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COMPETITION

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CHAIR'S COLUMN

Elizabeth C. Pritzker
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I start this column with what likely will be the most common sentence of 2020. The year brought many challenges and quite a few obstacles.

For public safety reasons and to try to stem the spread of COVID-19, we all "practiced" social distancing and became quite experienced in it—learning first-hand what it means to both work and live at home. We relied on Zoom as our meeting space: we tested its limits and, more than once, it tested ours. Cries for social and racial justice bring to light, once again, systematic inequality in public health and the criminal justice system. We grieved (and sometimes watched) the brutal shootings and unfortunate deaths of Ahmaud Arbery, Breonna Taylor, George Floyd, and too many others.

I am proud to have had the privilege of chairing the Executive Committee of the Antitrust, Unfair Competition and Privacy Section during this time. Throughout the year, our outstanding volunteers put together terrific virtual programs and networking events, continued with the publication of timely pieces in our monthly newsletter, *e-Briefs*, and authored, edited, or contributed to the California Antitrust and Unfair Competition Law treatise, as well as this edition of *Competition*.

Our efforts to meet the challenges of the year are noteworthy. We began the year by updating and clarifying our Section's mission: to engage, inform, and inspire generations of lawyers to further the practice of antitrust, competition, and privacy law in California. The Section fulfills its mission through its working committees, mentoring programs, and diversity and inclusion initiatives, and by engaging a wide range of perspectives and views to develop, support, and highlight diverse thought-leaders in the antitrust, UCL, and privacy fields.

The Section shelved in-person, live events that had been planned, for obvious reasons, and hosted a whole range of successful virtual CLE programs and webinars. The discussion topics included: Antitrust Economics: Fundamental Concepts Practitioners Need to Know; What's It Like to be In-House Competition Counsel; Antitrust and Health Care Provider Consolidation; and High Tech Mergers in Silicon Valley. We also sponsored two well-attended COVID-19-specific webinars: one addressing Pricing Issues During COVID-19, and the other focusing on Mental and Emotional Wellness for Lawyers During COVID-19.

The Section doubled down on its commitment to mentoring, diversity, and inclusion. The Section held its Fourth Annual "Celebrating Women in Competition Law in California" in March. We sponsored a webinar on Why You Need a Diverse Trial Team in June. Over four separate days in July and August, we hosted virtual meetings on Networking and Career Development for Young Lawyers and Law Students. And, the Executive Committee is hard at work developing a new Diversity and Inclusion Fellowship Program for law students interested in antitrust and unfair competition law that we hope to launch early next year.

The Section's flagship program, **the Golden State Institute** (GSI), has been designed as a virtual offering this year, with two virtual sessions to be held each day for three consecutive days between **October 27 and 29, 2020**. The programming will include: (1) Recent Developments in Antitrust and Unfair Competition Law; (2) A Conversation with California Supreme Court Justice Joshua P. Groban; (3) Big States Antitrust Trial (New York v. Deutsche Telecom); (4) Antitrust and Social Justice; (5) Cartel Enforcement; and (6) A Conversation About Diversity, Racism, and Equality in the Legal Profession. It will also feature a pre-taped conversation with the California Attorney General Xavier Becerra and two virtual networking events on October 27 and October 29.

The Section will honor its 2020 Antitrust Lawyer of the Year, Daniel Wall of Latham & Watkins LLP, at a celebratory dinner in April 2021.

The Section has continued to incubate and grow its privacy law offerings. This year will see the launch of a Privacy Treatise, a handbook on the California Consumer Privacy Act, and the inaugural California Privacy Forum—a virtual legal conference focused on educating attorneys on California privacy law that will feature a fireside chat with Stacey Schesser**,** Supervising Deputy Attorney General for the Privacy Unit in the Consumer Law Section of the Office of the California Attorney General.

As my tenure as Chair closes, I want to thank each of the members of the Executive Committee, our Section advisors, and the many talented volunteers on our standing committees. It is your hard work and dedication that make this Section the stand-out organization that it is. Thank you! You are all fantastic. It has been my honor to serve as your Chair.

In the coming year, the Antitrust, UCL and Privacy Section will be chaired by Qianwei Fu. I am excited to know that the Executive Committee, which will feature a diverse selection of new members, will continue its mission under Qianwei's very capable stewardship.

There is so much more to come. Onward!

EDITOR'S NOTE

Qianwei Fu
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Digitization has become the means by which businesses increase productivity and spur innovation. The COVID-19 outbreak is accelerating the rise of the digital economy. The unprecedented growth of digital markets has also had disruptive effects in many economic sectors. How to protect consumers and foster innovation in the rapidly developing digital markets? In what ways does competition law interact with other legal regimes such as data protection and sector-specific regulations? What role can competition policy play in responding to the unique challenges in the age of digitalization and in shaping the competitive digital ecosystem? The debate on these questions has led to a prolific body of written work and research. This topically-themed edition is a small contribution to that body of distinct work, centering on digital platforms and their implications for competition law and policy.

Professor **Joshua P. Davis** at the University of San Francisco School of Law and **Anupama K. Reddy** of the Joseph Saveri Law Firm address civil liability for interdependent pricing without an agreement as facilitated by Artificial Intelligence (AI). Because AI may make interdependent pricing far more prevalent and far more effective, they argue, it poses a threat to antitrust law that derives from its ability to overcome coordination problems. They suggest that if use of AI becomes widespread, it may make sense to impose civil liability for interdependent pricing generally.

Ryan C. Thomas and **Peter Julian** of Jones Day give an introduction to blockchain technology, explore the antitrust issues presented by blockchain implementations, and discuss the implications for companies considering adopting blockchain technology. They provide some useful advice to participants and administrators of blockchain networks on the best practices to avoid or minimize antitrust risks.

Ken (Jianmin) Dai and **Jet (Zhisong) Deng**, co-chairs of the Antitrust Practice Group of Dentons China, discuss big data and antitrust risks by examining high-profile cases in major jurisdictions including the U.S., the EU, and China. Their article takes a deep dive into several hotly debated issues: why merger control regime might malfunction in startup acquisitions; the increasing concern for pricing algorithms; determination of market dominance in a volatile digital market; data-related abusive conduct analyzed from the antitrust perspective; and the application of the essential facilities doctrine to big data.

John Ceccio and **Christopher Mufarrige** of Wilson Sonsini examine the digital ecosystems. They argue that some of the policy proposals aimed at making it more difficult for large digital firms to acquire small tech startups do not fully appreciate the disincentive effects of instituting a regulatory scheme that deters large platforms from purchasing smaller tech startups. They believe that the current merger enforcement principles and legal frameworks provide sufficient tools for preventing anticompetitive transactions in the digital markets.

Josh Palmer, an economist at applEcon, LLC, obverses that, twenty-five years after Bill Gates' Memo, the Internet tidal wave seems to be cresting again. Dr. Palmer reviews the economic and antitrust lessons from the Microsoft cases and discusses what these lessons, combined with commentary from economists analyzing digital platforms and competition, suggest about the next wave of antitrust cases in the digital markets.

Neil Dryden, **Sergey Khodjamirian** and **Jorge Padilla**, economists at Compass Lexecon, explain that the decision of a marketplace to operate its own reseller in competition with third-party sellers within the platform is likely to spur competition to the ultimate benefit of consumers. The article argues that when assessing the competitive implications of seemingly discriminatory decisions by multi-sided online businesses, attention needs to be paid to their underlying business models and the nature and strength of competition in the markets where they compete.

Jeewon Kim Serrato, Co-lead of the Digital Transformation and Data Economy team at BakerHostetler and **Lawrence Wu**, economist and President of NERA Economic Consulting, address the complexities that businesses will face in calculating the value of consumer data when meeting one of the fundamental requirements under the California Consumer Privacy Act (CCPA): if a business offers financial incentives or a price or service difference as compensation for the collection, sale, or retention of consumer data, the business must explain how the incentives or price or service difference are reasonably related to the value of the data to the business.

In addition to the topically-themed articles, we also include two articles highly relevant to antitrust practice.

Stephen McIntyre, counsel of O'Melveny, analyzes the current circuit split on the interpretation of the "direct effects" prong of the Foreign Trade Antitrust Improvements Act (the "FTAIA"). The article argues that the "immediate consequence" test of directness adopted by the Ninth Circuit is the correct approach, because it is not only truer to the FTAIA's statutory text, but also more consistent with how a similar provision in the Foreign Sovereign Immunity Act—another law dealing with extraterritoriality—is construed.

Also reprised here are discussions from the Section's fourth annual flagship program "**Celebrating Women in Competition Law in California**." Consistent with the Section's Diversity and Inclusion Policy and Initiative, this program celebrates women's rising representation in the competition law practice. This year, the panelists shared their invaluable experience and advice about business development, mentoring, and making a difference within the legal profession.

My special thanks to Robert L. Newman of Zelle LLP for his help in the production of this issue. I would also like to thank our editors and the Section's Executive Committee for their contribution and support.

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AI AND INTERDEPENDENT PRICING: COMBINATION WITHOUT CONSPIRACY?

By Joshua P. Davis and Anupama K. Reddy[1]

I. INTRODUCTION

Artificial Intelligence (AI) holds the potential to change our landscape in many ways. Some of them are positive. AI may empower automobiles to drive themselves, greatly reducing traffic accidents[2] and freeing up our time to pursue other tasks. It may be able to detect cancer—or its absence—far better than radiologists can, saving lives and avoiding unnecessary surgeries.[3] It can help us to identify remedies for viruses and perhaps greatly accelerate our development of vaccines. The list goes on and on.

But AI also has the potential to cause great harm. One place that harm may take place is in the marketplace. AI is a great player of games. It has defeated the world chess champion.[4] It has done the same to the world champion of Go,[5] a game with even more permutations. Market participants may be able to harness AI's game-playing power to cause market distortions to their benefit. That possibility and how to deal with it are the topics of this article.

More specifically, this article will address civil liability for interdependent pricing[6] without an agreement as facilitated by AI. There is perhaps no area of greater consensus in antitrust law—and competition law more generally—than that competing sellers should not

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1 Joshua P. Davis is the Professor and Director, Center for Law and Ethics at the University of San Francisco School of Law. He is a Board Member of the American Antitrust Institute. Anupama K. Reddy is an associate at the Joseph Saveri Law Firm, Inc. in San Francisco.

2 *See* John Markoff, *Google Cars Drive Themselves, in Traffic*, N.Y. Times, October 9, 2010, *available at* https://www.nytimes.com/2010/10/10/science/10google.html?mcubz=1%20 ("Robot drivers react faster than humans, have 360-degree perception and do not get distracted, sleepy or intoxicated, the engineers argue.").

3 *See, e.g.,* Sy Mukherjee, *This New AI Can Detect a Deadly Cancer Early With 86% Accuracy*, Fortune, Oct. 30, 2017, *available at* http://fortune.com/2017/10/30/ai-early-cancer-detection/; Riverrain Med., *U.S. FDA Approves Improved Performance of OnGuard Chest X-Ray CAD Technology*, MedicExchange June 24, 2010, *available at* https://www.prnewswire.com/news-releases/us-fda-approves-improved-performance-of-riverain-medicals-onguard-chest-x-ray-computer-aided-detection-technology-96787199.html; Gigen Mammoser, *AI May Be Better at Detecting Skin Cancer Than Your Derm,* Healthline, June 19, 2018, *available at* https://www.healthline.com/health-news/ai-may-be-better-at-detecting-skin-cancer-than-your-derm#1.

4 *See* Matt McFarland, *Google Just Mastered a Game That Vexed Scientists–and Their Machines–for Decades*, Washington Post, January 27, 2016, *available at* https://www.washingtonpost.com/news/innovations/wp/2016/01/27/google-just-mastered-a-game-thats-vexed-scientists-for-decades/.

5 *See* Scott Santens, *Robots Will Take Your Job,* Boston Globe, Feb. 24, 2016, *available at* https://www.bostonglobe.com/ideas/2016/02/24/robots-will-take-your-job/5lXtKomQ7uQBEzTJOXT7YO/story.html.

6 *See, e.g., Clamp-All Corp. v. Cast Iron Soil Pipe Inst.,* 851 F.2d 478, 484 (1st Cir. 1988) (interdependent pricing is lawful "not because such pricing is desirable (it is not), but because it is close to impossible to devise a judicially enforceable remedy for 'interdependent' pricing. How does one order a firm to set its prices without regard to the likely reactions of its competitors?").

be permitted to agree to elevate their prices above competitive levels.[7] Doing so is a crime in the U.S., as well as conduct that is treated as *per se* illegal under our civil antitrust laws.[8]

In contrast, courts often hold that the law allows sellers to act independently in a way that approximates—or even replicates—the effects of a price-fixing conspiracy.[9] Particularly when there are only a small number of sellers in a market, they may all manage to charge prices above competitive levels. True, each one could gain market share by lowering its prices. But the others would likely respond in kind—that is, retaliate—and the ultimate result would be to decrease all of their profits. So they might each price at levels similar to a monopolist and none may break ranks, benefiting all of them. This approach is sometimes called "interdependent pricing" because the strategy works for one seller only if other sellers respond in kind; the pricing strategy of each seller depends on the pricing strategies of the others. The same conduct is also sometimes called "conscious parallelism."[10]

Interdependent pricing can cause the same kinds of harms as price-fixing conspiracies.[11] It transfers wealth from buyers to sellers, decreases output, and results in

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7 An analogous rule applies to buyers. They cannot conspire to reduce the prices they pay below competitive levels. But that is not perceived to occur as often as conspiracies among sellers and so this article will focus on sellers' conduct.

8 In *U.S. v. Socony-Vacuum Oil Co.*, the Supreme Court stated that "a combination [of competitors] formed for the purpose and with the effect of raising, depressing, fixing, pegging, or stabilizing the price of a commodity in interstate or foreign commerce is illegal per se." 310 U.S. 150, 218 (1940).

9 *See, e.g., Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 227 (1993) ("Tacit collusion, sometimes called oligopolistic price coordination or conscious parallelism, describes the process, not in itself unlawful, by which firms in a concentrated market might in effect share monopoly power, setting their prices at a profit-maximizing, supracompetitive level by recognizing their shared economic interests and their interdependence with respect to price and output decisions."). *See also Motorola Mobility LLC v. AU Optronics Corp.*, 775 F.3d 816, 822 (7th Cir. 2014) (dictum) (Posner, J.) (stating if rivals were to match a slight price increase, it would "be an example of tacit collusion, which is not an antitrust violation"); *White v. R.M. Packer Co.*, 635 F.3d 571, 576 n.3 (1st Cir. 2011) ("Conscious parallelism has also been called 'tacit collusion' or 'oligopolistic price coordination.'") (citing *Brooke Group*, 509 U.S. at 227); *In re Insurance Brokerage Antitrust Litig.*, 618 F.3d 300, 339 n.19 (3d Cir. 2010); *Bailey v. Allgas, Inc.*, 284 F.3d 1237, 1251 (11th Cir. 2002) ("The hallmark of an oligopoly is tacit collusion among competitors."); *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 554 (2007) ("The inadequacy of showing parallel conduct or interdependence, without more, mirrors the ambiguity of the behavior: consistent with conspiracy, but just as much in line with a wide swath of rational and competitive business strategy unilaterally prompted by common perceptions of the market.").

10 *See* Barak Orbach, *Interstate Circuit and Conspiracy Theories*, 2019 U. Ill. L. Rev. 1447, 1487 (2019) ("'Conscious parallelism' means interdependence that results in parallel conduct"); *see also* Donald F. Turner, *The Definition of Agreement Under the Sherman Act: Conscious Parallelism and Refusals to Deal*, 75 Harv. L. Rev. 655, 671 (1962) ("[O]ligopolists who take into account the probable reactions of competitors in setting their basic prices, without more in the way of 'agreement' than is found in 'conscious parallelism,' should not be held unlawful conspirators under the Sherman Act even though . . . they refrain from competing in price.").

11 *See* Louis Kaplow, *On the Meaning of Horizontal Agreements in Competition Law*, 99 Cal. L. Rev. 683, 811-12 (2011); *see also* Elmer J. Schaefer, *Basing-Point Pricing Establishes Illegal Vertical Agreements*, 18 Ga. L. Rev. 529, 535 (1984) ("If successful, conscious parallelism based on implicit price signaling creates the same harm as an explicit agreement to fix prices."); Lee Goldman, *Trouble for Private Enforcement of the Sherman Act: Twombly, Pleading Standards, and the Oligopoly Problem*, 2008 B.Y.U. L. Rev. 1057, 1057 (2008) ("Although interdependent pricing results in the same harm to competitors as an agreement to fix prices, it is clear that the latter is per se illegal and the former, lacking a viable remedy, is legal.").

deadweight loss (sales of a product or service that fail to occur because prices are elevated above competitive levels). How significant these harms are depends on which notion of efficiency one adopts. A focus on consumer welfare would include all of those effects as significantly harmful.[12] In contrast, a focus on total welfare might suggest that a wealth transfer from a buyer to a seller—all else equal—is not necessarily bad. Regardless, there is general agreement that interdependent pricing, to the extent it has the same consequences as a price-fixing agreement, is anticompetitive.

Where there is far less agreement is whether the law should prohibit interdependent pricing as it does price-fixing agreements and, relatedly, how to draw the line between the two. In principle, an agreement to fix prices is illegal while independent conduct that has the same effect is not. But it is difficult to articulate how to distinguish them, if they are in fact distinct, a problem made more challenging in practice by various legal doctrines. One of them allows plaintiffs to rely on circumstantial evidence[13] to establish the existence of an agreement and another recognizes tacit agreements as sufficing for liability. In part because of similarities in effects, and the difficulties of line-drawing, theorists have suggested at times that the law should condemn interdependent pricing as it does price fixing. Richard Posner endorsed that approach over five decades ago,[14] although, as he has acknowledged, he was not alone in doing so and he has since changed his mind.[15] Louis Kaplow recently wrote an excellent book offering reasons to believe Posner may have been right in the first place and may be wrong now—a policy conclusion, he concedes, that "must be viewed as quite tentative."[16]

The thrust of Kaplow's argument is that from an economic perspective what we care about is whether prices are elevated above competitive levels, not the communications that we often require to prove the existence of an agreement.[17] As a result, requiring a conspiracy can end up focusing courts on issues that are a distraction at best and counterproductive at worst. We will explore in a bit some of the main points he makes. Note, however, that Kaplow's analysis assumes markets remain much as they have in the past. That assumption may not be realistic.

Enter AI. Two features of AI are particularly important for present purposes. First, AI may greatly increase the harms from interdependent pricing. AI holds the potential to enable such pricing to succeed in circumstances where it currently would likely fail

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12 *See* Kaplow, *supra* note 11 at 811-12; *see also* Louis Kaplow, *An Economic Approach to Price Fixing*, 77 Antitrust L.J. 343, 353 (2011).

13 *Interstate Circuit v. U.S.*, 306 U.S. 208 (1939).

14 Richard A. Posner, *Oligopoly and the Antitrust Laws: A Suggested Approach,* 21 Stan. L. Rev. 1562 (1969).

15 Richard A. Posner, *Review of Kaplow, Competition Policy and Price Fixing*, 79 Antitrust L. J. 761 (2014).

16 Louis Kaplow, Competition Policy and Price Fixing 451 (Princeton University Press 2013).

17 *See* Kaplow, *supra* note 16 at 6. ("[S]tandard approaches to defining agreement, which require the presence of particular, purely symbolic communications while excluding tangible behavior that communicates, have as their underlying logic the notion that 'words speak louder than actions.' Of course, the more familiar, opposite maxim is better rooted in common sense. . . ."); *see also* Dennis W. Carlton et al., *Communication Among Competitors: Game Theory and Antitrust*, 5 Geo. Mason L. Rev. 423 (1997) ("[A]ttempts to determine the legality of many forms of communication by assessing whether or not they conform to some connotation of the word 'agreement' are inappropriate—at least when viewed from the vantage point of economics.").

and to raise prices closer to monopoly levels when it does succeed. Second, AI may make interdependent pricing immune from legal liability. A reason is that for the foreseeable future AI will likely be incapable of forming any intent, a requirement for civil liability. Let's take these points one at a time.

AI may make interdependent pricing far more prevalent and far more effective when it occurs.[18] To understand this point, it is important to note a dynamic that lies at the heart of antitrust laws. It is what one might call a collective action problem or a coordination problem. But it isn't really a problem; it's a solution. The difficulty market actors have in acting collectively—in coordinating their behavior—is salutary. The collective action problem ordinarily involves prices (or, what generally amounts to the same thing, output). One of the main mechanisms of antitrust is to encourage sellers in the same market to compete for market share by lowering their prices. That competition ultimately benefits consumers. But it harms the competitors. They would maximize their profits by charging higher prices and producing less. The profit-maximizing model for the competitors would be to charge the same amount and produce the same quantity as would a single seller with complete control of the market, a monopolist. The competitors would do best if they collectively emulate the behavior of the monopolist. But that is not practical for them to do in a competitive market. If there are a large number of sellers of equivalent products—say, pencils—with equivalent cost structures, they generally cannot effectively resist competition. If one of the sellers charges more than the competitive price for pencils, another seller will sell at a lower price and steal market share. The sellers' failure to mimic a single seller of pencils through collective action or coordination redounds to the benefit of society as a whole. Or so antitrust theory runs.

The above analysis explains much of antitrust law. It provides a reason that antitrust law will prohibit mergers and acquisitions if a small number of firms control a large percentage of a market. A merger or acquisition will further consolidate control of the market, threatening competition. On the other hand, if there are a large number of firms in a market—each with a relatively small market share—a merger or acquisition is unlikely to harm competition. We rely on the difficulty that large numbers of actors have in coordinating their behavior to ensure well-functioning markets. So the collective action problem in markets is a feature of antitrust law, not a bug. Ideally, the problem would be insurmountable. Firms would then have to compete on price, or quality, or the like—to "compete on the merits," to coin an antitrust phrase.

AI poses a threat to antitrust law that derives from its ability to overcome collective action or coordination problems. As noted above, there is substantial evidence that firms run by human beings will not be able to emulate monopolists if the firms are sufficiently numerous and sufficiently similar to each other in key respects, such as their costs, and if each has a sufficiently low market share and acts independently. The collective action problem is too formidable. But AI holds the potential to solve previously insoluble problems. AI could be programmed to maximize profits in pricing. And it may be able to act sufficiently quickly and subtly to coordinate with even large numbers of other firms

18 *See* Ariel Ezrachi & Maurice E. Stucke, *Artificial Intelligence & Collusion: When Computers Inhibit Competition*, 2017 U. Ill. L. Rev. 1775, 1791–92 (2017) ("[C]omputers, in quickly processing their market and customers' proprietary data, may be more effective in monitoring rivals' prices or customers, which not only increases transparency but the risk of coordination.").

also operated by AI. Just as a small number of firms run by human actors can compete in a way that will collectively benefit them by mimicking a monopolist—or approximating monopolist prices—so may a large number of firms run by AI. Indeed, it is possible that an entrepreneur could develop pricing AI that has precisely this effect—especially if all sellers in a market rely on it—and that the sellers in a market could all buy the pricing AI for that reason. Voila—independent action leads in effect to price fixing.[19] The result could be that many markets—even if they contain large numbers of firms, each with relatively small market shares—may look a lot like they are dominated by a single seller. And the prices the sellers charge in those markets may be closer to monopoly prices than would occur if human beings were in charge of pricing decisions.

There is no precise, generally accepted definition of AI.[20] It includes a suite of technologies capable of self-learning and other behavior that resembles human intelligence.[21] AI can solve problems or make automated decisions for tasks that are typically thought to require higher order cognitive processes, including vision, spatial reasoning, and conceptualization.

Broadly, there are two AI approaches: the first is logic or rule-based AI—using deductive reasoning—and the second is machine learning or algorithmic AI—using inductive reasoning. The goal of the rule-based system is to model real-world processes using logic-based rules that a program can understand. To create a rule-based AI system, groups of engineers and experts come together to identify certain real-world rules and translate those into computer rules.[22] A familiar example is Turbotax, a software program created by Intuit, that is used by consumers to calculate income tax liability. Turbotax models real-world rules (i.e., the U.S. Internal Revenue Code), in a way that faithfully represents the logic and meaning of them.[23] For instance, the software rule might state: *if* a user's income is >$100,000, *then*, the program should apply a 20% tax rate to that user's application. This form of AI gives computers the ability to deduce conclusions in long, complex chains faster than the human mind could.

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19 We might treat the decision of each seller to buy the AI as equivalent to a decision to join a conspiracy. But given that there is no agreement that all of the sellers will do so, that just seems to beg the question.

20 *See generally*, Mark A. Lemley & Bryan Casey, *You Might Be a Robot*, Cornell L. Rev. (2019), *available at* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3327602 (discussing how there is "no consensus definition of 'robot,' much less its common technological constituents such as 'artificial intelligence,' 'automating software,' or 'sensory perception.'").

21 *See* Edwina L. Rissland, *Artificial Intelligence and Law: Stepping Stones to A Model of Legal Reasoning*, 99 Yale L.J. 1957, 1958 (1990) ("In 1968 Marvin Minsky, one of the founders of AI, said it well: AI is 'the science of making machines do things that would require intelligence if done by man.'"); *see also* Artificial Intelligence, Merriam-Webster, *available at* https://www.merriam-webster.com/dictionary/artificial%20intelligence.

22 *See* Rissland, *supra* note 21 at 1965 ("In the rule-based approach, a rule is encoded in a simple, stylized if-then format: If certain conditions are known to hold, then take the stated action or draw the stated conclusion. Rule-based systems work by chaining these rules together.").

23 *See* Sarah B. Lawsky, *Formalizing the Code*, 70 Tax L. Rev. 377, 379 (2017); Meg Miller, *How TurboTax Used Design to Win the Tax Wars, Fast Company* (Mar. 30, 2016), *available at* https://www.fastcompany.com/3056784/how-turbotax-used-design-to-win-the-tax-wars; *see also How TurboTax Used Design and Emotion to Solve a Boring Problem and Dominate an $11B Industry*, Product Habits, *available at* https://producthabits.com/how-turbotax-used-design-and-emotion-to-solve-a-boring-problem-and-dominate-an-11b-industry/.

A second approach to AI is machine learning.[24] This suite of algorithms find patterns in data and can infer rules themselves. The algorithms learn which characteristics reflected in data tend to lead toward the objective they are designed to pursue.[25] Machine learning has enabled AI to best the world champions in chess and Go. These self-learning patterns can also serve as digital intermediaries or helpful assistants that recommend movies, products, spouses, price-match,[26] or even determine prices[27] to charge customers.

AI can play many roles in organizations. It can be an efficiency tool guided by the human mind to make mundane tasks faster. Alternatively, it can serve as a conduit or a facilitating device to execute tasks that are anticompetitive, or even *per se* illegal, when human actors perform them. As Salil Mehta puts it, pricing judgments are "increasingly being transferred away from humans to algorithm-driven software."[28] AI can now step into decision-making shoes, and be the price-setter or robo-seller.[29] In this alternate universe, consumers may suffer economic harms that they would escape if imperfect human actors were setting prices rather than machines.

When human beings use algorithms to implement illegal agreements, algorithmic actors are not supposed to receive favorable treatment in the eyes of antitrust law.[30] Toward this end, the FTC created the Office of Technology, Research, and Investigation. It researches how algorithms affect consumers.[31] But what happens when algorithms

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24 *See* Harry Surden, *Machine Learning and Law*, 89 Wash. L. Rev. 87, 89 (2014) ("'Machine learning' refers to a subfield of computer science concerned with computer programs that are able to learn from experience and thus improve their performance over time"); *see also* Ai Deng, *An Antitrust Lawyer's Guide to Machine Learning*, Antitrust, Spring 2018, at 82, 86.

25 *See* Ajay Agarwal, Joshua Gans, and Avi Goldfarb, Prediction Machines: The Simple Economics of Artificial Intelligence (Harvard Business Review Press 2018).

26 *See Macy's Peers into the Hearts of Consumers with Predictive Analytics*, Retail Info Systems News (May 19, 2014), *available at* http://risnews.edgl.com/retail-news/Macy-s-Peers-Into-the-Hearts-of-Customers-with-Predictive-Analytics-92848; James Surowiecki, *In Praise of Efficient Price Gouging*, MIT Tech. Rev. (Aug. 19, 2014), *available at* https://www.technologyreview.com/s/529961/in-praise-of-efficient-price-gouging/.

27 Ezrachi & Stucke, *supra* note 18 at 1780 ("[C]omputers can assess and adjust prices—even for particular individuals at particular times—within milliseconds.").

28 Salil K. Mehra, *Antitrust and the Robo-Seller: Competition in the Time of Algorithms*, 100 Minn. L. Rev. 1323, 1338 (2016).

29 *See* John D. Sutter, *Amazon Seller Lists Book at $23,698,655.93—Plus Shipping*, CNN (Apr. 25, 2011), *available at* ://www.cnn.com/2011/TECH/web/04/25/amazon.price.algorithm/index.htm (Two companies purchased the same algorithm that entered into a price-war with one another, and within a week, drove the price of a biology textbook titled "The Making of a Fly" up to a whopping $23.7 million.).

30 In *United States v. Topkins*, David Topkins and his co-conspirators agreed to fix the prices of posters sold through Amazon and implemented their arrangement by purchasing certain price fixing algorithms. *See* Plea Agreement at 3-4, *United States v. Topkins*, No. 3:15-cr-00201-WHO (N.D. Cal. Apr. 30, 2015); *see also* DOJ Press Release, April 6, 2015, *available at* https://www.justice.gov/opa/pr/former-e-commerce-executive-charged-price-fixing-antitrust-divisions-first-online-marketplace (Assistant Attorney General Bill Baer of DOJ's Antitrust Division stated, "Today's announcement represents the division's first criminal prosecution against a conspiracy specifically targeting e-commerce. We will not tolerate anticompetitive conduct, whether it occurs in a smoke-filled room or over the Internet using complex pricing algorithms"); *see also United States v. Airline Tariff Publ'g Co.*, 836 F. Supp. 9 (D.D.C. 1993).

31 *See* Jill Priluck, *"When Bots Collude,"* New Yorker (April 25, 2015), *available at* http://www.newyorker.com/business/currency/when-bots-collude (last visited May 23, 2020).

perform tasks without communications or "agreements" with one another? Each machine learning algorithm can be coded to make decisions based on its predictions of the best responses of other parties in the market,[32] and engage in a form of follow-the-leader pricing. This could lead to parallel conduct without prior agreement, which could be facilitated automatically.[33]

Existing antitrust law generally imposes an intent requirement for criminal or civil liability for price fixing.[34] AI is currently unable to form intent.[35] Technologists have no reason to believe AI is conscious and have no idea how to build conscious AI. Consciousness, it would seem, would be necessary to meet the intent requirement under antitrust law. Intent is a mental state. Creatures without consciousness do not have mental states. So AI would seem unable to form the kind of intent necessary for its pricing decisions to give rise to liability under the antitrust laws.

By deploying AI, then, sellers could potentially insulate themselves from antitrust sanctions for elevating prices above competitive levels. They could instruct AI to charge profit-maximizing prices. That by itself would not seem to violate the laws. It does not entail any human intention to conspire with other sellers. AI may then be able to "solve" the pricing problem, identifying patterns of pricing behavior that enable multiple sellers to achieve or approximate monopoly profits. If all the sellers in an industry use AI in this way, all may enjoy higher profits than they otherwise could. And if they each make this decision independently—perhaps aware that other sellers are using AI in the same manner but without any agreement to do so—the proscription on price-fixing agreements may be rendered obsolete. Antitrust law may become as useless in protecting us from supracompetitive prices as a knight's armor is against a machine gun.

II. WHAT TO DO ABOUT AI AND INTERDEPENDENT PRICING?

How, then, to respond to this threat? A possibility is to adopt the approach that Posner proposed a long time ago (and later rejected) and that Kaplow has more recently tentatively embraced. We could put aside the intent requirement in favor of proscribing conduct that leads to supracompetitive pricing. We could do so by taking away the free pass for interdependent pricing, at least when market actors rely on AI for their pricing decisions.

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32 *See* Ezrachi & Stucke, *supra* note 18 at 1782.

33 *Id.*; *see also* Michal S. Gal and Niva Elkin-Koren, *Algorithmic Consumers*, 30 Harv. J.L. & Tech. 309, 347 (2017) ("Once we introduce algorithms, not only does oligopolistic coordination become more durable, but it may also actually be facilitated in non-oligopolistic markets, ones in which many competitors operate. The requirement that a prior agreement exist among market players therefore does not fit the algorithmic world.").

34 In *Poller v. Columbia Broad. Sys., Inc*, the Supreme Court noted that "motive and intent play leading roles" in antitrust litigation. 368 U.S. 464, 473 (1962). Similarly, in *Business Electronics Corp. v. Sharp Electronics Corp.*, Justice Stevens, in his dissent, noted that "in antitrust, as in many other areas of the law, motivation matters and factfinders are able to distinguish bad from good intent." 485 U.S. 717, 754 (1988) (citing *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*); Thomas A. Piraino, Jr., *The Case for Presuming the Legality of Quality Motivated Restrictions on Distribution*, 63 Notre Dame L. Rev. 1, 4, 16-19 (1988).

35 Yavar Bathaee, *The Artificial Intelligence Black Box and the Failure of Intent and Causation*, 31 Harv. J.L. & Tech. 889, 906 (2018) ("Machines and computer programs have no intent. The most we can glean from how they work and how they are designed is what goals their users or creators sought to achieve and the means they permitted their machine or program to use to achieve them.").

This approach would have the attractive characteristic that it would target the harm we care about—elevation of prices above competitive levels—rather than one means of achieving that harm—an agreement among competitors. Moreover, as Kaplow notes, the agreement requirement—to the extent it can be made coherent—in practice reduces a requirement of showing certain kinds of communications between market actors. But we don't really care about the existence of an agreement, much less about whether market actors communicate with each other and, if so, how they do so. Perhaps it would be better, then, to get to the heart of the matter and proscribe interdependent pricing that elevates prices above competitive levels, however it is achieved, at least if AI contributes to the effort.

There are various potential objections to a proposal along these lines. Key ones include that it is intrinsically wrong not to require intent for liability, that the relevant statutory language imposes an intent requirement, that banning interdependent pricing would not provide adequate notice to market actors about what conduct is prohibited and what conduct permitted, that proving interdependent pricing would not be feasible, that such a prohibition would also deter procompetitive conduct, that it is difficult to fashion an appropriate remedy, and that it would be improper to apply a different standard to conduct by AI than by human beings. We will take these topics one at a time. The position we will explore is that AI changes the analysis in favor of prohibiting interdependent pricing. We will then also suggest that working through these points tends to confirm that Kaplow's tentative conclusion is correct: we may want to extend a prohibition on interdependent pricing beyond AI to purely human conduct as well.

Most of the analysis that follows will focus on effects. It will be consequentialist. But there is a preliminary issue worth considering, one that is not consequentialist (call it deontological). The issue is whether it is intrinsically wrong to punish conduct—even civilly—if there is no culpable intent behind it. There are various areas of the law in which this sort of concern should be taken seriously. Federal antitrust law in the United States is not one of them. Our courts have long interpreted civil liability under the federal antitrust laws to promote efficiency, not to serve other potential ends. There is a good argument that in doing so they have not remained true to original statutory intent, refusing to deter or punish behavior that federal laws were meant to address. But that ship has sailed. Modern economic theory—with its commitment to consequentialism—is ascendant. A movement that began more than fifty years ago—championed by Richard Posner and Robert Bork, among others—has prevailed. It is well settled that courts are supposed to apply federal antitrust law in a way that will maximize welfare (even though there is disagreement about how to define that term). Requiring intent for civil liability for intrinsic reasons would be contrary to that approach.

A somewhat similar concern is that the statutory language of the federal antitrust laws requires intent. It might be argued that prohibiting interdependent pricing would require a legislative amendment, not merely judicial decision-making. This position is unpersuasive. As Kaplow has shown, the language of the federal antitrust law is more than broad enough to prohibit interdependent pricing.[36] Section 1 of the Sherman Act proscribes "[e]very contract, combination in the form of trust or otherwise, or conspiracy

36 *See* Kaplow, *supra* note 16 at 69-77.

in restraint of trade or commerce."[37] To note just one of Kaplow's points, interdependent pricing involves the requisite combination of different sellers and, if there were any doubt about this, the statute provides that the combination can be "in the form of a trust or otherwise," making explicit that the form of the combination does not matter; the phrase "or otherwise" encourages an expansive reading of the term combination.[38] So what should matter is whether market actors combine to restrain trade or commerce in a way that causes improper anticompetitive harm, not how their combination is structured. Along these lines, it is worth noting that the Sherman Act prohibits every contract in restraint of trade or commerce.[39] As has been noted, every contract restrains trade. The courts, however, have read the statute to make economic sense, allowing contracts when they are on net procompetitive. Fair enough. But, using similar purposive reasoning, the Sherman Act also enables courts to prohibit combinations—like interdependent pricing—if they are on net anticompetitive. As the courts have repeatedly held, what matters in federal antitrust law is substance, not form.

Let us turn, then, from formalism to economics. A first economic concern is that market actors would not have adequate notice of what they may and may not do if interdependent pricing can lead to civil liability. Distinguishing would not be easy between prices that will be perceived as competitive and prices that will be considered interdependent. So a seller may be unable to tell whether the prices it plans to charge are legal.

AI may make distinguishing easier between licit and illicit pricing. One of the difficulties with human market actors is that we cannot look inside people's minds—we cannot tell whether their intent, for example, is to match an elevated price and thereby avoid competition or if it is to mimic another seller's price out of a belief that it is set at ideal competitive levels given current demand. But the same may not be true with AI. It is possible to have AI maintain a record of the "decisions" it makes and its basis for doing so. This is no mean feat, but it may be feasible. AI processes information in a way that can

37 15 U.S.C. § 1 (1964). In a recent judgment, the Supreme Court awarded a victory for an independent contractor who sought to have an arbitration agreement stricken. *New Prime Inc. v. Olivera,* 139 S. Ct. 532 (2019). Justice Ginsburg wrote a brief concurrence cautioning against literal interpretation of the words Congress used while crafting the Federal Arbitration Act. In support of a dynamic interpretation, Justice Ginsburg wrote, "Congress . . . intended [the Sherman Antitrust Act's] reference to 'restraint of trade' to have 'changing content,' and authorized courts to oversee the term's 'dynamic potential.'" *Id.* at 544 (2019) (quoting *Business Electronics Corp. v. Sharp Electronics Corp.*, 485 U.S. 717, 731–732, (1988)).

38 *See KAPLOW, supra* note 16 at 71.

39 Section 1 states, "Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal." 15 U.S.C. § 1 (2006).

be analyzed as human thought cannot be (at least not yet).[40] We—perhaps with the help of forensic AI—might be able to determine whether a seller's AI recommended prices are based on an analysis of competitive forces or a strategy of engaging in interdependent actions.[41] So with the expansion of AI into pricing decisions, we might see an increase in our ability to assess the nature of those pricing decisions. And if sellers do not want to run afoul of the law, they can make sure that their AI seeks to maximize profits in a competitive manner rather than taking actions that maximize profits by avoiding competition and relying on other sellers to do the same. For these reasons, proscribing interdependent pricing by AI may create less uncertainty than proscribing it by human sellers.

There is also a questionable assumption built into the concern that banning interdependent pricing would make the law less certain. The assumption is that current law governing price fixing is reasonably clear. It isn't. As Kaplow has shown, the consensus that price-fixing conspiracies should be illegal masks profound disagreements about what that proscription means.[42] It is easy to underestimate how messy—even incoherent—the law is now. As a result, prohibiting interdependent conduct might make the law clearer because current law is such a muddle.

To see this, consider the difficulty of determining whether price fixing has occurred. Plaintiffs in price-fixing cases can rely on direct evidence, circumstantial evidence, or some combination of the two. Although the line between direct and circumstantial evidence is not always clear, and may ultimately be incoherent, some examples seem easy to characterize. Direct evidence may include obvious inculpatory statements. An employee at Company A writes an email to an employee at Company B, "Let's fix prices at $100!" The employee at Company B writes back, "Good idea. I agree to do so!" This sort of explicit conspiracy would ordinarily be treated as direct evidence (although Company A and Company B may well later argue in court that the employees were being sarcastic, misleading one another, or the like).

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40 But note that in a recent study at the University of California San Francisco, scientists created and trained an algorithm to decode brain waves and convert them into audio files. The algorithm uses "an array of electrodes" that are "surgically placed onto the part of the brain that controls movement, and a computer simulation of a vocal tract to reproduce the sounds of speech." Chelsea Whyte, *Mind-reading Device Uses AI to Turn Brainwaves into Audible Speech*, News Scientist (Apr. 24, 2019), *available at* https://www.newscientist.com/article/2200683-mind-reading-device-uses-ai-to-turn-brainwaves-into-audible-speech/#ixzz6Pr70Pufw; *see also,* Anthony Cuthburtsen, *Artificial Intelligence Translates Thoughts to Text Using Brain Implant*, Independent (March 31, 2020), *available at* https://www.independent.co.uk/life-style/gadgets-and-tech/news/artificial-intelligence-brain-implant-ai-mind-reading-neuralink-a9437806.html. A Russian research firm, Neurobotics, recently trained an algorithm to "guess what videos people were watching purely from their brainwaves." Matthew North, *AI Recreates Videos People Are Watching By Reading Their Minds*, News Scientist (Nov. 26, 2019), *available at* https://www.newscientist.com/article/2224866-ai-recreates-videos-people-are-watching-by-reading-their-minds/.

41 This effort might require sellers to keep records of what their AI has done. They might do so anyway or the law might incentivize them to do so, perhaps by creating an adverse inference if they do not.

42 In Chapter 2 of Kaplow's book, "Defining the Problem," Kaplow examines the inconsistent interpretation of certain terms that are integral to price-fixing judicial decisions, *e.g.*, "conspiracy," "meeting of the minds," "independent," and "interdependent." Kaplow, *supra* note 16 at 29-43; *see also* Louis Kaplow, *On the Meaning of Horizontal Agreements in Competition Law*, 99 Cal. L. Rev. 683, 696-704 (2011).

