention, or both.”).

restaurants would act as counterparties to consumers and as counterparties to the search provider.

A search provider could, of course, simply provide “neutral” search results to its users. But it could also extract payment from advertisers in exchange for a more favored spot in the results,¹⁷⁸ alter a “reputational system” to favor certain advertisers,¹⁷⁹ or otherwise tilt the offline playing field by “steering” users toward favored advertisers.¹⁸⁰ The ultimate effect is foreclosure of non-favored sellers from—and increasing concentration in—the offline market. In other words, digital steering is likely to cause consolidation of markets that appear to be distinct from the core digital market(s). The resulting rents, if split between the dominant provider and its favored counterparties, make the scheme rational.

Traditional antitrust analysis could easily overlook the possibility of such harm. To illustrate how this type of false negative might occur, suppose two search providers propose to merge. The relevant market(s) would not likely include local restaurant markets and the like, because neither of the merging parties would be treated as a direct market participant in such markets. As a result, traditional analysts would presumably ignore the possibility of split-the-rents harm.¹⁸¹

The acquisition of digital real estate portal Trulia by its direct rival, Zillow, provides a possible real-world illustration of such harm occurring due to a false negative on the part of an enforcement agency. In 2014, Zillow and Trulia announced plans to combine into Zillow Group (“ZG”). “At the time, the two firms were the largest and second-largest online real-estate portals, respectively.”¹⁸² After conducting a pre-merger review, the FTC cleared the deal without condition.¹⁸³ During a subsequent earnings call, ZG’s Chief Executive Officer, Spencer Rascoff, announced that “Zillow Group represented greater than 67 percent of the total online real estate category . . . and 78

178. See Google Search (Shopping), *supra* note 148, ¶ 25.

179. Newman, *supra* note 26, at 5.

180. See, e.g., Complaint at 24–27, *EJ MGT LLC v. Zillow Grp., Inc.*, No. 18-584 (JMV) (JBC), 2019 U.S. Dist. LEXIS 32420 (D.N.J. Feb. 28, 2019) [hereinafter Complaint, *EJ MGT LLC*] (alleging that Zillow disrupts competition in realtor markets by extracting payments from “favored” realtors in exchange for disabling the “Zestimate” feature of Zillow’s online real estate portal). To the extent it is relevant, the author consulted the plaintiff regarding this litigation. The views expressed herein are those of the author only and do not reveal or draw on any confidential information.

181. See, e.g., HMGs, *supra* note 6, § 7.1 (addressing solely the possibility of harm to the “relevant market” in which the parties are “market participants”).

182. Newman, *supra* note 26, at 5.

183. *Id.*

percent of the category on mobile only.”¹⁸⁴ Those market shares would likely be enough to warrant a presumption under U.S. antitrust law that ZG possesses monopoly power¹⁸⁵ and would almost certainly have made the proposed deal presumptively anticompetitive ex ante.¹⁸⁶ By its own admission, then, ZG appeared to have gained a dominant market position.

Additional statements from ZG executives suggest a subsequent shift in strategy to steer users toward “Premier” real estate agent-advertisers and away from non-Premier agents. As Rascoff put it, “[W]e will continue to encourage lower performing agents to leave”¹⁸⁷ while helping Premier agents “grow their market share in their respective cities.”¹⁸⁸ More specifically, ZG’s strategy was intended to have the effect of “accelerating the larger trend across the real estate agent population of higher producing agents gaining market share from those who are less competitive.”¹⁸⁹ Suppose that ZG’s strategy had its intended effect of increasing concentration in offline real estate agent markets. For this strategy to be rational, ZG would need a means of splitting the resulting rents with its favored realtors. As it turns out, the “Premier” agents that benefit from ZG’s steering appear to be those who pay fees to ZG.¹⁹⁰ These payments could be viewed as a mechanism for splitting the rents between realtors and ZG.

184. *Prepared Remarks at the Q2 2016 Earnings Conference Call*, ZILLOW GROUP, INC. (Aug. 4, 2016) [hereinafter *Zillow Q2 2016 Earnings Remarks*], https://s1.q4cdn.com/623891520/files/doc_financials/quarterly/2016/q2/2Q16PreparedRemarks.pdf [<https://perma.cc/S77K-VYZA>]; see also Rory Van Loo, *Rise of the Digital Regulator*, 66 DUKE L.J. 1267, 1293–94 (2017) (“After purchasing its leading competitor Trulia, online real estate listing service Zillow reached a 63 percent share.”).

185. *Cf., e.g., United States v. Dentsply Int’l, Inc.*, 399 F.3d 181, 184 (3d Cir. 2005) (“Dentsply has long dominated the industry . . . and enjoys a 75–80% market share on a revenue basis, [and] 67% on a unit basis . . .”).

186. Using the 67% figure as a conservative estimate and assigning equal shares to each of the pre-merged firms (the most conservative way to calculate), the parties’ pre-merger shares alone would yield an HHI of 2,244.5. Adding the other market participants’ shares would almost certainly cause the pre-merger market’s HHI to exceed 2,500, the threshold for a market to be considered “highly concentrated” under the HMGs. See HMGs, *supra* note 6, § 5.3.

187. *Prepared Remarks at the Q3 2015 Earnings Conference Call* (Nov. 3, 2015), https://s1.q4cdn.com/623891520/files/doc_financials/quarterly/2015/q3/Zillow_Group_Q3_2015_Prepared_Remarks.FINAL.110315.pdf [<https://perma.cc/LT6E-DAGV>].

188. *Id.*

189. *Zillow Q2 2016 Earnings Remarks*, *supra* note 184, at 6.

190. See, e.g., *Zillow Premier Agent Frequently Asked Questions*, ZILLOW PREMIER AGENT, <https://www.zillow.com/advertising/frequently-asked-questions.htm> (last visited Sept. 4, 2019) [<https://perma.cc/Y7GM-S7TT>]:

Why should I advertise on Zillow Group? . . . Receive instant visibility through the brands and devices potential clients love to use, like Zillow, Trulia and StreetEasy. . . . With the Buyers Agent List, you’ll appear next to listings and home searches in your target area as an elite agent to contact. Home buyers interested in taking the next step in their real estate purchase can connect with you directly through the touch of a button.

The likelihood of split-the-rents harm occurring will, of course, vary on a case-by-case basis. But it will presumably increase along with the size of the potential rents. Where the target market is highly competitive (as is arguably the case with, for example, some local restaurant markets), the attractiveness of a split-the-rents steering strategy may be relatively low. But where the target market is protected by some barriers to entry (as is arguably the case with local real estate agent markets¹⁹¹), this strategy becomes increasingly attractive.

Split-the-rents harm is uniquely facilitated by the attributes of digital markets. The same features that drive users to digital portals also render users uniquely susceptible to this type of steering.¹⁹² In fact, there are some parallels to the European Commission's *Google Search (Shopping)* decision. The Commission's basic theory of harm was that Google used its dominant general search engine to steer users toward its own comparison-shopping service, leveraging its power over general search to increase its power over comparison shopping.¹⁹³ Users access portals like Google, Zillow, and the like as a means of cutting through the fog of information overload, which is felt most acutely in digital contexts.¹⁹⁴ It is this unique backdrop that makes users particularly vulnerable to steering—and makes steering strategies more attractive—in digital markets.¹⁹⁵ When steering crosses the line into outright deception, it may violate consumer-protection laws. But if and when it is used to facilitate market consolidation, it is an antitrust problem.

191. Real estate agents typically are protected by occupational-licensing barriers to entry. See, e.g., *3 Steps to Becoming a Real Estate Agent*, REAL ESTATE EXPRESS, <https://www.realestateexpress.com/real-estate-license/> (last visited Sept. 4, 2019) [<https://perma.cc/VB59-Z8A9>] (“No matter what state you live in, you must take the real estate pre-licensing course from an accredited real estate licensing school.”).

192. Cf. Cheng, *supra* note 64, at 2–3 (observing that “default” status exerts a much more powerful sway over consumers in digital contexts than in brick-and-mortar stores).

193. Google Search (Shopping), *supra* note 148, ¶ 593 (concluding that Google’s conduct was “capable of leading competing comparison shopping services to cease providing their services,” allowing Google to impose higher costs on merchants). Split-the-rents harm is conceptually similar to this more straightforward leveraging theory of harm, but it is more likely to fall under the radar. On digital leveraging strategies, see Khan, *supra* note 52, at 328.

194. See David Bawden & Lyn Robinson, *The Dark Side of Information: Overload, Anxiety and Other Paradoxes and Pathologies*, 35 J. INFO. SCI. 180, 184 (2009) (“Innovations in information technology, such as the printed book, the periodical magazine or journal, the abstracting journal and the computer, have all led to complaints that it is impossible to keep up with the amount of information available.”).

195. See Cheng, *supra* note 64, at 3 (“[F]irms already embrace this idea; they collect data on consumer behavior precisely to steer consumer purchasing decisions.”).

C. Digital Product (Re)design

Anticompetitive product design (and redesign) is a relatively well-accepted theory of antitrust harm.¹⁹⁶ The archetypical design-conduct claim alleges that a dominant firm redesigned its core product so as to favor its own complementary product¹⁹⁷ and/or disfavor rivals' products.¹⁹⁸ Such design- and redesign-related strategies have spawned a rich body of antitrust precedent.¹⁹⁹ For a variety of reasons, leading cases and scholars advocate for heavily pro-defendant rules in this area.²⁰⁰ But, as the following discussion demonstrates, their arguments are inapposite in digital markets. Instead, several unique characteristics make digital markets an ideal context in which to deploy anticompetitive product design strategies.

Plaintiffs have brought multiple cases alleging anticompetitive product design in digital markets. *Microsoft III* was the earliest—and remains the most prominent—of these.²⁰¹ There, a dominant firm (Microsoft) issued a new version of its core product (the Windows

196. See e.g., AREEDA & HOVENKAMP, *supra* note 6, ¶ 776a (“A dominant firm may alter its product to the detriment of smaller rivals, particularly those making complementary products.”).

197. See John M. Newman, *Anticompetitive Product Design in the New Economy*, 39 FLA. ST. U. L. REV. 681, 683 (2012). This strategy effectively forces customers to use both of the dominant firm's products. Because of the conceptual similarity to contractual tying, this type of conduct is sometimes called “technological tying.” See, e.g., Charles M. Gastle & Susan Boughs, *Microsoft III and the Metes and Bounds of Software Design and Technological Tying Doctrine*, 6 VA. J.L. & TECH. 7 (2001).

198. See Thibault Schrepel, *Predatory Innovation: The Definite Need for Legal Recognition*, 21 SMU SCI. & TECH. L. REV. 19, 46–50 (2017) (usefully distinguishing between platform-design decisions (open or closed) and product modification so as to reduce interoperability with rivals' products).

199. Newman, *supra* note 197, at 715 (collecting and summarizing leading cases). There is growing recognition of “product hopping” as a discrete theory of liability. While such claims hinge on design-related strategies, they are not archetypical “product design” antitrust claims as that term is generally employed in the literature and case law. For a thorough discussion of product-hopping, see Michael A. Carrier & Steve D. Shadowen, *Product Hopping: A New Framework*, 92 NOTRE DAME L. REV. 167 (2016).

200. See, e.g., *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 286 (2d Cir. 1979) (holding that a design is procompetitive so long as there is some evidence that the design represented a product improvement, along with evidence that customers preferred the new design); *ILC Peripherals Leasing Corp. v. IBM Corp.*, 458 F. Supp. 423, 439 (N.D. Cal. 1978) (holding that if expert testimony so much as differs on whether a given design is pro- or anticompetitive, the design is irrebuttably presumed to be procompetitive and legal); Lisa P. Goldstein et al., *Antitrust in High-Tech Industries*, 19 GEO. MASON L. REV. 1071, 1094 (2012) (“[Professor Daniel Crane] said he would advocate something like a business judgment rule [for Google's search-related practices] . . . [and] discouraged an ex post balancing of the procompetitive and anticompetitive effects because the marketplace changes too quickly to analyze these things.”).