On the other hand, purchasers from Company A and Company B may discover evidence that they claim, all else equal, makes a conspiracy more likely than it otherwise would be. This sort of evidence is often described as falling within "plus factors," that is, categories of evidence suggestive of a conspiracy.

Here the real confusion begins. Take as an example evidence that Company A and Company B together have a dominant market share for sales of a product and that they charged higher prices than they would have in a competitive market. Let's say there is economic evidence that their prices varied upward from the amounts that would have been predicted based on their past behavior and underlying economic conditions. A statistical model may indicate supracompetitive pricing that seems inexplicable in the absence of a change in the companies' pricing strategies. Charging those supracompetitive prices, one might reason, would be against each company's economic interests in the absence of a conspiracy. It would make each vulnerable to losing market share to lower prices from its competitor. And given that the two companies together have a dominant market share, a conspiracy would seem to be particularly feasible. The general view is that conspiracies are more likely and more stable if they require the involvement of a relatively small number of entities. One might infer from these circumstances, then, that a conspiracy was afoot. Many courts have reasoned in just that way. They may also rely in part on the doctrine that a *tacit* agreement can suffice for liability, so such circumstantial evidence can suffice to establish a contract, combination, or conspiracy, as required by the Sherman Act.

Other courts, however, have taken the opposite view. They have noted a market with a small number of sellers that together have a large market share are susceptible to oligopolistic interdependent pricing. In other words, those sellers may be able to achieve prices above competitive levels without conspiring. This leads to what has been called a paradox of proof: that the markets most susceptible to price fixing are often also the markets most susceptible to anticompetitive conduct through interdependent action without any agreement.[43] As a result, if the odds of supracompetitive prices through independent oligopolistic behavior get too high—so high that the ordinary trappings of an agreement are unnecessary—courts may find the market conditions *undermine* an inference that there was a conspiracy. Reasoning along these lines can result in courts granting summary judgment for defendants.

Given this sort of fundamental disagreement between courts—these opposite ways of reasoning—it is fair to say that the law at present is uncertain, even internally inconsistent. At least in these circumstances, the law could be clearer—and market actors could benefit from more certain guidance—if courts were to tackle directly the issue that matters from the perspective of economic policy: have the defendants caused the kind of anticompetitive harm that the antitrust laws are designed to prevent? That happens if prices are elevated above competitive levels, whether sellers achieve that result through some form of agreement or by combining their efforts through interdependent pricing without entering an agreement, whatever that means. If defendants collectively have managed to elevate and maintain prices substantially above competitive levels, courts might reason, there is an antitrust violation. If not, there isn't one. And, to repeat, use of AI by market actors may make that inquiry easier to conduct than it otherwise would be.

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43 *See* Kaplow, *supra* note 16 at 126.

We may be able to distinguish with greater certainty than we have in the past whether a company is pricing competitively or engaging in interdependent pricing. And, again, the alternative may not lead to all that much predictability anyway.

Another potential criticism of proscribing the use of AI to achieve supracompetitive interdependent pricing is that proving such a claim would not be feasible. This is one of the main points Posner makes in critiquing Kaplow's book.[44] It is also perhaps the least persuasive. A main reason is that the burden of proving an antitrust claim lies with the plaintiffs. If proof is unavailable or impractical as to whether pricing is interdependent—as opposed to purely independent—plaintiffs will lose. If such proof is generally lacking, plaintiffs will bring few such claims. (Some plaintiffs and attorneys may learn this lesson the hard way, but if so they will pay a financial price and will adjust their behavior over time or continue to suffer adverse consequences.) In short, even if it is difficult for plaintiffs to prove interdependent pricing without evidence of a conspiracy—such as suspect communications between sellers—that does not seem to be a good reason to deprive them of the opportunity to try—for making interdependent pricing in the absence of an agreement *per se* legal.

Another point is that to prevail on an antitrust claim—even a *per se* claim—civil plaintiffs have to prove not only an antitrust violation but also that the violation caused them harm. This element is often called "impact."[45] Posner's concern, in effect, is that plaintiffs may be able to show an agreement in some cases, but it is very difficult for them to establish that they paid prices that were set above competitive levels. The latter showing is what is necessary to prevail on a claim of interdependent pricing. But buyers need to make that showing in any case. So proof of interdependent pricing is a subset of the proof necessary to establish liability in a case based on an agreement. Plaintiffs often satisfy their burden regarding impact by relying in part on a statistical model.[46] The same sort of statistical model that works in cases involving an alleged agreement should also work in cases of alleged interdependent pricing.

One might wonder: why bother proscribing interdependent pricing without an agreement if it is difficult to prove? The change might seem symbolic. But it wouldn't be. At the very least, it would eliminate a perverse dynamic in the law, one that Kaplow identifies. As he explains, requiring an agreement for liability—which, as noted, in effect often means requiring evidence of certain kinds of communications—"tends to exonerate defendants in precisely those cases in which deterrence benefits are greatest and chilling costs lowest."[47]

This point takes us back to the paradox of proof. When there are a small number of sellers in a market, and they collectively have a lot of market power, the risk of interdependent

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44 Posner, *supra* note 15 at 767.

45 *See In re Hydrogen Peroxide Antitrust Litigation*, 552 F.3d 305, 311 (3d Cir. 2008), as amended (Jan. 16, 2009) ("In antitrust cases, impact often is critically important for the purpose of evaluating Rule 23(b)(3)'s predominance requirement because it is an element of the claim that may call for individual, as opposed to common, proof."); *Blades v. Monsanto Co.*, 400 F.3d 562, 566 (8th Cir. 2005); *Simpson v. Union Oil Co. of Cal.*, 311 F.2d 764, 767 (9th Cir. 1963), *rev'd*, 377 U.S. 13 (1964).

46 Jonathan B. Baker & Daniel L. Rubinfeld, *Empirical Methods in Antitrust Litigation: Review and Critique*, 1 Am. L. & Econ. Rev. 386, 387 (1999).

47 *See* Kaplow, *supra* note 16 at 451.

pricing is particularly high, as is the likelihood of resulting anticompetitive harm. If nothing else, proscribing supracompetitive prices achieved through interdependence would eliminate a highly dubious defensive strategy. Sellers would not be able to say that circumstantial evidence of a conspiracy is insufficient because they in fact achieved the same harm to competition by other means—through purely interdependent pricing. That claim would be tantamount to confessing to an antitrust violation. Even if proving interdependent pricing is otherwise difficult, a confession should suffice to get to a jury.

Posner also worries about the risk of deterring procompetitive conduct.[48] It is hard to generalize about this possibility. Fortunately, Posner offers examples. Some involve a risk of chilling procompetitive behavior, while others may illustrate unpredictability or difficulties of enforcement, but they all warrant consideration. In his first example he suggests the plight of a seller in a market that is favorable to interdependent pricing. If the seller would maximize profits by matching the prices of other sellers, Posner asks what the seller should do to avoid potential civil liability. Cost-plus pricing? If so, he explains, the courts would in effect be burdened with setting prices, which has been "discredited, and would require a total institutional makeover of antitrust law."[49]

But this problem seems far more theoretical than practical. The seller—call it Company A—could simply charge an amount non-trivially below the other sellers in the market. If the other sellers do not respond in kind—perhaps because the impact of the new seller will be limited—Company A will gain market share, enjoy nice profits, and almost certainly be protected from liability. Suing the one cost-cutter in a market is very unlikely to prove successful. On the other hand, if other sellers respond in kind to Company A, Company A would have incentive to lower its prices if they are still obviously elevated above competitive levels. That, again, would win it market share. If its prices are not obviously above competitive levels, it should be able to hold them steady. After all, as Posner has pointed out, proving interdependent pricing has elevated prices above competitive levels is not easy. Prices that roughly approximate what would occur in competition are unlikely to result in a successful antitrust lawsuit.

Posner also suggests the possibility that a potential market entrant might be deterred by the risk of charging the prevailing market prices and thereby incurring liability.[50] The response to this concern is largely the same as the one to the example above. If prices are well in excess of competitive levels, the new seller should be able to enter the market, attract customers at a profit, and avoid being sued by charging prices that are below those of the incumbents and that are not too obviously above competitive levels. Again, if prices are not far in excess of competitive levels, a civil lawsuit is unlikely. Proof of harm would be too difficult.

Posner also offers an example of one seller—seller X—who doesn't pursue sales to its competitors' "sleepers," that is, customers who are too indolent or ignorant to shop

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48 Posner, *supra* note 15 at 763 ("And might not entry into concentrated markets be deterred because an entrant who, having successfully entered such a market, charged the prevailing market price would be a tacit colluder and could be prosecuted as such, if tacit collusion were deemed to violate the Sherman Act?").

49 Posner, *supra* note 15 at 763.

50 *Id.* at 763, 765.

around.[51] The reason to refrain from pursuing the sleepers of another company—seller Y—is fear of retaliation, which would result in competition and thus harm both seller X and seller Y. Three points are worth noting in response to this scenario. First, refraining from pursuing sleepers does not seem to have procompetitive benefits. So why worry that X and Y might feel compelled to compete with one another for these sales? Second, plaintiffs will have to show that the failure to compete for sleepers resulted in their paying higher prices than they would have in a competitive market. That will not be easy unless the conduct of sellers X and Y is egregious and has a widespread effect on the market—in other words, that their behavior is clearly anticompetitive and well worth discouraging from the perspective of efficiency. Again, proving interdependent pricing is difficult unless it has significant effects on the market and is obvious.

There is a third, related practical point that is important. Claims by purchasers are almost always brought as class actions.[52] The requirements of class certification make it unlikely that plaintiffs will bring cases that affect only a small, ill-defined subgroup of purchasers, such as sleepers. Those requirements also discourage cases based on only small overcharges. The reason is that courts generally interpret the certification standard of Federal Rule of Civil Procedure 23 as requiring plaintiffs in antitrust actions seeking damages to offer evidence capable of showing injury that is widespread across a proposed class.[53] Some courts may go so far as to require that such evidence is capable of showing harm to nearly all—or even all—class members.[54] So an antitrust lawsuit on behalf of all purchasers when conduct affects only a modest number of sleepers is not likely to be certified for class treatment.[55]

Further, all else equal, the smaller the alleged overall overcharge is in a case, the harder it is to show widespread harm to a class. The effects of an antitrust violation will vary somewhat from class member to class member. When those effects are relatively minor, variations between class members can mean that a significant proportion of a purchaser class was not harmed at all. Again, this can cause a court to deny class certification, which is generally a death knell for private purchaser antitrust actions.

Posner offers a few other possibilities for why two sellers—X and Y—would price similarly for apparently innocent reasons.[56] One is that X believes Y has insights into demand that X doesn't have. If that is true, Y would be pricing close to competitive levels—the issue is just what they are—and, again, the odds plaintiffs could bring a successful suit against conduct that so closely approximates competition is poor at best. Other possibilities

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51 *Id.* at 763-64.

52 Joshua P. Davis & Robert H. Lande, *Toward an Empirical and Theoretical Assessment of Private Antitrust Enforcement*, 36 Seattle U. L. Rev. 1269, 1286 (2013). Competitors would not be able to bring claims for interdependent pricing because they benefit—they are not harmed—when prices are elevated above competitive levels.

53 Joshua P. Davis & Eric L. Cramer, *Of Vulnerable Monopolists: Questionable Innovation in the Standard for Class Certification in Antitrust Cases*, 41 Rutgers L.J. 355, 382 (2009).

54 *Id.* Such a requirement may well be inconsistent with Rule 23. *Id.*

55 It might seem that the class could be defined to include only sleepers, but that would be difficult to do. It would be hard to define a sleeper in an objective way that does not depend on proving the merits of the lawsuit, and so such a class definition would run into ascertainability problems.

56 Posner, *supra* note 15 at 764.

Posner suggests are that X is afraid (1) it will win sales through competitive prices, but Y will gain a strategic advantage on the whole by increasing its profits from the customers it retains, and X's shareholders will be dissatisfied; or (2) Y will use its increased prices to finance product improvements that will give it a competitive advantage. It is hard to know how seriously to take these examples. As to the first, while it may be possible—at least in a market with heterogeneous products—one would think that more often Y's strategy would be unprofitable in the face of competition from X on price—hence the notion that elevated prices often involve interdependence. At the least, some empirical evidence of a common pattern should accompany such speculation. The same point applies with even more force to the second example, which would justify not only interdependent pricing but also explicit agreements to fix prices. They too can result in excess profits that could in theory fund product improvements. But, as the Supreme Court held long ago, experience tells us that in reality horizontal price fixing overwhelmingly harms competition and so we condemn it as *per se* illegal.[57] We should demand evidence before accepting a justification for interdependent pricing that would apply to horizontal price fixing as well.

There is also the problem of remedies.[58] Assuming plaintiffs prevail in civil litigation, the next issue is what relief they should receive. Here, the answer seems relatively straightforward. Plaintiffs should receive the ordinary measure of antitrust damages. Civil plaintiffs recover treble their damages, as measured under antitrust law. Because the damages antitrust plaintiffs may seek are limited in various ways—plaintiffs in antitrust cases cannot recover for prejudgment interest, dead weight loss, and the like—plaintiffs who are awarded treble damages after a trial in reality generally force defendants to pay about the actual harm they have caused or perhaps a bit more.[59] Moreover, virtually all antitrust cases—even with criminal guilty pleas—settle before trial at a discount for defendants.[60] So ordinary civil antitrust damages tends to result in too little deterrence, not too much deterrence,[61] and the same should be true for cases based on interdependent pricing. For these reasons, there seems to be little reason to adjust the measure of damages

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57 *See, e.g., United States v. Trenton Potteries Co.*, 273 U.S. 392 (1927) (horizontal price fixing); *Arizona v. Maricopa County Medical Soc.*, 457 U.S. 332 (1982) (agreement among physicians regarding fees they would charge patients was considered *per se* illegal horizontal price-fixing); *Catalano, Inc. v. Target Sales, Inc.*, 446 U.S. 643 (1980) (agreement among competitors to eliminate short-term free credit to customers was held to be *per se* illegal horizontal price-fixing). In *U.S. v. Socony-Vacuum Oil Co.*, 310 U.S. 150 (1940), the Supreme Court held:

> [F]or over forty years this Court has consistently and without deviation adhered to the principle that price-fixing agreements are unlawful *per se* under the Sherman Act and that no showing of so-called competitive abuses or evils which those agreements were designed to eliminate or alleviate may be interposed as a defense.

Id. at 218.

58 Posner, *supra* note 15 at 764 ("It is one thing to prohibit competitors from agreeing not to compete; it is another to order them to compete.").

59 *See* Robert H. Lande, *Are Antitrust "Treble" Damages Really Single Damages?*, 54 Ohio St. L.J. 115 (1993).

60 *See* John M. Connor & Robert H. Lande, *Not Treble Damages: Cartel Recoveries Are Mostly Less Than Single Damages*, 100 Iowa L. Rev. 1997, 2003 (2015) .

61 *See* Joshua P. Davis, Robert H. Lande, *Defying Conventional Wisdom: The Case for Private Antitrust Enforcement*, 48 Ga. L. Rev. 1, 74 (2013).

in such antitrust cases. The usual rule should work reasonably well—at least compared to allowing no recovery at all.

Of course, civil plaintiffs may also seek injunctive relief. As Posner rightly points out, that could be difficult to frame in cases involving interdependent pricing.[62] Courts understandably tend to be unwilling to tell sellers what prices they should charge. They are also unlikely to impose on sellers some vague and unwieldy mandate, such as requiring them to compete for sleepers. The law governing injunctions provides federal courts ample discretion to deny injunctive relief unless plaintiffs make a proposal that does not give rise to these sorts of problems. That may well mean that policing of interdependent pricing would rely primarily on deterrence effects from the prospect of civil liability in particularly egregious cases. That result seems better than immunizing from liability conduct that has potential to cause on net substantial anticompetitive effects.

Many of the arguments above might support civil liability for interdependent pricing generally, not just when it is effected with the help of AI. But our proposal is more limited. It focuses on use of AI. Framed this narrowly, our proposal creates a final issue. Would it be appropriate to allow plaintiffs to pursue claims based on interdependent pricing if sellers employ AI but not if they rely on human decision-making? In the extreme case—where sellers cede pricing decisions completely to AI—such a distinction is relatively easy to defend. As noted above, AI may greatly increase the anticompetitive effects of interdependent pricing. Markets that were once protected from it by, for example, containing a large number of sellers might succumb. Moreover, AI may make it easier to distinguish competitive from interdependent pricing. Its reasoning can be more transparent than human reasoning and the records of what it does may be less ambiguous.[63] Such a change in the costs and benefits analysis can warrant a different approach.

On the other hand, use of AI need not be binary. Human beings can rely on AI to assist in pricing decisions without deferring to it entirely. Further, an antitrust standard that depends on how sellers use AI could create an incentive to game the system. Sellers, for example, might attempt to involve human beings just enough to keep interdependent pricing without an agreement legal—assuming it is presently legal—while relying on AI sufficiently to make interdependent pricing effective. Those efforts would be inefficient, as would trying to police them. So if use of AI becomes widespread—including in making strategic business decisions, such as pricing—it may make sense to impose civil liability for interdependent pricing generally. Doing so might not prevent all of the potential anticompetitive effects from AI but it might mitigate some of them.

III. CONCLUSION

AI could transform our markets. From the perspective of the firms, it could be a huge boon. Their profits could increase dramatically. From the perspective of antitrust economics, and consumers, it could be a disaster. Fewer goods and services may be

62 Posner, *supra* note 15 at 765–66.

63 It is unclear how transparent AI's reasoning will be in practice. At present, it does not leave a record of how it makes decisions. On the other hand, the Right to an Explanation in Europe may force companies that sell technology to find ways to explain its reasoning. If so, transparency may be possible in the future.

available and their prices may be much higher than in competitive markets. Antitrust law as it has been structured to date could be rendered largely obsolete.

So what, if anything, can be done? Well, perhaps nothing needs to be. It is worth acknowledging that AI may not be capable of fulfilling its apparent potential—at least when it comes to coordination among competitors. That would be ideal. But complacency seems unwise. AI may not live up to expectations, but strategic behavior in a game theoretical setting plays to its strengths. So if AI does realize some expectations, coordination with other market actors to maximize profits likely will number among them. Indeed, competitors could each choose a form of AI that is designed to do just that—to form a pre-commitment strategy that would become rapidly apparent to other AI players in the market and allow a collective mimicking of monopolistic behavior. A provider of AI may even hawk its product based on its ability to support interdependent pricing. Multiple players in the same market may each decide independently to buy the particular AI for that very reason. The combined effect of those independent actions could have the same effect as horizontal price fixing. AI might thus perfect interdependent pricing without an agreement.

One possible response would be to prohibit interdependent pricing through use of AI. After all, it is not as if such pricing benefits society. The reason antitrust law condemns horizontal price fixing is that it has harmful effects. If interdependent pricing can achieve the same harmful effects—or approximates them—we could condemn it too. And it can.

Moreover, it may be relatively easy to determine whether AI is competing on the merits—lowering prices or enhancing quality, for example, to increase its market share—or whether it is pursuing conscious parallelism—modulating pricing and output so that if its competitors behave similarly they will all enjoy larger profits than in a competitive market. Particularly if there is a record of the algorithms that AI uses, and of the market information to which it responds, we should be able to detect whether it competes or engages in conscious parallelism. We could even require market actors to keep the relevant records. So we could proscribe interdependent pricing by AI, even if we allow such pricing by human beings.

That approach, however, could give rise to strategic behavior. Sellers would have incentive to seek the best of both worlds: involving human beings enough in business decisions to have a favorable legal standard, while at the same time relying on AI enough to inflate their prices above competitive levels. The right approach, then, might simply be to adjust our antitrust doctrine to accommodate the reality of a pervasive role for AI, if indeed that comes about. We might prohibit interdependent pricing generally. Such a tool would likely result in far more false negatives—findings of non-liability when there should be liability—than false positives—findings of liability when there shouldn't be any. But it would be better than treating interdependent pricing as *per se* legal. Indeed, perhaps we should have banned interdependent pricing all along.

BLOCKCHAIN TECHNOLOGY: A FUTURE ANTITRUST TARGET?

By Ryan C. Thomas and Peter Julian[1]

I. INTRODUCTION

Technology companies face increasing antitrust scrutiny globally. In the United States, lawmakers are ramping up pressure to increase enforcement at federal and state levels. Several high-profile politicians, including U.S. presidential candidates, have called for new antitrust legislation that would make it easier to pursue allegedly "dominant" companies, especially leading technology firms.[2] As more companies rebrand themselves to embrace e-commerce, future antitrust enforcement and private suits will extend beyond the large online platforms.

As blockchain applications increasingly expand beyond cryptocurrency into other areas, including supply chain and government bidding, companies and competition enforcers are developing experience with how antitrust issues play out with this much-hyped technology. Meanwhile, initial concerns around prematurely regulating and potentially stifling this emerging technology have given way to legislative efforts to limit illicit cryptocurrency uses, while promoting lawful uses of blockchain technology. While the promise of a sweeping blockchain revolution across the economy may seem overstated, real-world implementations have been progressing. This article explores the antitrust issues presented by blockchain implementations and implications for companies considering adopting blockchain technology.

Blockchain technology (or distributed ledger technology—the two are used interchangeably throughout this article) was first conceptualized in 2008 for use in Bitcoin.[3] Since then, the technology and "use cases" (applications) continue to evolve. Although by no means ubiquitous, every year more companies, including established, sophisticated players, are entering the blockchain "market."[4] Investors are still paying attention to and pouring significant sums of money into blockchain startups, and businesses are actively

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2 There is significant disagreement about whether regulatory intervention is necessary at all, or what regulation is warranted. *See, e.g.*, Makan Delrahim, Assistant Attorney General for the U.S. Department of Justice Antitrust Division, Keynote Address at Silicon Flatirons Annual Technology Policy Conference, https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-keynote-address-silicon-flatirons (cautioning against "misplaced" and "extreme views" that propose new rules to regulate online platforms and displace the "consumer welfare" standard in antitrust reviews).

3 *Blockchains: The great chain of being sure about things*, The Economist (Oct. 31, 2015), https://www.economist.com/briefing/2015/10/31/the-great-chain-of-being-sure-about-things.

4 *See infra* notes 9-12 and accompanying text.

implementing the technology.[5] "Platform" blockchains and blockchain as a service (BaaS) are becoming more common, making it easier for businesses to use the technology. Instead of having to code a proprietary blockchain solution from the ground-up, which can be a complicated and expensive endeavor, businesses can use open source solutions, such as Hyperledger,[6] Enterprise Ethereum,[7] or R3's Corda,[8] adapted to their particular application. In addition, leading enterprise software companies like IBM,[9] SAP,[10] and Oracle[11] have begun offering BaaS that make it even easier for businesses to explore and deploy the technology.[12] These developments have given rise to increasing emphasis on standardization and interoperability between blockchain networks to prevent data silos.[13]

Blockchain also continues to attract significant regulatory and legislative attention based on its disruptive potential. The acting United States Comptroller of the Currency (a former general counsel of a major cryptocurrency exchange)[14] recently issued rulemaking notices aimed at proliferating the use of both cryptocurrency and blockchain technology within the banking sector.[15] The rulemaking notice specifically seeks input on how blockchain technology is used or potentially could be used in the banking industry.[16]

Apart from potential agency rulemaking, legislators at both the federal and state levels are introducing bills aimed at providing a regulatory framework for the use of blockchain and cryptocurrencies.[17] At the federal level, the 116th Congress recently issued more than thirty-two such bills. The bills address a number of topics, such as limiting the use of cryptocurrencies for potential terrorism, sex trafficking, and money laundering, while

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5 *Deloitte's 2020 Global Blockchain Survey: From Promise to Reality*, Deloitte, https://www2.deloitte.com/content/dam/insights/us/articles/6608_2020-global-blockchain-survey/DI_CIR%20 2020%20global%20blockchain%20survey.pdf. (According to the survey, 39% of 1,488 senior executives and practitioners in fourteen countries said they have already incorporated blockchain into production at their companies—a 16% increase from 2019).

6 *About Hyperledger,* Hyperledger, https://www.hyperledger.org/about.

7 *About Enterprise Ethereum Alliance*, Enterprise Ethereum, https://entethalliance.org.

8 *About R3,* R3, https://www.r3.com/about.

9 *IBM Blockchain Solutions*, IBM, https://www.ibm.com/blockchain/solutions.

10 *Blockchain Applications and Services*, SAP, https://www.sap.com/products/intelligent-technologies/blockchain.html.

11 *Oracle Blockchain*, Oracle, https://www.oracle.com/blockchain.

12 Lucas Mearian, *Gartner: Blockchain Will be Nothing More than an Add-on for ERP, CRM Software*, Computerworld (Sept. 16, 2019), https://www.computerworld.com/article/3438838/gartner-blockchain-will-be-nothing-more-than-an-add-on-for-erp-crm-software.html.

13 *See, e.g.*, *Building an Interoperable Blockchain-enabled Ecosystem*, HIMSS (May 11, 2020), https://www.himsslearn.org/building-interoperable-blockchain-enabled-ecosystem.

14 Cory Johnson, *Trump's New Top Banking Regulator is a Bitcoin Bull*, Forbes (June 11, 2020), https://www.forbes.com/sites/coryjohnson/2020/06/11/trump-regulator-bitcoin-bull.

15 *OCC Requests Comment on Proposal to Update Activities and Operations Rules and its Rules on Digital Activities*, Office of the Comptroller of the Currency (June 4, 2020), https://www.occ.gov/news-issuances/news-releases/2020/nr-occ-2020-76.html.

16 *Id*.

17 This article is primarily concerned with blockchains, and not cryptocurrencies. The latter is an implementation of blockchain technology, but the two terms are often used interchangeably and have come to be closely associated in the zeitgeist.

promoting a working group to study the use of blockchain technology.[18] States are also jumping into the fray. In 2019, twenty-eight states introduced bills aimed at regulating the blockchain and cryptocurrency space, with a majority of them signed and enacted.[19] As these developments illustrate, legislative and regulatory bodies are concerned with blockchain and cryptocurrency's implications for the future, and are taking measures to promote their lawful use. Early concerns around burdening a new technology with regulations that may stunt its potential are giving way to a wave of new regulations aimed at both regulating and fostering its growth.[20]

Antitrust authorities are paying attention, too. As recently as August 27, 2020, the head of the Department of Justice Antitrust Division, Assistant Attorney General Makan Delrahim, confirmed that the Division was studying the competitive effects of blockchain technology.[21] The Division has implemented a program where government attorneys and economists are taking an online course to "build [their] expertise . . . in cutting edge business applications: specifically, blockchain" and other technologies with the goal of "develop[ing] a basic but critical understanding of how businesses implement these technologies and what effect they might have on competition."[22] Delrahim acknowledged that while the technology does have the potential to increase efficiencies, for example, in the financial technology sector, it also has the potential to lead to cartel-like behavior, and stated "the Division will play a critical role in ensuring market conditions are conducive to unleashing blockchain's revolutionary potential."[23] DOJ is not alone.

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18 Jason Brett, *Congress Has Now Introduced 32 Crypto and Blockchain Bills*, Forbes (Apr. 8, 2020), https://www.forbes.com/sites/jasonbrett/2020/04/28/congress-has-introduced-32-crypto-and-blockchain-bills-for-consideration-in-2019-2020.

19 Heather Morton, *Blockchain 2019 Legislation*, National Conference of State Legislatures (July 23, 2019), https://www.ncsl.org/research/financial-services-and-commerce/blockchain-2019-legislation.aspx.

20 Concerns regarding onerous regulations were most prominently raised during the debate surrounding the passage of New York's BitLicense regime. *See Stop BitLicense from harming small businesses and tech innovation in NY*, Change.org, https://www.change.org/p/governor-andrew-m-cuomo-and-the-new-york-state-legislature-stop-bitlicense-from-harming-small-businesses-and-tech-innovation-in-ny.

21 *See* Makan Delrahim, Assistant Attorney General, Antitrust Division, U.S. Department of Justice, *Assistant Attorney General Makan Delrahim Delivers Remarks at the Thirteenth Annual Conference on Innovation Economics* (Aug. 27, 2020), https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-remarks-thirteenth-annual-conference; *see also GAI Discussion Series: Assistant Attorney General Makan Delrahim & Judge Douglas H. Ginsburg*, George Mason University - Antonin Scalia School of Law, Global Antitrust Institute Online Discussion Series (June 16, 2020), https://www.youtube.com/watch?v=YRvV6jo2f-I.

22 *Id*. While controversial, the DOJ has previously opened investigations to learn more about new segments, even when it allegedly had no competitive concerns. *See* letter form Makan Delrahim, Ass't Att'y Gen., Antitrust Division, U.S. Dep't of Justice, to Jerrold Nadler, U.S.H.R. (July 1, 2020), *available at* https://www.politico.com/f/?id=00000173-0d14-dd78-a9ff-7fb6e2a70000 ("As the Division was deciding whether to open a[] [merger] investigation, it faced significant matters of first impression regarding the role of antitrust in this industry. . . . Without sufficient information to resolve a competition concern or understand what the likely effects of the merger may be, it is appropriate for the Division to investigate further.").

23 Delrahim, *supra* note 21.

Other competition authorities are paying close attention to the technology as it gets deployed more widely. In February 2018, the European Commission announced the "EU Blockchain Observatory and Forum."[24] In March 2018, the Federal Trade Commission announced the creation of an internal "FTC Blockchain Working Group."[25] Soon after, in April 2018, the Organization for Economic Cooperation and Development published an issues paper titled, "Blockchain Technology and Competition Policy."[26] The movement by government agencies to better understand blockchain increases the likelihood of scrutiny and potential enforcement actions, and businesses are well advised to evaluate the antitrust risks associated with deploying the technology.

While the rollout of blockchain is by no means ubiquitous, the technology is finding its audience and use cases. We will explore a few examples in this article, analyzing potential antitrust implications for other applications. First, we begin with a short overview of distributed ledger technology. Then, we discuss potential antitrust issues, with an emphasis on U.S. competition law. Finally, we discuss a few prominent contemporary examples of blockchain technology implementation and lessons learned for future adaptations.

II. BLOCKCHAIN BASICS

A full discussion about the mechanics of blockchain technology is outside the scope of this article. We address below a few crucial characteristics that will be helpful in discussing the antitrust implications. At its core, a blockchain is a shared ledger in which transactions are recorded and stored in a verifiable way.[27] Records of transactions are stored along with other transactions into "blocks" of data that are linked to one another in a "chain."[28] The ledger or database is hosted by a number of different users or "nodes."[29] Unlike a traditional database, the ledger does not allow users to delete data or modify existing data—users can only add new transactions to the end of it, much like a ledger recording financial transactions.[30] Also, unlike traditional databases in which one central authority controls what information can be accessed or added to the database, a blockchain is distributed across multiple computers in a network ("nodes" in blockchain parlance), each of which can read from or append to the ledger—all while ensuring that every node has an identical copy of the ledger.[31]

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24 *European Commission launches the EU Blockchain Observatory and Forum*, European Commission (Feb. 1, 2018), https://ec.europa.eu/digital-single-market/en/news/european-commission-launches-eu-blockchain-observatory-and-forum.

25 *It's Time for a FTC Blockchain Working Group*, Federal Trade Commission (Mar. 16, 2018), https://www.ftc.gov/news-events/blogs/techftc/2018/03/its-time-ftc-blockchain-working-group.

26 *Blockchain Technology and Competition Policy*, Organisation for Economic Co-operation and Development (Apr. 26, 2018), https://one.oecd.org/document/DAF/COMP/WD(2018)47/en/pdf.

27 *See generally* ABA, Blockchain for Business Lawyers (2018); Maryanne Murray, *Blockchain Explained*, Reuters (June 15, 2018), http://graphics.reuters.com/TECHNOLOGY-BLOCKCHAIN/010070P11GN/index.html.

28 *Id.*

29 *Id.*

30 *Id.*

31 *Id.*

Because blockchain nodes are distributed and have no centralized validation system, there must be a "consensus mechanism" for deciding which block to add at the end of the blockchain if there is a conflict between two or more nodes.[32] For example, on the Bitcoin blockchain, the party that is the first to correctly solve a computational puzzle gets to propose the next block to the network and is rewarded with bitcoins.[33] This is called "mining."[34] The nodes on the network signal their acceptance of the proposed block by adding it to their copies of the Bitcoin blockchain after validating that the computational puzzle was solved correctly, that the transactions in the block are valid, and that the Bitcoin in each transaction was not previously spent in another transaction.[35] If there is a conflict between different versions of the blockchain, the node that has done the largest amount of computational work to validate transactions is considered to have the accurate record. This is known as a "proof of work" consensus mechanism.[36] Apart from access to computing power, and thus being able to mine more, there is no practical likelihood that one participant can be strategically prioritized or given an unfair advantage over another.[37]

Generally, there are two types of blockchains based on levels of openness and distribution: "permissionless" and "permissioned."[38] A permissionless (or public) blockchain is open to anyone who wants to join—there is no central authority acting as a gatekeeper preventing new entrants from being a part of the blockchain network.[39] Without a central authority or clearing house, each node keeps a copy of the entire blockchain and is able to contribute data back to the network.[40] Participants can remain pseudonymous behind unique user identifiers, but can access the transaction data stored in the blockchain by downloading the software.[41] For example, in a supply chain blockchain, the transaction history can be used to assess if the participant has sufficient funds, capacity, and inventory to complete the requested transaction based on the prior recorded transactions that either have credited or debited the account.[42]

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32 Jake Frankenfield, *Consensus Mechanism (Cryptocurrency)*, Investopedia (Jul. 29, 2020), https://www.investopedia.com/terms/c/consensus-mechanism-cryptocurrency.asp.

33 Cryptocurrencies are perhaps the best-known examples of permissionless blockchains where anyone can join and "mine" for rewards by validating transactions on the blockchain.

34 Jake Frankenfield, *Mining*, Investopedia (May 8, 2018), https://www.investopedia.com/terms/m/mining.asp.

35 *Id.*

36 *See* Murray, *supra* note 27.

37 *See* Frankenfield, *supra* note 34.

38 Matthew Beedham, *Here's the Difference Between 'Permissioned' and 'Permissionless' Blockchains*, The Next Web (Nov. 5, 2018), https://thenextweb.com/hardfork/2018/11/05/permissioned-permissionless-blockchains.

39 *Id.*

40 *Id.*

41 *Id.*

42 *See* Knut Alicke et al., *Blockchain Technology for Supply Chains—A Must or a Maybe?,* McKinsey & Co. (Sept. 12, 2017), https://www.mckinsey.com/business-functions/operations/our-insights/blockchain-technology-for-supply-chainsa-must-or-a-maybe.

Public blockchains are well suited for transactions in which participants need pseudonymity and the ability to transact with an unlimited number of other participants.[43] However, some public blockchains, especially older ones, have technical barriers, such as speed, scalability, and storage constraints.[44] These limitations present impediments for business applications in which multiple transactions need to occur quickly and efficiently.[45] For example, it can take anywhere from ten minutes to sometimes an entire day to confirm a Bitcoin transaction.[46] Other public blockchains, such as the Ethereum and Bitcoin Cash blockchain network, have improved on some of these limitations, for example, by processing transactions faster.[47] Because of the limitations of the public blockchains and the fundamental openness within which they operate, "permissioned" blockchains have been developed to maintain efficiency and to address other use cases.[48]

In a "permissioned" (or private) blockchain, an administrator decides which nodes can join the network—the blockchain can be "open" to the public or only to the nodes that have the administrator's permission.[49] Private blockchains are likely to have fewer participants, greater potential for information sharing among participants, and less visibility into transactions from outside the blockchain.[50] As a consequence, they are the architecture that large companies may most often use to interact with suppliers, customers, or other partners.[51] In this respect, private blockchains lose many of the hallmarks of the original form of the blockchain technology, namely a radically open system in which any user can make verifiable pseudonymous transactions and see a history of all past transactions.[52]

Private blockchain networks in particular can spawn antitrust concerns, given the potential lack of transparency around competitor interactions. Unlike public blockchains, private distributed ledgers:[53]

- Have an owner who controls or delegates membership, mining rights and rewards, and maintains the shared ledger, including potentially the right to override, edit, or delete the entries on the blockchain.
- Have an owner or designated participants who are responsible for resolving discrepancies, often outside of a proof-of-work system. For example, the

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43 *See* Beedham, *supra* note 38.

44 *Id.*

45 *Id.*

46 *See* Steven Buchko, *How Long Do Bitcoin Transactions Take?*, CoinCentral (Dec. 12, 2017),https://coincentral.com/how-long-do-bitcoin-transfers-take.

47 *See* Sean Williams, *Which Cryptocurrencies Have the Fastest Transaction Speeds?*, The Motley Fool (Jan. 14, 2018), https://www.fool.com/investing/2018/01/14/which-cryptocurrencies-have-the-fastest-transactio.aspx.

48 *See* Beedham, *supra* note 38.

49 *Id.*

50 *Id.*

51 *Id.*

52 *Id.*

53 *Id.*; *see also* Murray, *supra* note 27.

consensus mechanism to validate transactions may be "proof of stake" in which a node's power to validate a transaction depends on its economic "stake" in the particular blockchain network. The idea is that with a larger stake the node will not approve transactions that would undermine the ledger's integrity.

- Have a limited membership, often without user anonymity, in which participants can match user identifiers to real-world entities.

- Host data that are not readable or writable by the public; consequently the information exchanged cannot be reviewed by nonmembers who lack access.

These attributes often make private blockchains more attractive for business applications. Private blockchains also can scale significantly better than public blockchains because they can use less computationally intensive consensus mechanisms. Likewise, private blockchains are often better suited for regulated industries that must follow mandated processes, such as "Know Your Customer" anti-money laundering and anti-terrorism regulations that require customers to prove their identity.[54]

III. ANTITRUST BASICS

Blockchain and other emerging technologies, like artificial intelligence and "big data" analytics, are evaluated under the same antitrust laws and analytical framework as "old tech," like smokestack industries.[55] In the United States, use of blockchain technology primarily raises potential issues under Sherman Act § 1 (no collusion), Sherman Act § 2 (no monopolization), Federal Trade Commission (FTC) Act § 5 (no unfair competition), and Clayton Act § 7 (no anticompetitive transactions).[56]

In recent years, politicians, competition agencies, and mainstream media in the United States and around the world have devoted significant attention to the question of whether technology companies, and more broadly, "high tech" products or services, should be subject to different antitrust enforcement rules. Although there is not always unanimity across or even within jurisdictions, U.S. leadership at the DOJ and a majority of the FTC Commissioners have made statements suggesting that existing laws are sufficient. In 2019, for example, the head of the DOJ Antitrust Division addressed this directly: "Some have suggested changing the antitrust laws, creating new agencies or even regulating the conduct of some firms . . . it bears repeating that our existent framework is flexible enough to detect harm in any industry and emerging ones."[57] In 2018, another DOJ official voiced similar sentiments:

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54 *See, e.g.*, Financial Industry Regulatory Authority (FINRA) Rule 2090 (Know Your Customer), https://www.finra.org/rules-guidance/rulebooks/finra-rules/2090#:~:text=Know%20Your%20Customer,-The%20Rule%20Notices&text=Every%20member%20shall%20use%20reasonable,on%20behalf%20of%20such%20customer.

55 *See* Blockchain for Business Lawyers, *supra* note 27.

56 While this article primarily concerns U.S. law, other jurisdictions generally enforce similar prohibitions on collusion, monopolization/abuse of dominance, and transactions that may substantially lessen competition. The discussion here may be relevant for those jurisdictions as well.

57 Diane Craft, *Existing U.S. Antitrust Laws Can Address Tech Monopolies, DOJ Antitrust Chief Says*, Reuters (Nov. 8, 2019), https://www.reuters.com/article/us-usa-antitrust-idUSKBN1XI2LS.

> Lately, there has been discussion about whether certain conduct—the use of computer algorithms to set prices, for example—should attract the same level of scrutiny as "traditional" price fixing conduct. To be clear, where competitors agree to restrict competition between them, whether by agreeing to display identical gasoline prices at gas stations on opposite street corners, or by fixing prices using advanced technology like online trading platforms or algorithms, they violate the Sherman Act. The agreement to fix the price is the illegal act; the means through which the agreement is carried out is less important.[58]

This statement directly implicates Sherman Act § 1, which prohibits anticompetitive collusion, such as price fixing, bid rigging, or market allocation.[59] Depending on how a blockchain is formed and operated, it may also implicate other antitrust laws, including those that prohibit monopolization and anticompetitive transactions. For most blockchain collaborations among rival businesses, however, the greatest practical antitrust risk involves collusion and improper information sharing. Participants might use blockchain technology to facilitate a "naked" agreement to fix prices or allocate markets or customers, or to improperly share competitively sensitive data, which might reduce competition. As the head of the DOJ Antitrust Division recently hypothesized:

> There is also, most certainly, potential for abuse. Incumbents could use blockchains anticompetitively to exclude competition. For example, consider seafood harvesters that establish a permissioned blockchain to track food through the supply chain and assure quality and sourcing. If multiple competing harvesters conditioned access to that permissioned blockchain on agreeing to certain prices or output, competition and consumers would suffer tremendous harm.[60]

A. Collusion and Improper Information Sharing—Sherman Act § 1

A § 1 violation requires concerted action (an "agreement") between two or more firms. Most agreements are reviewed under the rule of reason,[61] which examines whether the agreement's procompetitive benefits outweigh the likelihood of anticompetitive harm.[62] Certain other agreements between or among competitors, however, such as fixing prices, allocating markets, and rigging bids, are found to always or almost always

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58 Andrew Finch, Principal Deputy Assistant Attorney General, Antitrust Division, U.S. Department of Justice, *Remarks at New York Antitrust in the Financial Sector: Hot Issues & Global Perspectives* (May 2, 2018), https://www.justice.gov/opa/speech/principal-deputy-assistant-attorney-general-andrew-finch-delivers-remarks-antitrust.