201. *Microsoft III*, 253 F.3d 34, 34 (D.C. Cir. 2001) (“United States and individual states brought antitrust action against manufacturer of personal computer operating system and Internet web browser.”). The literature on *Microsoft III* is exceedingly voluminous. For a thorough treatment, see WILLIAM H. PAGE & JOHN E. LOPATKA, *THE MICROSOFT CASE: ANTITRUST, HIGH TECHNOLOGY, AND CONSUMER WELFARE* (2007).

operating system) that was designed so as to maximize interoperability with its own complementary product (Internet Explorer) and minimize interoperability with a rival's product (Netscape Navigator, a competing web browser).²⁰² The plaintiffs' allegations in *In re Apple iPod iTunes Antitrust Litigation*, if taken as true, provide another example.²⁰³ According to the complaint, Apple issued software updates to a core product (iPods) that were designed to block interoperability with a rival's product (RealNetworks' low-price music files).²⁰⁴

The modern antitrust enterprise employs a relatively laissez-faire approach to conduct involving product design. Some go so far as to argue that courts and enforcement agencies should treat all product-design strategies as per se legal.²⁰⁵ Proponents of such extreme positions argue that product design is uniquely unattractive as an exclusionary strategy. In brick-and-mortar markets, theorists posit that "product innovation is extremely costly and time consuming to develop, design, manufacture, and place on the market"²⁰⁶ and that product redesigns done purely to disfavor rival products would likely prompt a negative customer reaction.²⁰⁷ If the would-be monopolist were thereby forced to reverse course, it would forfeit any sunk costs invested and perhaps incur additional reversal costs by switching back to its former product design.²⁰⁸ As a result, anticompetitive product design was thought to be quite rare.

But unique characteristics of digital markets challenge the assumptions underlying that defendant-friendly position. To conceptualize the decision facing a dominant firm, assume that C_d represents the cost of undertaking an anticompetitive design strategy,

202. *Microsoft III*, 253 F.3d at 58, 59–78 (describing how Microsoft systematically "reduc[ed] [the] usage share of Netscape's browser and, hence, protect[ed] [its] operating system monopoly.").

203. See Amended Complaint at 1, *In re Apple iPod iTunes Antitrust Litig.*, 796 F. Supp. 2d 1137 (N.D. Cal. 2011) (No. C 05-00037 JW), 2010 WL 10934546 ¶ 7 ("[W]hen Apple launched the iTunes Music Store ("iTMS") in 2003, it quietly changed course, restricting iTMS and iTunes to work only with its own portable digital media player, the iPod, and restricting the iPod so it could only play files embedded with Apple's own proprietary Digital Rights Management.").

204. *Id.* at 26, 2010 WL 10934546 ¶ 132 ("Defendant took anticompetitive action against RealNetworks, with the express purpose of ensuring that only Audio Downloads from iTMS would be playable on iPods, and not on its competitors' Portable Digital Media Players.").

205. See Joseph Gregory Sidak, *Debunking Predatory Innovation*, 83 COLUM. L. REV. 1121, 1148 (1983) ("Courts should advance from their strong presumptions of legality for technological tie-ins and acknowledge that marketing strategies for product innovations should be per se legal.").

206. 3B PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 775c, at 284 (3d ed. 2006).

207. HERBERT HOVENKAMP, THE ANTITRUST ENTERPRISE: PRINCIPLE AND EXECUTION 274–76 (2005) ("Incompatibility can be expected to produce customer resistance, particularly if the redesigned good is no better than the old one.").

208. Newman, *supra* note 197, at 703 ("And there are "sunk" costs associated with innovation, costs that cannot be recovered once invested.").

P_m represents the potential monopoly profit to be had if the strategy succeeds, L represents the losses that will be sustained if the strategy fails, and R represents the risk (expressed as a ratio) that the strategy will fail due to customer backlash or antitrust oversight. The orthodox position is that the cost of such strategies typically outweighs the potential profits discounted for the risk of loss, such that

$$C_d > P_m - LR$$

Digital products alter this calculus. Redesigning code-based products, often done through issuing updates to existing software or altering HTML or algorithms, can generally be accomplished at far lower cost than redesigning physical products. Consider the products at issue in some of the seminal product-design cases: cameras and film,²⁰⁹ desktop computers and hardware accessories,²¹⁰ a skin-graft gun and needles.²¹¹ Each of these redesigns likely required a team of engineers, changes to production facilities, substantial marketing costs, and more.²¹² A software update, however, can be created by a single programmer or small team working at their desks (or even at home).²¹³ Moreover, digital distribution is generally much less costly than offline distribution.²¹⁴ Thus, C_d will often be lower in digital markets.

On the other side of the scale, monopoly profits are often higher in digital markets. As the leading treatise recognizes, strategically designed incompatibility can cause “serious anticompetitive consequences, particularly in ‘network’ industries where compatibility itself is often an essential ingredient to product success.”²¹⁵ This is so because the resulting monopoly power is uniquely durable. As noted

209. *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 268–71 (2d Cir. 1979) (discussing various aspects of the camera and film industry).

210. *In re IBM Peripheral EDP Devices Antitrust Litig.*, 481 F. Supp. 965, 972–73 (N.D. Cal. 1979) (“IBM is a supplier of computer systems, supplying all, or nearly all of the user’s computing needs. It offers a wide range of services and products, both software and hardware.”), *aff’d sub nom.* *Transamerica Comput. Co. v. IBM Corp.*, 698 F.2d 1377 (9th Cir. 1983).

211. *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1346–48 (Fed. Cir. 1998) (“Bard sued M3 Systems in August 1993 in the United States District Court for the Northern District of Illinois, asserting that M3’s ProMag biopsy gun and ACN/SACN biopsy needle assemblies infringed the ’308 and ’056 patents, respectively.”).

212. Newman, *supra* note 197, at 706 (“Like the initial distribution of software, updating software was once a costly, time-intensive project. It generally required design and subsequent distribution of code-based program files on physical disks to consumers.”).

213. Cf. PETER SEIBEL, *CODERS AT WORK: REFLECTIONS ON THE CRAFT OF PROGRAMMING* 154–56 (2009) (discussing writing and rewriting computer code).

214. Gaia Bernstein, *In the Shadow of Innovation*, 31 *CARDOZO L. REV.* 2257, 2287–88 (2010) (“Digital technologies reduced the costs for individual creation and distribution.”).

215. AREEDA & HOVENKAMP, *supra* note 6, ¶ 776a.

above, many digital markets exhibit network tendencies.²¹⁶ In such contexts, P_m is relatively high, making anticompetitive product design relatively more attractive.

Finally, both the amount and the likelihood of losses are relatively low for digital-product design strategies. The sunk costs entailed by undertaking the strategic conduct are usually lower, which means that the losses from an unsuccessful design or redesign will be lower. Second, digital redesigns are generally less costly to reverse than physical-product redesigns, further lowering L . Third, lower C_d means that the firm can charge less for the redesigned product, which reduces the risk (R) of a negative customer reaction.²¹⁷ Finally, customers are often required to spend relatively minimal amounts of time “accepting” digital-product redesigns—compare the ease of accepting an automatic software update to the time and effort entailed to have an auto dealer replace a physical part in a vehicle. This again tends to decrease the risk of a negative customer reaction, further lowering R . In short, digital markets feature higher potential profits, lower conduct-related costs, a lower risk of any losses, and a lower ceiling for any losses that do result.

All of this suggests that anticompetitive digital-product design is an unusually attractive strategy as compared to physical-product design. In other words, it is relatively much more likely that

$$C_d < P_m - LR$$

Profit-maximizing firms will pursue such strategies. Thus, anticompetitive product design is relatively more likely to occur in digital markets. The core argument commonly put forth in favor of a defendant-friendly approach to digital-product design—that such strategies are especially unattractive to firms—fails.²¹⁸

216. See *supra* Section I.B.2.

217. Newman, *supra* note 197, at 708 (“[R]edesigning code-based products through software updates entails relatively low costs to firms.”).

218. Another reason antitrust law historically adopted a hands-off approach to strategic design is that innovation often benefits society, and antitrust authorities are wary of chilling beneficial innovation. See, e.g., *In re IBM Peripheral EDP Devices Antitrust Litig.*, 481 F. Supp. 965, 1003 (N.D. Cal. 1979), *aff’d sub nom.* *Transamerica Comput. Co. v. IBM Corp.*, 698 F.2d 1377 (9th Cir. 1983); AREEDA & HOVENKAMP, *supra* note 6, ¶ 776a (“An implicit tying claim must always be treated circumspectly by the courts, because the issues will always be highly technical and because undue interference will chill innovation.”). For reasons I have argued elsewhere, this concern loses most, if not all, of its force in the context of digital markets. See Newman, *supra* note 197.

Whether labeled “implicit tying,”²¹⁹ “technological tying,”²²⁰ “predatory innovation,”²²¹ or something else, design-related exclusionary strategies are uniquely attractive in digital markets. The associated risks and costs are lower, and the potential profits higher, as compared with traditional brick-and-mortar contexts. As a prescriptive matter, this militates in favor of a less deferential standard than the antitrust enterprise has historically employed.

D. Digital Blackmail

Though it is not entirely exclusive to the digital context, digital markets also facilitate a somewhat unusual method of extracting monopoly profits: “digital blackmail.” Digital blackmail can occur when a dominant platform extracts rents by displaying (or threatening to display) unwanted information, then charging victims for its removal or concealment. Digital blackmail may also involve the inverse strategy: threatening to remove desirable information, then charging victims for the “privilege” of continuing to make it available.

In introductory textbook models, monopolists extract rents by reducing output and increasing prices.²²² Dominant digital firms, however, frequently employ zero-price business strategies.²²³ As a result, they must develop more exotic means of shifting surplus from counterparties to themselves. Digital blackmail is one such means.

A dominant digital portal controls the flow of information to its users.²²⁴ The resulting relationship is complex, often involving two distinct, though related, transactions. In the first transaction, users access a given portal, typically surrendering their personal information or attention to advertisements in exchange for access to the desired digital service.²²⁵ A given user may also be seeking to engage in a second transaction with a different counterparty.²²⁶ Such users access a digital

219. AREEDA & HOVENKAMP, *supra* note 206, ¶ 776a.

220. Apple iPod iTunes Antitrust Litig., No. C 05-00037 JW, 2009 WL 10678931, at *4 (N.D. Cal. May 15, 2009) (“[S]everal cases acknowledge the potential for liability based on a so-called ‘technological tie,’ where a technological relationship between a seller’s products compels a buyer to purchase both products.”).

221. Schrepel, *supra* note 198.

222. See generally AREEDA & HOVENKAMP, *supra* note 6, ¶ 501 (“Market power is the ability to raise price profitably by restricting output.”).

223. Newman, *Foundations*, *supra* note 15, at 197 (noting that “[c]reative content (e.g., films, music, books, and articles), software, search functionality, social media platforms, mobile applications, travel booking, and myriad other goods and services are now widely distributed at zero prices”).

224. See *supra* Section I.A.1.

225. See *supra* Section I.A.1.

226. See *supra* Section II.A.

portal (the first transaction) seeking information about which supplier to use for this second transaction.²²⁷ Thus, for example, an individual user may access Zillow's popular real estate portal (the first transaction) for a variety of reasons. If she is a prospective home buyer, that user may also be seeking to enlist the services of a realtor (a second transaction). In fact, Zillow's users often choose realtors based on information provided by Zillow, which includes the familiar star user-rating system for local realtors.²²⁸

Consumers' newfound ability to make purchasing decisions based on information gleaned from a single digital source "concentrates considerable power in the source."²²⁹ As noted above, Zillow's own investor statements have reported market shares of 67% across all platforms and 78% of mobile.²³⁰ But Zillow faces a quandary: How to exercise its power?²³¹ As to prospective home buyers, Zillow currently employs a zero-price business model, which—as a robust body of behavioral economics literature demonstrates—exerts a powerful effect on human decisionmaking.²³² A move by Zillow to begin imposing positive prices on prospective home buyers would, because of this "zero-price effect," run a substantial risk of triggering a mass exodus among such users. Thus, unlike a more traditional monopolist, Zillow may not be able to exercise its power by directly increasing price and reducing output.