59 15 U.S.C. § 1.

60 *See* Delrahim, *supra* note 21.

61 *See* VII Philip Areeda & Herbert Hovenkamp, Antitrust Law ¶ 1500, at 431 (3d ed. 2012).

62 *Wuxi Multimedia, Ltd. v. Koninklijke Philips Elecs., N.V.*, No. 04cv1136, 2006 WL 6667002, at *3 (S.D. Cal. Jan. 5, 2006) (quoting *Hairston v. Pac. 10 Conf.*, 101 F.3d 1315, 1319 (9th Cir. 1996)), *aff'd*, 280 F. App'x 968 (Fed. Cir. 2008).

harm competition. Such conduct is presumed unlawful without any inquiry into claimed procompetitive benefits (per se analysis).[63]

Private blockchains can be procompetitive. Because the participants are known to each other, the arrangement could result in reduced transaction costs, improved connections between nodes, and a more equitable validation of the transactions on the chain. However, the same arrangement may increase antitrust risk, such as when competitively sensitive terms such as price, quantity, and customer-specific features and specifications are shared between competitors. In fact, a private blockchain could facilitate an antitrust violation by providing a method to share the information or to monitor participants to ensure they are following the agreement's terms—i.e., not "cheating" on the arrangement. For example, private blockchains could be used to facilitate a price fixing arrangement, which as noted above is a per se violation of § 1, without regard to actual or claimed procompetitive effects.

Beyond more obviously anticompetitive agreements, blockchain participants could also violate § 1 if they use it to facilitate improper exchanges of competitively sensitive information or to unreasonably exclude rivals' access to the blockchain. Agreements to exchange competitively sensitive information may reduce competition, and the exchange itself also may provide evidence of unlawful coordination. Unlike price fixing or customer/market allocation agreements, however, such exchanges are less likely to be deemed per se unlawful under U.S. law. The conduct is instead evaluated under a "rule of reason" analysis, which requires balancing the anticompetitive harm against the procompetitive benefits of the information exchange.[64]

A number of factors are considered to determine whether an information exchange results in anticompetitive harm:

- Source of the information provided (does it involve actual or potential competitors?);
- Nature of the information exchanged (is it competitively sensitive?);[65]
- Industry structure (is the industry composed of many or few competitors?);[66]

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63 *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 885 (2007); *see also Bus. Elecs. Corp. v. Sharp Elecs. Corp.*, 485 U.S. 717, 723 (1988) ("Certain categories of agreements . . . have been held to be *per se* illegal, dispensing with the need for case-by-case evaluation. We have said that *per se* rules are appropriate only for 'conduct that is manifestly anticompetitive,' that is, conduct 'that would always or almost always tend to restrict competition and decrease output.'" (citations omitted)).

64 *See United States v. U.S. Gypsum Co.*, 438 U.S. 422, 441 (1978).

65 *See, e.g.*, *United States v. Container Corp. of Am.*, 393 U.S. 333, 334-36 (1969); *Todd v. Exxon Corp.*, 275 F.3d 191, 211-13 (2d Cir. 2001); *In re Currency Conversion Fee Antitrust Litig.*, 773 F. Supp. 2d 351, 369 (S.D.N.Y. 2011).

66 *See, e.g.*, *Container Corp. of Am.*, 393 U.S. at 336 (finding 18 firms controlling 90 percent of the market was sufficient concentration to support information-exchange claim); *Sugar Inst., Inc. v. United States*, 297 U.S. 553, 572 (1936) (information-exchange violation involving fifteen companies holding 70–80 percent of the market); *Todd*, 275 F.3d at 199 (finding fourteen companies sharing an 80–90 percent market share sufficient to support data-exchange claim on motion to dismiss).

- Whether there is an anticompetitive effect;[67] and
- Business rationale (could the legitimate business goals have been achieved with less or no exchange of competitively sensitive information?).

The head of the DOJ Antitrust Division recently noted:

> Blockchain solutions might, for instance, facilitate sharing of competitively sensitive information. As Dr. Thibault Schrepel has observed, by virtue of its distributed ledger, the blockchain "turns private information into genuinely public information." It may be difficult (or impossible) to identify which actors are sharing what information because the blockchain is based on pseudonyms and largely anonymous transactions. This combination of factors could embolden competitors to share more competitively sensitive information through the blockchain than they would otherwise. Moreover, blockchain's smart contract capabilities could facilitate the design and implementation of anticompetitive agreements[68]

In addition, private blockchain participants also may face § 1 risk if they unreasonably exclude competitors from the blockchain.[69] If a blockchain were to become critical to compete in a particular industry, competitors may need to be a part of the blockchain. Take costs, for example. Benefits from increased economies of scale (improving cost through greater output of a single good) and scope (improving cost through greater variety of goods) are critical elements of competition in most sectors. In banking and healthcare, for example, using blockchain technology can significantly reduce transactions costs. In healthcare, providers may not be able to provide the same level of care or generate necessary operating efficiencies without access to data on certain blockchain networks or pharmaceutical supply chains. If private blockchain members exclude competitors from accessing a blockchain that has become essential to doing business, nonmembers may not be able to compete effectively. Excluding rivals from a "must have" blockchain may give rise to claims that the blockchain's membership rules are being used to unfairly exclude or limit competition.

Exclusionary conduct also can result from a blockchain's architecture—for example, the consensus mechanism chosen to resolve discrepancies. In private blockchains, owners or designated blockchain participants may have the authority to resolve discrepancies in the chain unilaterally, as opposed to a more objective and equitable consensus mechanism. Certain participants could agree to resolve discrepancies against rival competitors and

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67 *See, e.g.*, U.S. Dep't of Justice & Fed. Trade Comm'n, Antitrust Guidance for Human Resources Professionals 4 (2016) ("While agreements to share information are not per se illegal . . . they may be subject to civil antitrust liability when they have, or are likely to have, an anticompetitive effect.").

68 *See* Delrahim, *supra* note 21.

69 *See* Blockchain for Business Lawyers, *supra* note 27.

to prioritize others.[70] Although a decision to exclude a competitor from a membership association is typically analyzed under the rule of reason, excluding a rival solely to impede its ability to compete and without a legitimate business justification may be deemed to be anticompetitive conduct.

B. Monopolization—Sherman Act § 2

Sherman Act § 2 generally prohibits monopolization and attempts to monopolize.[71] Importantly, monopoly power alone is not enough to prevail on a Section 2 claim.[72] Rather, the entity must use its monopoly power to willfully maintain that power through anticompetitive exclusionary or predatory conduct.[73] Courts have found exclusionary conduct in a number of circumstances, including, for example, when a monopolist has refused to deal with its rivals, has engaged in exclusive supply or purchase agreements, or has denied an essential facility to its competitors.[74]

The analysis is intensely fact specific, but blockchains may provide evidence of a Section 2 violation if, for example, as part of an exclusive supply arrangement a firm with monopoly power requires its customers to use its blockchain to complete transactions and that requirement results in customers having to abandon a competitor's blockchain. Section 2 also can be triggered in certain limited circumstances when a monopolist refuses to deal with a competitor. Although a company generally has no duty to deal with its rivals, courts have found antitrust liability when a monopolist had a prior course of dealing with the competitor but then terminated the relationship without any legitimate business reason.[75] Accordingly, a monopolist owner of a blockchain may face Section 2 scrutiny if it previously allowed a competitor access to its blockchain, but later excluded that rival without a reasonable business justification.

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70 *Private Blockchain or Database? How to Determine the Difference*, The Blockchain Review (Oct. 4, 2016), https://medium.com/blockchain-review/private-blockchain-or-database-whats-the-difference-523e7d42edc ("[T]he security promises of distributed ledgers and private blockchains are only as good as the honesty of the entities validating the transactions. There are no mathematical guarantees behind the irreversibility of transactions in a private blockchain.").

71 15 U.S.C. § 2.

72 *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966); *see also Verizon Commc'ns v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004) ("mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system," and in order to "safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive *conduct*.").

73 *See* Blockchain for Business Lawyers, *supra* note 27.

74 *See Trinko*, LLP, 540 U.S. at 407.

75 *See, e.g.*, *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985); *Trinko*, 540 U.S. at 407 ("*Aspen* is at or near the outer boundary of § 2 liability . . ."); *see also Viamedia, Inc. v. Comcast Corp.*, 951 F.3d 429, 458 (7th Cir. 2020) (holding refusals to deal may violate the antitrust laws if they involve "withdraw[ing] from a prior course of dealing," "forgoing short-run profits," and "treating a rival differently" from others).

C. Unfair Competition—Federal Trade Commission Act § 5

Section 5 of the FTC Act prohibits unfair competition.[76] The FTC has adopted an expansive and at times controversial interpretation of its enforcement powers under this statute, asserting that Section 5 applies to any "deceptive, collusive, coercive, predatory, unethical, or exclusionary conduct or any course of conduct that causes actual or incipient harm to competition," including conduct that is not covered by the Sherman Act.[77] One of the more common applications of Section 5 involves invitations to collude—efforts by one firm to enter into an anticompetitive price fixing or market allocation agreement with one or more of its competitors.[78]

Because blockchains can be used to share information, they could potentially be used to "signal" future plans to rivals and invite them to follow suit. For example, a competitor could use blockchain transaction histories to demonstrate to its competitors that it had been consistently charging a particular price, and then—successfully or unsuccessfully—suggest that they do the same. Or if a blockchain allowed rivals' access to prospective pricing or other competitively sensitive information, that could be used to signal plans and invite others to follow. Such activity may be viewed as an invitation to collude in violation of Section 5, particularly if there is evidence that competitors' subsequent transactions and posted prices were impacted by the signal.

D. Anticompetitive Transactions—Clayton Act § 7

Section 7 of the Clayton Act prohibits anticompetitive transactions, including mergers and acquisitions and certain joint ventures and competitor collaborations.[79] The key question is whether the proposed transaction is likely to create or enhance market power, or to facilitate its exercise.[80] A transaction is less likely to be anticompetitive if entry or repositioning in the market is easy, or if the merged firm and its remaining rivals could not profitably raise prices or otherwise reduce competition. In addition, when competitive

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76 15 U.S.C. § 45.

77 *See, e.g.*, Compl. ¶ 1, *In re Intel Corp.*, FTC Docket No. 9341 (December 16, 2009), http://www.ftc.gov/os/adjpro/d9341/091216intelcmpt.pdf; Compl. at 31, *FTC v. Qualcomm Inc.*, No. 5:17-cv-00220, 2017 WL 242848 (N.D. Cal. Jan. 17, 2017), ECF No. 1 (suggesting Section 5 would catch conduct beyond the reach of Sherman Act, § 2: "Qualcomm's practices, regardless of whether they constitute monopolization or unreasonable restraints of trade, harm competition and the competitive process and therefore constitute unfair methods of competition in violation of Section 5(a) of the FTC Act.").

78 *See* Joshua D. Wright & Angela M. Diveley, *Unfair Methods of Competition After the 2015 Commission Statement*, Antitrust Source 2-3, 7-8 (Oct. 2015), http://www.americanbar.org/content/dam/aba/publishing/antitrust_source/oct15_wright_10_19f.authcheckdam.pdf ("[O]nly a single form of business conduct—invitations to collude—has been generally accepted as a relatively uncontroversial [Section 5 unfair competition method] violation."); *see, e.g.*, Fed. Trade Comm'n, *Two Barcode Resellers Settle FTC Charges That Principals Invited Competitors to Collude* (July 21, 2014), https://www.ftc.gov/news-events/press-releases/2014/07/two-barcode-resellers-settle-ftc-charges-principals-invited. By contrast, an invitation to collude is not unlawful under the § 1 of the Sherman Act because there is no "agreement" between two parties; a unilateral overture alone is not enough to trigger liability under that statute.

79 15 U.S.C. § 18.

80 *See* Blockchain for Business Lawyers, *supra* note 27.

concerns are more limited the agencies are less likely to challenge a transaction if there are significant and verifiable transaction-specific efficiencies.[81]

Mergers or other transactions that involve rival blockchains may raise antitrust concerns. As part of its analysis, the DOJ or the FTC will consider several factors, including the number and significance of competing blockchains, the likelihood that existing or new firms could and would constrain the combined firm in the future, and efficiencies. Blockchain remains a relatively nascent technology still finding its use cases, with many startups and ventures looking to successfully commercialize the technology. This suggests that competition is dynamic and entry is common. In addition, as described above, blockchains may result in significant cost savings and other efficiencies. This could be a critical part of the analysis, particularly as competition agencies may have relatively less confidence about predicting adverse competitive effects and more confidence in accepting verifiable efficiencies and synergies. The combination or even interoperation[82] of rival blockchains could potentially result in significant cost savings and other operational synergies that may be credited as part of an agency's merger analysis.

IV. RECENT DEVELOPMENTS IN BLOCKCHAIN AND ASSOCIATED ANTITRUST ISSUES

As a new technology, blockchain has myriad applications. We focus here on a few noteworthy developments based on publicly available materials. The degree of antitrust risk that blockchain participants confront will vary depending on several factors, including blockchain membership composition (does it involve competitors?), industry structure (concentrated, with relatively few firms?), nature of information exchanges (does it involve competitively sensitive information?), information sharing protocols (is access restricted by user? is information encrypted?), and efficiencies (does the venture generate significant cost savings or other synergies?). Recent real world implementations offer useful guidance about how companies navigate these questions when implementing blockchain solutions.

A. IBM Food Trust Supply Chain

The IBM Food Trust—a supply chain solution designed to trace food as it moves from farms to store shelves—is perhaps one of the best known non-cryptocurrency distributed ledger implementations.[83] It is a permissioned blockchain built on the Hyperledger open source platform, and participants can enter and control access to their encrypted data by others on the network. A party to a transaction can view only the data that another party has shared. In a matter of seconds, a network user can trace the history of a food item from the time it left the farm to its current location in the supply chain, along with any

81 *Id.*

82 While two different blockchains based on different codebases, architecture, and use cases may be difficult to merge, they can theoretically be made interoperable. *See, e.g.*, Lucas Mearian, *Kadena Launches a Hybrid Platform to Connect Public, Private Blockchains*, COMPUTERWORLD (Jan, 16, 2020), https://www.computerworld.com/article/3514711/kadena-launches-a-hybrid-platform-to-connect-public-private-blockchains.html.

83 *About IBM Food Trust*, IBM, https://www.ibm.com/downloads/cas/EX1MA1OX.

associated uploaded documents. Data to the network can be uploaded via a web portal or application programming interfaces (APIs) developed by IBM.[84]

Food Trust is designed to increase food safety and freshness, increase supply chain efficiencies, and minimize waste.[85] Among the participants in Food Trust are some of the biggest competing food manufacturers and retailers, including Albertson's, Unilever, Nestle, Dole Food Company, Tyson Foods, and Kroger.[86]

Food Trust is overseen by an "Advisory Council" composed of industry representatives that set the policies and rules of engagement to maintain the network.[87]

Food Trust illustrates how companies have navigated three critical competition issues that might arise in blockchain collaborations involving competing firms—information sharing, membership composition, and having an objective consensus mechanism.[88]

First, Food Trust illustrates one way to address issues concerning competitively sensitive information. As previously explained, in the United States, information exchanges among competitors are typically analyzed under the rule of reason. In many cases, it will be necessary and reasonable for entities to exchange certain transactional information to accomplish legitimate business goals. However, the amount, type, effect, and nature of the information exchange is crucial to the antitrust analysis. Because the Food Trust participants have complete control over what information they share with the network, they can avoid sharing competitively sensitive information.[89] To the extent that a participant's competitively sensitive information exists on the network, it is encrypted, preventing competitor access.[90] Information can be accessed by other participants only if it has been shared on the network, and access has been granted.[91]

Second, composition concerns might arise if an interested competitor is refused access. There might be legitimate business justifications to exclude a competitor from a blockchain network, and adhering to a few best practices will minimize antitrust risk. The reasons for membership criteria should be documented, well-defined, and ideally point to procompetitive justifications. Membership criteria also should not be so narrowly defined that they could be construed as purposely excluding a certain competitor or set

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84 *Id.*

85 *IBM Food Trust, A New Era for the World's Food Supply*, IBM, https://www.ibm.com/blockchain/solutions/food-trust.

86 Ian Allison, *World's Second-Largest Grocer Joins IBM Food Trust Blockchain*, Coindesk (Apr. 11, 2019), https://www.coindesk.com/worlds-second-largest-grocer-joins-ibm-food-trust-blockchain.

87 *See About IBM Food Trust*, *supra* note 83, at 11.

88 Beyond Food Trust, there are other sector-wide blockchain networks where similar antitrust risks can arise, especially in the financial technology space. *See Blockchain Gains Traction in FinTech as Payment Networks Emerge*, Computerworld (Oct. 28, 2017), https://www.computerworld.com/article/3234192/blockchain-gains-traction-in-fintech-as-payment-networks-emerge.html. In addition, there are other blockchain networks within the food supply tracing space. *See Uncover the Human Fingerprints on Your Products*, Fairfood, https://fairfood.nl/en/solutions/trace.

89 *See About IBM Food Trust*, *supra* note 83.

90 *Id.*

91 *Id.*

of competitors. When applying the membership criteria, blockchain owners should not treat similarly-situated competitors differently. In addition, reasons for the removal of any member should be well-documented and fall within the established criteria for expulsion preferably detailed at the blockchain's inception or later developed governance structure.

With Food Trust, access is broadly available. Indeed, the only requirement is payment of Food Trust participant access fees.[92] In addition, the Advisory Council sets the rules of engagement and platform policies, providing members with transparency regarding the decision-making process.[93]

Finally, a blockchain network can avoid or minimize potential antitrust issues by using a pre-set, objective consensus mechanism, by which no single participant can control how a discrepancy is resolved. This reduces the likelihood that discrepancies raise competitive issues, for instance, based on favoritism or as a result of collusion among competitors on the network. Any deployed consensus mechanism should have discrete and objective parameters explaining how the participants must resolve any discrepancies.

Food Trust incorporates a consensus mechanism by which no party has an outsized influence on how data is on boarded to the network, or how disputes are resolved.[94] Food Trust uses a "Practical Byzantine Fault Tolerance" trust mechanism, validating addition when a specified number of nodes (usually two out of three, or four out of five) have reached agreement.[95] And IBM, as the architect of the blockchain has largely left rulemaking to the Advisory Council.[96]

B. Global Shipping Industry

Blockchain technology is being rapidly adopted by the global shipping industry.[97] The industry is drowning in paperwork required by dozens of governmental agencies, banks, customs bureaus, and other entities.[98] All of these entities need to sign off on the goods whenever a cargo ship enters or leaves a port, creating a lengthy administrative process dominated by paperwork.[99]

With the adoption of blockchain technology, authorized participants can view the status of goods on the ledger and understand where a container is in transit. In addition, customs documents, bills of goods, and other pertinent paperwork can be accessed in real time. Also, given the anti-tampering architectural properties of blockchain, there is an

92 *IBM Food Trust—Pricing*, IBM, https://www.ibm.com/products/food-trust/pricing.

93 *See About IBM Food Trust*, *supra* note 83, at 11.

94 *See id.*

95 *See* Christopher Ferris, *What We Really Mean When We Talk About "Real" Blockchain*, IBM (May 24, 2019), https://www.ibm.com/blogs/blockchain/2019/05/what-we-really-mean-when-we-talk-about-real-blockchain/.

96 *See About IBM Food Trust*, *supra* note 83, at 11.

97 Kyunghee Park, *Blockchain Is About to Revolutionize the Shipping Industry*, Bloomberg (Apr. 18, 2018), https://www.bloomberg.com/news/articles/2018-04-18/drowning-in-a-sea-of-paper-world-s-biggest-ships-seek-a-way-out.

98 *Id.*

99 *Id.*

inherent assurance that no party has modified, deleted, or appended transactions without consensus from others on the network.

Because these permissioned blockchain networks involve collaborations among carriers, some have sought antitrust exemptions from the Federal Maritime Commission (FMC).[100] The requests for exemption shed light on how to potentially navigate antitrust concerns.

To date, one blockchain shipping network, TradeLens, has received an antitrust exemption, while another request from Global Shipping Business Network (GSBN) is pending before the FMC.[101] GSBN is seeking FMC's approval to operate "a blockchain-enabled, global trade digitized process that will enable shippers, authorities and other stakeholders to exchange information on supply chain events and documents."[102] Under the agreement, GSBN will provide participants with: APIs for publishing and subscribing to event data related to cargo; the ability to store and share documents with blockchain participants; and a user interface to view event data and documents, and to manage access permissions.[103]

Given the potentially sensitive nature of information that will be provided on the blockchain network, GSBN proposed measures to address antitrust concerns.[104] The proposed agreement prohibits network participants from sharing with rivals confidential information such as their vessel capacity, customer terms and conditions, or rates and charges that customers will pay.[105] The GSBN petition is based on TradeLens' approved petition, which had sought the same approval in its petition to the FMC.[106]

These two agreements offer useful guidance for other blockchain networks. When a network would necessarily involve providing competitively sensitive information, there should be clear parameters of which type of information can and cannot be shared with other blockchain participants at different levels of the supply chain, including prohibitions on sharing with competitor information that could harm competition or facilitate collusion, such as prices. In addition, the governance structure and rules to participate in the blockchain should be transparent and objective to avoid unreasonably disfavoring some blockchain participants or excluding competitors.

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100 The U.S. Shipping Act of 1984 prohibits carriers from cooperating on certain matters without FMC's approval. FMC approval is automatic if the Commission fails to reject a proposed agreement within a specified time period. If FMC approves an agreement, federal antitrust laws do not apply to activities carried out in accordance with the agreement.

101 Jeffrey D. Neuburger, *Another Blockchain Supply Chain Shipping Consortium Files for Federal Antitrust Exemption*, Nat'l L. Rev. (June 3, 2020), https://www.natlawreview.com/article/another-blockchain-supply-chain-shipping-consortium-files-federal-antitrust.

102 *The Global Shipping Business Network Agreement*, Federal Maritime Commission, https://www2.fmc.gov/FMC.Agreements.Web/Public/AgreementHistory/29502.

103 *Id.*

104 *See* Neuburger, *supra* note 101.

105 *See id.*

106 Jeffrey D. Neuburger, *Supply Chain Blockchain Initiative Receives Federal Antitrust Exemption*, Nat'l L. Rev. (Feb. 11, 2020), https://www.natlawreview.com/article/supply-chain-blockchain-initiative-receives-federal-antitrust-exemption.

C. Government Transparency and Antitrust

Antitrust issues also can arise when governments deploy blockchain technology. Specifically, governments are deploying blockchains in an effort to provide greater efficiency, fight corruption, and bring greater transparency to the bidding and procurement process. For example, the U.S. General Services Administration is assessing blockchain to streamline some bids.[107] A pilot program is set to take place in Colombia later this year.[108] While public procurement processes, at least in developed countries, largely occur on electronic systems, blockchains bring something new to the table—they make it more difficult to alter bids or remove records of bids once they have been submitted.[109] Interestingly, the priority placed on greater transparency and increased confidence in the integrity of the records has led Colombia to use a permissionless blockchain instead of a permissioned one.[110]

In general, while increased transparency can lessen the likelihood of corruption by removing opportunities to tamper with bids, it can also lead to collusive behavior because competitors may have greater access to each other's bids on the open blockchain. The bids might nominally be made pseudonymously, but depending on what information bidders are able to see about rival bidders, competitors might be able to attribute them to particular rivals. This dynamic is even more acute when the number of bidders on a project is small. Such transparency might facilitate anticompetitive agreements because each player can more easily verify that the other is adhering to the agreement by confirming the bid on the ledger. While using blockchain as part of the procurement process is novel, even by blockchain standards, its use could grow, and bid takers should take measures to limit what access competing bidders can access about rival bids and bidders to limit opportunities for collusion.

At the same time, blockchain's procurement application also illustrates another broad point about blockchains being used as evidence in antitrust cases. During investigations and discovery, antitrust agencies and private plaintiffs seek data from the subjects of investigations and litigation, and from other third-party stakeholders. This may include transactional sales data, win/loss data, and pricing data. By their nature, blockchains create a history of information that, unlike other tools, becomes permanent. Bidding records on an open blockchain might be used by antitrust agencies and private plaintiffs to evaluate what information has been exchanged, when the information was exchanged, how competitive behaviors changed post-exchange, and whether there are competitively significant trends in

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107 *See* Stan Higgins, *US Government Seeks Blockchain Solutions for Contract Bidding System,* Coindesk (Jun. 22, 2017), https://www.coindesk.com/us-government-blockchain-contract-bidding ("According to a request for quotation published on 19th June, the General Services Administration is looking for a contractor to help it assess how blockchain could be integrated into FAStlane, a system launched last year as part of a broader effort to streamline how smaller companies, especially IT firms, bid on government contracts.").

108 Rachel Davidson Raycraft & Ashley Lannquist, *How Governments Can Leverage Policy and Blockchain Technology to Stunt Public Corruption*, World Economic Forum (June 15, 2020), https://www.weforum.org/agenda/2020/06/governments-leverage-blockchain-public-procurement-corruption.

109 *Id.*

110 *Id.*

the data. Blockchain discovery may also lead to complicated issues of who has ownership or control of the content, including encrypted or access-restricted content.

V. CONCLUSION

Despite falling short of predictions that blockchain would revolutionize the business world (so far), the technology is advancing and being used in an increasing number of applications. Blockchain is finding its use cases, most prominently in fintech, supply chain, insurance, and healthcare contexts, while experimentation continues elsewhere.[111] Moreover, the technology is evolving and the ways to deploy it are getting easier with the rise of open source platforms and BaaS. As the technology continues to gain traction, participants should pay attention to potential antitrust issues that blockchain presents. Implementations, such as the IBM Food Trust, illustrate how large and sophisticated companies have navigated commercial and competition issues.

To avoid or minimize antitrust risks, participants and administrators of blockchain networks should implement a number of best practices. For example: develop clear governance structures, membership criteria, and an objective consensus mechanism; and establish clear procedural safeguards to the extent the blockchain involves sharing competitively sensitive information between or among rivals. In the end, although blockchain is "old" by technology standards—going on 22 years—this very much remains a new frontier given the relatively limited number of blockchain implementations.[112] Private plaintiffs lawyers and governments—legislators and antitrust enforcers—are watching. It is too soon to predict whether blockchain will herald a new era of efficiency across industry sectors or a means to accomplish anticompetitive ends, or both. The next few years will be instructive as existing blockchain efforts mature and new ones launch.

111 Michael del Castillo, *Blockchain 50: Billion Dollar Babies*, Forbes (Apr. 16, 2019), https://www.forbes.com/sites/michaeldelcastillo/2019/04/16/blockchain-50-billion-dollar-babies/#7feabcd057cc.

112 Veronica Combs, *William Shatner Explores the World of Blockchain with New Digital Trading Cards*, Tech Republic (June 25, 2020), https://www.techrepublic.com/article/shatner-explores-the-world-of-blockchain-with-new-digital-trading-cards.

BIG DATA AND ANTITRUST RISKS IN CLOSE-UP: FROM THE PERSPECTIVE OF REAL CASES

By Ken Dai and Jet Deng[1]

Big data is the new battleground to achieve the competitive edge. The digital market features both the first-mover advantage and a winner-takes-all environment. Without doubt, enterprises fight for data, and suppress rivals from access to data. China, as one of the world's largest Internet markets with the largest Internet user population, exemplifies the heated data game. The Alibaba and SF Express data sharing spat is a famous example. In 2017, Alibaba's logistic network, Cainiao, cut off its data interface for SF Express, one China's largest couriers, and removed SF Express as a courier option on its e-commerce platform Taobao.[2] The dispute was traced back to SF Express's refusal to share customer logistics tracking data in the name of customer privacy protection.[3] Similarly, Cainiao's action was allegedly due to data security concerns. The matter was settled upon intervention by the State Post Bureau, China's courier service industry regulator. Similar disputes also occurred between Chinese tech giants Tencent and ByteDance, and between Tencent and Huawei, both of which will be discussed in this article. The yearning for data is overt among the leading companies, not to mention those smaller ones who remain far away from the tipping point.

The question is whether antitrust law has a role to play in regulating the competitive process for big data. By now the crossover seems to be inevitable and unstoppable. Across the world tech giants are often targets of competition law investigations. On the other hand, data protection laws have been increasingly applied in competition cases, such as the Facebook case in Germany which will be addressed in detail below. However, still there is a lot of space between "under-regulation" and "over-regulation."

The United States and China are examples of "under-regulation." Since *United States v. Microsoft Corporation*,[4] and until recently, the U.S. regulators have not accused any tech giants of antitrust violations. Similarly, China's digital economy does not fall much behind that of the U.S. and was also criticized for the lack of antitrust enforcement in the digital markets for the past twelve years since the enactment of its Anti-Monopoly Law.[5] In stark contrast, the European Union ("EU") is more aggressive in scrutinizing tech giants.

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2 *Data Sharing Cut Off as SF Express, Alibaba Spat Continues*, CGTN (June 2, 2017), https://news.cgtn.com/news/3d67444e7945444e/index.html.

3 *Id.*

4 253 F.3d 34 (D.C. Cir. 2001).

5 *See* Xu Liu, *Antitrust Enforcement Should Not Tolerate Internet Oligopoly*, The Paper (Aug. 29, 2018), https://www.thepaper.cn/newsDetail_forward_2390564 (criticizing the Internet giant for not filing merger notifications and circumventing antitrust reviews); *see also* Shanming Jin, *Reflection and Transformation of China's Antitrust Law Research Approach*, 34(04) Law Business Studies 71 (2017); Yang Cao, *Legal Regulations of Behaviors of Abusing Comparative Advantage in the Internet Field*, 34(03) Forum On Law 79 (2019).

The penalty against Google for abusing the dominance of its Android mobile operating system was a record-breaking EUR 4.3 billion[6] and was just one of the three fines that Google was hit with in the EU. The EU's antitrust probe against Amazon is still ongoing for Amazon's dual role as a retailer and a marketplace and how it took advantage of seller data.[7] More recently, the Commission also opened formal antitrust investigations to assess whether Apple's rules for app developers on the distribution of apps via the App Store violate EU competition rules.[8] The EU Member States are also active in some prominent cases. While it may not be proper to characterize the EU enforcement as "over-regulation", it is apparently on the other side of the spectrum from the U.S. or China. But is there a definitive point at which antitrust authorities should act righteously? There are no easy answers. Related topics have been repeatedly discussed, such as how network effects lead to dominance and how multi-homing complicates the analysis—all intricate issues but gradually falling back to clichés.

Instead of exploring theoretical ideas, this article will examine real cases. By looking at the circumstances surrounding and following those cases, it may be easier to have an instinctive appreciation for the role of antitrust law in the big data context. Specifically, this article will discuss: why the merger control regime might malfunction in start-up acquisitions; the increasing concern for pricing algorithms leading to a cartel situation; how to determine market dominance in a volatile digital market; the novel data-related abusive conduct analyzed from the antitrust perspective; and whether the long-lived essential facilities doctrine could still apply to big data. Each section will be accompanied by one or more high-profile cases in major jurisdictions.

I. START-UP ACQUISITIONS: THE LINGERING DIDI / UBER CHINA CASE

Start-up acquisition, particularly by large digital platforms, has become increasingly suspicious from the competition law perspective. This is the so-called "killer acquisition"—acquisitions of start-ups or nascent firms by dominant market incumbents. Start-ups begin with innovative projects, establishing customer base, and aggregating data pools, but often have not generated much revenue yet when turning themselves over to tech giants. Such acquisitions stifle potential competition by eliminating the potential threat posed by the start-up. Competition authorities in many jurisdictions are concerned that their merger review triggering thresholds are not broad enough to cover these kinds of transactions, particularly when the target firm has small turnover. On the other hand, even after reviewing, the authorities may not be quite confident that the existing theories of competitive harm will enable them to make the right decision, especially on data-driven capabilities in a rapid evolving market.

The 2016 Didi/Uber China acquisition is a typical case that generated heated discussions regarding China's merger control regime. On 1 August 2016, Didi Chuxing

6 *Google Fined a Record $5 Billion by the EU for Android Antitrust Violations*, The Verge (July 18, 2018), https://www.theverge.com/2018/7/18/17580694/google-android-eu-fine-antitrust.

7 European Commission, *Antitrust: Commission Opens Investigation into Possible Anti-competitive Conduct of Amazon* (July 17, 2019), https://ec.europa.eu/commission/presscorner/detail/en/IP_19_4291.

8 European Commission, *Antitrust: Commission Opens Investigations into Apple's App Store Rules* (June 16, 2020), https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1073.

("Didi"), a popular app-based ride-hailing platform in China, announced a strategic agreement with Uber China under which Didi would acquire all assets of Uber, including Uber's brand, business, and data. The acquisition ended a year-long price war between Didi and Uber during which drivers and passengers were attracted by both platforms through all kinds of allowance offerings. As a result of this deal, Didi would acquire market share of as much as 93.1% in the ride-hailing market in China.[9] Although this is not a typical "killer acquisition" (neither of them is a dominant incumbent though Didi's market share is quite high even before the deal), the acquisition exemplifies how the notification threshold based on the parties' turnover could be under-inclusive, and upon intervention by the Chinese competition authority nonetheless, how hard it could be to establish competitive harm in an extremely dynamic market.

A. Notification Thresholds That Are Under-Inclusive for Data-Driven Capacities

As to notifiability, Didi announced publicly that its turnover in the preceding fiscal year did not meet the relevant thresholds.[10] The turnover thresholds to trigger notification obligations in China are: the combined turnover of the parties exceeds CNY 2 billion (approx. USD 280 million) in China or CNY 10 billion (approx. USD 1.4 billion) globally; and the Chinese turnover of at least two of the parties to the transaction each exceeds CNY400 million (approx. USD 56 million). It was formulated when the Anti-Monopoly Law of China took effect in 2008 and has remained unchanged. Though widely criticized as too low to accurately mirror the economic reality in China, the thresholds still could not catch some high-profile transactions such as Didi/Uber China.

The case illustrates why turnover-based notifying threshold is under-inclusive, and cannot accurately reflect innovation capabilities based on data. The price war preceding this acquisition cost both Didi and Uber a significant amount of revenue. It was reported that Uber had suffered an annual loss of at least USD 1 billion in China.[11] Didi did not get rid of loss neither despite that it had possessed the data of more than 58.8 million users at that time.[12] The same reason goes to other start-ups and other jurisdictions. At an early stage, digital start-ups usually focus more on users and data than turnover. This is why Facebook's acquisition of Instagram was not reviewed by the European Commission and why, without a specific referral by national competition authorities, Facebook's acquisition of WhatsApp would not have been reviewed by the Commission.[13] For the same reason,

9 *Does Didi's Acquisition of Uber China Constitute an Industry Monopoly?*, China Youth Daily (Aug. 5, 2016), http://zqb.cyol.com/html/2016-08/05/nw.D110000zgqnb_20160805_6-01.htm.

10 *Id*.

11 *Didi Acquires Uber and Has 93.1% Market Share in China*, Jiemian News (Aug. 4, 2016), *available at* https://www.jiemian.com/article/779605.html.

12 *QuestMobile Data: Didi's Monthly Activity User Growth Ranks First with Nearly 200%*, Sohu (Apr. 25, 2016), https://m.sohu.com/n/446105417/.

13 Marc Bourreau and Alexandre de Streel, *Big Tech Acquisitions: Competition & Innovation Effects and EU Merger Control* (Centre on Regulation in Europe Feb. 2020), at 15, *available at* https://www.cerre.eu/sites/cerre/files/cerre_big_tech_acquisitions_2020.pdf.

U.S. regulators are now revisiting hundreds of deals made by tech giants in the past decade that were not required to notify according to law.[14]

B. Assessing Competitive Harms and Innovation Incentives in a Dynamic Market

Similar to the U.S., the competition authority in China also has the power to investigate a potentially anti-competitive transaction even though it did not trigger notification in the first place.[15] As early as September 2016, one month after the announcement of Didi/Uber China, the then merger control authority of China—the Ministry of Commerce—announced that it had launched an investigation into the deal. Almost four years passed, during which an institutional reform in 2018 led to the birth of the State Administration for Market Administration ("SAMR") taking over the responsibility of merger review. The last time the case was mentioned was a press conference held by SAMR in November 2018. On that occasion, Wu Zhenguo, the head of the Anti-Monopoly Bureau of SAMR, unequivocally said that the deal was still under investigation and they were assessing the deal's impact on market competition and industry development.[16] However, no decision has been made thus far.

Undoubtedly, it is no easy decision to challenge a start-up acquisition. Along with the traditional parameters—price, output, choice, and quality, a competition authority also has to consider innovation—a highly volatile parameter.[17] Data-driven innovation is pivotal for a sharing economy like Didi. Typically, both Didi and Uber collect users' locations, time, frequency and other data to analyze user habits, so as to offer more targeted services. For example, by analyzing data distribution of hours and roads, they can improve service coverage, alleviate peak hour pressure, and enhance passenger load factor. In addition to perfecting the basic services as a ride-hailing platform, the true value of big data may lie in researching new business opportunities. To name a few, transportation data could be used for providing analysis and consulting services to other related businesses. Platforms could also sell push-up ads, or direct traffic to expand into new services such as social networking or e-commerce. Apparently, continuous accumulation of data is one of the motives for various digital platforms to strive till the end.

While it is difficult to assess data-driven competency in a rapidly evolving market, we could look back at what happened in the past four years after the deal. The investigation aside, Didi itself has undergone several crises and its reputation was hit hard since the Didi/Uber China deal. Immediately after that, there were voices worrying about Didi's monopoly

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14 *F.T.C. Broadens Review of Tech Giants, Homing In on Their Deals*, The New York Times (Feb. 11, 2020), *available at* https://www.nytimes.com/2020/02/11/technology/ftc-tech-giants-acquisitions.html.

15 According to Article 4 of the *Provisions of the State Council on the Thresholds for the Notification of Concentration of Undertakings*, "[i]f a concentration of undertakings does not meet the notifying thresholds stipulated in Article 3 of these Provisions, but the facts and evidence collected in accordance with the prescribed procedures indicate that the concentration of undertakings has or may have the effect of eliminating or restricting competition, the competent department under the State Council shall conduct an investigation according to law."

16 *SAMR: Conducting Anti-monopoly Investigation on Didi/Uber Merger According to Law*, Xinhuanet (Nov. 16, 2018), http://www.xinhuanet.com/fortune/2018-11/16/c_129995829.htm.

17 Bourreau & Streel, *supra* note 13, at 17-18.

position. Drivers and passengers complained that they could no longer enjoy the allowances or discounts as before during the price war and there were even fare increases.[18] Didi's policy of raising rates at peak hours led to a lawsuit alleging its abuse of dominance.[19] Moreover, in 2018, Didi was under the spotlight again due to safety incidents and was questioned whether its monopoly position stimulated Didi's neglect of security.[20] At the same time the ride-hailing market in China continues to welcome new entrants. For instances, food delivery service platforms like Meituan, traditional taxi dispatching companies like Qiangsheng, car makers like BMW, and bicycle sharing service platforms like Hellobike, all have been or are positioning for ride-hailing service recently.[21]

As an ex ante regime, merger control is difficult in anticipating or even speculating about what will happen as a result of a transaction. If turnover, market share, or market concentration are no longer accurate indicators, reliance then falls on subjective standards such as innovation or efficiency. It is also uncertain for what term should the competitive concerns be evaluated—the year immediately after the transaction, five years, or longer. Didi may argue that easy access to ride-hailing market does not support government intervention in its deal, and new entrants can always keep Didi in check. However, an opposite narrative is, despite all the negative news regarding it, Didi still led the market in 2019 with an overwhelming market share, possibly more than 80%. [22] If competition law is meant to intervene only to prevent the tipping point, merger control can be justified only when a transaction at issue is the exact cause of reaching that tipping point. However, it is hard to decide on the right moment to intervene. More often, due to fear of inaccuracy or falsification, competition authorities could be hesitant and involuntarily choose to not intervene.

II. PRICING ALGORITHMS: DISTINGUISHING THE UBER CASE

Different from the rarely challenged start-up acquisitions under merger control, in the field of cartels, competition law enforcement cases involving data-based algorithms have become commonplace. Various platforms facilitate price comparison by consumers and are supposed to intensify competition. However, the reality might be quite the opposite. The transparency in pricing also facilitates collusion, monitoring of deviation, and frequent interactions to achieve equilibrium—features conducive to a cartel.

Generally, price fixing is illegal—irrespective of how it is implemented. For example, in 2015, the U.S. Department of Justice ("DOJ") filed criminal charges against

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18 *Is Didi's Price Increase a "Trouble" Caused by Monopoly?*, Shanghai Financial News (Sep. 20, 2016), *available at* http://wap.cnki.net/touch/web/Newspaper/Article/SHJR20160920B020.html.

19 *Huang Wende v. Didi Chuxing Technology Ltd.*, dismissed by Zhengzhou Intermediate People's Court of Henan Province; appealed to and heard by the Supreme People's Court of China on September 24, 2019 and not decided yet.

20 *Media Questioned the Didi Incident: Did Didi Cooperate with the Police in a Timely Manner and Was It Suspected of Monopoly?*, The Paper (Aug. 28, 2018), *available at* https://www.thepaper.cn/newsDetail_forward_2386317.

21 *There Are New Players in the Online Ride-hailing Market. Can We Break the Monopoly of Didi?*, 36KR, *available at* https://36kr.com/topics/819242074113.

22 *Analysis of the Market Status and Competition Pattern of China's Online Ride-hailing Industry—Intensified Market Competition*, Qianzhan Industry Research Institute (June 16, 2020), https://www.qianzhan.com/analyst/detail/220/200616-8a21c418.html.

an e-commerce cartel formed by an art seller operating on Amazon through pricing algorithm with its competitors. The seller settled with the DOJ for a USD 20,000 fine.[23] Subsequently, the co-conspirator was fined USD 50,000 and its executive was sentenced to six months in prison.[24]

However, when platforms are involved, it becomes muddy whether there exists price collusion. Platforms are in a uniquely advantageous position in setting prices, as they have aggregated a huge amount of data from both sides and even have knowledge of each individual's price preference. If a platform is just an intermediary that matches sellers with buyers and the sellers are independent from each other, the use of algorithm to coordinates the sellers' prices is very likely price-fixing. But if the sellers are deemed to accede to the platform, by accepting its terms including pricing algorithm, the platform and all the sellers are no longer independent and price-fixing seems inherent in the platform's business mode. The discussion here will focus on Uber and an OTA (online travel agency) cases in Europe, two technology platforms that received different legal findings.

A. Comparing the Facts in *Uber* and in *Eturas*

At the beginning of 2016, an Uber passenger sued Uber's CEO in a U.S. federal district court, alleging that Uber's operation and pricing methods are equivalent to a hub-and-spoke pricing cartel.[25] In March 2018, the district court granted Uber's motion to compel arbitration.[26] The appointed arbitrator ruled in Uber's favour on 22 February 2020, but the plaintiff asked the court to overturn the arbitration result.[27] Uber was also investigated in India for a similar reason, but the Competition Commission of India ("CCI") concluded in 2018 that the unified algorithm for pricing in third-party platforms is not equivalent to a hub-and-spoke cartel.[28]

In a similar case, thirty travel agencies in Lithuania were considered to be implementing hub-and-spoke cartel for sharing the same online travel booking system,

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23 *Former E-Commerce Executive Charged with Price Fixing in the Antitrust Division's First Online Marketplace Prosecution*, Department of Justice (Apr. 6. 2015), https://www.justice.gov/opa/pr/former-e-commerce-executive-charged-price-fixing-antitrust-divisions-first-online-marketplace#:~:text=April%206%2C%202015-,Former%20E%2DCommerce%20Executive%20Charged%20with%20Price%20Fixing%20in%20the,the%20Department%20of%20Justice%20announced.

24 *Online Retailer Pleads Guilty for Fixing Prices of Wall Posters*, Department of Justice (Aug. 11, 2016), https://www.justice.gov/opa/pr/online-retailer-pleads-guilty-fixing-prices-wall-posters; *Former E-Commerce Executive Pleads Guilty to Price Fixing; Sentenced to Six Months*, Department of Justice (Jan. 28 2019), https://www.justice.gov/opa/pr/former-e-commerce-executive-pleads-guilty-price-fixing-sentenced-six-months.

25 *Meyer v. Kalanick*, No. 1:15-cv-09796-JSR (S.D.N.Y. Jan. 29, 2016), Dkt. 37, *available at* http://blogs.reuters.com/alison-frankel/files/2016/04/meyervkalanick-complaint.pdf.

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

27 *Uber Customer Claims Company Won Price-fixing Suit Because Arbitrators Was Scared*, Reuters (May 23, 2020), *available at* https://www.reuters.com/article/us-uber-lawsuit/uber-customer-claims-company-won-price-fixing-suit-because-arbitrator-was-scared-idUSKBN22Y2ZZ#:~:text=Spencer%20Meyer%20initiated%20the%20high,the%20Uber%20ride%2Dhailing%20app.

28 Basu Chandola, *Algorithms and Collusion: Has the CCI Got It Wrong?*, Kluwer Competition Law Blog (Feb. 28, 2019), *available at* http://competitionlawblog.kluwercompetitionlaw.com/2019/02/28/algorithms-and-collusion-has-the-cci-got-it-wrong/.

Eturas. Eturas applied a common cap on discounts that the travel agencies could offer through the platform, and the cap was communicated in the form of an amendment to the platform terms and conditions.[29] However, in 2016, the European Court of Justice ("ECJ") reached a different conclusion. The ECJ pointed out that if the travel agency understood that there might be anti-competitive collusion in the platform management system and still used the system, the agency could be presumed to have participated in the cartel.[30]

B. Why Is Uber Exempted and Where to Draw the Line?

At a glance, *Eturas* is distinguishable from *Uber*. For example, platforms such as Eturas do not have pricing power over travel agencies and therefore, the pricing algorithm agreement reached between travel agencies on the Eturas platform is very likely to constitute a cartel. But in the case of Uber: accepting its unified price algorithm seems to be an inevitable prerequisite for entering the platform. Granted, not all platforms shall be treated equally.

But is there a bright line between *Eturas* and *Uber*? What kind of platforms is allowed to intervene into sellers' pricing? First, it is not very helpful to distinguish between B2C and C2C, as we can imagine that Amazon or Taobao as a C2C market would not be allowed to coordinate prices. Second, Uber is an example of a sharing economy in addition to its roles as a platform, while Eturas is not. Sharing economies employ a unique peer-to-peer fashion in which the in-between service provider is more apt to formulate a uniform pricing level. But we may look at another example of a sharing economy, Airbnb, a platform to share extra spaces in peoples' homes. Different from Uber, Airbnb let the hosts determine their listing price, though it sometimes provides price suggestions.[31] Other sharing economy applications own the resources that they share—e.g., WeWork holds leases of millions of square-feet to offer shared office space,[32] and Mobike owns millions of bikes to share.[33] So understandably those applications are free to determine pricing. But why is Uber (or other ride-hailing applications including Didi in China) an exception—owning nothing, merely matching drivers with passengers—allowed to price? Third, admittedly, pro-competitive benefits are also evident under the Uber model. Uber with sufficient data could prevent passengers from being 'held-up' caused by information asymmetry. For instance, a driver asking for excessive price on a rainy night. And generally, Uber's price is even lower than taxi companies that it was sued for predatory pricing

29 Sophie Lawrance & Marc Linsner, *Eturas—Any Conclusions on Platform Collusion..?*, Kluwer Competition Law Blog (Jan. 19, 2017), *available at* http://competitionlawblog.kluwercompetitionlaw.com/2017/01/19/eturas-conclusions-platform-collusion/.

30 *Id*.

31 *Airbnb Answers: Pricing Suggestions*, Airbnb (Aug. 21, 2018, 7:02 AM), *available at* https://community.withairbnb.com/t5/Airbnb-Updates/Airbnb-Answers-Pricing-suggestions/td-p/790645.

32 *Here's a Look at How WeWork's $50 Billion Pile of Office Leases Could Unravel*, MarketWatch (Oct. 14, 2019, 4:03 PM), *available at* https://www.marketwatch.com/story/heres-a-look-at-how-weworks-50-billion-pile-of-office-leases-could-unravel-2019-10-10.

33 *Mobike to Refund $150m as Bicycle-Sharing Market Heats up*, Financial Times (July 5, 2018), *available at* https://www.ft.com/content/ac332862-7ff9-11e8-bc55-50daf11b720d.

in several jurisdictions.[34] However, the question is still unanswered why rule of reason, instead of per se rule, applies to Uber usually applies to a cartel involving algorithms. All these arguments lead to doubt concerning platforms' algorithms—platforms are in a unique position to aggregate big data and formulate algorithms (pricing or non-pricing), but line-drawing is extremely difficult.

Either *Uber* or *Eturas* has at least some explicit agreement on the algorithm, but in reality what is actually happening may be merely "tacit collusion." It brings difficulties to cartel enforcement. Generally, horizontal price-fixing agreements require entities to commit at least "concerted practice", which requires at least some communication between the parties. In the digital world, the existing Internet oligopoly combined with converging algorithms makes it possible to collude between parties without communication.[35] Further, through the use of machine learning or deep learning based on massive data, algorithms can learn and potentially collude without human intervention. It is controversial whether the automated decisions should be imputed to human wills, but thus far there is no consensus on these complex issues.

III. FROM DATA AGGREGATION TO MARKET DOMINANCE: THE RAPIDLY EVOLVING INSTANT MESSAGING SERVICES IN CHINA

The existence of a dominant position in the relevant market is the precondition of abusive conducts. Although there are problems caused by its special attributes such as network effects, bilateral and even multilateral markets, and users' multi-homing attributes when finding dominant position in the digital market as comparing to traditional markets,[36] it is not unusual to find such dominance in the digital market. For example, the EU has held that Google has a dominant position in the markets of European online searching, Android operating system, and online advertising intermediary. In the German Facebook case that will be discussed in the following section, the relevant market was defined as the social network market in Germany, and Facebook occupied more than 80% market share with its daily and monthly active user base.

In addition, the EU has accumulated extensive experience in digital acquisition cases such as Microsoft / LinkedIn. In that case, the EU's investigation under merger rules focused in particular on three areas, namely, professional social network services, customer relationship management software solutions, and online advertising services.[37]

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34 Parveer S Ghuman, *Analysis of Competition Cases Against Uber Across the Globe*, Cuts International (March 2017), *available at* http://www.cuts-ccier.org/pdf/Analysis_of_Competition_Cases_Against_Uber_Across_the_Globe.pdf.

35 *How to Unveil Algorithmic Collusion? Professor Guangyao Xu of Nankai University: Anti-monopoly Law Can Be Applied*, Southern Metropolis Daily (Dec. 5, 2019), *available at* https://m.mp.oeeee.com/a/BAAFRD000020191205235541.html; *see also*, *Algorithms and Collusion: Competition Policy in the Digital Age*, OECE (2017), www.oecd.org/competition/algorithms-collusion-competition-policy-in-the-digital-age.htm.

36 Xiong Hongru, *Several Understandings of Platform Competition in the Era of Digital Economy*, China Economic Times (Aug. 16, 2019), *available at* http://www.drc.gov.cn/xsyzcfx/20190816/4-4-2899174.htm.

37 *Mergers: Commission Approves Acquisition of LinkedIn by Microsoft, Subject to Conditions*, European Commission (Dec. 6, 2016), https://ec.europa.eu/commission/presscorner/detail/en/IP_16_4284.

The Commission approved the acquisition subject to conditions, given Microsoft and LinkedIn are mainly active in complementary business areas, with minor overlaps in online advertising.

Although there are similar M&A review or administrative enforcement cases in China, as early as 2014 in *Qihoo v. Tencent*[38], the Supreme People's Court set a precedent on defining the relevant market and determining dominant market position in the instant messaging service market in Mainland China. The dominance determination concerned Tencent QQ—an extremely popular instant messaging service in a pre-mobile Internet era. In that case, the court held that, it is not necessary to clearly define the relevant market in every case of abuse of market dominance. Without a clearly defined relevant market, the market power of the enterprise concerned and the potential impacts of the suspected abuse on market can be evaluated by direct evidence proving exclusion or elimination of competition. Moreover, though generally speaking, the higher the market share is, the more likely it is to indicate the existence of a dominant market position, market share is only a rough and potentially misleading indicator of market dominance, especially considering the highly dynamic competition in the Internet environment. Taking into account all the factors when analyzing traditional markets, including market share, competitive situation in the relevant market, the defendant's ability to control the price, quantity or other trading conditions, the defendant's financial and technical capability, and market entry barriers etc., as well as the characteristics of the digital market, the court declined to find dominant position.

Based on the experience of various jurisdictions, the definition of relevant market and determination on market dominance are often considered under the traditional framework. Besides, the characteristics of emerging digital markets cannot be ignored, as they may play a decisive role therein. For example, due to the network effects based on the number of users and the lock-in effects based on user preferences, enterprises, especially those who enter the market first, usually have obvious advantages in market shares compared to their competitors. However, in the Internet industry, an enterprise with a high market share does not necessarily have a dominant market position, and the ability to maintain such market share in the relevant market is more important in assessing market power. As such, insignificant market share does not mean that the enterprise's influence on the market must be weak. Moreover, obvious innovation advantages may facilitate attracting consumers and achieving a high market share in a short time. For instance, when QQ, an instant messaging software of Tencent Inc. was in its infancy, Microsoft's MSN had the largest market share in the instant messaging service market in Mainland China (more than 50%). QQ's market share soon exceeded MSN. But now, with the evolvement of mobile Internet, QQ has been replaced in China by another messaging service also developed by Tencent—WeChat.

To sum up, the formation and existence of dominant position in the digital market has its own peculiarities. Therefore, traditional methods or standards for determining market dominance may need to be adjusted when applied to digital markets. In particular, the highly dynamic and instable digital market competition and the rapid technological innovation have greatly weakened market share as an indicator for the market power of an enterprise.

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38 *Beijing Qihoo Technology Co., Ltd. v. Tencent Technology (Shenzhen) Co., Ltd., and Shenzhen Tencent Computer System Co., Ltd.* (2013), Min San Zhong Zi No. 4.

IV. DATA ABUSE: THE GROUND-BREAKING FACEBOOK DECISION—HOW FAR CAN IT GO?

Abuse in the collection and use of users' data is discussed a lot in the digital world, but usually has to be addressed based on data protection law rather than competition law. But last year's Facebook decision in Germany is distinctive because it was decided under the abuse of dominant position provision of the competition law. On 7 February 2019, the German Federal Cartel Office ("Bundeskartellamt") announced its decision based on a three-year investigation on Facebook' data collection and found exploitative abuse in Facebook's collection, merge, and use of users' data.[39] According to Facebook's terms and conditions, users can only use the social network under the precondition that Facebook can collect user data through Facebook-owned platforms (such as WhatsApp and Instagram) or any other third-party websites and software that use Facebook's business tools (including the "Like" buttons and Facebook log-in account). Users have no choice but to accept Facebook's terms and conditions, if they wish to use Facebook's services. According to cases in the German courts, abusive conducts under the competition law include violations of the general principles of German Civil Law and fundamental human rights, which includes data protection. In this decision, the Bundeskartellamt held that Facebook's conduct violated the GDPR and general data protection principles, and therefore constituted abusive conduct. Finally, the Bundeskartellamt required that Facebook can use user data collected on its owned platforms, third-party websites and software only if it has obtained the voluntary consent from its users, that is, users' refusal to consent does not affect their use of Facebook. Such measure is equivalent to an internal divestment of Facebook's data processing activities. Facebook appealed. On 23 June 2020, the German Federal Court of Justice made a procedural ruling against Facebook.[40]

What is innovative about the German Facebook decision is that it provides some sort of clue on what kind of data use constitutes "abuse", although its reasoning is not free from controversies. Traditionally, dominance abuse can be categorized as "exclusionary abuse" and "exploitative abuse". The former means restriction of competition by squeezing rivals out of the market, such as predatory pricing and exclusive dealing, while the latter refers to the behaviours that directly harms consumers' interests, such as excessive pricing and price discrimination. Exploitative abuse is less likely to be pursued because enforcement agencies often fear for excessively interfering the market. However, that has changed in recent years, and the Facebook case represents a breakthrough given the finding of "exploitive abuse" by the German regulator.[41]

From a theoretical perspective, there are two approaches on how excessive collection and use of data may be deemed to constitute abuse under competition law. First, if the data provided by users is treated as consideration or counter-performance for using digital services, excessive collection and use of data may constitute "excessive pricing."

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39 *Bundeskartellamt Prohibits Facebook from Combining User Data from Different Sources*, Bundeskartellamt (Feb. 7, 2019), https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2019/07_02_2019_Facebook.html.

40 *Facebook Loses Antitrust Decision in Germany over Data Collection*, The New York Times (June 23, 2020), *available at* https://www.nytimes.com/2020/06/23/technology/facebook-antitrust-germany.html.

41 Marco Botta & Klaus Wiedemann, *Exploitative Conducts in Digital Markets: Time for a Discussion After the Facebook Decision*, 10(8) Journal of European Competition Law & Practice 465 (2019).

In a world where platforms mainly provide free services to consumers, traditional way of determination of excessive pricing may no longer apply. But users always have to provide their own personal data as the counter-performance. In that way, the benchmark to determine whether the conduct constitutes excessive pricing could be whether the services provided to users match the amount or types of personal data requested by the platform.[42] Second, if users cannot help but agree on the method of bundling authorisation which results in the users' losing control of their personal data, such unfair conditions may constitute abuse. This is the approach adopted by the Bundeskartellamt in the Facebook case.

Some critics say that the Bundeskartellamt's decision blurred the boundaries between competition law and data protection law, arguing that there is no causal link between excessive collection of data and Facebook's market dominance.[43] However, the German high court used very strong wording in its decision upholding the regulator's decision.[44] It held that there is user exploitation just because competition is excluded due to Facebook's dominant position, and its term of use is also designed to hinder competition. Specifically, the court mentioned network effects. It said that access to data is an important competitive parameter not only in the advertising market but also in the social network market, and Facebook's large database reinforces its position and thus excludes competition on both sides of the market. The case will still await a substantive ruling in a lower court of Germany, or might be appealed again or even referred to the European Court of Justice.[45] If finally affirmed, applying competition law in excessive collection or misuse of data could open a Pandora's box.

In addition to the excessive collection and use of data exemplified by the German Facebook case, in practice, another familiar practice that is likely to constitute abusive conduct is price discrimination, also known as "big data discrimination". In economics, consumers with different elasticities of demand are willing to pay different prices for the same commodity. If a supplier knows the demand conditions of its consumers, it can use differential pricing to grab consumer surplus. The premise that the supplier is aware of consumers' different reserve prices, albeit impossible in the past, has gradually become reality, owing to the rapid development of digital economy and the completeness of "user profiling." This makes differential pricing and big data discrimination by platform companies possible. For example, in 2000, customers of Amazon discovered that they could buy products at a lower price if they stripped their computer of the electronic

42 *Id.*

43 *Id.*

44 *Bundesgerichtshof bestätigt vorläufig den Vorwurf der missbräuchlichen Ausnutzung einer marktbeherrschenden Stellung durch Facebook*, Federal Court of Justice (June 23, 2020), https://www.bundesgerichtshof.de/SharedDocs/Pressemitteilungen/DE/2020/2020080.html.

45 *Facebook Loses Antitrust Decision in Germany over Data Collection*, The New York Times (June 23, 2020), *available at* https://www.nytimes.com/2020/06/23/technology/facebook-antitrust-germany.html#:~:text=the%20main%20story-,Facebook%20Loses%20Antitrust%20Decision%20in%20Germany%20Over%20Data%20Collection,its%20dominance%20in%20social%20media.

tags that identifies them as regular customers. Amazon denied personalising prices but refunded all customers who received higher prices.[46]

From the perspective of data protection law, the GDPR regulates automatic decision-making including user profiling, while other jurisdictions also give consumers similar protection, for example the *E-Commerce Law* in China. Usually such laws are centred on protecting users' right to know and choose. Nevertheless, in the view of competition law, the EU and China explicitly prohibit imposing differential treatment of pricing or other conditions on counterparties in the same circumstance. It means that even if user profiling is made and applied to differential pricing which complies with data protection law, such behaviour may still constitute an abuse of market dominance, which violates the competition law.

V. A RELIC IN THE NEW ERA: ESSENTIAL FACILITY DOCTRINE IN THE *HIQ V. LINKEDIN* CONTEXT

The final topic is about an old doctrine rooted in the U.S. antitrust law—the essential facility doctrine, which was stirred up by *hiQ Labs, Inc. v. LinkedIn Corp*[47] in a context totally different from how the doctrine was originated. Plaintiff hiQ Labs, Inc. ("hiQ") is a data analysis company that relies on LinkedIn's public profile information.[48] LinkedIn sent a cease-and-desist letter to hiQ to ask it to stop data scraping after being silent to hiQ's operating practices for several years.[49] In September 2019, the U.S. Court of Appeals for the Ninth Circuit affirmed the lower court's order granting a preliminary injunction barring LinkedIn from blocking hiQ from accessing and scraping publicly available LinkedIn member profiles to create competing business analytic products.[50]

Despite the significant implications this case, there had been, in fact, a number of cases concerning forced sharing before it. As early as 2013, a Finnish court ruled that a Finnish telephone number service company's refusal to provide users' information to other telephone directory distribution service providers constituted an abuse of market dominance. The court refused to accept the justified reason for data privacy and considered it neither sufficient nor true.[51] In China, there has not been any specific regulatory or litigated decisions by far. However, not long ago, with the spread of COVID-19 and the rapid growth of remote working applications, WeChat (a popular social media app) completely banned sharing the URLs containing relevant domains of ByteDance's Feishu,[52]

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46 Competition & Markets Authority (CMA), *Pricing Algorithms* (Oct. 8, 2018), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/746353/Algorithms_econ_report.pdf.

47 938 F.3d 985 (9th Cir. 2019).

48 *Id.* at 989.

49 *Id.* at 992.

50 *Id.* at 1005.

51 Organisation for Economic Co-operation and Development ("OECD"), *Annual Report on Competition Policy Developments in Finland*, OECD (May 15, 2013), http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/AR(2013)14&docLanguage=En.

52 *ByteDance's Feishu Blocked by WeChat, Tencent Has Not Responded*, Jiemian News (Feb. 29, 2020), https://m.jiemian.com/article/4047796.html.

which triggered a heated discussion regarding the boundary of "refusal to deal" under the Anti-monopoly Law of China. How does forced sharing of users' data or interfaces relate to competition laws, and under what circumstances will they contravene the essential facilities doctrine?

A. HiQ Decision Spelled out

The *hiQ* decision is not a judgment on substantive legal issues, but it touches on some points in competition law. hiQ claimed that LinkedIn unfairly leveraged its dominance in the networking market to attain anticompetitive advantages in the downstream data analytics market, in violation of California's Unfair Competition Law.[53] The Ninth Circuit ruled that, "if companies like LinkedIn, whose servers hold vast amounts of public data, are permitted selectively to ban only potential competitors from accessing and using that otherwise public data, the result—complete exclusion of original innovator in aggregating and analysing the public information—may well be considered unfair competition under the California Law."[54]

As of today, hiQ has only received the court's ruling in favour of a temporary injunction. "A plaintiff seeking a preliminary injunction must establish that he is likely to succeed on the merits, that he is likely to suffer irreparable harm in the absence of preliminary relief, that the balance of equities tips in his favour, and that an injunction is in the public interest."[55] However, two of the four elements for temporary injunction have bearings on the essential facilities doctrine.

First, hiQ claimed that its entire business model relies completely on the data from LinkedIn when hiQ proved that it would suffer "irreparable harm" if it couldn't obtain an injunction.[56] Neither the non-public resume information provided by users on other social networks nor requiring hiQ to invest time and cost to collect such data on its own are comparable alternatives.[57] It can be said that if LinkedIn refuses to share data, hiQ will be out of business.[58]

Second, when deciding whether to grant a temporary injunction, the court considered public interest in addition to the impact on the parties in the litigation. The court concluded that the public interest in supporting hiQ exceeded that of supporting LinkedIn, that is, "giving companies like LinkedIn free rein to decide, on any basis, who can collect and use data—data that the companies do not own, that they otherwise make publicly available to viewers, and that the companies themselves collect and use—risks the possible creation of information monopolies that would disserve the public interest."[59]

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53 LinkedIn's decision to send a cease-and-desist letter to hiQ occurred within a month of the announcement by LinkedIn's CEO that LinkedIn planned to leverage the data on its platform to create a new product for employers with some similarities to hiQ's Skill Mapper product.

54 *hiQ*, 938 F.3d at 998.

55 *Winter v. Nat. Res. Def. Council, Inc.*, 555 U.S. 7, 20 (2008).

56 *hiQ*, 938 F.3d at 993.

57 *Id.* at 993-94.

58 *Id.* at 994.

59 *Id.* at 1005.

These two points—"irreparable harm" and "risk of information monopoly"—closely link the case to the essential facilities doctrine in competition law.

B. Essential Facilities Doctrine in and Outside the U.S.

The essential facilities doctrine originated from the U.S. and was first established in *United States v. Terminal R.R. Ass'n*.[60] It was meant to require monopolists with essential facilities to open the facility for reasonable use by competitors. Over time, the essential facilities doctrine has developed to include four elements: (i) control of the essential facility by a monopolist; (ii) a competitor's inability practically or reasonably to duplicate the essential facility; (iii) the denial of the use of the facility to a competitor; and (iv) the feasibility of providing the facility.[61]

Within the framework of the EU competition law and the Anti-Monopoly Law of China, the essential facilities doctrine is treated as "refusal to deal" in abuse of market dominance cases. Two landmark EU decisions[62] lay out the standard for determining essential facilities: whether there is a legitimate basis for the refusal; whether the refusal will leverage the existing dominant position of the undertaking to another market; and whether the facilities are indeed "indispensable."[63]

China's Anti-Monopoly Law prohibits undertakings with market dominance from refusing to deal with counterparties without justifications. China enforcement authority's implementing rules add that, when evaluating refusal to deal by essential facilities, it is necessary to "consider the following factors together: the feasibility of investing reasonably to otherwise develop or construct the facilities, the trading partners' reliance on such facilities to carry out production and business operation effectively, the possibility of such undertakings providing such facilities, as well as the impact on their own production and business activities etc." The consideration of these additional factors echoes the above four requirements of the essential facilities doctrine from different perspectives.[64]

C. Examining the Doctrine in Big Data Context

Is it possible that data may constitute essential facilities? With the exception of the third element (i.e., denial of the use of the facility to a competitor), the other three elements are less likely to be met given the specific characteristics of data:

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60 224 U.S. 383 (1912).

61 *MCI Commc'ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1132 (7th Cir. 1983) (collecting cases).

62 Case C-7/97, *Oscar Bronner GmBH & Co KG and Others v. Mediaprint Zeitungs-und Zeischiftverlag GmbH & Co KG and Others* [1998] ECR I-7791; joined Cases C-241 & 242/91P, *RTE and ITP v. Commission*, [1995] ECR I-743.

63 Zhang Sulun, *The Application of the Essential Facilities Doctrine of Competition Law in Internet Industry*, J. Henan Normal Univ. (2017).

64 Article 16 of the Interim Provisions for Prohibiting Abuse of Dominant Market Position, promulgated by Order No. 11 of the State Administration for Market Regulation on June 26, 2019 and effective from September 1, 2019.

1. Control of the Essential Facility by a Monopolist

Although an enterprise of certain data assets can in a physical sense "control" the relevant data, whether the data is legally controlled by the enterprise or personal data subjects is an unsettled legal issue when personal data is involved. Take the *hiQ* case as an example. LinkedIn emphasises in its user agreement that users own the data content uploaded to LinkedIn by themselves, and LinkedIn only has a non-exclusive licence to use the data. In that case, the extent to which an enterprise can "control" the data by itself and can decide whether to share access to the data-related essential facilities without the intervention of personal data subjects is actually debatable.

2. Competitor's Inability Practically or Reasonably to Duplicate the Essential Facility

Whether the essential facilities are replicable require consideration of practical possibility as well as economic rationality. Personal data are hard to satisfy this requirement because of data's "non-rivalrous" and "intangible" nature, that is, providing users' personal data to one enterprise does not hinder providing the same datasets to another enterprise at the same time. Although there is a view that phenomena such as network effects prevent inferior competitors from effectively replicating data of the same size, there are also other characteristics—for instances, the unique multi-homing of users in the digital era and the importance of the timeliness of data—that make it difficult to argue that data assets cannot be effectively replicated.

3. Feasibility of Providing the Facility to Competitors

Similarly, the non-rivalrous nature of data seems to make it convenient and easy to provide data to competitors. Especially with modern technical conditions, it often simply means opening API (application programming interface) or even just "inactions" such as avoiding interception or encryption of public data. However, when data assets involve personal data, the regulation of personal data sharing has become the primary obstacle. In *hiQ*, LinkedIn once argued the privacy rights of users as a defense.[65] Although the court did not fully support LinkedIn because of the public nature of LinkedIn's data content, the court did recognise the value of this argument.[66] Considering jurisdictions with stricter regulations on personal data, such as under the GDPR in Europe, data sharing feasibility from the competition law perspective will be seriously weakened or just impossible.

For data assets not involving personal data, there seems to be a slim likelihood that the elements of the essential facilities doctrine can be satisfied. But when the doctrine is applied to personal data assets, the application of the essential facilities doctrine would face serious obstacles. The first is mandatory regulation of personal data. If personal data sharing must be premised on users' consent, the doctrine would be difficult to apply. Of course, jurisdictions have varying levels of personal data regulation. *hiQ* was litigated in the U.S. where personal data is relatively under-regulated and the verdict of the Finnish telephone directory case was long before the GDPR. Currently, due to the strict regulation on personal data in the EU and China, it is difficult to force any

65 *hiQ*, 938 F.3d at 994.

66 *Id.*

enterprises to open database. Another obstacle is to prove that enterprises that require forced sharing cannot practically or reasonably replicate the same datasets. In the dispute between WeChat and Feishu, even though WeChat has accumulated a large number of users, Feishu can hardly say that it cannot replicate the same user communities. What Feishu needs may be only a tipping opportunity—like the unexpected epidemic outbreak that enables workplace communication services to have a user surge. Therefore, in the digital age, the "essentiality" element of the essential facilities doctrine may have lost its foundation—economy of scarcity and scale as in the industrial era.

VI. CONCLUSION

Instead of directly answering the questions put forward in the beginning of this article, these cases illustrate sharply different approaches taken by antitrust authorities in different jurisdictions. Some are bold, like the Bundeskartellamt in the Facebook decision. Some are wary, like the Chinese authority reviewing Didi's acquisition of Uber China—concluding nothing almost four year after the transaction was completed. Some are attempting, like relating the *hiQ v. LinkedIn* case to the essential facilities doctrine.

The facts speak for themselves. Today in China, Didi still holds the dominant position in the ride-hailing market. There are new entrants, but the keen battle between Didi and Uber China never reappeared. The Facebook decision is fresh, so it remains to be tested in reality whether the decision can change the behaviours of Facebook and other data controllers in collecting and processing user data.

The good news is that authorities are looking for changes. Last year, the U.S. DOJ and FTC began to investigate Google, Amazon, Facebook, and Apple. The EU is considering revising its competition rules by tailoring them to digital platforms.[67] China is envisioning an overhaul of its Anti-Monopoly Law, the draft of which also includes changes to reflect its digital economy reality. At least, there is consensus among the authorities on the urgency to act. With the momentum and potentially new legal tools on the horizon, we may see a landscape reshaped.

67 *Margrethe Vestager Eyes Toughening 'Burden of Proof' for Big Tech*, Financial Times (Oct. 10, 2019), *available at* https://www.ft.com/content/24635a5c-fa4f-11e9-a354-36acbbb0d9b6.

DIGITAL PLATFORM COMPETITION, MERGER CONTROL, AND THE INCENTIVE TO INNOVATE: DON'T KILL THE GOOSE THAT LAYS THE GOLDEN EGG

By John Ceccio and Christopher Mufarrige[1]

The purpose of the antitrust laws is to promote competition and innovation for the benefit of consumers.[2] Recently, there has been a growing chorus of critics who subscribe to the idea that acquisitions by large digital platforms are detrimental to this purpose. The common belief among these critics is that current antitrust law is ill-equipped to address transactions in digital markets. Much of this sentiment focuses on transactions where large digital platform firms acquire technology-focused start-ups. These interventionists argue that past transactions of start-ups have harmed competition and innovation because, by purchasing nascent competitive threats, platform incumbents eliminated much needed competitive constraints. Taken together, they argue that this course of conduct impedes incentives to innovate and ultimately harms consumers.

In response to these perceived problems, critics assert that antitrust merger enforcement should be less forgiving when scrutinizing large firm acquisitions and that potential legislative action is needed. Importantly, these types of changes to the antitrust laws would make it harder for venture capital-backed companies to be acquired. This raises two important questions: (1) do the current proposals promote competition, innovation, and consumer welfare; and if not, (2) are extant antitrust principles capable of effectively addressing large technology firm's purchasing alleged nascent competitive threats?

The short answers are no and yes. *First*, critics fail to fully appreciate the unintended negative consequences their proposals will have on the innovation ecosystem as a whole. Put simply, if the critics' proposals were enacted, the incentives for innovation and growth would be severely curtailed and the capacity for future innovation and growth would be in doubt. *Second*, the fundamental principles of extant antitrust merger enforcement are sound, and the current legal and analytical frameworks are sufficient to combat potentially anticompetitive acquisitions of smaller, adjacently related start-ups. While there is certainly room for more empirical research to better understand digital markets,[3] any change in the

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2 *See, e.g.*, Joseph F. Brodley, *The Economic Goals of Antitrust: Efficiency, Consumer Welfare, and Technological Progress*, 62 N.Y.U. L. Rev. 1020, 1021 (1987); J. Thomas Rosch, *Monopsony and the Meaning of Consumer Welfare: A Closer Look at Weyerhaeuser*, 2007 Colum. Bus. L. Rev. 353, 353 (2007); Joshua D. Wright & Douglas H. Ginsburg, *The Goals of Antitrust: Welfare Trumps Choice*, 81 Fordham L. Rev. 2405, 2406 (2013); Carl Shapiro, *The Consumer Welfare Standard in Antitrust: Outdated, or a Harbor in a Sea of Doubt*, Prepared Remarks to the Senate Judiciary Committee Subcommittee on Antitrust, Consumer Protection and Consumer Rights, December 13, 2017 ("Furthermore, those who say that the 'consumer welfare' standard is narrowly focused on price to the exclusion of other factors are simply incorrect: properly applied, the 'consumer welfare' standard includes a range of factors that benefit consumers, not just low prices but improved product variety and product quality and of course more rapid innovation.").

3 *See* 6b order, *available at* https://www.ftc.gov/reports/6b-orders-file-special-reports-technology-platform-companies.

law must first aim to do no harm or, in other words, not kill the goose that lays the golden egg. The sections that follow describe: (1) the recent literature surrounding the debate; (2) the various regulatory proposals; (3) why those proposals are flawed; and (4) why existing merger enforcement principles are up to the task.

I. MERGER ACTIVITY AND BUSINESS DYNAMISM

The calls for increased scrutiny of small tech transactions stem from the growing commentary around large firms acquiring nascent competitive threats and the perceived fall in business dynamism. The various theories of harm related to nascent competition allege that, absent acquisition, the small start-up could have grown to provide an important competitive constraint on the large superstar digital platform, or that the large superstar firm would have innovated organically to develop its own competing product or service. In either case, the theories contend that competition and innovation in the particular market and adjacently related markets would have been better off without the transaction.

Besides the alleged softening of competition in the merging parties' markets, critics also argue that such acquisitions reduce business dynamism and innovation.[4] Specifically, these critics argue that platform incumbents have maintained their dominant positions, in part, because start-ups are funded with a latent intention to ultimately sell to a large firm.[5] They further argue that, because of the incentive to sell to and integrate with a large firm, innovative start-ups tend to compete to develop platform complements as opposed to competing for the platform itself.[6] Critics claim that this has a deleterious effect on business dynamism and innovation incentives, thereby harming consumers.[7] Some proposals have even called for legislation to alter venture capital investment incentives as a means to promote direct competition against digital platform incumbents.[8][9] The following sections outline the commentary around each of these topics.

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4 Mark A. Lemley & Andrew McCreary, *Exit Strategy* (Stanford Law & Econ. Olin Working Paper #542, 2019), https://ssrn.com/abstract=3506919; Kevin Bryan & Erik Hovenkamp, *Antitrust Limits on Startup Acquisition*, Rev. Ind. Organ. 56, 615–636 (2020); Stigler Center For The Study Of Economy And The State, Stigler Committee On Digital Platforms Final Report 111 (2019) [hereinafter Stigler Report].

5 Kevin Bryan & Erik Hovenkamp, *Antitrust Limits on Startup Acquisition*, Rev. Ind. Organ. 56, 615–636 (2020) ("When startups can choose what kind of technology they invent, they are biased toward inventions that improve the leader's technology rather than those that help the laggard incumbent catch up. Further, upon obtaining a pure monopoly, the leading incumbent's marginal willingness to pay for new technologies falls abruptly, which diminishes private returns on future innovations.").

6 *Id.*

7 *Id.; see also,* Lemley & McCreary, *supra* note 4, at 7 *("*But one party is left out of this equation: the consumer. Incumbents pay—can afford to pay—even for technologies they don't use because eliminating potential competitors keeps their profits high. But doing so also eliminates much of the promise of startup innovation for the economy.").

8 Sai Krishna Kamepalli, Raghuram Rajan & Luigi Zingales, *Kill Zone*, NBER Working Paper No. 27146 (May 2020); Mark A. Lemley & Andrew McCreary, *Exit Strategy* (Stanford Law & Econ. Olin Working Paper #542, 2019), https://ssrn.com/abstract=3506919.

9 Elizabeth Warren, *Here's How We Can Break Up Big Tech* (May 8, 2019), https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech- 9ad9e0da324c.

A. The Theories And Concepts Underlying Nascent Competitor Transactions

The commentary and proposals to upend current merger enforcement principles come partly from the belief that the antitrust laws are ill-equipped to address large digital platforms acquiring small, but growing technology-focused firms. While discussion on the topic is plentiful, definitions and theories of harm often get incorrectly intertwined and misconstrued.

1. Nascent Competition Vs. Potential Competition

As an initial matter, the concepts of "nascent competitor" and "potential competitor" are not the same. This is important because US antitrust law has developed standards to analyze "potential competitor" transactions, which would make challenges to even anticompetitive mergers exceedingly difficult if applied to "nascent competitor" transactions.[10] Thus, given the high level of concern over digital platform dominance, current potential competition doctrine seems too strict and is nonetheless inapplicable given the difference in the two concepts.[11]

The term "potential competitor" is typically defined as a firm that is predicted to have an undifferentiated or slightly differentiated product that will compete in the acquiring party's market at some point in the future, but does not do so currently.[12] In contrast, the concept of "nascent competitor" stems from the holding and reasoning in the seminal *Microsoft* case.[13] There, the court describes the concept as a differentiated product or technology that exists as a competitive threat to the incumbent but has not yet

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10 Jonathan Jacobson & Christopher Mufarrige, *Acquisitions of "Nascent" Competitors*, Antitrust Source at 25 ("Given the high level of current concern over technology firm dominance, the *Marine Bancorporation* requirements seem too strict.").

11 Although this paper does not discuss the standard that should apply to nascent competitor transactions, see Jonathan Jacobson & Christopher Mufarrige, *Acquisitions of "Nascent" Competitors*, Antitrust Source and Scott Hemphill & Tim Wu, *Nascent Competitors*, (U. Penn. L. Rev. 2020 (forthcoming 2020) for distinct but thoughtful analyses.

12 The markets and companies in question in the two leading potential competition cases serve as useful guides to clarify the concept. In *United States v. Falstaff Brewing Corp.*, the case involved an acquisition between Naragansett Brewing Co., the largest seller of beer in New England, and Falstaff Brewing Corp, a brewer operating outside of New England. The question presented was whether Falstaff was a potential entrant into the New England beer market, and if the acquisition, by eliminating Falstaff's perceived ability to enter, deprived the market of an important competitive constraint. Most important for the analysis here is the merging firms' products and the type of potential competition in question. Falstaff was not an innovative company, nor did it provide a substantially differentiated product from Narragansett. Thus, the potential competition analyzed in the case concerned entry of a marginally differentiated product that did not offer a substantially different way of fulfilling demand. *United States v. Falstaff Brewing Corp.*, 410 U.S. 526 (1973). Similarly, in *United States v. Marine Bancorporation*, the case involved an acquisition by National Bank of Commerce, a large national bank headquartered in Seattle, of Washington Trust Bank, a local bank operating in Spokane. Again, the question here concerned two companies that filled demand in substantially the same way. Neither bank offered an innovative new way to provide consumers with banking services. They simply operated in different geographies. *United States v. Marine Bancorporation*, 418 U.S. 602 (1974).

13 *United States v. Microsoft Corp.*, 253 F.3d 34, 53–54 (D.C. Cir. 2001) (en banc) (per curiam) (describing "middleware technologies that threatened to become viable substitutes for Windows").

fully matured into a significant competitor.[14] In other words, a nascent competitor may be characterized as a product or service that satisfies a consumer's underlying need for the incumbent's current product in a new and innovative way.[15]

While the definition of a nascent competitor is still somewhat in flux, it is well settled that the term conveys that the company has created an innovative product. Consequently, it is helpful to understand the different approaches firms take to innovation. But rather than looking at innovation from the perspective of existing markets and developing technologies—it is more useful to follow battle-tested antitrust analysis and view competition from the eyes of consumers. Specifically, when thinking about the nascent competitor concept, it helps to frame the analysis around the solution or service the innovator is attempting to provide in response to current—or anticipated future—consumer needs and preferences.[16] Innovation framed this way falls into three buckets:

- (innovation that offers a breakthrough solution to existing consumer demands;
- (innovation that redefines an existing solution to consumer demands and preferences; and,
- (innovation that anticipates or creates future consumer demand and seizes a brand-new opportunity.[17]

A category one innovator is the prototypical nascent competitor. Think of the music industry. CDs were a breakthrough solution (over cassette tapes) satisfying consumer demand regarding storing and replaying sound recordings. Thus, at its very early stages, CD companies were nascent competitive threats to the cassette industry.

A category two innovator may, but does not always, constitute a nascent competitor.[18] The determination rests on the amount of demand the innovative new product or service could divert from the existing industry, as well as the competitive constraint the newly defined product will have on the incumbent industry.[19] Innovation strategies that redefine an existing industry problem and solve the redefined problem lead to both disruptive and

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14 It is important to note that the competitive threat does not have to come the from the nascent competitor's current product, service, or business model. It is acceptable for the threat to come from a potential expansion or re-positioning that will then compete with the incumbent in some way. For example, although Instagram was not seen as a direct competitor with Facebook at the time of acquisition. The FTC saw Facebook as a social network and Instagram as a photo-sharing app. However, Instagram's expected ad-based business model made the two companies' competitors from the perspective of their revenue models.

15 For example, the iPhone, while not a direct competitor to Kodak *per se*, fills a consumer's need for what in the past would have been a camera purchased from Kodak.

16 W. Chan Kim & Renée Mauborgne, *Nondisruptive Creation: Rethinking Innovation and Growth*, MIT Sloan Mgmt. Rev. (Spring 2019).

17 *Id.*; *see also* Israel Kirzener, Competition and Entrepreneurship (1973).

18 *Id.* at 7-9.