The plaintiff's allegations in *EJ MGT*, if taken as true, may illustrate Zillow's response to this quandary.²³³ Zillow displays "Zestimates," property-value estimates, next to its real estate

227. See PATTERSON, *supra* note 52, at 9 (describing "information that is acquired to help make other purchasing, production, or pricing decisions").

228. See Matt Carter, *Zillow Launches Agent Ratings*, INMAN (Dec. 2, 2010), <https://www.inman.com/2010/12/02/zillow-launches-agent-ratings/> [<https://perma.cc/TQ7P-SVVT>].

229. PATTERSON, *supra* note 52, at 37.

230. Newman, *supra* note 26, at 5.

231. *Cf.* PATTERSON, *supra* note 52, at 10 ("Although the information providers may deliver information for free, they must get revenue somewhere, and they typically get it through advertising or other fees charged to sellers."). Zillow does not display obvious advertisements to prospective homebuyers, but it does (more subtly) display "Premier Agent" listings prominently in exchange for payments from those agents. Users may not even be aware that they are seeing an advertisement for a realtor, instead of a more objective list of those realtors whom users have rated the highest. See Newman, *supra* note 26, at 8.

232. See Kristina Shampanier, Nina Mazar & Dan Ariely, *Zero as a Special Price: The True Value of Free Products*, 26 *MARKETING SCI.* 742, 745 (2007) (describing the power of the "Zero-Price Effect").

233. Complaint, *EJ MGT LLC*, *supra* note 180, at 2 ("Together, Zillow and the Co-conspirators Brokers have made anticompetitive, unconscionable, and otherwise illegal agreements regarding the display of the Zestimate on Zillow's website for properties listed through the Co-conspirator Brokers."). Please see the author's disclosure, *supra* note 180. To be clear, the present discussion is not meant to suggest that Zillow in fact engaged in the alleged conduct, or that, if so, it violated antitrust or any other laws.

listings.²³⁴ For sellers and their agents, the presence of Zestimates is a two-edged sword. If the Zestimate is higher than the list price, the home appears to be a bargain. But if the Zestimate is lower than the list price, the home appears to be overpriced. Thus, from a given seller's perspective, the option to control whether prospective buyers can see the Zestimate would be quite valuable.

Zillow is notoriously reluctant to alter or remove Zestimates, even when requested to do so by homeowners or listing agents.²³⁵ According to the *EJ MGT* complaint, however, Zillow entered into a series of agreements that give certain favored realtor agencies (Sotheby's, Coldwell Banker, etc.) the ability to selectively hide the Zestimates for their listings.²³⁶ In other words, the plaintiff's theory is that Zillow imposes its Zestimates on all listings, but also offers certain sellers the ability to effectively conceal Zestimates on their listings—for a price.

The Zillow example demonstrates the possibility of digital blackmail, whereby a dominant firm is able to extract rents by displaying unwanted information about other businesses, then charging those victims for the privilege of concealing or eliminating the information. Digital blackmail might also involve the inverse of this strategy: a dominant provider might threaten to remove beneficial information about other businesses, then charge victims for the "privilege" of avoiding the threat. Recent allegations against online ratings-and-reviews platform Yelp illustrate the latter permutation of digital blackmail.²³⁷ Several small business owners sued Yelp, alleging that after they refused to buy advertising from Yelp, it removed positive five-star reviews from the owners' Yelp pages.²³⁸

234. Nat Levy, *Home-Sellers Continue Legal Battle Against Zillow, Appeal Judge's Decision to Toss Zestimate Lawsuit*, GEEKWIRE (May 17, 2018), <https://www.geekwire.com/2018/home-sellers-continue-legal-battle-zillow-appeal-judges-decision-toss-zestimate-lawsuit/> [https://perma.cc/WG89-ZQ2C] ("Over the years, the Zestimate tool has served as a source of contention from home sellers expecting to get more, home buyers expecting to pay less, and real estate professionals wishing they weren't caught in the middle.").

235. *Id.*

236. Complaint, *EJ MGT LLC*, *supra* note 180, at 15.

237. *Levitt v. Yelp! Inc.*, 765 F.3d 1123, 1127–29 (9th Cir. 2014) ("[T]he business owners maintain that Yelp created negative reviews of their businesses and manipulated review and ratings content to induce them to purchase advertising through Yelp."); PATTERSON, *supra* note 52, at 37 ("The plaintiffs in that case alleged that Yelp engaged in extortion by removing and threatening to remove positive reviews from its site unless the business owners purchased advertising from Yelp."). To be clear, the present discussion is not meant to suggest that Yelp in fact engaged in the alleged conduct, or that, if so, it violated antitrust or any other laws.

238. See sources cited *supra* note 237. Some of the plaintiffs also alleged that Yelp placed "negative reviews at the top of the business owners' Yelp pages," *Levitt*, 765 F.2d at 1134, conduct analogous to what was alleged in *EJ MGT*. See Complaint, *EJ MGT LLC*, *supra* note 180.

Such schemes are not altogether unique to the digital context, of course. Extortion, blackmail, protection rackets—these are time-honored methods for the powerful to extract wealth from the powerless. But the unique attributes of digital markets drastically increase the likelihood that such schemes will be employed. The success of a digital-blackmail strategy hinges largely on the power and importance of information, and many digital products comprise pure information, suggesting its uniquely vital importance in these markets.²³⁹ Moreover, suppliers of digital products often employ zero-price strategies and cannot easily introduce positive prices,²⁴⁰ creating the need for more exotic wealth-extraction methods. Digital blackmail fits the bill. But because it does not match the paradigmatic methods used to extract monopoly profits, it has largely escaped the notice of the antitrust enterprise.²⁴¹

* * *

Under the consensus view, anticompetitive conduct in digital markets is rare, and existing paradigms are up to the task of detecting and remedying it. But, as the foregoing discussion explains, such conduct may be surprisingly common. Unfortunately, it is far from clear that the current antitrust toolkit has been an effective means of detecting and preventing harm in digital markets.

III. UNIQUE LACK OF EFFICIENCIES

Modern antitrust law condones a great deal of seemingly fraught conduct where that conduct appears likely to produce efficiencies.²⁴² Thus, if digital markets were uniquely conducive to the creation of efficiencies, perhaps the current hands-off approach would be warranted after all. Unfortunately, the opposite appears to be true: conduct in digital markets is unusually unlikely to produce offsetting efficiencies. As a result, the balance of error costs favors a more vigilant stance toward digital markets.

239. PATTERSON, *supra* note 52, at 8 (“[O]ne can view these firms [(Internet retailers, search engines, and review sites)] as the latest step in the evolution of competition, with the primary forum of competition moving first from production to distribution, . . . and now to pure informational promotion.”).

240. See sources cited *supra* note 15.

241. Patterson’s excellent and thorough treatment is an obvious exception, and the outcome of *EJ MGT* will be telling. See PATTERSON, *supra* note 52.

242. See, e.g., John M. Newman, *Procompetitive Justifications in Antitrust Law*, 94 *IND. L.J.* 501 (2019) (discussing what it means for antitrust to take into account the beneficial effects of a defendant’s conduct).

A. Lessons from the Merger Context

The following discussion begins by deriving what lessons can be gleaned from the merger context, an area in which antitrust doctrine regarding efficiencies is relatively well-developed and formalized. As explained below, both the HMGs and the extant case law suggest that merger activity in digital markets is relatively unlikely to produce cognizable efficiencies.

1. Agency Guidance

The clearest guidance available regarding efficiencies comes from the current version of the HMGs. The HMGs, which are based on the agencies' unrivaled experience reviewing proposed mergers and acquisitions, identify certain types of efficiencies that are particularly likely to be both cognizable and substantial enough to neutralize concerns. In particular, the HMGs mention "shifting production among facilities formerly owned separately" as a frequently credited efficiency.²⁴³ From an institutional-design perspective, this raises the question: is this "good" efficiency particularly likely—or particularly unlikely—to be present in digital markets?

Firms whose core products are purely digital will, in general, be unable to assert this good efficiency. The lack of multiplant production in digital markets suggests that this good efficiency will tend to be conspicuously lacking across the entire digital sector.²⁴⁴ To the extent large pure-digital firms own physical assets, these tend to be office buildings and server farms, rather than production facilities.²⁴⁵ When Facebook acquired Instagram in 2012 for \$1 billion, for example, Instagram had only thirteen employees and no offices to speak of, let alone any substantial production or distribution facilities.²⁴⁶ Under the HMGs, then, that acquisition could not have offered the sole type of efficiency recognized as particularly cognizable.

The HMGs also identify multiple types of commonly asserted efficiencies that are particularly "bad," i.e., "less susceptible to

243. HMGs, *supra* note 6, § 10.

244. *Cf.* Posner, *supra* note 3, at 926 (distinguishing traditional from "new economy" industries in part because the former engaged in multi-plant production).

245. Interestingly, Posner noted this dynamic, though he drew opposition conclusions from those contained herein. *See* Posner, *supra* note 3, at 926 ("The traditional industries are characterized by multi-plant and multi-firm production . . .").

246. Alyson Shontell, *Meet the 13 Lucky Employees and 9 Investors Behind \$1 Billion Instagram*, BUS. INSIDER (Apr. 9, 2012), <http://www.businessinsider.com/instagram-employees-and-investors-2012-4> [<https://perma.cc/U8PK-24A8>].

verification” and/or “less likely to be merger-specific or substantial.”²⁴⁷ The bad efficiencies include those related to research and development (“R&D”), which are “generally less susceptible to verification and may be the result of anticompetitive output reductions.”²⁴⁸ Bad efficiencies also include purported benefits relating to “procurement, management, or capital cost.”²⁴⁹ R&D, management, and capital expenditures tend to account for relatively large portions of digital-focused firms’ expenditures. One might expect, then, that the efficiencies most commonly asserted by such firms will fall into the “bad” categories of invalid efficiencies. Existing case law confirms this intuition.

2. The Merger Cases

There have been few merger challenges involving digital markets, yielding a paucity of caselaw in the area. That said, two such challenges that produced reported judicial opinions—*United States v. H & R Block, Inc.*²⁵⁰ and *United States v. Bazaarvoice, Inc.*²⁵¹—are instructive. Litigation offers defendants an opportunity to plan and present their best arguments for efficiencies. Judicial opinions thus shed especially useful light on the types of efficiencies that might be claimed in digital markets, as well as the validity—or invalidity—of such claims.

H & R Block involved a challenge to H & R Block’s proposed acquisition of TaxACT.²⁵² At the time, the defendants produced two of the three most popular “digital do-it-yourself” tax-preparation products.²⁵³ The Department of Justice (“DOJ”) demonstrated that the acquisition would likely produce unilateral and coordinated anticompetitive effects,²⁵⁴ shifting the burden to the defendants to demonstrate offsetting efficiencies.²⁵⁵ H & R Block apparently attempted to point to TaxACT’s lower labor and procurement costs as a source of productive efficiency.²⁵⁶ But, as the court pointed out, TaxACT enjoyed lower costs because it chose to locate in a small city in Iowa and

247. HMGs, *supra* note 6, § 10.

248. *Id.*

249. *Id.*

250. 833 F. Supp. 2d 36 (D.D.C. 2011).

251. No. 13-cv-00133-WHO, 2014 WL 203966, at *1 (N.D. Cal. Jan. 8, 2014).

252. 833 F. Supp. 2d at 43 (“The DOJ seeks to enjoin Defendant H & R Block, Inc. from acquiring Defendant 2SS Holdings, Inc. (“TaxACT”), which sells digital do-it-yourself tax preparation products marketed under the brand name TaxACT.”).

253. *Id.* at 44 (“The three most popular DDIY providers are HRB, TaxACT, and Intuit, the maker of TurboTax.”).

254. *Id.* at 77–89.

255. *Id.* at 89.

256. *Id.* Some of the court’s opinion is redacted.

was “simply more cost conscious,” both choices H & R Block could have made on its own without acquiring its rival.²⁵⁷ The Defendants also purported to identify IT-related efficiencies, perhaps the closest they could come to invoking the HMGs’ good type of efficiency.²⁵⁸ But here, again, the court found that the claimed efficiency was not merger-specific and also not verifiable.²⁵⁹ Finally, and perhaps most damningly, the court pointed out that H & R Block had previously acquired another software company, then failed to achieve any of the efficiencies it had claimed at the time of the acquisition.²⁶⁰

In 2013, the DOJ challenged Bazaarvoice’s acquisition of PowerReviews.²⁶¹ At the time, the two were the largest U.S. providers of ratings-and-reviews platforms for use by e-commerce companies.²⁶² Again, the DOJ demonstrated the likelihood of anticompetitive effects, shifting the burden to the defendants.²⁶³ And again, the defendants failed to offer any persuasive evidence of efficiencies. Bazaarvoice made “no claim that the merger [would] reduce[] the marginal costs of providing its services.”²⁶⁴ Instead, Bazaarvoice pointed to its post-merger access to a larger pool of user data, a claim that might foreseeably be made in many other digital markets.²⁶⁵ But the court pointed out that Bazaarvoice could simply have come to some data-sharing arrangement with PowerReviews instead of purchasing its rival outright.²⁶⁶ Unsurprisingly, the court also rejected Bazaarvoice’s asserted R&D-related efficiencies.²⁶⁷ Like H & R Block, Bazaarvoice simply failed to prove that eliminating its rival would produce any cognizable efficiencies.

Taken together, these two opinions confirm the hypothesis derived above from formal agency guidance: digital markets offer relatively few opportunities for firms to achieve productive efficiencies via merger or acquisition. As predicted, the merging parties were unable to demonstrate any benefits from shifting production among facilities, the one type of efficiency particularly favored by the HMGs. The merging parties instead tried to rely on R&D-related,

257. *Id.* at 77 n.30, 90.

258. *Id.* at 90–91.

259. *Id.*

260. *Id.* at 91.

261. *See* United States v. Bazaarvoice, Inc., No. 13-cv-00133-WHO, 2014 WL 203966, at *1 (N.D. Cal. Jan. 8, 2014).

262. *Id.*

263. *Id.* at *54, *64–65.

264. *Id.* at *62.

265. *Id.*

266. *Id.* at *63.

267. *Id.* at *63–64.

management-related, and procurement-related efficiencies. As predicted by the HMGs, these purported efficiencies were not valid. Digital markets' unique lack of efficiencies further tips the scales in favor of a more active approach to antitrust enforcement.

B. Alleged Unique Efficiencies

Nonetheless, some persist in arguing that digital markets are conducive to the creation of certain types of legitimate efficiencies unique to the digital context. These arguments center on firms' use of personal data and the ability to lower the cognitive cost of switching between different products within a given ecosystem. The following discussion summarizes and critiques these arguments.

1. Internal and External Use of Data

Some argue that digital markets, at least those involving “Big Data,” allow opportunities for firms to create unique data-driven efficiencies.²⁶⁸ These claims largely center on suppliers' ability to capture users' personal information and use it to inform internal product design decisions. Sokol and Comerford point also to suppliers' ability to monetize users' data—to sell it externally—as a “pro-competitive benefit” uniquely available in data-rich markets.²⁶⁹

a. Improving Quality: Not Unique

It is true that firms offering digital products can often track, store, and draw on large quantities of their users' personal data. Search engines, for example, benefit from a type of indirect network effect: an individual user's experience can sometimes be improved using the data yielded by her predecessors.²⁷⁰ By learning from how users interacted with search results in the past, a supplier can redesign its search algorithm to yield higher-quality results going forward. The importance

268. See, e.g., Newman, *Applications*, *supra* note 15, at 68–69 (“[S]uppliers increase information costs to improve the quality of their products, increase advertising-related revenues . . . , or both.”); Maureen K. Ohlhausen & Alexander P. Okuliar, *Competition, Consumer Protection, and the Right [Approach] to Privacy*, 80 ANTITRUST L.J. 121, 151 (2015) (“[C]onsolidation of data across business platforms often creates significant efficiencies and gains in consumer welfare.”); Sokol & Comerford, *supra* note 88, at 1131 (“Big Data creates efficiency gains.”).

269. Sokol & Comerford, *supra* note 88, at 1133–34.

270. See Argenton & Prüfer, *supra* note 107, at 76 (“Access to more search log data today leads to higher perceived search quality.”).

of such data, at least over the short run, has been widely acknowledged in the computer-science literature.²⁷¹

The Microsoft–Yahoo joint venture, cleared in 2010 by the DOJ, offers a potential example of such data-related efficiencies. According to a DOJ press release, the agency predicted that “[t]he transaction [would] enhance Microsoft’s competitive performance because it [would] have access to a larger set of queries, which should accelerate the automated learning of Microsoft’s . . . algorithms and enhance Microsoft’s ability to serve more relevant search results”²⁷² As a result, the DOJ closed its investigation of the proposed joint venture.²⁷³

But the relevant question for present purposes is whether internal data use is a *unique* efficiency. As shown above, the nature of digital markets yields a unique lack of certain types of efficiencies. The question, then, is whether digital markets nonetheless facilitate a unique type of efficiency that might, for purposes of rule design, offset what is uniquely lacking.

While use of customer data to improve products might be “efficient” (i.e., they allow suppliers to offer a product at lower cost, or a better product at the same or lower cost), this is not unique to digital markets. As early as the 1950s, consumer research was identifiable as a distinct field, with about ten academic articles on the topic being published each year.²⁷⁴ Data may not have been as easily or as cheaply accessible in a nondigital world, but suppliers could access information about their customers via surveys, focus groups, direct observations, and a variety of other mechanisms.²⁷⁵ Digital markets may facilitate the

271. The value of data decays over time. *See, e.g.*, Article 29 Data Protection Working Party, *Opinion 1/2008 of the Article 29 Data Protection Working Party on Data Protection Issues Related to Search Engines*, 00373/EN/WP 148, at 19 (Apr. 4, 2008) (“In view of the initial explanations given by search engine providers on the possible purposes for collecting personal data, the Working Party does not see a basis for a retention period [for such data] beyond 6 months.”). That said, a dominant firm with a larger inflow of data may nonetheless hold a competitive advantage over rivals. In other words, the size of the ocean may not matter (much), but the volume of the river does.

272. Press Release, U.S. Dep’t of Justice, Statement of the Department of Justice Antitrust Division on Its Decision to Close Its Investigation of the Internet Search and Paid Search Advertising Agreement Between Microsoft Corporation and Yahoo! Inc. (Feb. 18, 2010), <https://www.justice.gov/opa/pr/statement-department-justice-antitrust-division-its-decision-close-its-investigation-internet> [<https://perma.cc/DD8C-ACAZ>].

273. *Id.*

274. James G. Helgeson et al., *Consumer Research: Some History, Trends, and Thoughts, in HISTORICAL PERSPECTIVE IN CONSUMER RESEARCH: NATIONAL AND INTERNATIONAL PERSPECTIVES* 155, 156 (Jagdish N. Sheth & Chin Tiong Tan eds., 1985). And, of course, it subsequently formed part of the subject matter of a popular television series, *Mad Men*. *See* Dave Kreimer, “*Mad Men*” Portrays Market Research 50 Years Ago, QUALITATIVE QUERY (Aug. 17, 2010), <https://nextstepconsult.wordpress.com/2010/08/17/mad-men/> [<https://perma.cc/87GY-8DRJ>] (describing episode plots that involved empirical consumer research).

275. Helgeson et al., *supra* note 274, at 156.

collection and storage of users' data, which in turn may allow suppliers to improve their products. But, in comparison to offline markets, the difference is (at most) one of degree, not of kind.

b. Subsidizing "Free": Not an Efficiency

Does the ability to monetize users' data yield procompetitive efficiencies? According to some legal scholars, the fact that many digital products are offered for "free" represents a clear, obvious benefit to consumers.²⁷⁶ Unsurprisingly, Google's senior competition counsel has also advanced this claim: "[T]here's little doubt that from a consumer perspective, free products are usually a great thing."²⁷⁷ Sokol and Comerford explicitly tie these supposed benefits to the monetization of users' data.²⁷⁸ Digital-product suppliers can use such data to feed the growing demand for targeted advertisements. This harvesting and reselling of data (the argument runs) "results in obvious consumer benefit."²⁷⁹

Such claims suffer from two primary defects. First, competition law does not prefer low prices per se. One of the most well-settled principles in antitrust law, for example, is that price fixers cannot evade liability by arguing that they fixed low ("reasonable") prices.²⁸⁰ And predatory pricing—which entails, in part, charging low prices—remains a viable theory of harm.²⁸¹ Thus, even if monetizing users' data allows suppliers to offer free (or, more accurately, zero-price) products

276. See, e.g., David S. Evans, *The Antitrust Economics of Free*, 7 COMPETITION POL'Y INT'L 71, 73 (2011) (conjecturing that a "vast amount of consumer surplus . . . likely results from products and services offered for free"); Michal S. Gal & Daniel L. Rubinfeld, *The Hidden Costs of Free Goods: Implications for Antitrust Enforcement*, 80 ANTITRUST L.J. 521, 523 (2016) ("Free goods often provide real benefits to consumers and are clearly procompetitive."); Sokol & Comerford, *supra* note 88, at 1133 ("In a competition law regime where lower prices for consumers are deemed highly desirable, this is undoubtedly a benefit to consumers.").

277. Dana Wagner, *Is Free an Antitrust Issue?*, GOOGLE PUB. POL'Y BLOG (July 10, 2009), <https://publicpolicy.googleblog.com/2009/07/is-free-antitrust-issue.html> [<https://perma.cc/68BG-9JXG>].

278. Sokol & Comerford, *supra* note 88, at 1133.

279. *Id.* at 1134.

280. See *United States v. Trenton Potteries Co.*, 273 U.S. 392, 397–98 (1927) ("The power to fix prices, whether reasonably exercised or not, involves power to control the market and to fix arbitrary and unreasonable prices.").

281. Albeit one that has become quite difficult to prosecute successfully. See Daniel A. Crane, *The Paradox of Predatory Pricing*, 91 CORNELL L. REV. 1, 4 & n.12 (2005) (identifying two examples of plaintiffs succeeding at trial on predatory-pricing claims after *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.* was decided in 1993); Christopher R. Leslie, *Predatory Pricing and Recoupment*, 113 COLUM. L. REV. 1695, 1698–99 (2013) (observing that the recoupment element required by the Supreme Court in *Brooke Group* "effectively eliminated the viability of predatory pricing claims").

to those users, that fact alone would not necessarily represent an efficient or desirable outcome.

Second, the overwhelming majority of digital products are not actually free to use. Though users may not pay with fiat currency, they do pay with their personal information and/or attention to advertisements.²⁸² The “free increases consumer welfare” argument may be intuitively appealing, but it is fatally flawed. In syllogistic form, it runs as follows: (1) zero-price products offer benefits to consumers, (2) consumers reap those benefits without incurring any costs, so (3) zero-price products create consumer surplus. The logical flaw lies in the minor premise. Consumers do incur costs to acquire “free” products.²⁸³ There is no principled reason to believe these costs are uniformly lower than analogous costs in other markets. Why would zero-price transactions—the result of bilateral agreements whereby both parties surrender something of value—necessarily create any more consumer surplus than transactions involving positive prices? The bare fact that many digital-product suppliers employ business strategies that involve extracting data and attention instead of fiat currency does not represent an obvious benefit to consumer welfare.²⁸⁴ And the ability to offer a zero-price product does not necessarily represent an efficiency.

2. Google’s Antitrust Paradox

As described above, building a proprietary ecosystem can be a uniquely effective way to erect barriers to entry in many digital markets.²⁸⁵ It may be intuitively appealing to conclude that such conduct is purely anticompetitive. And, to be sure, proprietary lowest-cognitive-load ecosystems have potential anticompetitive implications. Controlling a digital ecosystem increases the cost to users of switching outside the proprietary ecosystem.²⁸⁶ In this context, ease of intrabrand switching equals difficulty of interbrand switching. It is relatively easy (i.e., less costly in terms of cognitive burden) to switch among the

282. See Newman, *Foundations*, *supra* note 15, at 172–74 (“[C]ustomers pay for zero-price products with information and attention rather than money . . .”); Newman, *supra* note 92, at 547–48 (“[W]here Free prices obtain on the user side of an advertising-supported platform . . . advertising is the mechanism by which the platform is able to offer a Free product.”).