19 For example, Acorns, a FinTech company specializing in micro-investing and robo-advising, may never steal certain segments of consumers from incumbents such as Fidelity and TD Ameritrade, but it still provides a nascent competitive threat due to its innovative way of helping consumers invest in exchange traded funds.

nondisruptive creation. By slightly redefining the problem, a category two innovator can shift industry boundaries in creative ways. Take the Nintendo Wii, for example. The console redefined the problem the video game industry had long focused on from how to deliver the best graphics, to how to deliver an easy-to use video-game system that combined the movement of physical sports with family-friendly games everyone could play together at home.[20] The Wii's family-focused environment was easy to navigate and its operation was governed by motion, not button-pushing. The Wii pulled a slice of demand from the existing video game industry, "creating an element of disruption, but it also expanded the industry in a nondisruptive manner by attracting a mass of people—from young children to senior citizens—who had never played video games."[21]

On the other end of the spectrum is a category three innovator. This type of innovator is not properly characterized as a nascent competitor. A category three innovator creates new markets beyond industry boundaries, rather than eating at the margins or the core of existing industries. At its inception, Sesame Street was a category three innovator. It created a brand-new opportunity that unlocked a new market of preschool edutainment without replacing preschools or libraries.[22]

2. Killer Acquisitions

The Killer acquisitions theory is a variation on the more general nascent competitor theory of harm. The term "killer acquisition" comes from the title of a 2019 paper by Yale economists Colleen Cunningham, Florian Ederer, and Song Ma.[23] Cunningham et al. describe a killer acquisition as a case in which the acquiring firm's strategy is "to discontinue the development of the targets' innovation projects and preempt future competition."[24] The paper concludes that the acquiring party exited the competing project in approximately 5% to 7% of the transactions examined. Thus, according to the authors, "[i]ncumbents acquire firms with overlapping drug projects and . . . these acquired drugs are less likely to be developed, particularly when they overlap with the acquirer's product portfolio and when the acquirer has strong incentives to protect his existing market power."[25]

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20 Chan Kim & Renée Mauborgne, *supra* note 16.

21 *Id.*

22 This is not to say an acquisition of a category three innovator cannot harm competition, but rather that its assessment would not fall under the nascent competitor theory. Such an acquisition could, however, raise concerns under a conglomerate theory.

23 Colleen Cunningham, Florian Ederer & Song Ma, *Killer Acquisitions* (March 22, 2019), *available at* https://ssrn.com/abstract=3241707.

24 *Id.* at 1.

25 *Id.* at 41.

3. Zombie Acquisitions

In a "zombie' acquisition," the acquiring company keeps alive the target's early-stage product but foregoes further development and may explicitly starve it of resources to grow.[26] Hence, while related to the "killer acquisition" theory, instead of killing the competing product, the acquiring firm continues to offer the product in a zombie-like fashion.

4. Reverse Killer Acquisitions

Commentators have recently built on the "killer acquisition" concept and raised a distinct but related theory under the modified label of "reverse killer acquisition."[27] A "reverse killer acquisition" refers to a situation where a large digital platform purchases a smaller tech start-up instead of developing its own competing offer organically.[28] The theory highlights how acquisitions often encompass a "buy vs. build" decision where the incumbent must decide whether it is advantageous to build the functionality itself or purchase it from a start-up that has already successfully entered the market. More specifically, the commentators explain that large digital platforms "have exceptional abilities to pursue organic expansion but also opportunities to "roll up" (willing) startups to "get there faster," "buying" instead of expending effort in rival innovation."[29] Consequently, foregoing such effort could eliminate strong competitive constraints in the market by allowing the incumbent to "do away with its own innovation effort, and reduce innovation overall relative to a "no deal" scenario."[30]

B. The Perceived Fall of Start-Ups And Business Dynamism

In addition to the narrative around nascent competitors, commentators critical of current merger enforcement also point to the alleged lack of business dynamism as proof of the need to adopt more stringent merger regulations. For example, a recent paper authored by three University of Chicago economists constructs a theoretical model of investment incentives to support the notion that nascent acquisitions lead to reduced incentives to invest in start-ups.[31] The authors posit that the effect occurs because the prospect of acquisition discourages early adoption of nascent products, which results in higher entry barriers that make nascent firms less attractive to investors.[32]

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26 Elena Argentesi, Paolo Buccirossi, Emilio Calvano, Tomaso Duso, Alessia Marrazzo, & Salvatore Nava, *Tech-over: Mergers and merger policy in digital markets*, Voxeu (March 4, 2020), *available at* https://voxeu.org/article/mergers-and-merger-policy-digital-markets; *see also*, Meegan Hollywood & Adam Mendel, *INSIGHT: Did Antitrust Enforcers Allow for Creation of Competitive Ecosystem Now Drawing Their Ire?*, Bloomberg (March 31, 2020), *available at* https://news.bloomberglaw.com/mergers-and-antitrust/insight-did-antitrust-enforcers-allow-for-creation-of-competitive-ecosystem-now-drawing-their-ire.

27 Cristina Caffarra, Gregory S. Crawford & Tommaso Valletti, *"How Tech Rolls": Potential Competition And "Reverse" Killer Acquisitions*, CPI Antitrust Chron. (May 2020).

28 *Id.*

29 *Id.*

30 *Id.*

31 Sai Krishna Kamepalli, Raghuram Rajan & Luigi Zingales, *Kill Zone*, NBER Working Paper No. 27146 (May 2020).

32 *Id.* at 1.

Similarly, a report published by the Brookings Institution uses U.S. Census Bureau data to support its claim that start-up activity has declined over the past decade.[33] The report contends that the decline in business dynamism is "both a symptom and a cause of declining market competition."[34] In support, the report points to evidence that "[s]tart-up rates are declining across all sectors," "[t]he employment share of young firms has decreased by more than one-third since 1987," "[b]usinesses are taking longer to form, while business applications have declined," and "[t]he entrepreneurship rate has fallen by almost half for workers with a bachelor's degree."[35]

II. PROPOSED ACTIONS

The issues discussed above have led to various commentary and legislative proposals aimed at making it more difficult for large digital firms to acquire small tech-focused startups. The current antitrust framework looks to strike the right balance in approving procompetitive transactions while preventing anticompetitive ones.[36] However, many tech interventionists believe antitrust needs a re-balancing and that we should adjust its principles to raise the risks and costs associated with acquisitions by large firms. For example, the Stigler Center report proposes a notification and preclearance requirement "for any acquisition by a business designated as having bottleneck power."[37] The report argues that "[w]hen network effects are strong, a digital business with bottleneck power will likely only have very small competitors. Therefore, even small transactions can neutralize an important potential competitor that is poised to grow."[38] In the same vein, prominent antitrust economist John Kwoka has argued that the agencies should implement a strict structural presumption to block mergers that would breach a specific market share percentage.[39] This would contradict current agency practice, and is in tension with extant empirical evidence that does not suggest there is a causal link between market concentration and economic performance.[40]

Moreover, critics have not restricted their calls for reform to antitrust *per se*. A recent paper by distinguished Stanford Law Professor Mark Lemley and Andrew McCreary proposes a combination of "carrots" (regulatory incentives to make IPOs more attractive

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33 Jay Shambaugh et al., *The State of Competition and Dynamism: Facts About Concentration, Start-Ups, and Related Policies*, Brookings Inst. (June 13, 2018), *available at* https://www.brookings.edu/research/the-state-of-competition-anddynamism-facts-about-concentration-start-ups-and-related-policies/.

34 *Id.*

35 *Id.* at 19-24.

36 *See* Frank H. Easterbrook, The Limits of Antitrust, 63 Tex. L. Rev. 1 (1984); *but see* Lina M. Khan, Note, *Amazon's Antitrust Paradox*, 126 Yale L.J. 710, 716 (2017).

37 *See* Stigler Report, *supra* note 4.

38 *Id.* at 111 n.221.

39 John Kwoka, *Reviving Merger Control: A Comprehensive Plan for Reforming Policy and Practice* (Oct. 9, 2018), *available at* https://www.antitrustinstitute.org/wp-content/uploads/2018/10/Kwoka-Reviving-Merger-Control-October-2018.pdf.

40 *See, e.g.,* Esteban Rossi-Hansberg, Pierre-Daniel Sarte & Nicholas Trachter, *Diverging Trends in National and Local Concentration,* in 35 NBER Macroeconomics Annual 2020 (Martin Eichenbaum & Erik Hurst eds., forthcoming 2020); *see also* Chang-Tai Hsieh & Esteban Rossi-Hansberg, *The Industrial Revolution in Services* (Working Paper Mar. 17, 2020).

for start-ups and investors) and "sticks" (regulatory costs to discourage and perhaps prevent acquisitions of startups by dominant technology platforms).[41] They argue that the increasingly common exit strategy of startups to cash out through an acquisition, instead of an IPO, hampers economic growth and entrenches the platform's dominance by eliminating nascent or potential rivals, thereby depriving consumers access to the startup's innovative technologies.

Recently, Columbia Law professor Tim Wu took the call even further by suggesting that antitrust law should impose market share caps.[42] That is, companies should be prevented from growing past a certain market share percentage regardless of the value they create for consumers. In his view, clearer guidance on impermissible market shares could improve antitrust enforcement. Wu cites The Department of Justice's 1968 merger guidelines as a guide. There, the government would challenge transactions when both the acquiring and acquired firm had a market share of just 4% or more.

Legislators have also joined the discussion. Fueled by populist sentiment, Senators Elizabeth Warren and Amy Klobuchar have put forth far-reaching proposals to respond to the rise of "big tech" through legislation. Put simply, their plans would upend the principles undergirding current merger enforcement. Senator Warren's proposal aims to break-up what she calls "platform utilities," which she defines as '[c]ompanies with an annual global revenue of $25 billion or more and that offer to the public an online marketplace, an exchange, or a platform for connecting third parties."[43] The definition unsurprisingly encompasses today's large digital platforms. This would mean that our most innovative companies would no longer be allowed to integrate with complementary assets that participate on their platform. Under the Warren proposal, large digital platform firms would need to divest many of their in-house products, including the ones they offer for free. The proposal goes as far as to single-out certain acquisitions such as Amazon/Whole-Foods, Facebook/Instagram, and Google/Waze, as transactions that need unwinding.

Senator Klobuchar's plan does not call for the break-up of large firms, nor does it effectively ban mergers, but it does propose significant changes to the time-tested principles governing antitrust merger enforcement.[44] Current merger enforcement principles place the burden of proof on the government when challenging a transaction.[45] That is, the government must prove that the transaction is substantially likely to lessen competition in the alleged market.[46] The Klobuchar proposal would flip this on its head. First, it seeks to lower the standard of proof from "substantially" lessens competition to "materially" lessens competition. The amendment would significantly change Section 7 of the Clayton Act and reduce the government's burden, making it easier for agencies

41 Lemley & McCreary, *supra* note 4.

42 Spencer Parts, *Wu: Market share caps would improve enforcement*, Global Competition Review (July 13, 2020), *available at* https://globalcompetitionreview.com/article/usa/1228842/wu-market-share-caps-would-improve-enforcement.

43 Elizabeth Warren, *Here's How We Can Break Up Big Tech* (May 8, 2019), *available at* https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c.

44 Consolidation Prevention and Competition Promotion Act of 2019, S. 307, 116th Cong. (2019).

45 *See United States v. Baker Hughes, Inc.*, 908 F.2d 981 (D.C. Cir. 1990).

46 *Id.*

to successfully block transactions by large companies. Second, the plan proposes to "[s]hift[] the Burden of Proof so that powerful companies that have a market share of greater than 50% or that otherwise have substantial market power would have to prove" that their alleged "exclusionary conduct" does not present an "appreciable risk of harming competition."[47] Moreover, the Klobuchar plan is not industry-specific (unlike the Warren plan). Thus, it would have far-reaching effects across all M&A activity, regardless of industry or deal size.

III. DISRUPTING THE INNOVATION ECOSYSTEM

While well intentioned, the proposals described above do not fully appreciate the disincentive effects of instituting a regulatory scheme that deters large platforms from purchasing smaller tech-start-ups. Moreover, the data cited to support the notion that business dynamism has declined, and that acquisitions and conduct by digital platforms is partly to blame, fail to accurately reflect available evidence.[48] The discussion below describes: (1) the importance of understanding platform competition compared to platform innovation; (2) evidence suggesting that business dynamism is flourishing; (3) the positive externalities large digital firms provide to smaller acquired start-ups; and (4) the unintended consequences of implementing a scheme that disincentivizes large firms from acquiring start-ups. Overall, current proposals aimed at improving competition and innovation will likely do neither.

A. Platform Competition Vs. Platform Innovation

Before altering investment incentives and increasing scrutiny of smaller competitor transactions, it is essential to understand the nature of platform competition and innovation.[49] Two important concepts inform our understanding of digital platform dynamics: network effects and modularity.[50] These two concepts work together to create an environment where competition and innovation occur at both the platform

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47 *Klobuchar Introduces Legislation to Deter Anticompetitive Abuses*, Klobuchar.Senate.Gov (Mar. 10, 2020), *available at* https://www.klobuchar.senate.gov/public/index.cfm/news-releases?ID=E59886E1-12EE-48A5-94F5-044658A75513.

48 *Does America Have a Monopoly Problem? Examining Concentration and Competition in the U.S. Economy, before the* United States Senate Committee on the Judiciary (March 5, 2019) (testimony of Joshua D. Wright), *available at* https://www.judiciary.senate.gov/imo/media/doc/Wright%20Testimony.pdf.

49 There is a growing debate on the differences between platforms and alleged aggregators. While we do not have space here to elaborate in great detail, an aggregator is in fact a platform. Alleged aggregators may have different technical architectures and firm structure than what are traditionally perceived as platforms, but they are still nonetheless platforms that facilitate the interaction of distinct groups of users.

50 Annabelle Gawer, *Bridging Differing Perspectives on Technological Platforms: Toward an Integrative Framework*, 43 Research Policy 7, 1239-1249 (2014), *available at* http://www.sciencedirect.com/science/article/pii/S0048733314000456: *See* Geoffrey Parker & Marshall Van Alstyne, *Two-Sided Network Effect: A Theory of Information Product Design*, 51 Management Science 10 (2005); Mark Armstrong, *Competition in Two-Sided Markets*, 37 Rand J. Econ. 668 (2006) (defines two-sided markets as "markets involving two groups of agents interacting via 'platforms' where one group's benefit from joining a platform depends on the size of the other group that joins the platform"); *see also* Michael A. Cusumano, Annabelle Gawer and David B. Yoffie, The Business of Platforms: Strategy in the Age of Digital Competition, Innovation, and Power (2019).

and component levels.[51] More specifically, understanding these characteristics of digital platform competition is important when tailoring a policy regarding acquisitions of smaller competitors, because the harm from disincentivizing investment in complementary products for the platform likely outweighs the benefits policymakers expect to gain from incentivizing investment to compete for the platform.

1. Network Effects

A platform exhibits network effects when the value of the platform to one user increases as more users join and expand the reach of the platform.[52] Network effects arise due to complementarity between the nodes in a network.[53] A node can be a consumer, app developer, merchant, website, or any other entity that interacts on the platform. The value that consumers and the platform owner create increases with network size, resulting in a positive feedback loop.[54] These network effects, viewed as an essential feature of platforms, reflect interdependence of demand between nodes on the platform, and shape competition for the platform market. Platform economics helps explain why entrants compete fiercely to innovate, as some platforms become dominant, and may even give rise to "winner-take-all" outcomes under specific conditions.[55] But the expansion of the network provides tremendous benefits to participants, including consumers. Moreover, competition and innovation for the platform ignores the important aspects driving competition on the platform itself, which is equally, if not more, important in terms of benefits to consumers.

2. Modularity

Economists discussing platforms typically take the platform as exogenous and fixed, leaving important characteristics undiscussed—such as how, and in what ways, complementary nodes interconnect to the platform.[56] To understand these relationships, we must examine the idea of modularity. Digital platforms are standardized architectures that divide complex systems into modules and rely on interfaces that link these modules.[57] Rather than a single actor managing the development of the technology, modular platforms

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51 Components and complements are used here synonymously.

52 *See* Carl Shapiro & Hal R. Varian, Information Rules: A Strategic Guide To The Network Economy 13 (1999).

53 Nicholas Economides, *The Economics of Networks*, Int'.l J. of Industr. Org. 14, 673-699 (1996) ("We have pointed out earlier that the crucial relationship in both one-way and two-way networks is the complementarity between the pieces of the network.").

54 Michael L. Katz and Carl Shapiro, *Systems Competition and Network Effects*, 8 J. Econ Persp. 93 (Spring 1994).

55 *Id.* ("In markets with network effects, there is natural tendency toward de facto standardization, which means everyone using the same system. Because of the strong positive-feedback elements, systems markets are especially prone to "tipping," which is the tendency of one system to pull away from its rivals in popularity once it has gained an initial edge."); Thomas Eisenmann, Geoffrey Parker & Marshall Van Alstyne, *Strategies for two-sided markets*, Harvard Business Review (2006).

56 *See* Gawer, *supra* note 50.

57 Christopher Yoo, *Modularity Theory and Internet Regulation*, 2016 U. Ill. L. Rev. 1 (2016).

represent a decentralized approach to managing complexity.[58] With modularity, platforms provide an incentive to third-parties to experiment and improve the consumer experience, so long as the component complies with the standardized interface.[59] In so doing, platforms allow multiple actors to pursue parallel innovation, which can improve the quality of the technical solution as well as increase the rate of technological change.[60] Moreover, the decentralized approach allows individual entrepreneurs to leverage their knowledge of particular consumer preferences to improve the overall platform experience.[61]

3. The Tradeoff

The common mistake commentators make when proposing policy responses to combat the alleged market power by digital platforms is thinking that regulatory action to increase competition for the platform will ultimately result in better outcomes for consumers. Sadly, it is not that simple.[62] While current proposals may increase incentives to compete and innovate for the platform, they diminish incentives to compete and innovate on the platform.[63] Put differently, to warrant an increase in the former, critics of current antitrust law must not only marshal forward evidence that current antitrust law fails to detect otherwise anticompetitive mergers, they must also present evidence that the reduced consumer benefits from a reduction in competition on the platform is outweighed by tangible consumer benefits by an increase in competition for the platform.

Because digital platforms are modular architectures, the value the platform creates for consumers and society is largely a function of the number of components that can plug into it.[64] A component can be a website, a merchant, an application, another individual, or any type of node that increases the overall complementarity of the platform.

A system that looks to incentivize platform competition over platform innovation will tend to lead to an outcome where entrepreneurs and investors devote their resources to developing competing platforms.[65] This could lead to worse outcomes for consumers for several reasons. First, if resources are devoted to creating competing platforms, there

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58 *Id.* at 8 ("Near decomposition of complex systems yields a number of advantages. As an initial matter, it makes complex systems easier to describe and comprehend. By creating a larger number of intermediate forms that can constitute building blocks for the larger system, near decomposition permits experimentation to occur on a smaller scale instead of with the system as a whole. The existence of stable intermediate forms also allows complex systems to evolve more rapidly.").

59 *Id.*

60 *Id.*

61 *See* F.A. Hayek, *The Use of Knowledge in Society*, 35 Am. Econ. Rev. 519 (1945).

62 *See* Gawer, *supra* note 50.

63 Joseph Farrell & Garth Saloner, *Standardization, Compatibility, and Innovation*, 16 RAND J. Econ. 70 (1985) ("finding that a firm may remain incompatible with a rival because it will suffer a substantial decline in market share if it becomes compatible, since that would increase the value to consumers of its rival's product."); *see also* Chun-Hui Miao, *Limiting compatibility in two-sided markets*. 8 Rev. of Network Econ. 4 (2009).

64 Juan D. Carrillo & Guofu Tan, *Platform Competition: The Role of Multi-homing and Complementors*, Working Papers 06-30, NET Institute, revised Oct 2006 (finding that a platform and its complementors always benefit from an increase in the number of compatible complementors); *See also* Josh Lerner & Jean Tirole, *Some Simple Economics of Open Source*, 50 J. Indust. Econ. (2003).

65 *See* Chun-Hui Miao, *Limiting compatibility in two-sided markets*. 8 Rev. of Network Econ. 4 (2009).

is a higher likelihood of incompatibilities, which leads to increased switching costs for consumers and increased development costs for component makers. Moreover, with increased development costs comes decreased incentives for investment into platform complements. And because the value of a platform stems largely from the number of complements or nodes that can plug into the platform, the overall value of a platform in such an environment will tend to be lower, thus, reducing value and usefulness to consumers and society as a whole.

B. Business Dynamism And Venture Capital Investment Is Flourishing

The theoretical case for singling out acquisitions of small start-ups generally, much less in the area of big tech, is underwhelming at best. And the available empirical evidence regarding venture capital funding only further undermines the case for greater intervention. The data often pointed to by critics to support the notion of declining business dynamism are particularly weak due to its reliance on US Census data. Census data are wildly over-inclusive for the purpose of antitrust analysis. Under the Census, a "firm" is defined as "a business organization consisting of one or more domestic establishments that were specified under common ownership or control." And the term "startup" includes any "firm" with an age of zero. Therefore, "start-ups" can include any business, such as a restaurant or retail store, which is uninformative when it comes to nascent competition analyses.

Nonetheless, while it is true that venture capital exits are increasing, the increase is caused by private equity buyouts rather than acquisitions by large technology platforms.[66] And it is also true that the buyouts are increasingly focused on the tech sector. Now, critics of big tech look at these data and claim that they result from either "kill zone" style buyouts or motivated by some other anticompetitive purpose.

But these general claims rely on a myopic understanding of the data. For example, if the critics are right and lax antitrust laws have motivated and inspired many, if not most, of these purchases, we would expect places like the EU to outshine American performance in important ways—but the data do not support this claim at all. As a general matter, it is difficult to discern whether an increase in concentration results from anticompetitive behavior *or* more efficient firms having greater success. Indeed, perhaps the most important lesson of the 1970s and 1980s structural debates in antitrust economics was that concentration and competition mean different things[67] and that a concentrated market can still be highly competitive and contestable. Indeed, the extant empirical evidence

66 *See* Jan Rybnicek (@jmrybnicek), Twitter (March 6, 2020, at 9:58 a.m.), *available at* https://twitter.com/jmrybnicek/status/1235942809921818625.

67 *See, e.g.*, Timothy J. Muris, *Improving the Economic Foundations of Competition Policy*, 12 Geo. Mason L. Rev. 1, 9-10 (2003) ("[A]lthough some industries appeared to have market structures favorable for the existence and exercise of substantial market power, the industries were, nonetheless, quite competitive.").

does not appear to suggest that there is a causal link between market concentration and economic performance.[68]

Though the structure-conduct-performance paradigm has been making a comeback in populist circles, a recently released paper appears to have demonstrated once again that greater market share does not inexorably lead to negative outcomes for consumers. In fact, MIT Professor David Autor and his coauthors' recent research flatly contradicts these claims.[69] Quite the opposite, Autor et. al., find that increased productivity by firms explains the recent increase in concentration:

> If globalization or technological change push sales towards the most productive firms in each industry, product market concentration will rise as industries become increasingly dominated by superstar firms.

The authors specifically find that the industries concentrating the fastest are the ones with the fastest productivity growth. Perhaps most importantly, the authors find these effects across international jurisdictions—ruling out the possibility that more lax antitrust scrutiny in some jurisdictions is causing the structural changes.

That is not all. The U.S. also happens to lead the world in R&D investment, far exceeding the investments by companies in the EU.[70] Moreover, the U.S. is home to the highest percentage of "unicorn" firms (startups valued at $1 billion or more) worldwide, with the EU representing only a declining minor share.[71]

C. Benefits From Acquiring Complementary Technologies

Small start-ups and consumers benefit immensely from digital platforms acquiring developing technologies. While the current proposals and commentary frame the discussion around speculation that these acquisitions prevent what could lead to direct competition with the platform incumbent, they fail to fully acknowledge the many real financial and operational synergies from integration. As Cunningham et. al make clear, acquisitions of innovative start-ups in the early stages of development by established firms can be procompetitive.[72] The authors reason that "firms who are better at exploiting technologies acquire innovative targets to realize synergies, effectively enabling specialization and subsequently increasing innovation and overall welfare."[73] Consequently,

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68 *Does America Have a Monopoly Problem? Examining Concentration and Competition in the U.S. Economy, before the* United States Senate Committee on the Judiciary (March 5, 2019) (testimony of Joshua D. Wright), *available at* https://www.judiciary.senate.gov/imo/media/doc/Wright%20Testimony.pdf.

69 David Autor, David Dorn, Lawrence Katz, Christina Patterson, & John Van Reenen, *The Fall of the Labor Share and the Rise of Superstar Firms* (forthcoming Quarterly Journal of Economics), *available at* https://scholar.harvard.edu/files/lkatz/files/adkpv-superstars-qje-manuscript-accepted-20191028.pdf; *see also* Sam Peltzman, *Productivity and Prices in Manufacturing During an Era of Rising Concentration* (2018), *available at* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3168877.47.

70 *See* Jan Rybnicek (@jmrybnicek), Twitter (February 22, 2020, at 2:38 p.m.), *available at* https://twitter.com/jmrybnicek/status/1231302272048648192.

71 *Id.*

72 Cunningham et al., *supra* note 23, at 1.

73 *Id.*

while a small percentage of start-up acquisitions may result in the exit of a competing project, procompetitive motivations overwhelmingly drive the transaction rationale.[74]

The integration of a new technology or functionality from a smaller start-up onto the acquiring firm's platform tends to reduce costs, drive new features, and create a "one-stop shop" for consumers.[75] Consequently, a large platform can offer the small start-up scale that is otherwise unachievable.

Being acquired by a large digital platform may also give the start-up much-needed access to capital.[76] Startups often face limits on both raising and deploying capital to invest in the business. Without adequate capital and cashflow, the innovative start-up will often have difficulty hiring and competing for the technical talent it needs to succeed. Additionally, while small firms are maturing, they are unable to efficiently deal with regulatory costs. For example, the passage of GDPR has made it prohibitively costly to operate a data-enabled business model.[77] Thus, integration with a larger platform helps the small start-up receive the capital and know-how to eliminate these costs and continue doing what it does best—innovating.

D. Unintended Consequences Of Disincentivizing Start-Up Acquisitions

Venture capital financing is a pillar of American innovation.[78] Many of America's best-known public companies such as Amazon, Apple, FedEx, Intel, Microsoft, and Starbucks, began as VC-backed firms. Recent proposals that have the effect of disincentivizing start-up transactions take for granted this well-functioning ecosystem and may upend its welfare-enhancing incentive structure.[79]

Venture capitalists play a substantial role in funding high-risk, technology-based business ventures. To compensate investors for their risk taking, they demand a specific target rate of

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74 *But see* Ilene Gotts & Richard Rapp, *Antitrust Treatment of Mergers Involving Future Goods*, Antitrust (Fall 2004). Gotts and Rapp track a dozen pharmaceutical cases where mergers were blocked and find varying outcomes in getting viable products to market.

75 Marc Bourreau & Alexandre de Streel, *Digital Conglomerates and EU Competition Policy* (March 2019) ("A conglomerate merger generates consumption synergies when the consumers buy the two independent products from the merged entity, due to the benefits of one-stop shopping.").

76 Jonathan Jacobson & Christopher Mufarrige, *Acquisitions of "Nascent" Competitors*, Antitrust Source (August 2020), https://www.americanbar.org/content/dam/aba/publishing/antitrust_source/2020/august-2020/aug20_jacobson_8_18f.pdf.

77 Jian Jia, Ginger, Zhe Jin & Liad Wagman, *The Short-Run Effects of GDPR on Technology Venture Investment*, (May 22, 2020), ("the negative effects manifest in the number of and amounts raised in financing deals, and are particularly pronounced for newer, data-related, and business-to-consumer ventures.") *available at* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3278912.

78 *See* Laura Entis, *Where Startup Funding Really Comes From*, Entrepreneur (Nov. 20, 2013), *available at* https://www.entrepreneur.com/article/230011.

79 Gordon M. Phillips and Alexei Zhdanov, *R&D and the Incentives from Merger and Acquisition Activity*, Rev. of Financial Studies 26, 34-78 (2012) ("Our model shows that small firms optimally may decide to innovate more when they can sell out to larger firms.").

return.[80] The return materializes most often in one of two "exit options": acquisition or initial public offering (IPO). Indeed, salutary ex ante incentives that facilitate venture financing and start-up formation is predicated on the ability to exit. That being said, the evidence suggests that acquisition is seen more and more as the preferred exit option. In fact, recent data show that roughly two-thirds of successful exits in the United States came from acquisitions compared to one-third from IPOs.[81] While the reasons for this have not been fully investigated, the evidence suggests it could be because IPOs typically involve: (1) high underwriting and regulatory fees; (2) a longer runway before profits are realized; and (3) uncertainty in public market pricing.[82]

Regardless of the reason why investors exit the way they do, the fact that start-ups tend to rely on acquisition to exit means that the innovation ecosystem depends on maintaining acquisition as a reasonably unencumbered option. The prospect of being acquired can provide a valuable ex-ante incentive for entrepreneurs and investors to spur innovation and create businesses that would otherwise never be born.[83] As even Cunningham et al. acknowledge"[i] t is possible that the presence of an acquisition channel also has a positive effect on welfare if the prospect of entrepreneurial exit through acquisition (by an incumbent) spurs ex-ante innovation."[84] For this reason, a regulatory scheme that disincentivizes acquisitions of start-ups, and for example, promotes IPOs instead, potentially reduces the ex-ante incentive for entrepreneurs to innovate and form new start-ups.[85] Thus, proposals that either *per se* prevent acquisitions of smaller firms, or raise the regulatory risks of doing so, will make future innovative projects and idea origination less attractive to investors and entrepreneurs.

To see why, we must understand the valuation principles driving venture capital investment decisions.[86] Recall that an investor has either an implicit or explicit target rate of

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80 An adequate return varies depending on the particular circumstances, but regardless of what is adequate, the riskier the project, the higher the required return on that investment. *See* Aswath Damodaran, Investment Valuation: Tools and Techniques for Determining the Value of Any Asset. Chapter 4: The Basics of Risk (3d ed. 2012).

81 Hal Varian, *Recent Trends in Concentration, Competition, and Entry*, 82 Antitrust L.J. 807, 820 (2019) ("implying that there were about twice as many successful acquisitions as IPOs.").

82 *See* Brian J. Bushee & Gregory S. Miller, *Investor Relations, Firm Visibility, and Investor Following*, 87 Acct. Rev. 867, 870–71 (2012) (demonstrating that listed company fees, yearly disclosures, and compliance, as well as the IPO process itself, is costly.).

83 Harry J. Sapienza et al., *The Self-Determination Motive and Entrepreneurs' Choice of Financing* in Cognitive Approaches To Entrepreneurship Research 105, 106 (Jerome A. Katz & Dean A. Shepherd eds., 2003) ("[W]ealth maximization and self-determination are the two primary motives driving entrepreneurial financing choices."); D. Gordon Smith, *The Exit Structure of Venture Capital*, 53 UCLA L. Rev. 315, 316 (2005) ("Before venture capitalists invest, they plan for exit. That is, they plan to withdraw their investment, adjusted for any return, from the entrepreneur's company. The ability to control exit is crucial to the venture capitalist's business model of short-term funding of nascent business opportunities.").

84 Cunningham et al., *supra* note 23, at 40.

85 Gordon Phillips & Alexei Zhdanov, *Venture Capital Investments and Merger and Acquisition Activity around the World*, NBER Working Paper No. 24082 ("We argue that active M&A markets promote innovation investments and make it easier for venture capitalists to monetize their investment by selling their portfolio companies to potential acquirers.").

86 *See* Aswath Damodaran, Investment Valuation: Tools and Techniques for Determining the Value of Any Asset. Chapter 22: Valuing Young or Start-Up Firms (3d ed. 2012).

return when deciding whether to take a project. In the case of a venture-backed company, that target rate of return is a function of the enterprise value of the firm at exit, which is calculated based on the firm's capacity to generate future cash flows, and the uncertainty associated with these cash flows. Thus, from the investor perspective, the ability to generate future cash-flows is largely tied to the ability to exit. If the ability to exit becomes more uncertain due to heightened regulatory scrutiny, the probability of future cash flows becomes less certain to the investor. And as the exit cash flow amount becomes less certain, or risker, the target rate of return required to incent new projects increases. At an increased target rate of return, investors may choose to forego projects taken under the current antitrust framework because they now expose the investor to a level of risk he or she is unwilling or unable to swallow. In turn, entrepreneurs may not be able to find the financing for their risky business ideas, or if they do, they will have to give investors a larger stake in the company to compensate for their increased risk. This will tend to result in less entrepreneurial idea origination because the return to the entrepreneur in terms of money, time, and effort, will no longer be worth it. And as idea origination weakens, venture capitalists invest less into startups, creating a negative feedback loop that is harmful to innovation, and ultimately, consumers.

IV. CURRENT ANTITRUST LAWS ARE UP TO THE TASK

The fundamental principles of antitrust merger enforcement are sound. And the current legal framework provides sufficient tools for preventing anticompetitive transactions that involve small tech start-ups, killer acquisitions, nascent competitors, potential competitors, or any other type of alleged anticompetitive combination. While merger enforcement could always benefit from more knowledge and information related to any particular market, much less digital markets, that does not mean the principles and framework are broken. In fact, both the Horizontal Merger Guidelines ("HMG"), and the newly minted Vertical Merger Guidelines ("VMG"), touch on principles to assess transactions involving small but nascent competitors.

Section 6.4 of the HMG, titled "Innovation and Product Variety," explicitly outlines some of the types of harms recent commentary and proposals hope to protect against.[87] Moreover, the guidance document states that agencies can and will evaluate a transaction based on "the extent to which successful innovation by one merging firm is likely to take sales from the other, and the extent to which post-merger incentives for future innovation will be lower than those that would prevail in the absence of the merger."[88] While one can appreciate the common response that current case law prevents using such theories, it ignores the fact that we cannot know if such tools work if they have not yet been tested. Thus, before moving to adopt new laws and regulations, we first must at least attempt to exhaust the tools we do have.

Moreover, even if there were doubts about the applicability of the HMG to transactions involving adjacently related businesses, the recently published VMG closes

87 U.S. Dep't. of Justice & Fed. Trade Comm'n., Horizontal Merger Guidelines § 6.4 (2010) [hereinafter HMG], *available at* https://www.justice.gov/atr/horizontal-merger-guidelines-08192010 [https://perma.cc/CQ5M-8PDD] (describing, as possible effects from a horizontal merger, a "reduced incentive to continue with an existing product-development effort or . . . to initiate development of new products").

88 *Id.*

that gap with its discussion around "merger of complements," "two-level entry," and "diagonal" mergers.[89] Although not vertical per se, these concepts were likely adopted with nascent competition in mind. The document states clearly on page one that:

> These Guidelines describe how the agencies analyze a range of non-horizontal transactions. Where they use the term "vertical," that term should not be read to narrow the applicability of these Guidelines. The analytical techniques, practices, and enforcement policies described in these Guidelines apply to strictly vertical mergers (those that combine firms or assets at different stages of the same supply chain), "diagonal" mergers (those that combine firms or assets at different stages of competing supply chains), and vertical issues that can arise in mergers of complements.[90]

The merger of complements concept likely follows the adoption of conglomerate effects introduced in the United Kingdom in 2010.[91] Conglomerate effects refer to a situation where the merging firms' products are not in the same product market, nor are they inputs or outputs of one another. Such mergers could enable tying and bundling strategies that foreclose competition, enable price discrimination, or soften competition among firms. Thus, the discussion on mergers of complements in the VMG provides a reasonable framework to respond to any alleged issues resulting from acquisitions of nascent competitors that double as complements or give rise to conglomerate effects.

Moreover, the VMG codify the "two-level entry" theory of harm, asserting that vertical mergers can raise entry barriers by effectively requiring new rivals to enter both the upstream and downstream markets simultaneously.[92] Moving forward, the agencies now have express authority to investigate and bring cases under such a theory, should they deem it appropriate for the facts of the case.

Similarly, the VMG also outlines a theory of harm related to what it calls a "diagonal merger." It defines a "diagonal merger" as "those that combine firms or assets at different stages of competing supply chains." While the guidelines do not explicitly explain the theory of harm, the agencies illustrate it through an example where a company acquires control over an input that it does not use in its own products or services, but which is important to its competitors.[93] This was likely adopted to address current commentary around suites of digital products and ecosystems.

Ultimately, the VMGs put the bar and business community on notice that transactions involving adjacently related business are subject to agency scrutiny, despite a lack of

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89 *See* U.S. Dep't of Justice & Fed. Trade Comm'n Vertical Merger Guidelines (2020) [hereinafter VMG], *available at* https://www.ftc.gov/system/files/documents/reports/us-department-justice-federal-trade-commission-vertical-merger-guidelines/vertical_merger_guidelines_6-30-20.pdf.

90 *Id.* at 1.

91 U.K. Merger Assessment Guidelines (CC 2 Revised), ¶¶ 5.6.1 and 5.6.2. The terminology in the Merger Assessment Guidelines refers to "conglomerate mergers of two suppliers of goods which do not lie within the same market, but which are nevertheless related in some way. . ."

92 VMG at 7.

93 *Id.* at 9.

horizontal overlap or increase in concentration. While some critics may wish the VMG went further,[94] it nonetheless provides the agencies with ample room to make an evidence-based inquiry of any transaction that might tend to harm competition or innovation. Of course, when analyzing these novel theories, the agencies must thoroughly assess the available empirical evidence and factual record.

The existing empirical evidence suggests that many vertical and conglomerate transactions are in fact procompetitive.[95] This is not to say that they are always procompetitive,[96] but that based on theory and empirical evidence, conglomerate and vertical acquisitions should not be looked at with quite the same skepticism as a horizontal transaction that eliminates a direct competitor. This is particularly important in regard to complementary technology because, as the discussion above illustrates, such transactions have far-reaching benefits outside just the effects in the merging parties' markets.

V. CONCLUSION

In the overwhelming majority of cases, current principles and frameworks have led to the right outcome. If there is to be any adjustment, it should only be at the margins in the application of the law, and leave the legal and analytical frameworks untouched. As George Mason professor John Yun correctly notes, the relevant question for antitrust policy is whether competition agencies are systematically biased in approving anticompetitive mergers, or blocking procompetitive mergers.[97] Current antitrust law continues to be up to the task of incorporating new evidence and applying it to evolving markets. No doubt, agencies should continue to invest heavily in learning about edge technologies and stay abreast of new business developments—but the current framework is capable of doing just that. Existing merger enforcement principles have not led us astray just yet, so we should be careful not to kill the goose that lays the golden egg.

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94 *See, e.g.*, Public Comments of 26 State Attorneys General on Draft Vertical Merger Guidelines, *available at* https://coag.gov/app/uploads/2020/02/Final-AG-VMG-Comments-2.26.pdf.

95 Joshua Karl Austin, *Vertical Integration and Pricing Outcomes in Retail Gasoline Markets*, 35 Econ. Bull. 1 (2015); James C. Cooper, et al., *Vertical Antitrust Policy as a Problem of Inference*, 23 INT'L J. INDUS. ORG. 639, 648 (2005); Daniel P. O'Brien, *The Antitrust Treatment of Vertical Restraints: Beyond the Possibility Theorems*, in The Pros And Cons Of Vertical Restraints 40, 76–81 (Konkurrensverket Swedish Competition Authority ed., 2008); Lawrence G. Goldberg, *The Effect of Conglomerate Mergers on Competition*, 16 J.L. & Econ. 1 (1973).

96 Michael A. Cohen, *A Study of Vertical Integration and Vertical Divestiture: The Case of Store Brand Milk Sourcing in Boston*, 22 J. Econ. & Mgmt. Strategy 101 (2013); Laurence C. Baker, M. Kate Bundorf, & Daniel P. Kessler, *Vertical Integration: Hospital Ownership of Physician Practices is Associated with Higher Prices and Spending*, 33 Health Aff. 756 (2014); Thomas G. Koch, Brett W. Wendling, & Nathan E. Wilson, *How Vertical Integration Affects the Quantity and Cost of Care for Medicare Beneficiaries*, 52 J. Health Econ. 19 (2017).

97 John M. Yun, Testimony on Competition in Digital Technology Markets: Examining Acquisitions of Nascent or Potential Competitors by Digital Platforms (September 24, 2019), *available at* https://papers.ssrn.com/ sol3/papers.cfm?abstract_id=3459660.

IT'S HIGH TIDE AGAIN IN INTERNET MARKETS

By Josh Palmer[1]

"The Internet is a tidal wave. It changes the rules." When Bill Gates wrote this in an internal Memo to his executive staff in May 1995, it was in large part a warning that Microsoft had to focus on getting to the forefront of this wave or else have its dominant position in computing washed away. Microsoft's ensuing practices would result in the United States Department of Justice (DOJ) filing an antitrust case against the company in 1998. A multitude of private actions in the U.S. followed, as did similar cases globally.

Twenty-five years after Gates's memo, the Internet tidal wave seems to be cresting again. This time in the form of looming antitrust cases against companies that have enjoyed large success, by developing digital platforms that leverage the Internet (and other) capabilities Bill Gates highlighted in his Tidal Wave Memo.

In this article, I briefly review Microsoft's conduct pursuant to Gates's memo and the antitrust cases against Microsoft that followed. I then review the economic and antitrust lessons from the Microsoft cases as espoused by the authors of a widely used industrial organization textbook. I conclude by discussing what these lessons, combined with commentary from economists analyzing digital platforms and competition, suggest about the next wave of antitrust cases in these markets. Given the complexity of digital platforms and range of antitrust concerns that have been raised, this article in no way should be taken as exhaustive. Rather, I attempt to highlight some of the issues that seem most prevalent and interesting in the antitrust litigation context.[2]

I. MICROSOFT AND THE FIRST INTERNET TIDAL WAVE

Much as an oceanic tidal wave is the consequence of gravitational interactions between the Sun, Moon, and Earth,[3] Bill Gates recognized that the Internet tidal wave was the result an interaction of multiple technologies, including TCP/IP protocols allowing computers to operate on distributed networks, HTML and other extensions allowing information to be presented in a more structured manner, modern communications infrastructure that could be purchased through commodity bids, and "most important[ly]", a place to publish public content.[4]

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1 Josh Palmer is a partner at applEcon, LLC. The views expressed here are solely those of Dr. Palmer and not applEcon, LLC. Dr. Palmer would like to thank Breanna-Bode Szopo for her excellent research assistance.