283. See, e.g., Eben, *supra* note 15, at 279–80 (“In exchange for the provision of their personal data, consumers obtain access to . . . ‘free’ services.”).

284. See sources cited, *supra* note 282.

285. See *supra* Section I.A.2.

286. See Candeub, *supra* note 6, at 409 (“If we establish habits and routines to allocate our scarce cognitive resources, these routines—like many other habits—can be quite difficult, i.e., costly, to break, creating high switching costs with possible anti-competitive implications.”).

various portals and products offered within the proprietary ecosystem. But that very ease also makes it relatively hard (i.e., more costly in terms of cognitive burden) to switch to a rival's product.²⁸⁷

This can be thought of as “Google’s Antitrust Paradox.” On the one hand, lower cognitive load is, *ceteris paribus*, a benefit to users. To situate this concept within current antitrust discourse, perhaps the closest analogy is to economies of scope. Suppose a digital-product supplier acquires the provider of a complementary product. Relative to the pre-acquisition state of affairs, the firm may be able to lower users’ cognitive burden by offering access to both products via one proprietary ecosystem. This is somewhat similar to the familiar notion of economies of scope that can arise from combining the production of complementary physical products. Of course, the analogy is not perfect. Economies of scope arise where it is cheaper to produce two products together,²⁸⁸ but in the present context, it is not necessarily cheaper for the combined firm to produce both products. Yet the end result may be similar: lower costs to customers.

On the other hand, though, those lower costs are yoked with an *increase* in the cost to switch outside the proprietary ecosystem. Here again, the analogy to economies of scope breaks down. In a traditional market, economies of scope—provided that the lower costs are passed along to buyers in the form of lower prices—represent an unalloyed good.²⁸⁹ Firm *A*’s achieving economies of scope does not directly cause the cost of Firm *B*’s product to increase. In the digital-ecosystem context, however, *A*’s ability to lower costs to its users necessarily represents an increase in the effective cost of *B*’s alternative product. The lower the costs to use *A*’s ecosystem, the higher the costs of switching to *B*.

In the above example, *B* is obviously harmed. Is the harm good or bad when viewed through the lens of antitrust? Not all harm to competitors is cognizable under modern antitrust law. If an inefficient rival is shut out of a market by its own inability to offer an attractive product, the consensus position would view that outcome as desirable. But the harm to *B* is not exactly analogous to the harm suffered by inefficient rivals. *B* might be an efficient rival in the sense that it is able to produce a similar product at the same cost—yet *A*’s kingdom-building

287. As noted above, lack of data portability exacerbates this effect. *See supra* notes 128–133 and accompanying text.

288. *See, e.g.*, DENNIS W. CARLTON & JEFFREY M. PERLOFF, MODERN INDUSTRIAL ORGANIZATION 51 (1990) (describing efficiencies formed by the production of different goods together).

289. Assuming, as this Article does throughout, that “good” in the present context properly refers to consumer-welfare effects.

could nonetheless cause *B* to experience a loss of volume.²⁹⁰ *A*'s behavior would thus force analysts to confront a tradeoff between lower intrabrand switching costs and higher interbrand switching costs.

Such tradeoffs are not altogether foreign to antitrust law.²⁹¹ This one is somewhat similar to the tradeoff between productive and allocative efficiency identified by Williamson.²⁹² Though antitrust enforcers were once fairly hostile to claims of productive efficiencies, the modern antitrust enterprise has become relatively receptive.²⁹³ That said, claims of productive efficiencies remain subject to the requirement that the efficiencies be passed through to customers.²⁹⁴ In the classic tradeoff presented by Williamson, the productive efficiency—lower internal cost structure—might or might not be passed on to customers.²⁹⁵ In the present context, however, the relevant lower cost is necessarily enjoyed by users themselves. Of course, the relevant *higher* cost (of switching to *B*) is also imposed directly onto users.

Thus, this unusual dynamic is a two-edged sword. The benefit of a lower cognitive burden for users does not come without the increase in market power facilitated by higher interbrand switching costs. It would be incorrect to view proprietary ecosystem building as purely anticompetitive, but it would be just as incorrect to view it as generating pure efficiency gains. Perhaps the best tiebreaker is modern antitrust law's general preference for interbrand competition.²⁹⁶ Through that lens, ecosystem building appears to do more harm than good.

In sum, digital markets suffer from a unique lack of opportunities for firms to achieve beneficial efficiencies. Despite the

290. Such harm is not a cognizable antitrust injury. See *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 487–89 (1977) (holding that a rival's inability to compete on the merits did not constitute antitrust injury).

291. Indeed, as Allensworth persuasively argues, antitrust law is replete with commensurability problems. See Rebecca Haw Allensworth, *The Commensurability Myth in Antitrust*, 69 VAND. L. REV. 1, 4 (2016) (“Antitrust law often must trade off one kind of competition for another, or one salutary effect of competition (such as price, quality or innovation) for another.”).

292. See Oliver E. Williamson, *Economies as an Antitrust Defense: The Welfare Tradeoffs*, 58 AM. ECON. REV. 18, 21–23 (1968) (theorizing mergers that reduce average costs can yield positive allocative effects notwithstanding the tradeoff of price increases).

293. See, e.g., Robert Pitofsky, *Efficiency Consideration and Merger Enforcement: Comparison of U.S. and EU Approaches*, 30 FORDHAM INT'L L.J. 1413, 1418–19 (2007) (“[T]here is increasing evidence that efficiency claims, as spelled out in the Guidelines, have had the effect of persuading enforcement authorities not to challenge proposed mergers.”).

294. HMGs, *supra* note 6, § 10 (“[T]he Agencies consider whether cognizable efficiencies likely would be sufficient to reverse the merger's potential to harm customers in the relevant market, e.g., by preventing price increases in that market.”).

295. See Williamson, *supra* note 292, at 21–23 (“[I]t is evident that a relatively modest cost reduction is usually sufficient to offset relatively large price increases . . .”).

296. See *Cont'l T. V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 52 n.19 (1977) (“Interbrand competition is the competition among the manufacturers of the same generic product television sets in this case and is the primary concern of antitrust law.”).

paucity of enforcement efforts in this area, the few reported opinions that do exist confirm this intuition. Some argue that digital markets offer unique procompetitive benefits, but a closer look demonstrates that these purported efficiencies tend to be illusory, not unique to the digital context, or rife with anticompetitive potential.

IV. APPROPRIATE RULE DESIGN FOR DIGITAL MARKETS

Digital markets warrant unique treatment. They present a uniquely high likelihood of market power and anticompetitive conduct, along with a unique lack of offsetting efficiencies. Taken together, these facets counsel in favor of a pro-enforcement stance toward conduct in digital markets. But such a stance would be in tension with the value some commentators place on maintaining doctrinal unity.²⁹⁷ This raises a question: does the antitrust enterprise currently treat digital markets the same as their offline counterparts? If so, a higher degree of certainty might be warranted before departing from that unified stance, out of concern for maintaining doctrinal unity. If not, however—if doctrinal unity is already a chimera—antitrust analysts are free to adopt the approach that is best suited for the particular task at hand. The following discussion demonstrates that digital markets already receive differential treatment. Ironically, and unfortunately, that treatment has been skewed heavily against, rather than toward, enforcement efforts. The remainder of the following discussion offers prescriptive suggestions to correct that fundamental error.

A. The Current State of Play

It is increasingly well recognized that digital markets already receive unique treatment under U.S. antitrust laws.²⁹⁸ As the foregoing indicates, digital markets do exhibit unique features that merit a uniquely pro-enforcement stance. But the orthodox antitrust enterprise has pursued the opposite path, opting instead for a near-total lack of enforcement in digital markets. This hands-off attitude is apparent in each of the three primary areas of antitrust agency activity: litigation

297. See generally Waller, *supra* note 8, at 644 (noting that deviations from antitrust's supposed doctrinal unity necessarily create rule-of-law concerns).

298. See, e.g., Nitasha Tiku, *How to Curb Silicon Valley Power—Even with Weak Antitrust Laws*, WIRED (Jan. 5, 2018), <https://www.wired.com/story/how-to-curb-silicon-valley-power-even-with-weak-antitrust-laws/> [<https://perma.cc/B5FW-C8SZ>] (“[Tech giants] were allowed to grow unfettered in part because of a nearly-40-year-old interpretation of US antitrust law that views anticompetitive behavior primarily through the prism of the effect on consumers.”).

challenging anticompetitive conduct, litigation seeking to block proposed mergers and acquisitions, and competition advocacy.²⁹⁹

As to conduct, the government has brought only one substantial case since *Microsoft*. In 2012, the DOJ sued Apple and several publishers for agreeing to fix e-book prices.³⁰⁰ It was, in many ways, a remarkable case. The DOJ's choice of targets, for instance, struck many as odd.³⁰¹ The agency is tasked with preventing the buildup and abuse of market power. Why, then, did it choose to expend scarce resources attacking a handful of publishers whose combined share of e-books sold in the United States is less than 25%?³⁰² Why not focus instead on the retail level, which is dominated by a single firm (Amazon) that controls more than 80% of all U.S. sales?³⁰³ But stranger still was the DOJ's ex ante leniency. Viewed in isolation, the case itself was absolutely warranted: the defendants engaged in horizontal price-fixing, a practice universally condemned by modern antitrust authorities.³⁰⁴ Given the

299. None of this is meant to downplay the importance of private enforcement, which plays a vital role in the functioning of the U.S. antitrust enterprise. See Harry First & Spencer Weber Waller, *Internet Markets and Algorithmic Competition: The Rest of the Story*, 3 CONCURRENCES: COMPETITION L. REV. (ONLINE MKTS. & OFFLINE WELFARE EFFECTS – INTERNET, COMPETITION, SOC'Y & DEMOCRACY), 2017, at 42, 43 (“Private enforcement actions will continue to fill the gap in terms of cases not brought by the government . . .”). But, particularly given the substantial endogenous and exogenous hurdles faced by private antitrust plaintiffs today, the Agencies, now more than ever, must lead the way.

300. See *United States v. Apple, Inc.*, 791 F.3d 290, 339 (2d Cir. 2015) (upholding lower court's decision that Apple's conduct was per se illegal). In 2010, the Justice Department filed a complaint against and proposed settlement with six Silicon Valley firms that had entered into a series of agreements not to “poach” each other's employees. Press Release, U.S. Dep't of Justice, Justice Department Requires Six High Tech Companies to Stop Entering into Anticompetitive Employee Solicitation Agreements (Sept. 24, 2010), <https://www.justice.gov/opa/pr/justice-department-requires-six-high-tech-companies-stop-entering-anticompetitive-employee> [<https://perma.cc/CY25-5MGD>]. But the relevant market(s) at issue were labor markets, not digital markets. See Complaint ¶ 14, *United States v. Adobe Sys., Inc.*, No. 1:10-cv-01629 (D.D.C. Sept. 24, 2010), 2010 WL 11417874 (contrasting the defendants' conduct with what occurs “[i]n a well-functioning labor market”). The FTC closed an investigation into Google's search-related practices in 2013, despite a staff conclusion that the conduct was anticompetitive. *The FTC Report on Google's Business Practices*, WALL ST. J. (Mar. 24, 2015, 7:40 PM), <http://graphics.wsj.com/google-ftc-report/> [<https://perma.cc/82L9-GALB>].

301. Pasquale, *supra* note 126, at 47 (“Rather than shaping antitrust law to accommodate the publishers' efforts to mollify the effects of Amazon's increasingly monopolistic power over book sales, the DoJ stuck with a formalistic approach, smothering an alternative in the cradle as a per se violation of competition law.”).