2 For a more comprehensive view from a policy perspective *see* Jonathan B. Baker, The Antitrust Paradigm: Restoring a Competitive (Harvard Univ. Press 2019). For a more comprehensive view of the technology and economics *see* Stigler Comm. on Dig. Platforms, Final Report (Sept. 2019), https://research.chicagobooth.edu/stigler/media/news/committee-on-digital-platforms-final-report [hereinafter Stigler Comm. Report].

3 *See What is a Tidal Wave?*, Nat'l Oceanic & Atmospheric Admin., https://oceanservice.noaa.gov/facts/tidalwave.html (last updated June 25, 2018).

4 *See* Bill Gates, *The Internet Tidal Wave*, DOJ, at 1-2 (May 26, 1995), https://www.justice.gov/sites/default/files/atr/legacy/2006/03/03/20.pdf.

Gates also predicted that the Internet tidal wave created by these technological interactions created enough energy to fundamentally alter not only how information was processed, but also how businesses functioned and consumers interacted and learned, projecting that: "In the next 20 years the improvement in computer power will be outpaced by the exponential improvements in communications networks. The combination of these elements will have a fundamental impact on work, learning, and play."[5]

Of primary concern to Gates was the possibility that a computer's operating system would no longer be an essential part of the computing ecosystem. In particular, he warned that if web browsers were able to operate as middleware compatible across operating systems, Microsoft's monopoly position in operating systems with its Windows operating system would be severely jeopardized. Gates specifically called out Netscape, "[a] new competitor 'born' on the Internet . . . pursuing a multi-platform strategy where they move the key API into the client to commoditize the underlying operating system."[6]

Three years after Gates's Tidal Wave Memo informing his executives and directors of plans to "define an integrated strategy" across the company, with the goal to "protect and grow our Windows asset",[7] the DOJ filed an antitrust suit claiming that Microsoft engaged in conduct to protect its operating system monopoly. Consistent with Gates's directive, the allegations included a charge that Microsoft was bundling its own browser, Internet Explorer, with Windows to leverage its monopoly into the emerging browser market. The DOJ further alleged Microsoft used exclusionary agreements that precluded downstream customers from buying, using, distributing, or promoting other companies' products, as well as restricted the rights of its customers to provide services or resources to Microsoft's actual and potential software competitors.[8] A number of private antitrust cases followed, including class actions on behalf of consumers in various states.[9] Microsoft's conduct also led to antitrust actions around the world.[10]

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5 *Id*. at 1.

6 *Id*. at 4.

7 *Id*.

8 Complaint, ¶5, *United States v. Microsoft Corp.*, 97 F. Supp. 2d 59 (D.D.C. 2000).

9 *See Consumer Class Action Settlement Information*, Microsoft, https://www.microsoft.com/en-us/legal/class/default.aspx (showing California, New York, and Iowa were among the state class actions in which plaintiffs have alleged that Microsoft unlawfully used anticompetitive means to maintain a monopoly in markets for certain software).

10 *See Turning the Page on the Past by Investing in the Future of Canada*, Microsoft (Aug. 8, 2018), https://news.microsoft.com/en-ca/2018/08/08/turning-the-page-on-the-past-by-investing-in-the-future-of-Canada/ ("Microsoft and the plaintiffs have reached a settlement and have filed papers seeking approval in the courts of British Columbia, Ontario and Quebec. . . . [L]ike the antitrust allegations made against Microsoft in the United States in the 1990s, the cases we are resolving today are about conduct from the 1980s and 90s."); *see also Microsoft Hit by Record EU Fine*, CNN (Mar. 25, 2004), https://web.archive.org/web/20060413082435/http://www.cnn.com/2004/BUSINESS/03/24/microsoft.eu/ ("[T]he European Union has found Microsoft guilty of abusing the 'near-monopoly' of its Windows PC operating system and fined it a record 497 million euros ($613 million). . . . [T]he Complaint against Microsoft centered on the Microsoft Media Player, which plays music and video clips. It is a free add-on to Windows.").

After reviewing the evidence in the DOJ and consolidated states' cases—including Gates's Tidal Wave Memo—the Court released its findings of fact on November 5, 1999. Among the facts found to have been proven by a preponderance of evidence was that:

> To the detriment of consumers, however, Microsoft has done much more than develop innovative browsing software of commendable quality and offer it bundled with Windows at no additional charge. As has been shown, Microsoft also engaged in a concerted series of actions designed to protect the applications barrier to entry, and hence its monopoly power, from a variety of middleware threats, including Netscape's Web browser and Sun's implementation of Java. Many of these actions have harmed consumers in ways that are immediate and easily discernible. They have also caused less direct, but nevertheless serious and far-reaching, consumer harm by distorting competition.[11]

Although the subsequent litigation resulted in a lower court ordering Microsoft broken up and in 2001 the D.C. Circuit unanimously affirming (en banc) the company's liability for monopolization, Microsoft ultimately entered a consent decree with the DOJ, which included conduct-related instead of structural remedies.[12] Microsoft also agreed to settlements in the billions of dollars in private cases. The California indirect-purchaser plaintiff class, for example, obtained a settlement valued at over $1 billion.[13] Microsoft also settled related lawsuits with a number of firms, including Novell ($536 million), AOL-Time Warner ($750 million), and Sun Microsystems ($700 million).[14]

Pointing to, in part, a precedent-setting structured reasonableness framework for evaluating a dominant firm's conduct under Sherman Act §2, as well as clarifying that antitrust laws extend to nascent actual and potential competitive harms, even in rapidly changing innovation markets. Jonathan Baker claims that "*Microsoft* was the most important U.S. antitrust decision of the past three decades."[15]

Not surprisingly, given the importance of the technological and competitive issues involved, a variety of sources have proffered lessons from the Microsoft cases. Economists Dennis Carlton and Jeffrey Perloff, authors of the widely used industrial organization textbook, "Modern Industrial Organization", have offered a summary of both the industrial organization and antitrust lessons from the Microsoft case, which is especially relevant for anticipating the potential antitrust litigation in digital markets.

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11 *See* Finding of Facts, ¶409, *United States v. Microsoft Corp.*, 97 F. Supp. 2d 59 (D.D.C. 2000).

12 *See generally* Stipulation, *United States v. Microsoft Corp.*, 84 F. Supp. 2d 9 (D.D.C. 1999).

13 Declan McCullagh, *Judge OKs $1.1 Billion Microsoft Deal*, CNET (Aug. 29, 2003), https://www.cnet.com/news/judge-oks-1-1-billion-microsoft-deal/. Two of applEcon's founding partners, Professor Jeffrey MacKie-Mason and Dr. Janet S. Netz provided expert witness testimony on behalf of the California class (and other states). At that time, the author worked as a staff analyst supporting these experts.

14 Steve Lohr & Paul Meller, *Microsoft to Pay $536 Million to Novell in Antitrust Case*, N.Y. Times (Nov. 9, 2004), https://www.nytimes.com/2004/11/09/technology/microsoft-to-pay-536-million-to-novell-in-antitrust-case.html.

15 Baker, *supra* note 2, at 197.

II. ECONOMIC AND ANTITRUST LESSONS FROM *MICROSOFT*

From an industrial organization perspective, Carlton and Perloff profess that *Microsoft* teaches that "in a rapidly changing technological environment with scale economies, complementary products, and network effects a dominant firm can use strategic behavior to preserve and increase its dominance even though the product changes dramatically over time."[16] Though this may seem obvious, Microsoft and others had questioned whether the dynamic aspect of technology markets negated the ability of firms to exercise market power over the long run.[17]

However, from an antitrust litigation perspective, as Carlton and Perloff point out, *Microsoft* also teaches (or, at least reaffirms) that strategic behavior to disadvantage rivals—which the authors note is a core component of most business programs—may or may not benefit consumers even when it successfully results in market power, depending on the context. Consequently, they posit as another lesson the need to identify and weigh both pro- and anti-competitive effects—that is, the need to conduct a rule-of-reason analysis of strategic conduct in technology markets.[18]

As Internet-related technologies and the use of digital platforms have expanded in the 25 years since Bill Gates's Tidal Wave Memo, so too has the range of potential strategic behavior available to digital platform firms.[19] This suggests that rule-of-reason analyses in digital platform litigation is likely to be much more involved and costly. Although the full set of strategic conduct is wide-ranging and outside the scope of this article, I review the primary economic features of digital markets and how these features are likely to impact the challenges of conducting rule-of-reason analyses in these markets. First, however, I briefly review the firms that were powered by the Internet tidal wave Gates predicted—Google, Apple, Amazon, and Facebook—and that are the focus of most of the current wave of antitrust scrutiny of big tech.

Lastly, after reviewing the primary economic features of digital platforms and how they may impact rule-of-reason analyses, I point to commentary from leading economists that suggests antitrust litigation involving digital platforms may well require not only more, but also new types of evidence and analyses.

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16 *See* Dennis Carlton & Jeffrey M. Perloff, Modern Industrial Organization, Ch. 11§ 4 (4th Global ed. Pearson 2000).

17 *See generally* Erik Brynjolfsson & Michael D. Smith, Frictionless Commerce? A Comparison of Internet and Conventional Retailers, 46 Mgmt. Sci. n.4, 563, 563-85 (2000).

18 *See* Carlton and Perloff, *supra* note 16, at Ch. 11 § 4.

19 *See* David S. Evans & Richard Schmalensee, *Antitrust Analysis of Platform Markets: Why the Supreme Court Got It Right in American Express* 15 (Competition Policy International 2019) (hereinafter Evans & Schmalense). In this article, the term digital platform indicates an Internet-based product or service that facilitates interactions between distinct customers of the platform. The distinct customers comprise different sides of the platform's business. Digital platforms, therefore have two or more sides. *Id.* at 15. For example, Google's search engine facilitates transactions between advertisers, search users, and web content creators, indicating a 3-sided platform. This is consistent with academic definitions and the Supreme Court's definition in *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2280 (2018).

III. THE RISE OF GOOGLE, APPLE, AMAZON, AND FACEBOOK

As Bill Gates predicted in his 1995 Tidal Wave Memo, the Internet has changed the rules not only on how technology works, but how consumers engage in economic, social, educational, and nearly every other type of activity. While Gates accurately predicted the events, he missed on the firms that would come to dominate. Specifically, of the "Big-Four," only Apple was mentioned as a potential competitor, and that was due to Apple's early adoption of TCP and its "strength in education". Netscape and Yahoo were the browser and search competitors Gates singled out.[20]

Of course, it would have been difficult for Gates to foresee the rise of any of these other companies. Amazon still had not sold its first online book when Gates wrote his Tidal Wave Memo, and Google and Facebook were still years away from starting. The Stigler Committee on Digital Platforms—a committee of legal, economic, and political science academics that spent over a year studying digital platforms—recently concluded:[21]

> One of the key defining factors of the past decade is the rise of Digital Platforms (DPs), such as Google, Facebook, Amazon, Apple. As more and more of our economy and society moved online, these companies ascended from non-existent or nearly bankrupt in the early 2000s to join Microsoft as global behemoths, exceeding (as of August 2019) more than 4 trillion dollars in market capitalization.
>
> This meteoric rise is not surprising. These companies invented new products and services that revolutionized the way we work, study, travel, communicate, shop, and even date. In the process, they created trillions of dollars in consumer surplus.

In 2019, Apple, Microsoft, Google-parent Alphabet, Amazon, and Facebook were amongst the world's Top 10 digital companies.[22] "Collectively, the Big Five tech companies generate over $800 billion in revenue each year, making them bigger than Saudi Arabia's entire economy."[23] Apple, Amazon, Microsoft, and Google-parent Alphabet also dominate the stock market, "making up 17% of the S&P 500's total market value."[24]

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20 Gates, *supra* note 4, at 2.

21 Stigler Comm. Report, *supra* note 2, at 6.

22 *Top 100 Digital Companies List*, Forbes, https://www.forbes.com/top-digital-companies/list/.

23 *See* Zia Muhammad, *Alphabet, Amazon, Apple, Facebook, Microsoft: How Big Tech Companies Earn Revenue*, Digital Info. World (May 12, 2019), https://www.digitalinformationworld.com/2019/05/how-tech-giants-make-billions-infographic.html.

24 Michael Sheetz, *Apple, Amazon, Microsoft and Alphabet and the Road to $1 trillion*, CNBC (Jan. 31 2020, 1:42 PM), https://www.cnbc.com/2020/01/31/apple-amazon-microsoft-and-alphabet-and-the-road-to-1-trillion.html.

Given their size and dominance, it is no surprise that these large firms now face their own tidal wave of antitrust challenges.[25] In the U.S., for example, federal and state investigations into these companies are ongoing,[26] as are various class actions.[27] There are also investigations or actions in (at least) Australia, the United Kingdom, Germany, the European Commission, France, Israel, and Japan.[28]

As the wave of pending antitrust cases builds against these digital firms, the lessons from the Microsoft case—that strategic behavior by these firms can have both beneficial and harmful impact so that a rule-of-reason analysis is required—provide a lens through which likely economic inquiries and issues that will be litigated can be brought into view.

IV. THE CHALLENGES OF RULE-OF-REASON ANALYSES IN DIGITAL MARKETS

Digital platforms encompass an ever-widening range of technologies, industries, and consumers. Nonetheless, a core set of features typically capture the most relevant aspects for understanding the underlying economics. After reviewing these core features, I argue that the complexity of digital platform environments indicates that the variety and extent of economic analyses in rule-of-reason analyses will also need to scale. Hence, the already long and difficult task of identifying net competitive effects is likely to get longer and more difficult for all participants.

Further, highly regarded industrial organization economists have argued that the evidence and analyses presented in digital platform litigation will likely need to extend beyond traditional approaches. I consider some ways in which this may manifest.

A. Economic Features of Digital Markets

Discussions related to digital platforms and antitrust typically revolve around the cost structure of digital technology, network effects, and zero-price aspects.

Economies of scale—declining per unit costs as output increases—are characteristic features of digital platforms. On the supply side, hardware, software, and heavy reliance

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25 *See*, *e.g.*, Herbert Hovenkamp, The Antitrust Enterprise, Principle and Execution 109 (Harvard Univ. Press 2005); *see also*, *e.g.*, Jean Tirole, *Regulating the Disrupters*, LiveMint (Jan. 1, 2019), https://www.livemint.com/Technology/XsgWUgy9tR4uaoME7xtITI/Regulating-the-disrupters-Jean-Tirole.html ("Given the scale and scope of these firms' impact on our societies, it is no surprise that they inspire both hope and fear in the public consciousness").

26 Russell Brandom, *The Regulatory Fights Facing Every Major Tech Company*, The Verge (Mar. 3, 2020), https://www.theverge.com/2020/3/3/21152774/big-tech-regulation-antitrust-ftc-facebook-google-amazon-apple-youtube.

27 *See, e.g.*, Adam Liptak & Jack Nicas, *Supreme Court Allows Antitrust Lawsuit Against Apple to Proceed*, N.Y. Times (May 13, 2019), https://www.nytimes.com/2019/05/13/us/politics/supreme-court-antitrust-apple.html; *see also*, *e.g.*, *Amazon.com Antitrust*, Hagens Berman, https://www.hbsslaw.com/cases/amazon-antitrust ("An independent investigation by Hagens Berman's legal team and expert antitrust attorneys has revealed that Amazon.com has violated federal antitrust price-fixing laws, causing consumers everywhere to pay artificially increased prices for products purchased via online retailers across the internet. Consumers have now filed a class action lawsuit against Amazon for driving up prices for online purchases made from other retailers.").

28 Stigler Comm. Report, *supra* note 2, at 28.

on intellectual property all contribute to economies of scale. For example, as Bill Gates recognized, the Internet allows digital assets to be distributed with low marginal costs.[29] Similarly, the software and intellectual property on which digital business is built and conducted also results in economies of scale.[30] All else equal, industries with significant economies of scale in costs result in larger firms.

Digital platforms can also exhibit direct or indirect network effects (or both) on the demand side.[31] Direct network effects occur when users on one side of the platform gain additional benefits from users on the *same* side of the platform. Communication or social networks are an example—the more people I can interact with on my network, the more I value it.

Digital platforms also exhibit indirect network effects, which "refer to the situation in which participants on one side of the market value having more participants on the other side with whom they can have a mutually beneficial interaction."[32] Indirect network effects occur because the greater density of relevant parties a platform can bring to one side of the platform, the greater the value of the platform to the other side of the platform.[33] Evans and Schmalensee point to OpenTable as an example. The more restaurant patrons use OpenTable, the more valuable it is to restaurants. Similarly, the more restaurants use OpenTable, the more valuable it is to restaurant patrons. Indirect network effects generate positive-feedback loops (virtuous cycles) for successful firms.[34] Complementary products, like games that are developed for a particular social media cite, also generate indirect network effects.[35]

Like economies of scale, network effects tend to promote market structures comprised of large firms. The strength of network effects can be mediated by the ability (and willingness) of users to use multiple platforms (often referred to as "multi-homing"). The easier it is to use multiple platforms for a given service, the weaker the network effects.[36]

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29 Gates, *supra* note 4, at 2 ("[A]nother unique aspect of the Internet is that because it buys communications lines on commodity bid basis and because it is growing so fast, it is the only 'public' network whose economics reflect the latest advances in communications technology. The price paid for corporations to connect to the Internet is determined by the size of your 'onramp' to the Internet and not by how much you actually use your connection. Usage isn't even metered. It doesn't matter if you connect nearby or half way around the globe. This makes the marginal cost of extra usage essentially zero encouraging heavy usage.").

30 *See*, *e.g.*, Richard A Posner, Antitrust Law 245-46 (The Univ. of Chicago Press 2nd ed. 2001); *see also* Tirole, *supra* note 25.

31 Baker, *supra* note 2, at 123.

32 Evans & Schmalensee, *supra* note 19, at 10.

33 *See id.* at 10-11; *see also* Kate Collyer et al., *Measuring Market Power in Multi-Sided Markets*, Competition Pol'y Int'l Antitrust Chron., Sept. 2017, at 2 [hereinafter Collyer et al.].

34 *See*, *e.g.*, Evans & Schmalensee, *supra* note 19, at 11 ("Indirect network effects result in a positive feedback loop between the two sides."); *see also* Gates, *supra* note 4, at 2 ("[M]ost important is that the Internet has bootstrapped itself as a place to publish content. It has enough users that it is benefiting from the positive feedback loop of the more users it gets, the more content it gets, and the more content it gets, the more users it gets.").

35 Stigler Comm. Report, *supra* note 2, at 38.

36 *Id.* ("Multi-homing lessens network effects because a consumer can enjoy the size of both networks, rather than having to choose one.").

Indirect network effects also generate externalities because the decision of an economic agent to join or leave a platform impacts the value of that platform for other economic agents. Consequently, the indirect network effects result in interrelated pricing structures. That is, pricing on one side of the platform must take into account how any demand effects will propagate through to the other side(s). In particular, a price increase will tend to decrease demand, and the decreased number of participants will reduce the value of the platform to users on the other side(s) of the platform. As a result, optimal pricing policies over the platform may make price-cost comparisons on a particular side of the platform less informative of market power than in non-platform markets.[37] Consequently, the price-cost relationship on any particular side of the platform may not be an accurate measure of market power.

Another key aspect of the digital platforms operating on the Internet, which Bill Gates foresaw, is zero-price services.[38] Many digital platforms involve sides on which one party does not pay even a nominal price for the provided service.[39] For example, Google does not charge its search engine users a fee. In these cases, firms compete for consumers' attention or presence, not their dollars. These markets are often referred to as "attention" markets to distinguish them from "transaction" markets. Multi-sided platforms can be comprised of both attention and transaction markets. When consumers do not directly pay a money price, measures of quality and innovation become more important in evaluating consumer welfare.[40]

The lesson from *Microsoft* that a rule-of-reason analysis is necessary to determine the net competitive effects of strategic behavior by technology firms indicates that the economies of scale, network effects, and zero-price elements inherent in digital platform markets will impact how the looming digital platform antitrust cases are litigated.

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37 *See* Collyer et al., *supra* note 33, at 2 ("[I]n a multi-sided market, the price structure reflects the interlinked demands of the two groups of consumers and the need to get both sides on board. This often results in complex pricing where the price to each group of consumers does not reflect the marginal cost of supplying them."); *see also* Evans & Schmalensee, *supra* note 19, at 12 ("An important consequence of this [price] interrelationship is that the prices charged to either group are not informative, by themselves, about the degree of competition for the platform.").

38 Gates, *supra* note 4, at 3 ("[F]or users who connect to the Internet some way other than paying us for the connection we will have to make MSN very, very inexpensive—perhaps free. The amount of free information available today on the Internet is quite amazing. Although there is room to use brand names and quality to differentiate from free content, this will not be easy and it puts a lot of pressure to figure out how to get advertiser funding.").

39 *See* Stigler Comm. Report, *supra* note 2, at 30 ("Digital platforms are characterized by free services. 'Free' is not a special zone where economics or antitrust do not apply. Rather, a free good is one where the seller has chosen to set a monetary price of zero and may set other, non-monetary, conditions or duties."); *see also* Fiona M. Scott & David C. Dinielle, *Roadmap for a Digital Advertising Monopolization Case Against Google*, Omidyar Network, 39 (May 2020), https://www.omidyar.com/sites/default/files/Roadmap%20for%20a%20Case%20Against%20Google.pdf ("[S]ervices provided by Google and other technology platforms provide extraordinary benefits to consumers and to society, free of charge.").

40 *See* Stigler Comm. Report, *supra* note 2, at 31 ("The existence of zero money prices means that measurement of quality will be critical.").

B. Strategic Behavior and Rule-of-Reason Analysis in Digital Markets

The complexity of digital markets suggests that evaluating strategic behavior under a rule-of-reason framework will likely mean a multiplicative, not additive, increase in necessary facts and analyses.[41] That is, even traditional areas of disagreement like the relevant market and appropriate counterfactual will be more intensely contested.[42]

Market definition is a predictable element of disagreement in most antitrust cases. As Baker points out, even in traditional markets, there need not be a unique set of products that comprise an antitrust market.[43] Instead, a variety of product groupings may satisfy, for example, the hypothetical monopolist test that forms the conceptual framework for identifying relevant antitrust markets in the DOJ and FTC's horizontal merger guidelines.[44] Plaintiffs and defendants typically offer competing market definitions. In multi-sided markets, this disagreement is likely to spill over to each side of the at-issue platform, multiplying the number of market definition arguments.[45]

A related issue is how to measure and interpret shares and concentration within multisided markets. For example, when a particular side of the platform does not pay a price, what measure will be used?[46] The complexity of the underlying business practices and technology also adds to the challenge of obtaining accurate shares. Bitton and Lewis (2020), for instance, argue that misunderstanding the underlying technology can (and has) led to inaccurate claims regarding Google's market shares in the digital advertising space.[47]

In addition to determining the relevant markets, shares, and concentration levels, there is still no consensus amongst economists regarding which of the sides of the multi-

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41 *See* Collyer et al., *supra* note 33, at 3 ("Many of our standard tools for assessing market power are more complex to apply in multi-sided markets and may need to be adapted."); *see also* Evans & Schmalensee, *supra* note 19, at 191 ("The economic literature analyzing two-sided platforms is new, complex, and evolving."); *see also* Stigler Comm. Report, *supra* note 2, at 63-64 ("On the one hand, targeted advertising to wise and well-informed consumers is welfare improving insofar as it allows advertisers to send the right information to the right people, improving their choices and fostering competition among suppliers. On the other hand, in the modern economy this simple model becomes more complex because of the cost to the consumer, namely loss of privacy. There is an open empirical question as to whether the tradeoff is worthwhile to consumers").

42 A flavor of the likely arguments can be seen in Evans and Schmalensee, chapter 5 of which includes arguments put forth by various economists that the authors consider to be no more than "red herrings".

43 Baker, *supra* note 2, at 184.

44 *See* DOJ & FTC, Horizontal Merger Guidelines 8-9 (2010).

45 Stigler Comm. Report, *supra* note 2, at 31-32 ("Market definition will vary according to what consumers are substituting between, whether there is competition on the platform between complements, or competition between platforms, or competition between a platform and potential or nascent competitors regarding possible future markets.").

46 For a detailed discussion of the challenges of measuring market share and concentration in multi-sided markets, *see* Collyer et al.

47 *See generally* Daniel S. Bitton & Stephen Lewis, *Clearing up Misconceptions About Google's Ad Tech Business*, Australian Competition & Consumer Commission (2020), https://www.accc.gov.au/system/files/Google%20%20Report%20from%20Daniel%20Bitton%20and%20Stephen%20Lewis%20%285%20May%202020%29.pdf.

sided platforms must be analyzed.[48] The issues of what are the relevant antitrust markets, how competitive are they, and the range of relevant economic impacts will generally be more complicated for digital platforms.

As a further complication, antitrust analyses are inherently reliant on the presumed counterfactual—is the market less competitive than it would have been but-for the at-issue conduct? Are consumers worse off than they would have been but-for the at-issue conduct? Given the conceptual nature of any but-for world, even once a relevant market is decided upon, there will certainly be differing opinions offered on the counterfactual conduct and its impact on the market dynamics and equilibrium outcomes.[49]

The supply and demand economies of scale, for example, raise interesting issues when analyzing counterfactuals. For instance, since the structure of multisided digital platforms makes these markets inherently prone to tipping (that is, being dominated by one or a few large firms),[50] what counterfactual aspects would prevent one dominant firm from being replaced by another dominant firm in the but-for world? That is, how much additional market power does a defendant have relative to the amount of market power in the counterfactual?[51] Similarly, of the many available alternatives, what but-for conduct will be proffered on each side of the platform and on what basis?[52]

Even settling on the but-for conduct, what market dynamics and equilibrium outcomes would have resulted (and when) in each of the relevant markets? For example,

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48 *Compare* Baker, *supra* note 2, at 185 *with* Evans & Schmalensee, *supra* note 19, at 27, 51-54.

49 *See* Reference Manual on Scientific Evidence (Third) 439 (2011) ("[O]ne party's damages analysis may hypothesize the absence of any act of the defendant that influenced the plaintiff, whereas the other's damages analysis may hypothesize an alternative, legal act. This type of disagreement is particularly common in antitrust and intellectual property disputes."); *see also* Stigler Comm. Report, *supra* note 2, at 32 ("The need to identify the specific anticompetitive exclusionary conduct and analyze it may raise enforcement costs given all the possible variants of exclusionary conduct possible in digital markets.").

50 *See* Stigler Comm. Report, *supra* note 2, at 29 ("[Digital] markets often have extremely strong economies of scale and scope due to low marginal costs and the returns to data. Moreover, they often are two-sided and have strong network externalities and are therefore prone to tipping. If so, the competitive process shifts from competition in the market to competition for the market. This combination of features means many digital markets feature large barriers to entry. The winner in these settings often has a large cost advantage from its scale of operations and a large benefit advantage from the scale of its data. An entrant cannot generally overcome these without either a similar installed base (network effects) or a similar scale (scale economies), both of which are difficult to obtain quickly and cost-effectively."); *see also* Tirole, *supra* note 25 ("That today's information-technology markets are highly concentrated is beyond dispute. In most cases, a single company dominates a given market. There is nothing abnormal about this, as users are prone to flocking to just one or two platforms, depending on the service.").

51 Nicholas Economides et al., Handbook of Antitrust Economics 485 (Pablo Buccirossi eds., MIT Press 2008) ("Because inequality is natural in the market structure of network industries, there should be no presumption that anticompetitive actions are responsible for the creation of market share inequality or very high profitability of a top firm. Thus, no anticompetitive acts are necessary to create this inequality. The 'but for' benchmark against which anticompetitive actions in network industries are to be judged should not be 'perfect competition' but an environment of significant inequality and profits.").

52 Stigler Comm. Report, *supra* note 2, at 32 ("The need to identify the specific anticompetitive exclusionary conduct and analyze it may raise enforcement costs given all the possible variants of exclusionary conduct possible in digital markets.").

network effects indicate that consumer preferences, and hence demand functions, *change* as the platform adds or loses users. If the but-for conduct would have resulted in less dominance by the defendant, what would the but-for demand curves look like? Efficiency and rationality arguments in the presence of dynamic preferences are more complicated than those based on stable demand curves.

Research into the economics of digital platforms is relatively new and evolving.[53] The lack of established tools and empirical work will likely raise arguments about whether proffered evidence on the assumed counterfactual conduct and consumer effects is sufficiently reliable, rather than merely theoretical.[54]

Antitrust litigation is complex. It can be difficult for judges and juries to understand and evaluate the economic evidence underlying necessary legal elements. Further, there are negative consequences to both false positives and false negatives.[55] The predictable disputes over market definition and counterfactuals can be expected to inherit the complexity of the of the underlying strategies and technology, resulting in intensified calls for specialized triers of fact.[56]

V. HOW MIGHT DIGITAL PLATFORMS ACTIONS ALTER ANTITRUST LITIGATION?

Beyond just requiring *more* of the same when it comes to market definition arguments, counterfactual assertions, and calls for specialized triers of fact, numerous highly regarded economists argue that new types of economic evidence and analyses may be needed when evaluating digital platforms.

A. Overwhelming Complexity as a Driver for New Analytical Tools

The complex interdependencies among the various platform sides have led well-established economists to call into question the sufficiency of traditional economic analyses and tools to handle competition analysis in digital platforms. Some illustrative examples follow.

Jean Tirole, winner of the 2014 Nobel Memorial Prize (Economics) and author of a popular industrial organization textbook argues that:[57]

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53 Evans & Schmalensee, *supra* note 19, at 191 ("The economic literature analyzing two-sided platforms is new, complex, and evolving.").

54 Jeffrey M. Perloff et al., Estimating Market Power and Strategies, at xi (Cambridge Univ. Press 2007) ("Economic theory alone cannot tell us how much market power firms exercise or which strategies they use. Thus, empirical work is critical if we are to understand how markets function.").

55 Carlton and Perloff, *supra* note 16, at Ch. 11 § 4 ("Figuring out whether a product design is efficient or anticompetitive is likely to be a very hard task in usual cases. Especially if products are changing rapidly, the court could err greatly and could impose large costs on consumers – at least in the usual circumstances with the usual type of evidence.").

56 *See*, *e.g.*, Stigler Comm. Report, *supra* note 2, at 32 (recommending "the establishment of a specialist competition court to hear all private and public antitrust cases which would allow judges to develop some expertise.").

57 *See* Tirole, *supra* note 25.

> When it comes to multi-sided platforms, these [traditional principles of competition policy] simply are not applicable in many cases. New guidelines for adapting competition policy to two-sided markets would require that both sides of the market be considered together, rather than analyzed separately. . . . This will require care and a new analytical approach.

David S. Evans and Richard Schmalensee, economics professors at University College London and MIT, respectively, and widely cited by the Supreme Court in the two-sided platform case *Ohio v. American Express*, assert that:[58]

> New tools may well be necessary to apply traditional principles appropriately in markets with multi-sided platforms[.]

Kate Collyer, Hugh Mullan, and Natalie Tilman, economists at the Competition and Markets Authority in the UK, claim that:[59]

> Many of our standard tools for assessing market power are more complex to apply in multi-sided markets and may need to be adapted.

Fiona Scott Morton and her subcommittee on digital platforms concluded that:[60]

> From an economic perspective, there is no single new characteristic that would make competition in digital platforms different from more traditional markets. Rather, it is the coincidence of several factors at a scale that has not been encountered before that makes the problem unique and requires new analysis of market structure and market power.

Assertions by such well-known industrial organization and competition economists questioning the reliability of standard tools and noting the relatively unsettled body of empirical knowledge are likely to be raised in litigation, especially by defendants.

B. The Importance of Zero- and Non-Price Aspects

Zero- and non-price attributes also threaten to complicate digital platform antitrust litigation. For starters, as Alfred Marshall—a founder of modern economics and the marginal revolution—explained in his classic microeconomics principles text: "Economic laws, or statements of economic tendencies, are those social laws which relate to branches of conduct in which the strength of motives chiefly concerned can be measured by a *money price*."[61]

When consumers obtain a product or service which they do not directly pay a monetary price for, the typical signal of their valuation of that product or service is absent. In its absence, economists have turned to cognitive resources like attention as

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58 *See* Evans & Schmalensee, *supra* note 19, at 36.

59 *See* Collyer et al., *supra* note 33, at 3.

60 *See* Stigler Comm. Report, *supra* note 2, at 34.

61 Alfred Marshall, Principles of Economics: Abridged Edition 33 (8th ed. Cosimo Classics 2006) (1890) (emphasis added).

the object of interest when using zero-price services.[62] As standard economics was not developed to evaluate consumer welfare effects as measured by non-price elements, behavioral economics and marketing have become important areas of expertise.[63] This raises the question of whether behavioral economists or marketing experts, who may have more relevant subject matter expertise in some instances than traditional economists, will be used as expert witnesses in digital platform antitrust litigation. For example, the economists on the Market Structure and Antitrust Subcommittee, make this point about behavioral economics on a number of occasions:

> Economists and lawyers will have to develop tools to explain to courts the role of behavioral biases in the creation of market power and in their effect on the quality of content.[64]

> Behavioral economics has had a profound influence in the conduct of economic policy that will become even more prevalent as more knowledge is digested and applied. It is of great relevance for our understanding of internet economics because, as information flows improve and some physical barriers are removed, human factors are more likely to provide the frictions that have increasing effects on market outcomes.[65]

> Given the prevalence of behavioral effects in the digital economy, the measurement of consumer welfare must be carried out very carefully. As we have mentioned, behavioral economics is now a well-established discipline that can help sort different online behaviors and business practices. Incorporating this knowledge into the legal practice's toolbox may help develop better measures of output and quality.[66]

More and more economists acknowledge the role of non-price attributes in consumer welfare, and especially to the extent cognitive and psychological aspects are cited as important features for understanding the effect of firm conduct on consumers.[67]

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62 *See*, *e.g.*, Evans & Schmalensee, *supra* note 19, at 14-15; *see also* Stigler Comm. Report, *supra* note 2, at 40, 42.

63 Conjoint analysis, a method for determining consumer valuations often used in the marketing literature, is one example of a technique from outside of economics that has been used more recently in litigation. For an informative introduction (centered around its use in patent damages litigation), see Gregory J. Sidak & Jeremy O. Skog, *Using Conjoint Analysis to Apportion Patent Damages*, Criterion (June 2016), https://www.criterioneconomics.com/docs/using-conjoint-analysis-to-apportion-patent-damages.pdf.

64 *See* Stigler Comm. Report, *supra* note 2, at 31.

65 *Id.* at 42.

66 *Id.* at 67.

67 Search algorithms that provide more relevant content, for example, benefit consumers over the full range of topics they care (i.e., value) enough to search for and "[w]hen [platforms] can identify individual tastes at fine levels and personalize their services to this taste, they often improve people's lives. Search engines can better answer queries or find a nearby destination, cultural and news websites are able to suggest well-suited content, and ecommerce websites can improve matching between buyers and sellers. These are all part of the consumer benefit described previously." Stigler Comm. Report, *supra* note 2, at 48.

Consequently, questions of whether and how these aspects are included in both the cost and benefit sides of consumer welfare analyses seem imminent.[68]

Of course, widening the scope of inquiry not only muddies the waters in terms of what evidence, analyses, and areas of expertise are most relevant and reliable, it also runs into the practical limits of the litigation system.[69] Courts already have to balance good versus good-enough-for-litigation science.[70]

VI. CONCLUDING REMARKS

Bill Gates foresaw many of the valuable benefits that successful internet companies would bring by integrating previously unavailable technologies. As the Stigler Committee concluded:

> Over the past 25 years, that power has exploded with head-spinning velocity: Today, there is no area of human life that has not been affected by the technological innovations made possible by the internet. We now buy goods and services, do banking, pay bills, find information, and talk with multiple groups of friends and acquaintances on the web. The speed, scale, and scope of the internet, and of the ever-more powerful technologies it has spawned, have been of unprecedented value to human society."[71]

Thus, as Carlton and Perloff professed after *Microsoft*, even strategic behavior that harms rivals can increase consumer welfare, necessitating a rule-of reason analysis. However, the complexity and scale of digital platforms promise to carry over to any rule-of-reason analysis, multiplying the areas of disagreement and resources need to adjudicate them. It remains an open question whether non-specialized triers of fact will be able to fulfill this difficult task.

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68 Stigler Comm. Report, *supra* note 2, at 67 ("Another reason to be pessimistic about measuring traditional surplus concepts is related to the barter nature of the exchange: Users barter attention and personal data for services. With a 'free' service, consumers are paying for any expansion of activity with their attention to content. When facing a zero-money price, and when quality is difficult to observe, consumers are not receiving salient signals about the social value of their consumption because the price they believe they face does not reflect the economics of the transaction, and they are ignorant of those numbers."). Similarly, as Marshall pointed out, economists are in the same position—they don't observe the price that their already-narrowly focused analyses require.

69 *Id.* at 67 ("We caution, however, that the legal structure of US antitrust law is not well set up to accommodate this complexity as it opens the door for judges to weigh all manner of social concerns as well as traditional economic effects.").

70 *See* Hovenkamp, *supra* note 25, at 109 ("Moreover, we are not particularly good at locating the line between anticompetitive and innovative practices. An overly aggressive antitrust rule would chill innovative conduct, so we frequently give the firm acting unilaterally the benefit of the doubt."); *see also* Reference Manual on Scientific Evidence, *supra* note 49, at xiv ("In the final analysis, a judge does not have the option of suspending judgment until more information is available, but must decide after considering the best available science. Finally, given the enormous amount of evidence to be interpreted, expert scientists from different (or even the same) disciplines may not agree on which data are the most relevant, which are the most reliable, and what conclusions about causation are appropriate to be derived.").

71 Stigler Comm. Report, *supra* note 2, at 27.

Moreover, price, the typical signal economists rely on to gauge value, is absent from many digital markets. This presents a challenge to traditional economic analyses. As a result, analyses of consumer welfare effects are more likely to benefit from—if not require—new types of evidence and analyses. This opens the door for behavioral economists, marketing experts, and perhaps others to serve as expert witnesses in antitrust litigation.[72]

As the wave of antitrust cases against digital platforms crests, it only seems fitting to let Bill Gates deliver the key takeaway from *Microsoft*: "The Internet is a tidal wave. It changes the rules."

72 Alfred Marshall and Jean Tirole recently have argued, with the right amount of imagination and humbleness, industrial organization and other (non-behavioral) economists can also evolve their tools kits to address the complexity of digital platform markets and antitrust issues. Marshall, *supra* note 61, at 43 ("The economist needs the three great intellectual faculties, perception, imagination and reason: and most of all he needs imagination, to put him on track of those causes of visible events which are remote or lie below the surface, and of those effects of visible causes which are remote or lie below the surface."); *see also* Tirole, *supra* note 25 ("Regulators and economists must be humble; they will learn by doing, and their policies should not be cast in stone.").

THE SIMPLE ECONOMICS OF HYBRID MARKETPLACES

By Neil Dryden, Sergey Khodjamirian, and Jorge Padilla[1]

ABSTRACT

This article explains that that the decision of a marketplace to operate its own reseller in competition with third-party sellers within the platform is likely to spur competition to the ultimate benefit of consumers. A marketplace will profit by supplying directly as a reseller when that duality is needed to (a) achieve selection parity with other distribution channels and/or (b) prod third-party sellers to compete more aggressively. The success of a hybrid marketplace (i.e., an online business that is both a marketplace and a reseller operating in that marketplace) may require it to support its retail operations in order to increase the appeal of its store *vis-à-vis* other stores. The effect of such strategy on the incentives to innovate of other sellers in the marketplace is in principle ambiguous but the available evidence suggests it may be positive.

KEYWORDS: antitrust, business models, hybrid marketplaces, regulation

JEL CODES: K21 (Antitrust Law), L13 (Oligopoly and Other Imperfect Markets), L40 (Antitrust Issues and Policies: General)

I. INTRODUCTION

Several authors and policymakers have expressed concern that a "platform"[2] that is both a service provider or a seller and an intermediary for other service providers and sellers may infringe the competition laws if, as an intermediary, it enjoys a dominant position and favours its own service provider or seller.[3] Some have even proposed that dominant platforms be prohibited from adopting so-called "dual" or "hybrid" business models and demanded the structural separation of the most prominent digital platforms.[4] This proposal is based on the belief that such duality creates a conflict of interest that can be exploited to further entrench the platform's alleged dominance, thwart competition, and stifle innovation.

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2 In this article we define platforms as online businesses which facilitate interactions between individuals or firms subject to within-group and/or cross-group network effects. Such platforms may operate either offline or online and may provide very different services and generate substantial efficiencies. In the retail industry, we would consider resellers that let third parties into their stores to be platforms irrespective of whether they operated offline or online. While the focus of the article is on online business models, no implications regarding market definition should be drawn from such an expositional choice.

3 *See, e.g.,* Lina Khan, *Amazon's Antitrust Paradox*, 126 YALE L.J. 710 (2017), *available at* https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=5785&context=ylj.

4 *See, e.g.,* Lina Khan, *The Separation of Platform and Commerce*, 199 COLUMBIA L. J. 973 (2019), *available at* https://columbialawreview.org/content/the-separation-of-platforms-and-commerce/.

We do not dispute here that discrimination by dominant vertically integrated firms, including hybrid platforms, may distort the competitive process and cause consumer harm in certain circumstances. Instead, our main claim in this article is that not all hybrid platforms are identical. Differences in their business models and the dynamics of the markets where they operate are crucial to understand their incentives and the effects of their conduct. More specifically, we explain that e-commerce platforms (or "marketplaces"), which sell products and services to consumers, have no incentive to marginalise firms that distribute through them, restrict competition and/or thwart innovation by such firms.

Marketplaces seek to increase the volume that is sold through their stores over long periods of time. Such volume increases when consumers can find a wide selection of products at competitive prices upon visiting the store. However, third-party sellers using the marketplace to distribute their products may not have the incentive to offer as many varieties through that store as they do through other channels and, especially, their own direct distribution channels (their physical or online stores). Also, they may not have incentive to price competitively the varieties sold through the marketplace, especially when they possess market power. Likewise, they may not provide the right product quality or may fail to deliver promptly and satisfactorily the products acquired through the marketplace.

Firstly, distributing directly may save third-party sellers some commissions: not only because commissions are not paid on their own direct channels, but also because the simple existence of this channel may work as a credible outside option that naturally balances the bargaining power in favour of third-party sellers.[5] Secondly, marketplaces increase consumers' ability to compare price and non-price terms and, therefore, may encourage greater competition. High prices, low quality and insufficient product variety reduce the marketplace's volume and profit.

Marketplaces may increase transactions and profits by adopting a hybrid business model, i.e., supplying directly as resellers in their platforms, adding the missing varieties with the aim of achieving selection parity with other distribution channels, and pricing competitively to make sure that its customers can see the best deal.[6] They may do so by selling third-party brands through their own reseller arm or by selling their own (private) labels. However, this strategy may succeed only if the marketplace's own reseller arm is able to complement the marketplace's portfolio of product offerings by adding products that are sufficiently attractive to consumers.

Arguably, the marketplace's efforts to increase the appeal of the products or services offered by its reseller arm may be regarded as discriminatory and anticompetitive. However, that interpretation is in our opinion incorrect. Firstly, the goal of the hybrid marketplace is not to restrict competition but to make its own marketplace more competitive with other distribution channels. The marketplace enters as a reseller

5 Put it another way, the marketplace will have limited market power when setting (access and other) fees to third-party sellers with their own direct distribution channels.

6 As explained in Section II.B. a reseller may also adopt a hybrid business model for reasons that are no different to those. Once it operates as a hybrid marketplace it will have to deal with the same conflicts of interest discussed in connection with any other hybrid marketplace, regardless of its origins.

into those product markets where competition is limited, but to do so effectively it needs to offer attractive products at competitive prices without undermining the offers made by third-party sellers operating in the store. Secondly, consumers benefit from lower prices, higher quality and greater variety. Thirdly, a third-party seller's ability to innovate need not be diminished since the marketplace's entry only seeks to promote the success of the platform (which in principle could increase the third-party seller's profitability and, therefore, its incentive to invest in its product portfolio). Fourthly, increased competition increases the sellers' incentives to invest and, thus, consumers also benefit from more and more disruptive innovation. Finally, entry by the marketplace's own reseller arm expands the marketplace's customer base, which, in turn, incentivizes new sellers to join and existing sellers to invest in innovation.

These findings have implications for policy. Hybrid marketplaces, such as Amazon (or *El Corte Inglés* in Spain, *Selfridges* in the UK, *Walmart* in the US, etc.), enter one side of their platforms with their retail arms to improve the appeal of their range of product offerings and promote their competitiveness with other marketplaces or distribution channels. This is procompetitive and consumer welfare enhancing.

The remainder of this article is organized as follows. In Section II we present three different online business models and investigate, on the one hand, why a marketplace distributing the products of third-party sellers may wish to supply directly as a reseller and, on the other, why a reseller may wish to operate as a marketplace to distribute the products of third-party sellers. In Section III we discuss the incentives of a hybrid marketplace to improve the appeal of its marketplace by increasing the value offered by its own reseller and consider the likely effects of such a strategy on competition and innovation inside its business and across marketplaces. In Section IV we consider an alternative theory—the "value capture" theory—which posits that both the marketplace's entry as a reseller and the potential bias in favor of its own reseller have the goal of free-riding on third-party sellers' efforts and the effect of discouraging innovation by these suppliers and making consumers worse off. We explain why the empirical evidence available to us is much more consistent with the procompetitive theory advanced in Section III than with the value capture theory presented in this section. The reason being that in practice the competition faced by marketplaces acts as a discipline device, limiting their incentives and ability to capture value while increasing their incentives to behave in a pro-competitive manner. Section V concludes discussing policy implications.

II. COMPARING ONLINE BUSINESS MODELS

We explicitly consider three different e-commerce business models in this article: the "reseller model," where the firm acquires products from suppliers and resells them to end-consumers; the "marketplace model," where it intermediates between sellers and buyers, and charges one or both sides; and the "hybrid model," where the platform acts both as reseller and a marketplace. The marketplace model is a pure intermediation model, whereas in the hybrid model the "platform" is both an intermediary and a seller.

A. The Choice of Business Model

There is an extensive literature discussing the pros and cons of the three e-commerce business models described above.[7] According to this literature, no business model universally dominates the others from a managerial or a social welfare perspective; it all depends on the facts.

One important consideration when assessing their relative profitability, for example, is who is better placed to choose the right way of marketing the product.[8] It may be the reseller, because it can draw from the experience of selling many different products from many different suppliers. It may be the sellers distributing through an arm's length marketplace, because their products are highly differentiated or even rather unique. Or, if the answer varies from one product to another within the firm's product portfolio, then the right business model may be the hybrid model.

Another important factor to consider when choosing a business model is the possible existence of "cross-product market spillovers."[9] Do higher marketing efforts for one product affect the demand for other products? If the answer is yes, then it is optimal to choose the reseller model, because the reseller can better internalize those externalities. Resellers may also be more efficient at selling incremental units to consumers due to economies of scale of stocking, distribution and marketing, especially when they are selling a narrow range of high demand products.[10] In contrast, marketplaces may be more efficient when selling a broad range of low demand products.

Resellers may be better able to verify and certify the quality of goods sold by their suppliers due to economies of scale.[11] They may also have a greater incentive to do so given that buyers may find it easier to hold them accountable when the quality of their products is poor. Sellers may be reluctant to join a marketplace that cannot guarantee the quality of the products sold by other sellers for fear of the reputational concerns that the latter's quality choices may have on its own sales.[12] Resellers may also be better able to aggregate the purchasing power of their buyers than marketplaces, given that the latter limit themselves to facilitate transactions but do not set the terms of those

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7 *See, e.g.,* K. Jerath and Z. Shang, *Store within a Store*, 47 J. Mktg. Res. 743 (2010); A. Hagiu and J. Wright, *Marketplace or Reseller?*, 61 Mgmt. Sci. 184 (2015); A. Hagiu and J. Wright, *Multi-sided Platforms?*, 43 Int'l J. Indus. Org. 162 (2015); V. Abhishek, K. Jerath, and Z. Zhang, *Agency Selling or Reselling? Channel Structures in Electronic Retailing*, 62 Mgmt. Sci. 2259 (2016); L. Tian, A.J. Vakharia, Y. Tan, and Y. Xu, *Marketplace, Reseller or Hybrid: Strategic Analysis of an Emerging E-commerce Model*, 27 Prod. and Oper. Mgmt. 1595 (2018).

8 *See generally supra* note 7.

9 *Id.*

10 *Id.*

11 *Id.*

12 *Id.*; *see also* C. Nosko and S. Tadelis, *The Limits of Reputation in Platform Markets: An Empirical Analysis and Field Experiment*, The National Bureau of Economic Research ("NBER") Working Paper No. 20830 (2015), *available at* https://www.nber.org/papers/w20830. The authors explain, among other things, that buyers may draw conclusions about the quality of a platform from single transactions, causing a reputational externality across sellers. They document this problem using eBay data and claim that platforms can benefit from identifying and promoting higher quality sellers.

transactions.[13] In a sense, a reseller represents the collective demand of its buyers when negotiating wholesale prices with its suppliers. This is not what a marketplace does; the marketplace charges commissions for facilitating transactions but has no direct stake on those transactions. On the other hand, and precisely because the marketplace does not set end-consumer prices, the well-known double marginalization problem is less severe in the marketplace model.[14] This makes it particularly attractive when the reseller or the marketplace compete with direct distribution channels, as it is most often the case.

B. The Logic and Competitive Effects of Hybrid Marketplaces

There is evidence that companies often change their business models. Some move from being resellers to also operate marketplaces, like Amazon and many department stores around the world have done. Others, like Tesco, Walmart, etc. start selling third-party products and then introduce their own private labels. In this section, we first explain why a marketplace may have the incentive to adopt a hybrid business model, acting as both a reseller and a marketplace, and why such a business model choice is likely to result in fiercer competition and increased consumer welfare. Then we will consider the reasons why a reseller may choose to become a hybrid platform.

Because marketplaces typically charge per transaction (unit or *ad valorem*) fees, they benefit with increases in the volumes sold through their stores, especially when such increases are sustained over long periods of time. Such volumes will be greater when consumers can find a wide selection of products at competitive prices in any of their visits. Many consumers exhibit a preference for variety;[15] others have one-stop shopping preferences, i.e., prefer to concentrate their purchasers at a store to save on shopping costs;[16] and most (if not all) prefer to buy at discounted prices.

Many marketplaces will thus have the incentive to distribute a wide range of product varieties, including some which may be regarded as close substitutes, both to increase product choice and encourage price competition within the marketplace.[17] Those stores will naturally seek to offer a wider selection of products and everyday lower prices than their competitors.

The problem typically faced by marketplaces, whether online or offline, is that the third-party sellers' and marketplace's incentives to introduce new products or to offer lower prices and first-rate delivery services are misaligned.[18] This is because the third-party seller fails to internalize the external effect of its pricing and non-pricing decisions on the sales of other sellers, and on the marketplace's overall reputation and profits. For example, when considering whether to introduce a new variety, an individual seller will

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13 *Id.*

14 *See* A. Hagiu and J. Wright, *On the optimality of ad valorem fees*, Mgmt. Sci. (forthcoming 2020).

15 *See* X. Vives, Oligopoly Pricing: Old Ideas and New Tools, Ch. 6 (MIT Press 1999).

16 *See* P. Klemperer and J. Padilla, *Do Firms' Product Lines Include Too Many Varieties?*, 28 RAND J. Econ. 472 (1997).

17 *See* J. Farrell and M. Katz, *Innovation, Rent Extraction, and Integration in Systems Markets*, 48 J. Indus. Econ. 413 (2000).

18 *See* Nosko and Tadelis, *supra* note 12.

not factor in its calculation that its decision to do so may attract new consumers to the marketplace and, hence, increase the sales and profits of other third-party sellers and, consequently, the attractiveness and profitability of the marketplace. For the very same reason, third-party sellers may set higher prices, offer lower quality, and distribute less promptly and reliably, than the marketplace would like them to.

This misalignment between the incentives of the marketplace and the third-party seller occurs whether sellers have access to other distribution channels or not, but it is much more likely to occur if they do, and especially if they can distribute directly through their own channels. There are several reasons for this. Firstly, distributing directly may save them the marketplace's fees and commissions. Also, since those commissions are, as mentioned, typically charged by transaction, they tend to increase the third-party sellers' marginal costs of selling within the platform, thereby implying that some product varieties may be, simultaneously, offered in their own distribution channels at lower prices. Thus, third-party sellers will be concerned about cannibalising their direct distribution when launching new products or pricing more aggressively in the marketplace; a concern that is foreign to the marketplace.

Secondly, third-party sellers with access to alternative distribution channels may use the marketplace to advertise their brands given its large consumer reach, but distribute their bestsellers or their cheaper products through other channels where they pay lower fees (e.g., other marketplaces or e-commerce sites) or no fees at all (their own distribution channels).

Thirdly, consumers' ability to compare the offers of competing suppliers is facilitated by the marketplace, especially in the case of an online hybrid marketplace. The greater transparency in online marketplaces will likely force sellers to compete more aggressively, as they will no longer be able to price-in any search costs or shopping costs consumers may face. Moreover, the platform may enter the marketplace as a strategic defensive reaction against third-party sellers who sell their products at uncompetitive prices.[19]

Finally, when third-party sellers utilize other distribution channels, their portfolio, pricing and quality decisions at those other channels will account for their impact on their *own* sales in the marketplace but, as before, will not factor in the effect of such decisions on the overall sales volume channelled through the marketplace. The number of varieties sold through the marketplace, their quality and prices are more likely to be suboptimal from the platform's point of view, as well as from the viewpoint of consumers, when sellers have market power, whether that power has a unilateral origin (stemming either from product differentiation or consumer inertia) or is the result of industry-wide tacit coordination. Such market power, whether unilateral or collective, will depress volume and hurt the marketplace and its consumers.

The marketplace may try to address these problems by adopting a hybrid model, supplying directly as a reseller so as to add the missing varieties with the aim of achieving selection parity

19 Furthermore, and as highlighted in Section 2 of the 2016 joint paper by Autorité de la Concurrence and Bundeskartellamt, *Competition Law and Data*, in some cases, greater transparency can also facilitate entry by new competitors (in this context, additional third-party sellers joining the platform's marketplace) that gain access to more information about consumer needs and market conditions.

with other distribution channels, increase the quality of its offerings,[20] and price competitively to make sure that its customers can see the best deal. This increases the appeal of the marketplace in the short-run and, especially, its chances of success in the long run. Consumers will be attracted to marketplaces with a wide selection of products, distributed efficiently and commanding low prices. This will in turn increase the number of sellers wishing to join the platform and their incentives to offer more variety and greater quality on that platform, thus attracting even greater number of consumers, and so on and so forth.

The hybrid marketplace will prioritize its reseller's investments in varieties which are either not on offer at the marketplace (especially when they can be found elsewhere) or are currently being offered at uncompetitive prices or quality of service by existing sellers. Furthermore, if offering additional products is costly, we would expect the marketplace's reseller to prioritize products expected to maximise volume on the marketplace (e.g., popular products).[21]

The product and pricing choices of the marketplace's own reseller will naturally differ from those of the other sellers operating in the marketplace. It may enter products that no third-party seller finds attractive, because of the positive externalities that the availability of new varieties generates on the existing ones when consumers have preference for variety and/or engage in one stop-shopping. And for the same reasons, it is also likely to commercialize products that are already on offer but at high prices, by offering cheaper varieties of those products.

In short, a marketplace may choose to adopt a hybrid business model in order to become a more effective competitor in the distribution market by offering more options, higher quality, and cheaper prices. In this respect, its business model choice is aligned with consumers, but may frustrate third-party sellers, especially those with market power.

A reseller may also adopt a hybrid business model for reasons that are no different than those described above. The reseller may be unable to offer as wide selection of products as other resellers or marketplaces. Investing in new varieties to bridge the gap is costly and risky. But that narrower portfolio places the reseller at a serious competitive disadvantage when it comes to consumers with a preference for variety of product offerings or one-stop shopping preferences.[22] The reseller may also be unable to match the prices offered by competitors benefiting from economies of scale and scope originating in their larger volumes and their wider product portfolios.

These disadvantages can be mitigated or eliminated when the reseller adopts a hybrid business model. This move can be interpreted as an effort to "recruit" other sellers in the

20 *See* H.Y. Kang, *Intra-platform Envelopment: The Competitive Dynamics Between the Platform Owner and Complementors*, Acad. of Mgmt. Proceedings 11205 (2017).

21 This entry pattern is supported by several empirical studies. *See, e.g.*, F. Zhu and Q. Liu, *Competing with complementors: An empirical look at Amazon.com*, 39 Strategic Mgmt. J. 2618 (2018); B. Jiang, K. Jerath, and K. Srinivasan, *Firm strategies in the "mid tail" of platform-based retailing*, 30 Mktg. Sci. 757 (2011); Hagiu and Wright, *supra* note 7.

22 *See* Klemperer and Padilla, *supra* note 16.

quest for attracting consumers.[23] The downside of this strategy is that the hybrid reseller will have to compete with other sellers operating in the same distribution channel. But the upside is that the marketplace's attraction (or "gravity," using the language of trade theory[24]) is much greater than the reseller's, since the collective portfolio of products offered by the marketplace is much wider than that offered by the single reseller. Again, such a business model choice would be likely to result in fiercer competition and increased consumer welfare.

Given the negative impact of competition on the profits of third-party sellers, there is a risk that they would simply stay away from the newly launched marketplace, thus defeating the adoption of a hybrid business model. In a recent paper, Hagiu *et al.* (2020) show that this need not be the case. In their model, the multi-product reseller has the incentive to transform itself into a marketplace by hosting rivals,[25] since this reduces the additional shopping costs to consumers of buying products from the rivals' versions of the reseller's non-core products. While this makes those rivals closer competitors, it turns the competitor into a complementor, thus increasing demand for the reseller's core products. It follows that this strategy can be both beneficial for the reseller and its hosts.

III. POTENTIAL CONFLICTS OF INTEREST IN HYBRID MARKETPLACES AND THEIR WELFARE EFFECTS

The success of the hybrid strategies described in the previous section is highly uncertain. The hybrid business will have to overcome many hurdles to ensure that its own reseller can compete effectively and in a levelled playing field with sellers distributing through other marketplaces and other distribution channels, including their own distribution channels.

The hybrid marketplace's reseller will have to persuade consumers to switch away from competing marketplaces or third-party sellers' own direct distribution channels. Third-party sellers with their own distribution channels may, for example, engage in "loss leading"—selling below cost at their own distribution channel the varieties that are also sold on the hybrid marketplace in competition with the hybrid marketplace's reseller, while selling at a high enough price those varieties that are only distributed through its own channel. This strategy could limit the success of the hybrid marketplace's reseller and, therefore, defeat the goal of promoting the marketplace.[26]

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23 *See* A. Hagiu and D. Spulber, *First-Party Content and Coordination in Two-Sided Markets*, 59 Mgmt. Sci. 933 (2013). The authors explain that a platform may have the incentive to include first-party content alongside third-party content to mitigate the "chicken and egg" coordination problem in user participation.

24 *See, e.g.*, T. *Chaney*, *The Gravity Equation in International Trade: An Explanation*, 126 J. Political Econ. 150 (2018).

25 A. Hagiu, B. Jullien, and J. Wright, *Creating Platforms by Hosting Rivals*, Mgmt. Sci. (forthcoming 2020).

26 *See* Z. Chen and P. Rey, *Loss Leading as An Exploitative Practice*, 102 Am. Econ. Rev. 3462 (2012).

A. Competing with Alternative Distribution Channels by Launching An Effectively Competitive Reseller

A marketplace will only be able to achieve the goal of improving the appeal of its own store by launching its own reseller if the latter can offer sufficiently attractive varieties and at competing prices. This is not at all easy in light of the multiple hurdles noted above, especially if the products in question are experience or credence goods.[27] Thus, the hybrid marketplace will have to invest in the appeal of its own reseller arm so that it can steer price and non-price competition in the store, thereby increasing the store's traffic, which is a key dimension in terms of its sustainability and attractiveness *vis-à-vis* competing marketplaces and other distribution channels. This strategy is rivalry and welfare enhancing.[28]

The marketplace's ultimate goal is not to advance its own retail arm; if it wanted to do so it would not allow third-party sellers to sell products in competition with its own reseller. The hybrid marketplace's goal is not to restrict competition within the platform, but to spur it, in order to make its marketplace more competitive. The marketplace enters as a reseller into those product markets where competition is limited, either because prices are too high or there is too little product variety or quality is lacking. Consumers benefit from lower prices and greater variety, and third-party seller's ability to innovate is not diminished since the marketplace's entry only eliminates supra-competitive rents (i.e., it does not impede them from obtaining a fair return on their investments).[29] Furthermore, increased competition increases the third-party sellers' incentives to invest in innovation and, thus, consumers also benefit from more and more disruptive innovation.

So, for example, when facing incumbents with established brands, selling at high prices in the marketplace and possibly offering lower prices and superior delivery services through their own direct distribution channels, the hybrid marketplace's reseller will likely find it optimal to enter selling a cheaper product and offering fast and costless delivery. Incumbents may try to match on both dimensions, and they may also try to differentiate their products further in order to relax price competition. Moreover, entry by the reseller will likely attract more consumers to the marketplace. The expanded customer base would incentivize more sellers to join the platform and existing sellers to invest more.[30]

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27 An "experience good" is a product or service where product characteristics, such as quality or price, are difficult to observe in advance, but these characteristics can be ascertained upon consumption. Experience goods include hairdressers, canned food, etc. A "credence good" instead is a good whose utility impact is difficult or impossible for the consumer to ascertain even after consumption. Examples of credence goods include legal services and economic consulting services.

28 *See, e.g.*, B. Yoo, V. Choudhary, and T. Mukhopadhyay, *Electronic B2B Marketplaces with Different Ownership Structures*, 53 Mgmt. Sci. 952 (2007). The authors explain that biased marketplaces (i.e., marketplaces owned by sellers or buyers) may set prices that induce greater participation from both buyers and sellers and greater social welfare compared to neutral marketplaces. Also relevant is V. Nocke, Peitz, M., and K. Stahl, *Platform Ownership*, 5 J. Eur. Econ. Ass'n 1130 (2007), in which the authors demonstrate that vertical integration of sellers onto the marketplace is weakly welfare-increasing.

29 And even without supra-competitive rents, as entry is rarely immediate, competitors may have sufficient time to reap the rewards of their investment.

30 F. Zhu, *Friends or foes? Examining platform owners' entry into complementors' spaces*, 28 J. Econ. & Mgmt. Strategy 23 (2019).

Arguably, the marketplace could increase the appeal of its platform by subsidizing the entry of new sellers or, at very least, reducing their access, listing and usage fees significantly. This would increase the marketplace's ability to attract new sellers and induce them to introduce new varieties and price more aggressively. This strategy is complementary to the hybrid strategy discussed so far. However, as explained by Belleflamme and Toulemonde (2009) and (2010), this strategy may fail to deliver,[31] since the resulting increase in competition within the marketplace may discourage sellers from joining the marketplace in the first place. Therefore, the marketplace may have no choice but to enter itself with its own reseller.

B. Welfare-Enhancing Limitations on the Information Disclosed to Third Parties

Platforms operating different business models and competing in markets characterized by different dynamics will have different incentives in connection with the amount and nature of the demand information that is collected, as well as with the way in which that information is handled. In principle, online platforms with access to demand data can target their offerings more effectively. On the one hand, this may improve consumer welfare to the extent that consumers are more likely to be served the products they seek. On the other, consumers may dislike intrusive targeting, oppose price discrimination and be concerned about the potential misuse of the information that is collected from them when they make deals at a given platform. As a result, consumers are more likely to express concern about the scope and the amount of data the online platform extracts from them when they anticipate that such information may be transmitted widely and, thus, more likely land in wrong hands.

As far as information is concerned, marketplaces will use the consumer data generated at their stores to increase their appeal in competition with other stores. They have the incentive to provide demand information to third-party sellers if that helps them to improve their offers and increase output at the store. Hybrid marketplaces will in addition employ that data to focus their own reseller's activities on the products that consumers demand but where the offer of the marketplace is most deficient (for example by comparison to the selection and prices offered by other distribution channels of all sorts).

Marketplaces, including hybrid ones, will restrict the information shared with third-party sellers in order to limit the scope for price discrimination, when price discrimination is not prohibited. They may also restrict the information shared with third-party sellers in the platform if they may use that information elsewhere, especially if they use it in ways that are contrary to the interests of the marketplace's customers. This is because in using such data third-party sellers likely will not take account of the negative implications for the marketplace from the misuse of such data or the use of the data in a way that induces consumers to leave the marketplace (e.g., because the data is used to engage in consumer welfare-reducing price discrimination).

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31 *See* P. Belleflamme and E. Toulemonde, *Negative Intra-group Externalities in Two-Sided Markets*, 50 Int'l Econ. Rev. 245 (2009); P. Belleflamme and E. Toulemonde, *Platform Competition and Sellers Investment Incentives*, 54 Eur. Econ. Rev. 1059 (2010).

For these reasons there is no basis to presume that consumers are hurt when hybrid marketplaces limit the information provided to third-party sellers in their platforms. There are pro-competitive reasons both for providing third-party sellers with very extensive support including some data and analytics that increase their participation on the marketplace while, at the same time, restricting the disclosure of information that may be used against the interests of its consumers.

IV. AN ALTERNATIVE VIEW: THE VALUE CAPTURE THEORY

Hitherto, we have explained that a marketplace adopts a hybrid model in order to effectively improve its marketplace's appeal in response to the actual or perceived lack of effort of third-party sellers and when facing incumbency advantages of the third-party sellers. An alternative explanation, with radically different welfare implications, is that the goal of that strategy is to capture the value generated by those sellers, free riding on their innovations and R&D efforts.

Suppose a marketplace observing which third-party products sell more and at more attractive prices, decides to clone them and sell them at lower prices through its own reseller. Those third-party sellers which developed such products will thus be deprived of an appropriate rate of return. Had they anticipated the marketplace's opportunistic behavior they might not have invested in them. And, furthermore, they may no longer invest in new products if they fear that the marketplace's conduct is systemic.

The assessment of the value capture hypothesis requires first considering the motivation of the marketplace to enter as a reseller, and then investigating the effects of that entry on third-party sellers. As regards the marketplace's entry motivations, we are not aware of any theoretical literature that formally models those incentives. The empirical literature is more informative. It uses platform-owners entry patterns to infer their motivations. Zhu (2019) provides a useful survey of such studies. He concludes that "it is often difficult to infer platform owners' exact motivations through quantitative analysis because different motivations can lead to the same empirical patterns".[32] We concur.

A good example of the limitations of such studies is given by—the otherwise valuable contribution of—Zhu and Liu (2018),[33] who infer that Amazon's entry patterns are driven by value capture from their finding that Amazon's marketplace enters the more "popular" products as a reseller. However, that observed entry pattern could equally be explained by a more benign motive, such as ensuring the competitiveness of the marketplace. Firstly, the popular products targeted by Amazon may be relatively underperforming on Amazon's marketplace; i.e., they may be doing much better on other distribution channels with whom Amazon fiercely competes. Secondly, if Amazon's goal is to make its marketplace more competitive, it is only rational that it focuses its effort and investment on those products which drive significant volumes and are most likely to be critical to the success of the marketplace.

Whatever the underlying motive behind a marketplace's decision to adopt a hybrid model, the key question from a public policy perspective is the effect of such a decision on

32 Zhu, *supra* note 30.

33 *See* Zhu and Liu, *supra* note 21.

consumer welfare. Therefore, in what follows we focus on signing that effect by reference to the existing theoretical and empirical literature.

A. Theoretical Considerations

According with Foerderer *et al.* (2018), "the theoretical mechanisms through which entry [by platforms] might affect complementary innovation, remain understudied."[34] It is possible that the entry of the marketplace and the ensuing reduction in the rents of the third-party sellers may affect negatively both the incentive and ability of the latter to invest. This argument replicates the well-known Schumpeterian "appropriability effect" that stresses that incumbents will not invest unless they expect to appropriate sufficient post-innovation rents.[35] But it is also possible that, as Arrow (1962) famously argued,[36] firms under competitive pressure will try to outperform competitors by producing higher quality or more cost-efficient products and services: product market competition spurs innovation. Indeed, and as noted above, third-party sellers have an incentive to differentiate their offerings in order to escape the increased competition. As highlighted by Carl Shapiro,[37] Arrow's and Schumpeter's positions are compatible. What is crucial within the context under analysis is that entry by the marketplace owner promotes contestability without severely hurting appropriability. As already explained in the previous section, we believe that to be the case here.

Aghion *et al.* (2009) have shown that the effect of entry into a market on incumbent innovation and productivity is ambiguous.[38] On the one hand, the threat of entry encourages firms close to the "technology frontier" to innovate, because these firms can escape competition by innovating more intensely. This is similar to the "escape of competition effect," identified by Aghion *et al.* (2001),[39] according to which incumbents need to innovate in order to preserve their pre-innovation rents when faced with the possibility the entrant may innovate. On the other hand, entry may discourage innovation by firms that are further behind the technology frontier, because these firms have no hope to win against the entrant.

Aghion *et al.* (2009), using data about policy changes in the EU and the UK as instruments for the effect of the threat of entry into the UK market, find that, indeed

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34 *See* J. Foerderer, T. Kude, S. Mithas, and A. Heinzl, *Does platform owner's entry crowd out innovation? Evidence from Google photos*, 29 Info. Sys. Research 444 (2018). Note, in addition, that none of the theoretical papers they cite seem to fill this gap in our opinion.

35 *See* J. Schumpeter, Capitalism, Socialism and Democracy (Harper & Brothers 1942).

36 *See* K. Arrow, *Economic Welfare and the Allocation of Resources to Invention* in: The Rate and Direction of Inventive Activity: Economic and Social Factors, National Bureau of Economic Research, Committee on Economic Growth of the Social Science Research Councils, at 609-26 (Princeton University Press 1962).

37 *See* C. Shapiro, *Competition and Innovation: Did Arrow Hit the Bull's Eye?* in: The Rate and Direction of Inventive Activity Revisited, National Bureau of Economic Research, Inc., at 361 (2011).

38 *See* P. Aghion, R. Blundell, R. Griffith, P. Howitt, and S. Prantl, *The effects of entry on incumbent innovation and productivity*, 91 Rev. of Econ. and Statistics 20 (2009).

39 *See* P. Aghion, C. Harris, P. Howitt, and J. Vickers, *Competition, Imitation and Growth with Step-by-Step Innovation*, 68 Rev. of Econ. Studies 467 (2001).

while those firms near the technology frontier respond to entry by innovating more, those lagging behind respond by innovating less. The reason for these different reactions is that the innovation effort needed to maintain the lead over the entrant is smaller for firms that are "neck-and-neck" than for firms that are further back on the technology frontier.

B. Empirical Evidence

Thus, whether entry encourages or discourages innovation is likely to vary from industry to industry, making it ultimately an empirical question. Foerderer *et al.* (2018) examine the impact of Google's entry into photography apps on Android.[40] They conduct a difference-in-differences analysis of time-series data on a random sample of 6,620 apps taking advantage of the natural experiment provided by Google's unannounced release of the Google Photos app in 2015. Innovation here is defined as the decision to release a major update (adding new features or functionalities) for an app. The authors find that "after entry, app developers were more likely to incrementally innovate their photography apps and to release new apps to the affected market category."

Cennamo, Gu and Zhu (2018) consider the effect of platform-owner entry on developers' innovation outcome in the US video games industry.[41] They use data on 5,865 unique video game titles and 14 home video game consoles from January 1995 to June 2008. Innovation is measured through (i) the level of effort, proxied through the number of programmers who worked on a game during its development; (ii) the quality of the game, measured using the scores assigned by critics; and (iii) the portfolio of games produced, measured by the proportional share of titles within each category in the previous year. The authors find that entry with blockbuster games leads developers to focus more on the category that saw entry but exert less effort (which the authors interpret as "free-riding"). When blockbuster entry is "too frequent", third-party developers switch their focus to other video game genres.

Zhu and Liu (2018) study the effect of Amazon entry on third-party sellers' activity on the marketplace.[42] They collect a 0.5% sample of third-party seller products from four product categories listed on the US Marketplace in June 2013, which are then observed again in April 2014. The authors find that third-party sellers affected by Amazon's entry reduced the number of products they offer relative to unaffected sellers. Yet, the effect on consumers of Amazon's entry is positive since it reduces the cost to consumers and results in increased sales.

Zhu and Liu (2018) findings regarding the impact of Amazon's entry on third-party sellers' marketplace activities have been questioned in a recent paper co-authored by two of the authors of this essay.[43] The authors use a richer dataset than Zhu and Liu (2018). In particular, it covers (i) *all* products ("ASINs") across a wider range of categories and (ii) *all* sellers of those ASINs. Furthermore, the authors check the suitability of the control group

40 *See* J. Foerderer, T. Kude, S. Mithas, and A. Heinzl, *supra* note 34.

41 *See* C. Cennamo, Y. Gu, and F. Zhu, *Value co-creation and capture in platform markets: Evidence from a creative industry*, 2018 Working Paper, Harvard Business School.

42 *See* Zhu and Liu, *supra* note 21.

43 N. Dryden, S. Khodjamirian, L. Rovegno, and I. Small, *Another Look at the Impact of Amazon Retail's Entry on Third-Party Innovation at Amazon's Marketplace* (2020) (on file with authors).

of sellers, as well as running a range of robustness checks and considering a wider set of activity measures (e.g., related to innovation). The authors have estimated a difference-in-difference econometric model, using data for France and Germany on ASINs listed and in stock at Amazon's Marketplace that achieved at least one sale between June 2016 and June 2018, to compare innovations by comparable sellers, some affected by Amazon's entry and others not. In particular, they study how Amazon Retail's entry impacts (a) the size of the seller's catalogue or portfolio, (b) the probability that a third-party seller launches at least one ASIN new to the Marketplace in a given month, and (c) the number of ASINs new to the Marketplace in that month. They find that Amazon Retail's entry affects positively and in a statistically significant way the size of catalogues of the third-party sellers operating in the Marketplace, their probability of innovation, and the number of new-to-market ASINs they introduce. In other words, they confirm that the effect of Amazon Retail's entry is not to disincentivize third-party innovation, as the value capture theory suggests, but rather to spur innovation, as we have explained above.

Finally, Wen and Zhu (2019) look at how app developers on the Android mobile platform respond to the threat of Google's entry into their markets. They conduct a difference-in-difference analysis of time series on a randomly selected sample of 3,986 Android apps listed in the Google Play store for the US market. The threat of entry is proxied by Apple's decisions to enter app markets in the iOS platform. This assumption is justified, since 80% of the time Apple enters first and the Google follows. Innovation is measured in two ways: by the frequency of app updates released by the developer, and the rate of product expansion through the introduction by the developer of new apps to the market. The authors find that when the platform-owner entry threat increases, app developers reduce innovation for the affected apps, but shift innovation to unaffected and new apps. They speculate that these popular app developers may behave in this way to make themselves "attractive acquisition targets" for the expanding platform owner. As we said above, their desire to escape competition may be a more plausible explanation.

In summary, as predicted by the theory, the empirical evidence shows differences from industry to industry. One cannot thus presume that the effect of the marketplace's entry as a reseller on the incumbent third-party sellers' investments decisions will be negative. In fact, the available evidence, albeit limited, suggests that it may be, and it often is, positive.

C. Assessing the Relative Plausibility of the Value Capture Hypothesis

According to the value capture story, hybrid marketplaces have the ability and incentive to capture the value generated by third-party sellers operating in their platforms. Their actions will undermine the incentives to invest of those sellers and may thus reduce innovation to the ultimate detriment of consumers.

As we have seen above, there is no theoretical or empirical basis to sustain such a presumption. Although one cannot rule out that the entry of the marketplace as a reseller in its platform may undermine the incentives to invest of its intra-platform rivals, both theory and evidence suggest that this is not only unlikely but that the opposite may be true: the effect of entry may encourage more innovation by incumbents.

Furthermore, even if that effect on incentives were negative, from a consumer welfare viewpoint, one would need to assess whether the additional competition generated by the marketplace's decision to adopt a hybrid business model and, possibly, favor its own reseller offsets any potential adverse effects on competition. According to Zhu (2019), "none of the studies [investigating the effects of platform entry] has documented harmful effects on platform users."[44] Due to such entry "consumers often gain easier access to these complementary services or can obtain them at a lower cost."[45]

V. POLICY IMPLICATIONS

This article makes two simple policy points. First, the entry incentives of hybrid marketplaces are aligned with those of consumers: they enter as resellers those products and services that are either not served or underserved by third-party sellers. Their entry is thus meant to spur competition and innovation in order to make their platforms more attractive to final consumers. Second, when assessing the competitive implications of seemingly discriminatory decisions by multi-sided online businesses, attention needs to be paid to their underlying business models and the nature and strength of competition in the markets where they compete.

Hybrid marketplaces are naturally motivated by consumer satisfaction, since they risk losing their business if consumers can obtain lower prices, more variety or superior distribution elsewhere. They serve both end consumers and third-party sellers, and they monetize their platforms both by selling to consumers and charging a fee to sellers. Thus, they do not have an incentive to harm either constituency. It is in their financial incentive to make sellers grow.

Marketplaces' (including hybrid ones) main goal is to increase the appeal of their platforms which, since they are unable to provide enough product variety on their own, requires recruiting third-party sellers. That in turn requires ensuring that those sellers can obtain a high enough rate of return on the platform—sufficiently high to compensate for any loss of sales on other distribution channels. Rather than embarking on exclusionary strategies, therefore, the aim of a marketplace is to induce third-party sellers to participate on the platform. Yet, as explained in Section III above, a marketplace cannot really grow and prosper unless its third-party sellers price aggressively and/or expand the product portfolios available on the platform in order to attain a critical mass of consumers. In order to incentivize them to do so, the marketplace may have to stir the waters by introducing its own reseller and its own brands. Not all third-party sellers will benefit equally from this strategy, and some may even be worse off, but many of them, especially those without market power and more specialized portfolios, as well as consumers will be unambiguously better off.

Because not all multi-sided businesses are born equal or operate equally, public policy cannot treat them equally either. Policymakers, both regulators and antitrust authorities, must be aware of the differences discussed in this article and factor them in when designing their policies, since it is important to distinguish between complaints motivated by rent-shifting aims from those that are legitimately grounded on the protection of competition and consumer welfare.

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44 Zhu, *supra* note 30.

45 F. Zhu, *When Tech Companies Compete on their Own Platforms*, Harv. Bus. Rev. (June 2019).

PRIVACY, PRICING, AND THE VALUE OF CONSUMER DATA: THE COMPLEX NATURE OF THE CCPA'S NON-DISCRIMINATION REQUIREMENT

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I. INTRODUCTION

Much like how there was debate in the past on whether the goals of antitrust and intellectual property law were incompatible or complementary,[2] we should anticipate many debates on how the goals of privacy law may affect the way firms compete, particularly when consumers are given a choice of opting in or opting out of providing companies with their personal information and when those choices may be affected by the prices charged and the services offered by those companies. With the passage of the California Consumer Privacy Act (CCPA),[3] which went into effect on January 1, 2020, this issue is now front and center.

The CCPA is a first-of-its-kind law that requires businesses to calculate the value of consumer data. While it includes several new consumer rights, such as the right to know, right to delete, and a right to opt-out, this article will focus on the right to non-discrimination and the complexities that businesses will face as they navigate three things: the need to ensure consumers' right to privacy and non-discrimination under the CCPA; the ability to offer competitive prices and marketing incentives to meet consumer demands; and the opportunity to earn revenue from the consumer data they may be able to collect, sell, and retain. These three interrelated objectives complicate what businesses may have to do to meet one of the fundamental requirements under the CCPA, which is this: if a business offers financial incentives or a price or service difference as compensation for the collection, sale, or retention of consumer data, the business must explain how the incentives or price or service difference are reasonably related to the value of the data to the business. This is uncharted territory; and while we wait to see what enforcement actions the California Attorney General brings under this law, which began on July 1, 2020, we cannot underestimate the lasting impact the law may have on the global privacy discourse and how regulators view the respective rights and powers the consumers and businesses have in controlling the use of personal data that is collected about individuals.

II. THE RIGHT TO NON-DISCRIMINATION UNDER THE CCPA

One of the most groundbreaking aspects of the CCPA is the notion that consumers have a right to non-discrimination, under which businesses are prohibited from discriminating

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2 *See* U.S. Dep't of Justice & Federal Trade Comm'n, Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition (2007), *available at* https://www.ftc.gov/sites/default/files/documents/reports/antitrust-enforcement-and-intellectual-property-rights-promoting-innovation-and-competition-report.s.department-justice-and-federal-trade-commission/p040101promotinginnovationandcompetitionrpt0704.pdf.

3 Cal. Civ. Code §§ 1798.100-1798.199 (2018) (effective Jan. 1, 2020).

against consumers who exercise their privacy rights, such as the right to know, delete, or opt-out of the sale of their personal information. To comply with the CCPA, businesses must include a statement in their privacy policies informing consumers that they have a right "not to receive discriminatory treatment" for exercising their CCPA rights.

While the CCPA does not define what it means to "discriminate," it provides a nonexclusive list of practices that may qualify as discriminatory, which includes responding to a consumer by:

- Denying goods or services;
- Charging different prices;
- Providing a different quality of goods or services; and
- Suggesting that the consumer may receive a different price or rate.[4]

Because enforcement of the CCPA has only begun on July 1, 2020, we have yet to see how the Office of the Attorney General of the State of California (OAG), which has the sole authority to bring an enforcement action under the law, interprets this provision. According to the Frequently Asked Questions that were published by the OAG, "Businesses cannot deny goods or services, charge you a different price, or provide a different level or quality of goods or services just because you exercised your rights under the CCPA."[5] This does not mean, however, that consumers have an unlimited right to non-discrimination without consequences. The OAG provides two examples of potential consequences: (1) "if you refuse to provide your personal information to a business or ask it to delete or stop selling your personal information, and that personal information or sale is necessary for the business to provide you with goods or services, the business may not be able to complete that transaction";[6] or (2) "[i]f you ask a business to delete or stop selling your personal information, you may not be able to continue participating in the special deals they offer in exchange for personal information."[7] Not being able to complete the requested transaction or not allowing customers to participate in special deals, however, are often not the desired outcome for businesses, so how can businesses offer promotions, discounts and other deals in exchange for collecting, keeping or selling your personal information?

The CCPA provides certain exceptions to the general prohibition on discrimination. Businesses may charge different prices or offer different levels of service if the difference is "directly related to the value provided to the business by the consumer's data."[8] The CCPA also permits businesses to offer financial incentives—including payments to consumers as compensation for the collection, sale, or deletion of personal information—as long as the

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4 *See* Cal. Civ. Code § 1798.125 (a)(1)(A-D) (2018).

5 California Consumer Privacy Act (CCPA), State of California Department of Justice, https://oag.ca.gov/privacy/ccpa#sectionf (last visited Aug. 31, 2020).