302. See *Amazon Ebook Market Share 2017 – Is It Big Enough?*, PUBLISHDRIVE, <https://publishdrive.com/amazon-ebook-market-share/> (last updated Oct. 25, 2017) [<https://perma.cc/57A2-HSU8>].

303. Wahba, *supra* note 29.

304. *Apple, Inc.*, 791 F.3d at 297 (“Apple intentionally organized a conspiracy among the Publisher Defendants to raise ebook prices.”).

type of conduct at issue and the salacious underlying facts,³⁰⁵ one would ordinarily expect criminal prosecution—yet the DOJ chose to file the case as a civil matter instead of bringing criminal charges.³⁰⁶

As to mergers and acquisitions, the agencies have sued to block three deals: H & R Block/TaxAct and Bazaarvoice/PowerReviews, which are discussed above,³⁰⁷ and the proposed merger of DraftKings and FanDuel.³⁰⁸ What common threads tie these actions together? First, despite the prevalence of zero-price business strategies in digital markets,³⁰⁹ none of these challenged mergers featured zero-price markets. Most of H & R Block's and TaxAct's customers paid identifiable prices.³¹⁰ Bazaarvoice and PowerReviews sold their ratings-and-reviews software to other businesses at positive prices.³¹¹ And, although many fantasy-sports products do not require payment of entry fees to use, the FTC's challenge of DraftKings/FanDuel focused exclusively on the type of online fantasy sports that *do* require monetary payments.³¹² Second, each of these mergers would have resulted in off-the-charts concentration levels, well above the thresholds for presumptive illegality.³¹³ Thus, while these actions are

305. *United States v. Apple Inc.*, 952 F. Supp 2d 639, 651 (S.D.N.Y. 2013) (finding it was not uncommon for CEOs of the Publishers to hold private dinners in New York restaurants to discuss Amazon's pricing schemes on e-books).

306. Complaint, *Apple Inc.*, 952 F. Supp. 2d (No. 12 CV 2826).

307. *See supra* Section III.A.2.

308. Complaint, DraftKings, Inc., No. 9375 (F.T.C. June 19, 2017), 2017 WL 3049123 [hereinafter Complaint, DraftKings, Inc.]. A number of deals have been cleared on condition that the parties divest some assets or agree to behavioral remedies. *See, e.g.*, *United States v. Google Inc.*, No. 1:11-cv-00688, 2011 U.S. Dist. LEXIS 124151, at *13–32 (D.D.C. Oct. 5, 2011) (describing behavioral remedies agreed to by Google in order to receive clearance for its proposed purchase of ITA); Press Release, Fed. Trade Comm'n, FTC Challenges Reed Elsevier's Proposed \$4.1 Billion Acquisition of ChoicePoint, Inc. (Sept. 16, 2008), <https://www.ftc.gov/news-events/press-releases/2008/09/ftc-challenges-reed-elseviers-proposed-41-billion-acquisition> [<https://perma.cc/NGU9-59WV>] (reporting that the FTC required divestitures before clearing the combination of “the two largest providers of electronic public record services to U.S. law enforcement customers”).

309. Newman, *Foundations*, *supra* note 15, at 151.

310. Compare Tik Root & Commentary, *Millions of Americans Pay Unnecessary Tax Filing Fees—But They May Be Able to Get a Refund*, QUARTZ (June 18, 2018) <https://qz.com/1307700/free-file-many-americans-who-file-taxes-online-are-paying-unnecessary-fees/> [<https://perma.cc/G9P2-8VJA>] (calculating that only about three percent of eligible tax returns, approximately 3.125 million per year on average, have been filed for free over the sixteen-year history of the free-file program), with Plaintiff's Memorandum of Points and Authorities in Support of its Motion for a Preliminary Injunction at Ex. 12, *United States v. H & R Block, Inc.*, 833 F. Supp. 2d 36 (D.D.C. 2011) (No. 11-00948) (“We, together with our franchisees, prepared 24.5 million tax returns worldwide during fiscal year 2011 . . .”).

311. *United States v. Bazaarvoice, Inc.*, No. 13-cv-00133-WHO, 2014 WL 203966, at *8 (N.D. Cal. Jan. 8, 2014).

312. *See* Complaint, DraftKings, Inc., *supra* note 308, ¶ 16 (“Most DFS contests require users to pay an entry fee for each lineup submitted and involve the potential for cash prizes.”).

313. *See infra* note 336 and accompanying text; *see also* HMGs, *supra* note 6, § 5.3 (defining a highly concentrated market as one with a Herfindahl-Hirschman Index above 2,500).

certainly commendable, they leave considerable room for expanded efforts. Even under existing legal frameworks, antitrust enforcement could reach zero-price markets and deals that are less blatantly anticompetitive yet still above current thresholds for presuming harm.

Finally, in the area of competition advocacy, the agencies have repeatedly urged courts to side *with*, rather than against, dominant firms. In one striking example, enforcers “aggressively” moved to protect digital-private-taxicab companies Uber and Lyft from unionization efforts.³¹⁴ In 2015, Seattle enacted an innovative ordinance designed to facilitate unionization among the city’s drivers.³¹⁵ The Chamber of Commerce quickly sued to challenge the ordinance, but lost at the district court.³¹⁶ After the Chamber appealed to the U.S. Court of Appeals for the Ninth Circuit, the FTC and DOJ filed a joint amicus brief arguing that Seattle’s ordinance was potentially anticompetitive,³¹⁷ and the FTC appeared at oral arguments to reiterate its criticism.³¹⁸ The choice of targets was puzzling. Uber and Lyft operate as a near duopoly, together controlling about 96% of the U.S. market.³¹⁹ Uber alone enjoys a 74% share.³²⁰ Was a single city ordinance, enacted to better the precarious financial situation of a few thousand workers, the most pressing competition problem in this market? Even more recently, the DOJ filed an amicus brief and sought oral arguments in support of Apple and the “indirect purchaser” rule,³²¹

314. See Pasquale, *supra* note 126, at 50 (“[T]he FTC has aggressively warned cities not to harm ‘competition’ by imposing certain rules on transport platforms like Uber.”).

315. Daniel Beekman, *Uber and Lyft Didn’t Want You to Know—But They Have Over 9,200 Drivers in Seattle*, SEATTLE TIMES (Jan. 23, 2016), <https://www.seattletimes.com/seattle-news/politics/county-opens-permit-records-uber-lyft-drivers-top-9200/> [<https://perma.cc/E74Q-LA7M>].

316. Avi Asher-Schapiro, *Trump Administration Fights Effort to Unionize Uber Drivers*, INTERCEPT (Mar. 26, 2018), <https://theintercept.com/2018/03/26/uber-drivers-union-seattle/> [<https://perma.cc/37TR-RNFN>].

317. Brief for the United States and the Federal Trade Commission as Amici Curiae in Support of Appellant and in Favor of Reversal, *Chamber of Commerce v. City of Seattle*, 890 F.3d 769 (9th Cir. 2018) (No. 17-35640), 2017 WL 5166667.

318. See Asher-Schapiro, *supra* note 316 (“The agencies filed an amicus brief late last year, and an FTC lawyer presented oral arguments last month in front of a three-judge panel.”).

319. Johana Bhuiyan, *Uber’s U.S. Sales Have Recovered After the #deleteUber Campaign but Lyft is Still Gaining*, VOX (Nov. 5, 2017, 10:38 AM), <https://www.recode.net/2017/11/5/16599156/uber-business-market-share-lyft-scandal-delete-uber> [<https://perma.cc/ED8V-GZAS>].

320. *Id.*

321. See Brief for the United States as Amicus Curiae Supporting Petitioner at *10–15, *Apple Inc. v. Pepper*, 139 S. Ct. 1514 (2019) (No. 17-204), 2018 U.S. S. Ct. Briefs LEXIS 2984, at *12 (“A consumer who chooses to buy an app from the App Store pays the purchase price and receives the app, but has no economic stake in the manner in which that money is divided between Apple and the developer.”).

a disfavored, defendant-friendly doctrine condemned by (among others) the bipartisan Antitrust Modernization Commission.³²²

In sum, it seems digital markets have received unusual treatment from antitrust authorities. Relatively few actions have been taken. When action was taken, the targets were generally not digital giants themselves. Instead, authorities have repeatedly opposed relatively small entities that were seeking to counter tech giants' considerable power. The agencies have sued to block a handful of mergers, but only where the proposed deals would have resulted in truly extreme concentration levels, and never in a zero-price market.³²³ Instead, a number of significant transactions have been cleared in highly concentrated, zero-price markets. Google, Facebook, and Amazon alone have acquired dozens of head-to-head rivals and ecosystem building targets without drawing any serious opposition from the agencies.³²⁴

Private enforcement seems to have fared little better. Expansive interpretations of the Federal Arbitration Act,³²⁵ courts' mistaken belief that "free" digital products are immune from antitrust scrutiny,³²⁶ and numerous other hurdles and pitfalls faced by modern antitrust plaintiffs,³²⁷ have all combined to stymie private litigants' efforts to counter the power of digital giants.

Though these skies appear dark, there is a silver lining: the antitrust enterprise finds itself free to adopt the rules and approaches best suited for the specific task at hand. Concerns over doctrinal unity lose much of their salience where antitrust already treats a particular sector differently than it treats others. That seems to be the case in digital markets, leaving the question of institutional design decidedly open. As demonstrated above, the balance of error costs suggests a pro-

322. See ANTITRUST MODERNIZATION COMM'N, *supra* note 6, at vi ("The Commission recommends that Congress overrule the Supreme Court's decisions in *Illinois Brick* and *Hanover Shoe* to the extent necessary to allow both direct and indirect purchasers to recover for their injuries.").

323. See Newman, *Foundations*, *supra* note 15, at 151 ("What little precedent and commentary does exist tends to conclude summarily that antitrust law does not apply to 'free' products.").

324. See, e.g., Russell Brandom, *The Monopoly-Busting Case Against Google, Amazon, Uber, and Facebook*, VERGE (Sept. 5, 2018), <https://www.theverge.com/2018/9/5/17805162/monopoly-antitrust-regulation-google-amazon-uber-facebook> [<https://perma.cc/W3SA-B69L>] (describing how big tech companies have sought out competitors and bought them out without serious antitrust obstacles).

325. *Meyer v. Kalanick*, 291 F. Supp. 3d 526, 536 (S.D.N.Y. 2018).

326. *Kinderstart.com, LLC v. Google, Inc.*, No. C 06-2057 JF (RS), 2007 U.S. Dist. LEXIS 22637, at *15 (N.D. Cal. Mar. 16, 2007).

327. See, e.g., Allensworth, *supra* note 291, at 45 (noting that courts "often find the presence of any plausible procompetitive argument to allow a restriction to pass muster under the Rule of Reason" and that "courts often place unreasonable demands on plaintiffs—in the form of empirical evidence and unassailable market definitions").

enforcement stance toward digital markets is appropriate. The remaining task, then, is identifying how best to achieve that goal.

B. Inverting the Implicit Presumption

The antitrust enterprise currently employs an implicit presumption that antitrust enforcement in digital markets is generally unwarranted.³²⁸ This is precisely the position urged by Posner's influential essay. In it, he argued that digital markets pose "ineradicable uncertainty"³²⁹ and concluded that U.S. states should be stripped of all authority to bring antitrust claims.³³⁰ Even as to federal oversight, Posner seriously entertained the appropriateness of a "zero enforcement" policy.³³¹ He ultimately backed away from that rather radical proposal, but nonetheless urged extreme caution as to antitrust enforcement in technology markets.³³²

That proposal was misguided. Digital markets are different, but in ways that warrant increased scrutiny, not a free pass. In light of the unique likelihood of market power and harm in digital markets, structural presumptions should in practice be relatively less defendant friendly in digital markets than they presently are in other markets. Instead of the current heavy presumption against antitrust enforcement in digital markets, courts and enforcers should consider imposing a presumption in favor of such scrutiny.

In fact, against the current backdrop of persistent nonenforcement, even treating digital markets the *same* as other markets might be an improvement over current policy. As to merger enforcement, for example, the HMGs purport to treat most mergers that cause the Herfindahl-Hirschman Index ("HHI") to exceed 2,500 as presumptively anticompetitive.³³³ Recent agency actions in nondigital markets have challenged deals that would result in HHIs as low as 3,600.³³⁴ In the not-too-distant past, the FTC challenged a hospital

328. See, e.g., Nazzini, *supra* note 88, at 4 ("*Primum non nocere, deinde curare*. A maxim as needed in medieval medicine as in 21st Century competition policy."). To be sure, Nazzini is more sophisticated than most, noting that "disruptive innovation is not an article of faith and cannot become a pretext for a non-interventionist agenda." *Id.* But this is only after positing that "[i]n digital markets, disruptive innovation is particularly relevant" and before suggesting that "barriers to entry in online markets are not necessarily significant." *Id.*

329. Posner, *supra* note 3, at 943.

330. *Id.* at 940.

331. *Id.* at 943.

332. *Id.* ("Clearly, though, the byword . . . will be: caution.")

333. HMGs, *supra* note 6, § 5.3.

334. See, e.g., Amended Complaint for Temporary Restraining Order and Preliminary Injunction Pursuant to Section 13(b) of the Federal Trade Commission Act at 6, *FTC v. Wilh. Wilhelmsen*

merger that would have resulted in an HHI of 3,200.³³⁵ Yet the three deals involving digital markets discussed above featured much higher HHI levels: 8,100 (DraftKings/FanDuel), 4,691 (H & R Block/Tax Act), and 3,914 (Bazaarvoice/PowerReviews).³³⁶ As to conduct cases, the DOJ has challenged multiple restraints of trade involving steering of customers in nondigital markets³³⁷—yet the FTC declined to challenge Google’s steering of its users despite a staff finding of consumer harm.³³⁸ Thus, there may be substantial room for increased enforcement even within existing legal frameworks.

A shorthand way of summarizing the present proposal is that it seeks to reframe the question that has typically been posed by courts and enforcers confronting digital-market conduct. Instead of asking why conduct should be condemned, perhaps the more appropriate question is, “Why should this conduct be allowed?” Given the unique likelihood of long-run harm and lack of efficiencies described above, the answer will often be, “It should not.”

Where a firm with monopoly power seeks to acquire a potential rival—a not-uncommon occurrence in digital markets—this approach reflects the position advocated for by the leading treatise. In such instances, Areeda and Hovenkamp propose the following framework: “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.”³³⁹

Additionally, the antitrust enterprise must move beyond its current obsession with econometrics, especially the inclination to insist

Holding ASA, 341 F. Supp. 3d 27 (D.D.C. 2018) (No. 1:18-cv-00414-TSC) (“Post-Acquisition market concentration would be at least 3600 by revenue . . .”).

335. See *FTC v. Univ. Health, Inc.*, 938 F.2d 1206, 1211 n.12 (11th Cir. 1991) (“Furthermore, any merger that increases a market’s HHI by over 100, to a post-merger level over 1000, raises antitrust concerns. In the present case, the proposed merger would increase the HHI by over 630 to approximately 3200.”).

336. *United States v. Bazaarvoice, Inc.*, No. 13-cv-00133-WHO, 2014 WL 203966, at *36 (N.D. Cal. Jan. 8, 2014) (according to the court’s opinion, “the pre-merger HHI was 2674, and it would increase by 1240 to 3915 after the merger.” The source of the discrepancy—2674 plus 1240 equals 3914, not 3915—is unclear.); *United States v. H & R Block, Inc.*, 833 F. Supp. 2d 36, 72 (D.D.C. 2011); Complaint, *DraftKings, Inc.*, *supra* note 308, ¶ 47.

337. See *United States v. Am. Express Co.*, 88 F. Supp. 3d 143, 149 (E.D.N.Y. 2015) (holding that DOJ-challenged steering restrictions “constitute[d] an unlawful restraint on trade”), *rev’d*, 838 F.3d 179 (2d Cir. 2016), *aff’d sub nom.* *Ohio v. Am. Express Co.*, 138 S. Ct. 2274 (2018) (holding “there is nothing inherently anticompetitive about Amex’s antisteering provisions”); Complaint ¶ 14, *United States v. Charlotte-Mecklenburg Hosp. Auth.*, 248 F. Supp. 3d 720 (W.D.N.C. 2016) (No. 3:16-cv-00311), 2016 WL 3202191 (“CHS’s [steering] restrictions reduce the competition that CHS faces in the marketplace.”).

338. *The FTC Report on Google’s Business Practices*, *supra* note 300.

339. AREEDA & HOVENKAMP, *supra* note 6, ¶ 701d.

on econometric “proof” of market-wide price and/or output effects. So-called “qualitative” evidence has been unfairly maligned by scholars who mistrust judicial and administrative authorities. Exogenous procedural and substantive law developments have substantially reduced the role of juries, long the favored punching bag of those who downplay the value of qualitative evidence.³⁴⁰ Yet commentators continue to argue that sophisticated judges and enforcement agencies will frequently be misled by “smoking gun” documents.³⁴¹ Are federal judges and agencies really so easy to mislead? In any event, these scholars’ preferred type of “quantitative evidence” is not immune from manipulation.³⁴² Numbers, often incomplete and taken out of context, can tell many stories. Any observer of or participant in a modern antitrust trial has likely heard two highly credentialed economic experts reach precisely opposite conclusions using the same underlying data.³⁴³ Throughout all of antitrust law’s history, qualitative evidence has played an important and useful role. That role deserves to be reinvigorated.

Qualitative evidence is particularly vital in zero-price digital markets.³⁴⁴ Such markets will tend not to produce the sorts of data—particularly relating to prices—often relied on in more traditional contexts. But the antitrust enterprise has a congressional mandate to oversee and protect competition in all markets, not just those that map most comfortably onto the simplistic models that appear in the opening

340. See, e.g., Crane, *supra* note 8, at 1200 (“[J]uries are singularly unqualified to resolve complex disputes over industrial organization matters . . .”). Crane offers a nuanced critique: his position is that while juries are not qualified to resolve antitrust cases, the actual number of antitrust jury trials in a given year is quite small, reducing this Chicago School bogeyman to more of a nuisance than an actual threat. *Id.*

341. On this point, see generally Geoffrey A. Manne & E. Marcellus Williamson, *Hot Docs vs. Cold Economics: The Use and Misuse of Business Documents in Antitrust Enforcement and Adjudication*, 47 ARIZ. L. REV. 609, 610 (2005) (“It is inappropriate for courts and regulators to prove antitrust violations by relying on the accounting information, business rhetoric, and expression of intent contained in business documents, and the likelihood of error resulting from the use of these documents is substantial.”).

342. See, e.g., Jesse Eisinger & Justin Elliott, *These Professors Make More Than a Thousand Bucks an Hour Peddling Mega-Mergers*, PROPUBLICA (Nov. 16, 2016), <https://www.propublica.org/article/these-professors-make-more-than-thousand-bucks-hour-peddling-mega-mergers> [<https://perma.cc/Y8VM-EQW3>] (“[A] ProPublica examination of several marquee deals found that economists sometimes salt away inconvenient data in footnotes and suppress negative findings, stretching the standards of intellectual honesty to promote their clients’ interests.”).

343. See *id.* (“‘This is not the scientific method,’ said Orley Ashenfelter, a Princeton economist known for analyzing the effects of mergers. . . . ‘The answer is known in advance, either because you created what the client wanted or the client selected you as the most favorable from whatever group was considered.’”).

344. See Newman, *Foundations*, *supra* note 15, at 179 (“Price information is quantitative, simple, and almost costless to gather. Nonprice cost information is qualitative, complex, and relatively costly to gather.”).

pages of undergraduate economics textbooks and antitrust-law casebooks.³⁴⁵

C. Challenging Consummated Mergers

It is axiomatic that predicting ex ante the competitive effects of a given merger can be difficult. To illustrate, consider the FTC's ex ante analysis of the proposed Zillow/Trulia acquisition. Perhaps there was no evidence that the acquisition would produce actual, merger-specific efficiencies.³⁴⁶ There was, however, evidence suggesting that real estate agents use "numerous methods" other than Zillow's and Trulia's portals to access potential home buyers.³⁴⁷ There was (unsurprisingly) no evidence that ZG planned to stop innovating post-acquisition.³⁴⁸ Thus, the FTC may have had a rational basis for its decision to clear the proposed deal. Unfortunately, subsequent evidence rather strongly suggests that that ex ante decision was incorrect, and that the now-consummated acquisition has facilitated harmful effects.³⁴⁹

But what is often quite difficult to predict ex ante can be considerably easier to analyze ex post. Why should a harmful merger, by simple virtue of having been consummated, not attract renewed antitrust scrutiny? In fact, consummated mergers *are* challenged with some frequency.³⁵⁰ This practice should continue, and be expanded, in

345. See *id.* at 174 ("Under the consensus view, modern antitrust law takes as its goal the protection and promotion of competition in private markets.").

346. See Statement of Commissioner Ohlhausen, Commissioner Wright, and Commissioner McSweeney Concerning Zillow, Inc./Trulia, Inc., Zillow, Inc., No. 141-0214 (F.T.C. Feb. 19, 2015), 2015 WL 757484, at *2 [hereinafter Statement of Commissioners Concerning Zillow, Inc./Trulia, Inc.] (stating that the FTC found the evidence of anticompetitive effects "inconclusive," but not mentioning any evidence of efficiencies).

347. *Id.* at *1.

348. See *id.* at *1 ("[T]here was insufficient evidence leading us to conclude that . . . the combined company would have a reduced incentive to innovate . . ."). On the low likelihood that merger reviews will identify likely harms to innovation, see John M. Newman, *Antitrust in Attention Markets: Objections and Responses*, 59 SANTA CLARA L. REV. (forthcoming 2019).

349. See Newman, *supra* note 26, at 53 ("Post-deal statements from the combined firm's executives suggest the Zillow-Trulia acquisition may have harmed — indeed, may be harming — consumers.").

350. J. Thomas Rosch, Comm'r, Fed. Trade Comm'n, Consummated Merger Challenges—The Past is Never Dead (Mar. 29, 2012), https://www.ftc.gov/sites/default/files/documents/public_statements/consummated-merger-challenges-past-never-dead/120329springmeetingspeech.pdf [<https://perma.cc/74QK-D6PG>]; see also Press Release, U.S. Dep't of Justice, Justice Department and New York Attorney General File Antitrust Lawsuit Against New York City Tour Bus Joint Venture of Coach USA and City Sights (Dec. 11, 2012), <https://www.justice.gov/opa/pr/justice-department-and-new-york-attorney-general-file-antitrust-lawsuit-against-new-york-city> [<https://perma.cc/HY7H-WKY5>] (initiating a lawsuit after learning of the challenged transaction only after it had already been consummated).

digital markets.³⁵¹ Ex ante, the likelihood of the unique harms described above may be difficult to predict with certainty—but ex post, analysis often becomes much clearer.³⁵²

The only traditional concern with challenging consummated mergers is that of “unscrambling the eggs”³⁵³—it can be difficult to unwind business units once combined, and any efficiencies that did result from the deal may be lost. But this concern is lessened in digital markets. Digital-product suppliers engage in less physical intermingling of assets than their offline counterparts, and any intangible combination that occurs is relatively easy to unwind. To illustrate, consider the FTC’s *Evanston Northwestern Healthcare Corp.* decision, which involved a consummated merger between hospitals.³⁵⁴ After the deal closed, but before the agency filed a complaint, the merged firm spent about \$120 million making substantial physical upgrades to its facilities.³⁵⁵ Because these and other benefits could not have survived separation of the merged firm, the Commission declined to order divestiture.³⁵⁶ But, as noted above, physical plant is much less salient in digital mergers. Even the intangible products often maintain separate appearances and functionality.³⁵⁷

The agencies spend a great deal of time reviewing Hart-Scott-Rodino Act filings regarding proposed deals.³⁵⁸ Some of that time may

351. It may be worth noting that the current Assistant Attorney General of the DOJ Antitrust Division has expressed what could be understood as a contrary view. See *US: Antitrust Chief Says Tech Dealmaking Spawns ‘Great Efficiencies’*, COMPETITION POL’Y INT’L (July 12, 2018), <https://www.competitionpolicyinternational.com/us-antitrust-chief-says-tech-dealmaking-spawns-great-efficiencies/> [<https://perma.cc/A3AZ-PQBU>]:

You wonder would YouTube be as useful and as [much of] a competing force to music or in video had it not been enhanced and improved through the tech resources that Google had? . . . I think there’s [sic] great efficiencies that could occur from a lot of these. You can’t, you know, in retrospect try to second guess that.

(internal quotation marks omitted) (quoting Makan Delrahim).

352. See, e.g., Tim Wu, *The Case for Breaking Up Facebook and Instagram*, WASH. POST (Sept. 28, 2018), <https://www.washingtonpost.com/outlook/2018/09/28/case-breaking-up-facebook-instagram/> [<https://perma.cc/2MH3-JH52>] (calling for government enforcers to challenge the consummated acquisition of Instagram by Facebook).

353. Debbie Feinstein, *Un-consummated Merger*, FED. TRADE COMM’N (Dec. 18, 2013, 10:44 AM), <https://www.ftc.gov/news-events/blogs/competition-matters/2013/12/un-consummated-merger> [<https://perma.cc/S2HV-99EJ>] (“[A]chieving a remedy in consummated mergers [prior to the passage of the Hart-Scott-Rodino Act] often involved a complicated ‘unscrambling of the eggs’ to restore competition to pre-merger levels.”).

354. *Evanston Nw. Healthcare Corp.*, No. 9315 (F.T.C. Aug. 6, 2007), 2007 WL 2286195, at *2.
355. *Id.* at *38.

356. *Id.* at *3.

357. Jon Fingas, *Facebook and Instagram Are Finally Integrated, Sort Of*, ENGADGET (Nov. 15, 2016), <https://www.engadget.com/2016/11/15/facebook-and-instagram-unified-business-inbox/> [<https://perma.cc/5GCG-96JN>].

358. See, e.g., FED. TRADE COMM’N & DEP’T OF JUSTICE, HART-SCOTT-RODINO ANNUAL REPORT 1 (2017), <https://www.ftc.gov/system/files/documents/reports/federal-trade-commission-bureau->

be better spent reviewing “close call” consummated mergers. The greater certainty afforded by ex post review is particularly salient when the harms at issue are complex relative to the traditional price overcharges at the center of most investigations.³⁵⁹ Together with the fact that “unscrambling” digital deals is relatively easy, this militates in favor of increased scrutiny of consummated mergers.

D. Statutory and Quasi-Regulatory Solutions

Erroneous antitrust decisionmaking, in the form of false negatives, is particularly common in zero-price markets. For years, antitrust authorities overlooked the massive welfare harms that can occur—and have occurred—in such markets.³⁶⁰ Courts, enforcers, and eminent scholars all have been misled by the myth that where a market lacks obvious prices, consumer welfare cannot be harmed.³⁶¹ If a product is free, the story goes, it offers benefit at no cost.³⁶² In fact, such “markets” may appear not to be markets at all.³⁶³

The mistake lies in conflating price and cost. Consumers do pay for the vast majority of zero-price products: they exchange attention to advertisements, personal information, the rights to creative labor, and more in order to access zero-price products.³⁶⁴ “Free” products, in other words, are often not free. Yet suppliers of zero-price products have thus far enjoyed a free pass from antitrust oversight.³⁶⁵ Such unwarranted legal immunity distorts the competitive playing field, causing inefficient distribution of societal resources and harm to welfare.³⁶⁶

Enforcement agencies have recently taken steps in the right direction. During its review of the Zillow/Trulia merger, for example,

competition-department-justice-antitrust-division-hart-scott-rodino/p110014_fy_2017_hsr_report_c.pdf [https://perma.cc/2T9N-5EQJ] (noting that, in Fiscal Year 2017, more than two thousand HSR transactions were reported).

359. See Wu, *supra* note 352 (“As this analysis suggests, the case for the breakup should be relatively clear. Today, we can measure the effects of the lack of competitors to Facebook, in terms of higher prices and lower quality.”).

360. Newman, *Foundations*, *supra* note 15, at 192–94 (describing likely false negatives).

361. *Id.*

362. See STUCKE & GRUNES, *supra* note 17, § 1.26 (addressing the myth that “because something is ‘free,’ it must be good for consumers”).

363. See *id.* (“Because of the lack of transparency, consumers often do not know how much they actually pay for these services.”).

364. Newman, *supra* note 92, at 555 (“Consumers who pay for a product via attention or information nonetheless pay for that product.”).

365. See Newman, *Foundations*, *supra* note 15, at 160–62 (“United States legal precedent contains multiple examples of courts creating de jure antitrust immunity by declining to apply antitrust scrutiny in zero-price contexts.”).

366. Newman, *supra* note 92, at 575–79 (critiquing the undeserved “protected status” afforded to suppliers of zero-price products).

the FTC reportedly analyzed the zero-price market for online real estate information.³⁶⁷ Relative to past (non)actions, that analysis alone represented forward progress. As one FTC Commissioner rightly observed, “[T]he mere fact that [anticompetitive] effects occur on the ‘free’ side of the market should matter little to an antitrust enforcer.”³⁶⁸

Yet there remains substantial room for improvement. Two issues in particular merit concern. First, the FTC investigated only whether the proposed merger would likely result in less *innovation* on the user side of the platform.³⁶⁹ But such analyses are almost certain to be fruitless, as was the FTC’s inquiry in Zillow/Trulia. Economic theory does not offer robust predictions as to whether a particular deal will harm innovation competition. We know that Schumpeter’s notion of monopoly as the ideal market structure was incorrect, but the economics of innovation remain (perhaps necessarily) fuzzy.³⁷⁰ Moreover, the type of qualitative evidence—internal presentations, communications, and the like—that can sometimes fill such voids will typically be lacking in the present context. For obvious reasons, CEOs seem unlikely to pitch proposed deals to their directors by claiming that the merged firm will become less innovative. Little surprise, then, that the FTC’s analysis in Zillow/Trulia failed to yield evidence of innovation harm.

Second, even if enforcers were to analyze a zero-price market, accurately identify likely or actual anticompetitive effects, and file a lawsuit to correct the problem, there is no guarantee that a court would be receptive. Past experience, at least in the United States, is less than reassuring,³⁷¹ although judicial analyses in the European Union and China have been much more forward-thinking in this area.³⁷²

These domestic problems call for a statutory solution, as well as (or alternatively) the type of quasi-regulatory, formal agency guidance

367. Statement of Commissioners Concerning Zillow, Inc./Trulia, Inc., *supra* note 346.

368. Terrell McSweeney & Brian O’Dea, *Data, Innovation, and Potential Competition in Digital Markets—Looking Beyond Short-Term Price Effects in Merger Analysis*, CPI ANTITRUST CHRON. 4 (Feb. 2018), <https://www.competitionpolicyinternational.com/wp-content/uploads/2018/02/CPI-McSweeney-ODea.pdf> [<https://perma.cc/MZ52-RUAZ>].

369. Statement of Commissioners Concerning Zillow, Inc./Trulia, Inc., *supra* note 346, at *1.

370. Herbert Hovenkamp, *Antitrust and the Movement of Technology*, 19 GEO. MASON L. REV. 1119, 1119 (2012) (“[I]nnovation is so badly behaved when compared to the relatively smooth transitions that traditional price theory finds for competitive processes under constant technology.”).

371. *See, e.g.*, *Kinderstart.com, LLC v. Google, Inc.*, No. C 06-2057 JF (RS), 2007 U.S. Dist. LEXIS 22637, at *15 (N.D. Cal. Mar. 16, 2007) (“KinderStart cites no authority indicating that antitrust law concerns itself with competition in the provision of free services.”).

372. *See, e.g.*, *Google Search (Shopping)*, *supra* note 148, ¶ 319 (“The Commission concludes that a finding of dominance is not precluded by Google’s claim that it offers its general search services free of charge.”); Newman, *Applications*, *supra* note 15, at 69–71 (discussing the Supreme People’s Court’s decision in *Qihoo 360 v. Tencent*).

often offered by the FTC and DOJ. Here, explicit tools are appropriate: the problem of “free” does not present the line-drawing concerns that might be presented by explicit rules attempting to single out “digital markets” for enhanced scrutiny. Products are either zero-price or not. Moreover, zero-price business models are particularly pervasive in digital markets.³⁷³ Thus, a solution focused on zero-price products can be relatively precise—and, while appropriate on its own merits, is doubly appropriate given the substantial overlap between digital and zero-price markets.

The German experience is instructive. For a time, German courts took the view that “free” products could not constitute relevant antitrust markets.³⁷⁴ To correct that error, the ninth amendment to Germany’s Competition Act made clear that “a market shall not be invalidated by the fact that a good or service is provided free of charge.”³⁷⁵ A similar addition of this simple language to the relevant U.S. antitrust statutes could prevent domestic courts from mistakenly granting antitrust immunity to free-product suppliers.

More comprehensive formal agency guidance would also be of substantial value. As the Zillow/Trulia review illustrates, simply understanding that markets without prices can be cognizable relevant markets—though commendable—is not enough. Analysts may nonetheless fail to consider perhaps the most vital aspects of competition in such markets: attention and information.³⁷⁶ Formal guidance explaining that attention and information overcharges are cognizable harms would offer a great deal of utility to all stakeholders, including potentially affected firms and their corporate counsel.³⁷⁷

373. See Newman, *Foundations*, *supra* note 15, at 151 (“Alongside the advent of the Internet, however, [zero-price products] exploded in number, variety, and popularity.”).

374. *Germany Adjusts Antitrust Law to Digital Economy and Proposes New Regulatory Agency*, CLEARLY GOTTLIEB 2 (June 28, 2017), https://www.clearlygottlieb.com/~media/organize-archive/cgsh/files/2017/publications/alert-memos/2017_06_28-germany-adjusts-arc.pdf [<https://perma.cc/ALR5-NCZ4>].

375. Gesetz gegen Wettbewerbsbeschränkungen [GWB] [Act against Restraints of Competition], June 26, 2013, BGBL. I at 1750, 3245, as amended by Act of October 30, 2017 BGBL I at 1151, § 18(2a), *translation at* https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Others/GWB.pdf?__blob=publicationFile&v=6 [<https://perma.cc/RR86-PKK2>] (Ger.).

376. Here again, others are leading the way: in early 2019, German enforcers issued a decision concluding that Facebook had abused its dominance by extracting excessive information from its users. See Natasha Singer, *Germany Restricts Facebook’s Data Gathering*, N.Y. TIMES (Feb. 7, 2019), <https://www.nytimes.com/2019/02/07/technology/germany-facebook-data.html> [<https://perma.cc/M56J-F6TH>] (“[T]he German agency’s ruling is advancing a larger antitrust argument: that a tech company’s abuse of its market dominance to amass information about and profile its users can amount to a kind of data coercion.”).

377. See Jan M. Rybnicek & Joshua D. Wright, *Defining Section 5 of the FTC Act: The Failure of the Common Law Method and the Case for Formal Agency Guidelines*, 21 GEO. MASON L. REV. 1287, 1315 (2014) (calling for a formal agency policy statement in order to “give the business community . . . much-needed guidance”).

CONCLUSION

Digital markets have matured since their inception, and our understanding of them has grown considerably. Though it may once have seemed that the balance of error costs favored a hands-off approach to antitrust enforcement in digital markets, it has become increasingly clear that this approach is misguided. The risk of false negatives and the costs of nonenforcement are far more substantial, and the risk of false positives far lower, than conventional wisdom suggests. As a result, digital markets do warrant differentiated treatment. But the proper approach entails a watchful eye and a ready hand, not the laissez-faire status quo. The current defendant-friendly approach to digital markets has almost certainly caused massive harm to competition and society at large. Worse yet, it runs the risk of delegitimizing the entire antitrust enterprise. Antitrust law still has much to offer in a digital world, but it must be allowed to function properly and fully.