6 *Id.*

7 *Id.*

8 *See* Cal. Civ. Code § 1798.125(b)(1) (2018).

programs are not "unjust, unreasonable, coercive, or usurious in nature,"[9] and if businesses notify consumers of these financial incentives, obtain opt-in consent prior to enrolling a consumer in a financial incentive program, and provide consumers with the opportunity to revoke consent for such programs at any time.[10]

This has generally been interpreted to mean that the CCPA was intended to allow businesses to offer tiered pricing or service levels so long as the financial incentive or price or service difference is reasonably related to the value of the consumer's data. However, any business that is seeking to rely on this exception must first calculate a good-faith estimate of the value of the consumer's data or show that the tiered pricing or service levels are reasonably related to the value of the consumer's data. For example, this means companies need to prepare a good faith estimate of the value of the data that is the basis for the financial incentive, price difference, product difference, or service difference that they may offer to consumers in order to incentivize them to not exercise their right to opt-out from the sale of their personal information. Companies will also need to describe the methodology they are using to calculate that value.

III. "CONSUMER," "PERSONAL INFORMATION," AND "SALE" UNDER THE CCPA

In order for a business to understand when this non-discrimination right may be triggered and to calculate the value of the personal data, it must first understand the key terms under the CCPA which are defined broadly and may be different than what most people expect. Again, there have not been any enforcement actions that provide guidance on how each of these terms should be interpreted and applied in practice.

First, the term "consumer" under the CCPA generally means "a natural person who is a California resident."[11] Thus, CCPA requirements should only apply to California residents. However, it is possible that questions may arise relating to the applicability of the law to persons who lived in California only part of the time, California residents whose information was collected before they were California residents but continue to be processed after they have moved to California, and to what extent the legal requirements would apply to data that belong to California residents but collected outside of California. Even if we have determined that CCPA does not apply to a specific data processing activity, over a dozen states are contemplating CCPA-like laws and thus the concept of non-discrimination may be extended to other jurisdictions. Businesses that do not segment their data based on geographic locations or based on the time of collection may also face challenges in determining what data is in scope under the CCPA or other consumer privacy laws that are jurisdiction-specific.

Second, "personal information" under the CCPA is defined as "information that identifies, relates to, describes, is reasonably capable of being associated with, or could reasonably be linked, directly or indirectly, with a particular consumer or household."[12]

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9 *See id.* § 1798.125(b)(4) (2018).

10 *See id.* § 1798.125(b)(2) (2018).

11 *See id.* § 1798.140(g) (2018).

12 *See id.* § 1798.140(o)(1) (2018).

This is a very broad definition of what may constitute personal information and therefore protected under the law. For instance, information such as behavioral analytics and inferences based on interaction with websites which are used to create profiles about a consumer reflecting the consumer's preferences may be in scope. In contrast, the CCPA's definition of "personal information" does not include information lawfully made available from federal, state, or local government records, which the OAG acknowledges are often sources used by data brokers.[13]

Third, the terms "sell," "selling," "sale," or "sold," are defined as "selling, renting, releasing, disclosing, disseminating, making available, transferring, or otherwise communicating orally, in writing, or by electronic or other means, a consumer's personal information by the business to another business or a third party for monetary or other valuable consideration."[14] Because of this broad definition, even transfers that do not involve a financial payment could constitute a sale under the CCPA. Most companies don't sell their data for money, but they may engage in bulk data sharing for product improvement or inventory control. In order for data transfers to not be considered as a "sale," businesses can rely on the "business purpose" exception. Specifically, a business can use the personal information for the business's or a service provider's operational purposes, or other notified purposes, provided that "the use of personal information shall be ***reasonably necessary*** and ***proportionate*** to achieve the operational purpose for which the personal information was collected or processed or for another operational purpose that is ***compatible with the context*** in which the personal information was collected."[15]

One of the most closely watched areas of CCPA compliance is to determine to what extent a service provider may collect and use personal information for marketing or advertising purposes. Although the CCPA explicitly allows businesses to use the personal information for providing marketing or advertising services under this business purpose exception,[16] it is possible the OAG may have a more limited view on whether and how this business purpose exception may apply to service providers.[17]

The final regulations, which went into effect on August 14, 2020, would allow service providers to use the personal information obtained in the course of providing services for "internal use by the service provider to build or improve the quality of its services, provided that the use does not include building or modifying household or consumer

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13 *See California Consumer Privacy Act (CCPA),* State of California Department of Justice, https://oag.ca.gov/privacy/ccpa#sectiong (last visited Aug. 31, 2020).

14 *See* Cal. Civ. Code § 1798.140(t)(1) (2018).

15 *See id.* § 1798.140(d) (2018) (emphasis added).

16 *See id.* § 1798.140(d)(5) (2018).

17 The OAG, in its Final Statement of Reasons which is part of its rulemaking package, states that "the intent of the CCPA is to prohibit a service provider from using personal information collected from one business for its own business purposes or to then provide services on behalf of a different business." *See* Final Statement of Reasons, State of California Department of Justice, at 32, *available at* https://oag.ca.gov/sites/all/files/agweb/pdfs/privacy/ccpa-fsor.pdf (last visited Aug. 31, 2020) [hereinafter Final Statement of Reasons]. The OAG adds, as an explanation of the modifications in the regulations in § 999.314(c): "[s]ubsection (c) thus accurately reflects the CCPA's requirement that service providers act on behalf of a business by processing information to further the business's specific business purpose and not for the service provider's own business purposes." *Id.*

profiles to use in providing services to another business, or correcting or augmenting data acquired from another source."[18] This is consistent with the CCPA's definition of "business purpose" which also appears to be concerned with the building of consumer profiles; it allows "[s]hort-term, transient use, provided the personal information is not disclosed to another third party and is not used to build a profile about a consumer or otherwise alter an individual consumer's experience outside the current interaction, including, but not limited to, the contextual customization of ads shown as part of the same interaction."[19] Thus, it would seem that use of personal information by businesses and services providers would not constitute a "sale," as long as personal information is either not disclosed to a third party or the third party can meet the requirements under the "business purpose" exception as a "service provider." Although it may be tempting to think of this as a bright-line rule, each of those terms, as we noted above, require a close examination and an assessment based on specific contexts.

Even if a business is not able to rely on the business purpose or service provider exceptions, there are several other exceptions provided under the CCPA that may apply to specific data processing activities. Thus, any business that is engaging a service provider to provide marketing or advertising services would benefit from an analysis of how the CCPA impacts the business's ability to engage in such services and whether any assessment of the non-discrimination rights would be appropriate for the data that is transferred to any such service providers.

IV. NOTICE OF FINANCIAL INCENTIVE UNDER THE CCPA

Given the definitions of "consumer," "personal information," and "sale" under the CCPA and the complexities surrounding those key terms that are likely to depend on situation-specific facts, it is possible that many "use case" scenarios involving the transfer of data from one party to another may constitute a sale, and thus be subject to the consumer's right to opt-out from such sale of personal information. Because in a data economy, the volume, accuracy, and integrity of a data set are important drivers for calculating the value of a certain data set, businesses may be motivated to discourage any consumer actions that would result in the data not being as complete as it can be. Once a business identifies a data processing activity that may be a sale under the CCPA, it may incentivize consumers to not exercise his or her consumer rights, including the right to opt-out or the right to delete, by offering a financial incentive.

A notice of financial incentive must be provided to consumers before they opt-in to any "financial incentive" program, benefit, or other offering that is related to collection, retention, or sale of personal information. For example, businesses that want to incentivize consumers to not opt-out, payment in the form of customer loyalty points, coupons, or discounts may be offered.

The financial incentive notice must include all information a consumer would want to know before consenting to participate in such a program, specifically:

- A succinct summary of the financial incentive or price or service difference offered;

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18 Cal. Code Regs. § 999.314(c)(3).

19 Cal. Civ. Code § 1798.140(d)(4) (2018).

- A description of the material terms of the financial incentive or price or service difference, including the categories of personal information that are implicated by the financial incentive or price or service difference and the value of the consumer's data;
- How the consumer can opt-in to the financial incentive or price or service difference;
- A statement of the consumer's right to withdraw from the financial incentive at any time and how the consumer may exercise that right; and
- An explanation of how the financial incentive or price or service difference is reasonably related to the value of the consumer's data, including:
    1. A good-faith estimate of the value of the consumer's data that forms the basis for offering the financial incentive or price or service difference; and
    2. A description of the method the business used to calculate the value of the consumer's data.[20]

The requirement that companies explain how the financial incentive or price difference is reasonably related to the value of the consumer's data is an important one. This is for two reasons. First, the explanation is part of the notice requirement, which ensures transparency so that a consumer can make an informed decision about whether to accept the incentive. Second, the explanation is needed to ensure that the company can meet the non-discrimination requirement. Specifically, a company cannot treat a customer differently based on whether he or she is opting in or out of the sale of personal information. Both requirements are met if a company can show that the financial incentive (or the product that has a price or service difference) that is offered for the collection or disclosure of consumer information is reasonably related to the value of the consumer's data.

We can view the requirement as having three components. First, the company needs to explain the material terms of the financial incentive or price or service difference. Second, the company needs to provide a good faith estimate of the value of the consumer's data, which includes a description of the methodology used to calculate the estimate. Third, the company has to provide those two things together to explain how that financial incentive or price/service difference is related to the value of the consumer's data. Thus, the requirement is more than coming up with a good faith estimate of the value of the consumer's data.

It is important to note that the phrase "and the value of the consumer's data" appears to have been added in the Final Regulations § 999.307(b)(2) by the OAG, to clarify, according to its Final Statement of Reasons, that "'the value of the consumer's data' is always a material term of such a financial incentive program."[21] The OAG adds: "[t]his change is necessary because some public comments appear to mistakenly believe that

20 Cal. Code Regs. § 999.307(b)(1)-(5).

21 *See id.* § 999.307 (b) (2); *see also* Final Statement of Reasons, *supra* note 17, at 17.

businesses may operate financial incentive programs without performing a valuation of consumer data. . . . The addition of the words 'and the value of the consumer's data' benefits consumers and businesses by providing clarify and certainty that such value is always among the 'material terms' of any financial incentive or price or service difference, as those terms are defined in these regulations."[22] Thus, any business seeking to collect or sell personal information may need to evaluate whether its data processing activities actually trigger a potential non-discrimination right and thus a requirement for notice and opt-in consent, which will need to be presented together with the calculation and disclosure of the value of consumer data.

V. THE TERMS OF THE FINANCIAL INCENTIVE AND THE PRICE OR SERVICE DIFFERENCE OFFERED FOR THE DISCLOSURE OF CONSUMER DATA

Once a business has determined that it seeks to provide a financial incentive for the collection and use of personal information, the incentive offered can be structured in a number of different ways. For example, a company could offer a premium service for $5 per month where users who elect to pay the $5 premium would be able to opt-out from the sale of their personal information, as long as the business can show that the $5 per month payment is reasonably related to the value of the consumer's data to the business. Another type of incentive is a loyalty program where a company might offer a $5 coupon or discount for purchases of $100 or more. The coupon or discount could be expressed as a percentage discount (e.g., a five percent discount off the price paid) or a dollar amount ($5 off of a $100 purchase). For consumers who join a loyalty program where the personal information is necessary in order for the consumers to enjoy the benefits (e.g., email address and transaction history to provide loyalty benefits), the consumer's request for deletion maybe denied by the business, as long as the information is necessary for the business to provide the loyalty program requested by the consumer and is reasonably anticipated within the context of the business's ongoing relationship with the consumer. Indeed, these are two of the examples that appear in the regulation itself.[23] The above examples could get complicated, however, in a number of ways. Here are two examples:

- Scenario 1: Suppose a grocery store would like to start a loyalty program whereby consumers who sign up to the program to receive coupons and discounts must also agree that the information collected from the loyalty program, such as the name and email of the consumer and shopping history, can be shared by the store with other third parties (e.g., consumer goods companies or data brokers). Setting aside the question of whether this is a sale or not, it is worth thinking through how the financial incentive requirement would apply in this context. While the grocer knows that it will be offering some type of coupon, it may not know what coupons it will offer throughout the year, how frequently it will send coupons to members of the loyalty program, and how many or what percentage of the coupons would even be redeemed. Thus, even if the grocer had some idea of the value that a data broker may be willing to pay the company for its data, it is possible that the store cannot say with much certainty the value of the

22 *See* Final Statement of Reasons, *supra* note 17, at 17.

23 *See* Cal. Code Regs. § 999.336(d).

coupons that it will be offering its loyalty program members in the future. What analysis would the grocer have to perform to show that the terms of the financial incentive are reasonably related to the value of the data collected and potentially sold? What terms should the grocer include in the notice and application form for the loyalty program? Can the grocery store avoid this problem by making the data transfer to third parties optional?

- Scenario 2: Suppose the grocer has successfully established a loyalty program whereby it offers a $5 coupon every week to its loyalty program members. Suppose also that the grocer is compliant with the regulation in that it is able to show that the $5 weekly coupons are reasonably related to the value of the data collected and sold. However, market circumstances change and the grocer now wants to offer an additional $10 coupon or discount in addition to the $5 coupon or discount it was previously offering. There could be many reasons why a company may have to offer larger discounts and lower its prices to its customers. The company may be expanding its business into new geographic areas or introducing a new product line. The company also might be facing new or more intense competition from its rivals. Offering an additional coupon or discount in response to competitive conditions would ordinarily be met with appreciation by consumers, but suppose that the revenue that the grocer receives for selling its data has not changed. Would the grocer's $10 weekly coupon still be viewed as being reasonably related to the value of the data? What analyses would the grocer have to do to show that it remains compliant with the regulation? Should the question of harm and consumer welfare be considered when evaluating the reasonableness of the financial incentive?

These examples illustrate that complying with the regulation will be no easy task for businesses. Even if it is relatively easy for a company to describe the terms of the financial incentive initially, changes in the marketplace or consumer behavior may make it difficult for the company to describe specifically what those terms are, particularly given certain unknowns. A company may not know in advance how many coupons or discounts it will offer, how many consumers will redeem those coupons or take advantage of those discounts, what types of discounts or coupons are most attractive to consumers, and whether and by how much the coupons and discounts were successful in generating new sales and ultimately, where and how much new revenue was generated by the sale of that data. Moreover, depending on the volume, accuracy and integrity of the data set at large, the value of the individual consumer's data to the business also may change as a result of market dynamics. Yet the regulation appears to require the company to describe with some reasonable certainty how the financial incentives and any price and service difference offered might be related to the value of the consumer's personal information that the company may collect, sell, or retain. To estimate the value of any proposed financial incentives and price or service differences, companies may need to draw on market studies, their prior experience with coupons, and other market data that may shed light on the effectiveness of discounts in promoting sales and the use of coupons by consumers of similarly-situated companies, as well as any revenues and expenses related to the collection and sale of personal information.

VI. ESTIMATING THE VALUE OF CONSUMER DATA

The regulations offer a number of considerations that a company may use to calculate the value of consumer data to the company. These factors include:

- The marginal, average, or aggregate value to the business of the data collected, sold, or deleted;
- The revenue generated by the business from the sale, collection, or retention of consumers' personal information;
- The expenses that the business may incur in connection with the sale, collection, or retention of the data or with the offer or provision of any financial incentive or price or service difference; and
- The profit generated by the business from the sale, collection, or retention of consumers' personal information.[24]

While these factors may appear straightforward at first blush, there are a number of considerations that may come into play as previewed above. First, the value of an individual consumer's personal information may depend on what other data are being collected. For example, if the data are being sold, the value of an individual's personal information may not be all that important by itself, but important when aggregated with other individuals' data. It is also important to think about the different types of data that could be collected. The collection of email addresses is likely to be more valuable if there is associated data on consumers' home or work zip code location, income category, or age, but less valuable without such data. Thus, it may not be enough for businesses to consider the value of the specific piece of personal information that will be collected by this one particular data processing activity. Businesses also may need to think about how this specific piece of data will be combined with other databases, either internally to be used by the same business or transferred to a third party to be used for a different purpose.

This brings us to our second point. The value of having the data will depend on how the data are used. For example, if the data collected are to be sold to an advertiser, the value may well depend on the value of the data to that advertiser, and the company selling that data may not know this value at the time of data collection. The value of the data to be sold could easily vary from one advertiser to another, based on which other sources of data are available to the advertiser at the time of the sale and which other advertisers are in the market for the company's consumer data, among other factors. How much an advertiser is willing to pay for the company's data will affect the price that the company will be able to charge for access to its data, and as the questions above indicate, determining the revenues that the company may earn from selling or licensing its personal data may involve an inquiry into the nature of the personal data being sold and the market in which its buyers of the company's data may operate.

Third, the regulation asks for the value of the data to the business from selling, collecting, or deleting the data. Consider, for example, the value associated with collecting personal information on one more consumer versus the value associated with deleting

24 *See id.* § 999.337(a).

that consumer's personal information. These values may be the same if the individual's data are sold to an advertiser with many other consumers' data. But if the company is in the business of selling a product or service to the consumer, it is possible that the added value of obtaining a new consumer's information is higher than the loss in value associated with deleting that consumer's information. In the case of gaining consumer information, the company could well be gaining a new customer. In the case of deleting consumer information, the company may have lost that person's data, but there may be no loss in sales if the expectation is that the consumer is likely to continue purchasing products or services from the company.

Fourth, the regulation suggests that the company may consider the costs incurred by the company to collect, sell, or retain the data, or to offer the financial incentive or price or service difference when estimating the value of consumer data. For many companies, these costs are likely to be comprised of IT, marketing, and other fixed costs that do not significantly vary depending on how many consumers are served by the company and how many consumers opt-in or opt-out of providing consumer information. In these circumstances, costs may not be useful in determining the value of the consumer's information to a company, particularly when thinking about the value of any particular individual's data. However, it may be useful to consider the incremental cost associated with collecting and selling a larger increment of personal data (e.g. data on consumers in a new city or state or new data that had not been collected before), the incremental cost associated with generating an appropriate incremental increase in sales, and/or the incremental cost associated with producing the content that may be available in a premium content offering.

The profit generated by holding or selling consumer data is another factor that may be useful in calculating the value of consumer information. In addition to the complexities associated with estimating the incremental sales revenue associated with collecting or selling the data or the revenue associated with offering the incentive, consideration should be given to the complexities that can arise when assessing the relationship between terms of a financial incentive and profitability.

The relationship may be straightforward in certain cases. Suppose a consumer pays $5 per month for a premium product in order to opt-out of the sale of personal information. This would generate an incremental profit of $5 per month to the company if there is little or no marginal cost associated with serving that one additional consumer. The $5 per month fee for the premium product might make sense if the company is able to sell access to its consumer data for $5 per consumer per month, so the justification for the $5 fee would be the opportunity cost of not being able to sell that consumer's data. However, the scenarios below highlight some of the issues are likely to complicate the justification for the $5 fee:

- Scenario 1: Suppose the company faces competition from a new rival that is also selling its consumer data. As a result, the company discovers that it cannot continue selling its data at a price of $5 per consumer per month. Instead, the company has to lower the price to $3 per consumer per month. But the company continues to charge consumers $5 per month for its premium product because the value of the premium product and the cost of producing content for the premium product has not changed. In other words, will businesses be expected to have dynamic pricing where the cost of a premium service to consumers change based

on the ups and downs of the cost to purchase that piece of personal information in the data marketplace? Is it sufficient if that change in price is reflected after periodic review (i.e., annually) or will consumers be able to make a claim that businesses need to offer real-time pricing?

- Scenario 2: Suppose a company that offers a free product decides to introduce a premium product for $5 per month. However, after it introduces its premium product, the company discovers that many of the consumers who were using the free product begin purchasing the premium product. As a result, the company has less data to sell because more of its consumers are buying the premium product and opting out of disclosing their personal information. Because fewer consumers are opting into disclosing their data, advertisers are only willing to pay $3 per consumer per month for the data. With the reduction in the price that the company can charge for its data, is the $5 fee for the premium product still reasonably related to the value of the data collected and sold? What analyses would the company need to do to assess this question?

Complexities also may arise in the situation where a business may have to change the terms of the financial incentives that it offers to its consumers. For example, consider a company that is offering a five percent discount to consumers who are members of its loyalty program (for which they have agreed to disclose their personal information).

- Scenario 3: Suppose the company faces additional competition from the entry of a new rival. In response to that entry, the company decides its best approach is to increase the percentage discount that it offers to its loyalty program members from five percent to ten percent. Suppose, however, that the revenues that the company can generate by selling its consumer data has not changed—the number of loyalty members did not change and the amount and type of data collected by the company did not change. The only change was the increase in the financial incentive that the company is offering its members. After the increase in the percentage discount offered to consumers, is the financial incentive still reasonably related to the value of the data collected and sold?

- Scenario 4: Suppose a retail store discovers that its loyalty program customer retention rates and purchase volume per person over a three year period are not much different from the customer retention rates and purchase volume per person that the retailer experienced before introducing its loyalty program. As a result, the retailer decides that it may be able to improve customer retention rates by offering additional financial incentives. However, because the data collected and sold by the retailer has not changed, the revenues generated by the retailer for its data has not changed. With the introduction of the new financial incentive, is the amount of the financial incentive still reasonably related to the value of the data?

These scenarios illustrate how competition and market dynamics may make the relationship between the financial incentive (or price and service difference) offered and the value of the data more complex. Scenarios 1 and 2 highlight situations where a company has not lowered the price that it is charging its premium service customers, even though the personal data of these customers has become less valuable to parties interested in purchasing

or getting access to the company's data. Scenarios 3 and 4 highlight situations where the company may appear to be offering greater discounts to encourage consumers to disclose their personal data when, in fact, the change was motivated by competitive reasons. In all four scenarios, it was a change in market conditions that led to either a change in the value of the data or a change in the terms of the financial incentive (or price or service difference) offered. Indeed, because competitive conditions in the market for the consumer data sold by the company may not be linked to competitive conditions in the company's product or service market, complying with the regulation may require the company to explain the nature of competition and pricing in multiple markets—the market(s) for which the data may be used and the market(s) in which the company competes.

On the surface, explaining how a financial incentive or price or service difference is related to the value of the consumer's data may seem complex, but it is similar to economic and business analyses that companies undertake in the ordinary course of business. Companies set and adjust the prices of their various products all the time. A company that sells a low-end, mid-range, and high-end product will have to choose the price of each product based on costs, supply, demand, and other competitive market conditions. Companies also study the relationship between their marketing incentives and outcomes all the time. When complexities arise, evidence from these economic and market studies may be more important as part of the compliance process.

VII. CONCLUSION

The CCPA is new and compliance with the regulation raises complex legal and economic issues. This is particularly true with respect to the non-discrimination requirement in the law, which allows companies to offer tiered pricing or service levels along with the opportunity to opt-in or opt-out of providing consumer information as long as they can explain how the financial incentive or price or service difference is reasonably related to the value of the consumer's data.

The regulation recognizes the basic issues that companies have to address, which is that companies have to (a) explain the terms of the financial incentive or price or service difference; (b) calculate the value of the consumer's data; and (c) explain how the two are reasonably related. On the surface, this may seem straightforward, but in practice, the terms of the financial incentive may not be easy to explain, particularly if there are unknowns that relate to how often the incentives will be given, how much the incentive will be, how frequently a discount or coupon will be redeemed, or what data the business is collecting and what it's worth.

There are challenging economic issues that companies must address when they explain how the financial terms that are being offered relate to the value of the consumer data collected. First among these issues is the need to consider the effect of market conditions and competition on the value of the data to the company, the financial terms offered to consumers, and the revenues that a company may earn from the data they collect. Value and price are complex economic concepts and they are central to the compliance process. For example, there is the price of the data sold and the price of a premium product that a company may charge consumers along with the option to opt in or opt out of disclosing personal information. The regulation would seem to require that these two elements be reasonably related, yet the underlying factors that determine the price at which a company

may be able to sell its data may be quite different from the factors that determine the price that the company may have to charge its consumers for opting into a loyalty program or some premium product. These are challenging issues because in today's competitive, dynamic, and fast-moving markets, market changes could easily affect both the value of the data to the company and the financial terms that a company may need to offer consumers who want to participate in a loyalty program or purchase a premium product. As the CCPA has become law, these are issues that companies must be prepared to navigate.

More broadly, these pricing-related data issues will only broaden the intersection of privacy law and antitrust law. For example, questions related to nascent competition, the acquisition of data in adjacent markets, data grabs, and the role of data in potentially facilitating collusion are all examples of ways the lines between antitrust and privacy objectives and thus enforcement are increasingly becoming blurred.[25]

California Attorney General Xavier Becerra stated in his press release while announcing the approval of the Final Regulations that "privacy is an inalienable right" and "Californians should control who possesses their personal data and how it's used."[26] By requiring businesses to provide notice and obtain opt-in consent if they wish to offer a different price, rate, level, or quality of goods or services to the consumer based on the collection and use of personal information, the CCPA in essence becomes a first-of-its-kind law that requires businesses to calculate and disclose the value of the consumer's data. This step of calculating the value of the consumer's data is an important one, but it will be a complex undertaking due to the interrelationships that touch on consumers' right to privacy and non-discrimination under the CCPA, the need for businesses to compete and to be able to price and market their products in response to market conditions, and the revenues that a company may be able to earn by collecting, selling, and retaining consumer data. The first step to interrogating the value of consumer's data may need to begin with the businesses understanding what data they collect, retain or sell.

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25 *See generally* Alyse F. Stach, Ann M. O'Brien and Jeewon Kim Serrato, *The thin line between privacy and antitrust*, The Privacy Advisor, IAPP (June 23, 2020), https://iapp.org/news/a/the-thin-line-between-privacy-and-antitrust/.

26 Press Release, State of California Department of Justice, Attorney General Becerra Announces Approval of Final Regulations under the California Consumer Privacy Act (Aug. 14, 2020), https://oag.ca.gov/news/press-releases/attorney-general-becerra-announces-approval-final-regulations-under-california.

THE FTAIA'S "DOMESTIC EFFECTS" EXCEPTION: WHY THE NINTH CIRCUIT GOT IT RIGHT

By Stephen McIntyre[1]

Four decades ago, Congress took on a deceptively simple task: deciding when U.S. antitrust laws apply to conduct that occurs in foreign nations. The question was not a new one; the Supreme Court had grappled with it at least as early as 1909.[2] But it was a question that had evaded clear and consistent answers, despite having cropped up repeatedly in the 90 years since the Sherman Act's passage. And so Congress stepped in to settle the matter once and for all.

The resulting legislation was called the Foreign Trade Antitrust Improvements Act, or the "FTAIA." The FTAIA said that conduct involving foreign trade or commerce is not subject to the Sherman Act unless one of two conditions were met. First, if the conduct involves imports to the United States, it remains within the Sherman Act's reach. Alternatively, if the conduct has a "direct, substantial, and reasonably foreseeable effect" on domestic commerce, and that effect "gives rise to a claim," the Sherman Act applies. Simple enough, right?

Not so much. As courts and litigants struggled to decipher the FTAIA, disagreements arose. The so-called "domestic effects" exception—the provision saying that foreign conduct is actionable if it has a direct, substantial, and reasonably foreseeable effect on U.S. commerce—has been a subject of psarticularly heated litigation and debate. In fact, the courts cannot even agree on what makes an effect "direct."

Hence this article. The Ninth Circuit, the first Court of Appeals to step into the thicket, holds that an effect is "direct" if it follows as an "immediate consequence" of the foreign conduct. The Second and Seventh Circuits disagree; they both hold that there need only be a "reasonably proximate causal nexus" between the conduct and the effect. Who is right?

This article argues that the Ninth Circuit has adopted the correct approach. The "immediate consequence" rule is not only truer to the FTAIA's statutory text, but also more consistent with how a similar provision in the Foreign Sovereign Immunity Act—another law dealing with the extraterritorial application of U.S. law—is construed. The "reasonably proximate causal nexus" rule, in contrast, derives from irrelevant doctrinal principles and creates a risk of doctrinal confusion.

This circuit split has persisted for nearly a decade. It is time to resolve it—and time to embrace the Ninth Circuit's interpretation as controlling.

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2 *See Am. Banana Co. v. United Fruit Co.*, 213 U.S. 347, 355–59 (1909).

I. THE FTAIA: AN "INELEGANT" STATUTE

Congress passed the Foreign Trade Antitrust Improvements Act in 1982. According to the legislative history, one of the Act's chief purposes was to resolve disagreement among the lower courts concerning "the proper test for determining whether United States antitrust jurisdiction over international transactions exists," and to enact a "single, objective test—the 'direct, substantial, and reasonably foreseeable effect' test."[3]

Despite Congress's characterization of this standard as a "straightforward clarification" of American antitrust law,[4] the resulting statute has accurately but diplomatically been described as "inelegant."[5] As the Supreme Court explained in 2004 in *F. Hoffmann-La Roche Ltd. v. Empagran S.A.*,[6] still the only case in which the High Court has construed the FTAIA, the statute sets forth a "general rule placing *all* (nonimport) activity involving foreign commerce outside the Sherman Act's reach."[7] The FTAIA then "brings such conduct back within the Sherman Act's reach"[8] where (1) the conduct has a "direct, substantial, and reasonably foreseeable effect" on U.S. commerce, and (2) *that effect* "gives rise to" the plaintiff's antitrust claim.[9]

The FTAIA was largely overlooked for the first 20 years following its enactment. In its first decade of existence, just one federal appellate court construed the FTAIA.[10] Remarkably, in two major decisions involving the Sherman Act's extraterritorial effect, the Supreme Court and the First Circuit conspicuously *avoided* offering any interpretation of the FTAIA.[11] It was not until the early twenty-first century that the FTAIA began to pick up currency in antitrust litigation.[12]

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3 H.R. Rep. No. 97-686, at 2 (1982), *reprinted at* 1982 U.S.C.C.A.N. 2487.

4 *Id.* at 2, 7.

5 *See, e.g.*, *Den Norske Stats Oljeselskap As v. HeereMac Vof*, 241 F.3d 420, 438 (5th Cir. 2001); *Coors Brewing Co. v. Miller Brewing Co.*, 889 F. Supp. 1394, 1397 (D. Colo. 1995); *see also United States v. Hui Hsiung*, 778 F.3d 738, 751 (9th Cir. 2015) (describing FTAIA as "a web of words").

6 *F. Hoffmann-La Roche Ltd. v. Empagran S.A.* ("*Empagran I*"), 542 U.S. 155 (2004).

7 *Empagran I*, 542 U.S. at 162 (emphasis in original).

8 *Id.*

9 15 U.S.C. § 6a; *Sun Microsystems Inc. v. Hynix Semiconductor Inc.*, 608 F. Supp. 2d 1166, 1174 (N.D. Cal. 2009); *see Empagran I*, 542 U.S. at 173–74 (FTAIA's reference to "a claim" means the "plaintiff's claim" or "the claim at issue").

10 *McGlinchy v. Shell Chem. Co.*, 845 F.2d 802, 813–15 (9th Cir. 1988); *see also United States v. LSL Biotechnologies*, 379 F.3d 672, 678 (9th Cir. 2004) ("Federal courts did not shower the FTAIA with attention for the first decade after its enactment."). The Second Circuit acknowledged the FTAIA in *O.N.E. Shipping Ltd. v. Flota Mercante Grancolombiana, S.A.*, 830 F.2d 449 (2d Cir. 1987), but did not rely on it in affirming dismissal of the plaintiff's claims. *See id.* at 451–54.

11 *See Hartford Fire Ins. Co. v. California*, 509 U.S. 764, 796 n.23 (1993); *United States v. Nippon Paper Indus. Co.*, 109 F.3d 1, 4 (1st Cir. 1997).

12 *See, e.g.*, *Turicentro, S.A. v. Am. Airlines Inc.*, 303 F.3d 293, 298–308 (3d Cir. 2002); *Kruman v. Christie's Int'l PLC*, 284 F.3d 384, 393–403 (2d Cir. 2002); *Den Norske*, 241 F.3d at 421–31.

II. DEBATING THE FTAIA

Once the courts took notice of the FTAIA, a number of debates soon arose. This article will address two, both relating to the statute's "domestic effects" exception.

A. The "Gives Rise To" Prong

One dispute centered on the FTAIA's "gives rise to" clause. Some courts initially held that the FTAIA's requirement that the domestic effect "give rise to *a* claim"[13] could be satisfied so long as the requisite effect gave rise to a claim "by someone, even if not the . . . plaintiff who is before the court."[14] In *Empagran*, the Supreme Court rejected this view, holding that the domestic effect must specifically give rise to *the plaintiff's* antitrust claim.[15] However, the Court declined to elaborate on what that meant.[16] The *Empagran* plaintiffs—foreign purchasers of vitamins—had asserted that "because vitamins are fungible and readily transportable, without an adverse domestic effect (*i.e.*, higher prices in the United States), the sellers could not have maintained their international price-fixing arrangement and respondents would not have suffered their foreign injury."[17] Put another way, the *Empagran* plaintiffs argued that the domestic effect (higher U.S. prices) was a "but for" cause of the higher prices they paid in foreign markets.[18]

On remand, in a decision that has come to be known as *Empagran II*, the D.C. Circuit rejected the plaintiffs' proposed "but for" standard.[19] The court reasoned that "[t]he statutory language—'gives rise to'—indicates a direct causal relationship, that is, proximate causation, and is not satisfied by [a] mere but-for 'nexus.'"[20] Judged against this stricter standard, the plaintiffs' claims were found lacking. The D.C. Circuit held that although the maintenance of "super-competitive prices in the United States may have facilitated the appellees' scheme to charge comparable prices abroad," the charging of supracompetitive prices in the United States did not *proximately cause* the plaintiffs to pay higher prices in other countries.[21] Because of this, the court held, the domestic effect did not "give rise to" a valid antitrust claim.[22]

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13 15 U.S.C. § 6a(2) (emphasis added).

14 *Empagran S.A. v. F. Hoffman-LaRoche, Ltd.*, 315 F.3d 338, 350 (D.C. Cir. 2003), *vacated*, 542 U.S. 155 (2004); *see also Kruman*, 284 F.3d at 400 (rejecting view that "a claim" refers to "the plaintiff's claim").

15 *Empagran I*, 542 U.S. at 173–74.

16 *See id.* at 175.

17 *Id.*

18 *Id.*

19 *Empagran S.A. v. F. Hoffman-LaRoche, Ltd.* ("*Empagran II*"), 417 F.3d 1267, 1270–71 (D.C. Cir. 2005).

20 *Id.* at 1271.

21 *Id.*

22 *Id.*

Since then, three federal appellate courts have adopted *Empagran II*'s proximate causation standard for the FTAIA's "gives rise to" prong,[23] and none have disagreed with it.

B. The "Direct Effects" Prong

Another debate—which supplies the basis for this article—centered on the meaning of "direct," as in "direct, substantial, and reasonably foreseeable effect." Just three U.S. Courts of Appeals have weighed in on this question, and two interpretations have emerged.

The Ninth Circuit: The Ninth Circuit was the first federal appellate court to venture a definition of "direct" under the FTAIA. The issue arose in *United States v. LSL Biotechnologies*, a civil enforcement action in which the U.S. Department of Justice (the "DOJ") alleged that LSL Biotechnologies and Hazera, an Israel-based competitor and erstwhile business partner of LSL, had entered into a naked agreement not to compete.[24] The challenged restraint, which was embedded in a settlement agreement, provided that Hazera would not compete with LSL in the development, production, or marketing of seeds for tomatoes that had long shelf lives, which were needed to maintain a supply of tomatoes to grocery stores in the United States during the winter months.[25] According to the government, Hazera "would likely" have been a "significant competitor of [LSL] in North America" if not for the non-compete agreement.[26]

LSL moved to dismiss the complaint, asserting a lack of subject matter jurisdiction pursuant to the FTAIA.[27] The district court granted the motion with prejudice,[28] and the Ninth Circuit affirmed. In so doing, the Ninth Circuit first rejected the DOJ's contention that the FTAIA merely codified Judge Learned Hand's famous *Alcoa* "effects" test, which

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23 *See, e.g.*, *Lotes Co. v. Hon Hai Precision Indus. Co.*, 753 F.3d 395, 414 (2d Cir. 2014); *In re Dynamic Random Access Memory (DRAM) Antitrust Litig.*, 546 F.3d 981, 987–90 (9th Cir. 2008); *In re Monosodium Glutamate Antitrust Litig.*, 477 F.3d 535, 538–39 (8th Cir. 2007).

24 *LSL Biotechnologies*, 379 F.3d at 674–76.

25 *Id.*

26 *Id.* at 675 (alteration in original).

27 *Id.* at 676–77. In recent years, courts have come to view the FTAIA not as limiting a federal court's subject matter jurisdiction, but as setting forth substantive elements of a Sherman Act Claim. *See, e.g.*, *Hsiung*, 778 F.3d at 751–53; *Lotes*, 753 F.3d at 403–08; *Animal Sci. Prods., Inc. v. China Minmetals Corp.*, 654 F.3d 462, 466–69 (3d Cir. 2011). The impetus for this about-face was a series of Supreme Court decisions discouraging "drive-by jurisdictional rulings." *Arbaugh v. Y&H Corp.*, 546 U.S. 500, 511 (2006). In *Arbaugh*, the Court announced a "readily administrable bright line" rule: unless Congress "clearly states that a threshold limitation on a statute's scope shall count as jurisdictional, . . . courts should treat the restriction as nonjurisdictional in character." *Id.* at 515–16. Applying that rule, the Court ruled in *Morrison v. National Australia Bank Ltd.*, 561 U.S. 247 (2010), that the Securities Exchange Act's limit on extraterritoriality is a "merits question," not a jurisdictional one. *Id.* at 253–54. The distinction between substantive and jurisdiction requirements may affect the parties' burdens in cases involving the FTAIA. On a motion to dismiss for failure to state a claim, for example, courts must accept as true well-pleaded factual allegations plausibly demonstrating that the alleged anticompetitive conduct satisfies the FTAIA. *See Bell Atlantic Corp. v. Twombly*, 550 U.S. 544, 555–56 (2007). If the FTAIA's criteria were jurisdictional, however, the proponent of jurisdiction could be required to affirmatively demonstrate its existence under Federal Rule of Civil Procedure 12(b)(1). *See, e,g.*, *GBForefront, L.P. v. Forefront Mgmt. Grp., LLC*, 888 F.3d 29, 35 (3d Cir. 2018); *Super. MRI Servs., Inc. v. Alliance Healthcare Servs., Inc.*, 778 F.3d 502, 504 (5th Cir. 2015); *Wolfe v. Strankman*, 392 F.3d 358, 362 (9th Cir. 2004).

28 *LSL Biotechnologies*, 379 F.3d at 676.

provided that extraterritorial agreements in restraint of trade fall beyond the Sherman Act's reach unless their "performance is shown actually to have had some effect upon" U.S. imports or exports.[29] The Ninth Circuit noted that, "[u]nlike the FTAIA, the *Alcoa* test does not require the effect to be 'direct.'"[30] Since the court's task was "to give meaning to the words used by Congress," and to "avoid constructions that render words meaningless," the court was obliged to apply the test prescribed by the FTAIA: namely, whether the defendants' conduct caused a "direct, substantial, and reasonably foreseeable effect" on U.S. commerce.[31]

But what does that actually mean? Drawing on the Supreme Court's antitrust standing jurisprudence in private damages actions, the DOJ argued that the FTAIA's "direct effect" language invokes "the common law concept of 'proximate cause.'"[32] According to the DOJ, all it had to do was "allege[] a proximate cause relationship" between the LSL/Hazera non-compete agreement and the effect on U.S. commerce[33]—the lack of competition in the United States for long shelf-life tomatoes.

The Ninth Circuit disagreed. The court first pointed to the 1982 edition of *Webster's Third New International Dictionary*, which defined "direct" as "proceeding from one point to another in time or space without deviation or interruption."[34] Perhaps recognizing the unhelpfulness of that definition in resolving the dispute at bar,[35] the court next considered the Supreme Court's construction of a "nearly identical term in the Foreign Sovereign Immunities Act ('FSIA')."[36] Similar to the FTAIA, the FSIA provides that immunity does not extend to a foreign sovereign's extraterritorial commercial conduct unless that conduct "causes a *direct effect* in the United States."[37] In *Republic of Argentina v. Weltover, Inc.*,[38] the Ninth Circuit noted, "the Supreme Court unanimously declared that an effect is 'direct' if it follows as an *immediate consequence* of the defendant's activity."[39]

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29 *United States v Aluminum Co. of Am.* ("*Alcoa*"), 148 F.2d 416, 443–44 (2d Cir. 1945); *see LSL Biotechnologies*, 379 F.3d at 679 ("The government contends that the FTAIA merely codified the existing common law regarding when the Sherman Act applies to foreign conduct and that we should continue to employ the *Alcoa* effects test. We reject this contention.").

30 *LSL Biotechnologies*, 379 F.3d at 679.

31 *Id.* at 679–80 (quoting 15 U.S.C. § 6a(1)).

32 Brief for Appellant United States of America at 36–37, *United States v. LSL Biotechnologies*, No. 02-16472 (9th Cir. Sept. 23, 2002) (relying on *Blue Shield of Va. v. McCready*, 457 U.S. 465 (1982)), *available at* https://www.justice.gov/atr/case-document/file/501551/download.

33 *Id.* at 15.

34 *LSL Biotechnologies*, 379 F.3d at 680 (quoting Webster's Third New International Dictionary 640 (1982)).

35 Indeed, writing in dissent, Judge Aldisert cited a different definition of "direct" that he perceived to be more relevant: "c. LOGIC. Proceeding immediately from the consequent to antecedent, from cause to effect." *Id.* at 692 (Aldisert, J., dissenting) (citing The Oxford Dictionary of the English Language (1800–1829)).

36 *Id.* at 680.

37 *Id.* (quoting 28 U.S.C. §1605(a)(2)) (emphasis added).

38 *Repub. of Arg. v. Weltover, Inc.*, 504 U.S. 607 (1992).

39 *LSL Biotechnologies*, 379 F.3d at 680 (citing *Weltover*, 504 U.S. at 618) (emphasis added).

This, it seems, was good enough for the Ninth Circuit. Without further analysis, the panel majority matter-of-factly adopted the *Weltover* definition as governing the FTAIA: an effect is "direct" if it "follows as an immediate consequence" of the defendant's foreign conduct. Applying this standard, the Ninth Circuit held that the LSL/Hazera agreement could not have had a "direct" effect on U.S. commerce.[40] The DOJ had alleged that the agreement made it "less likely" that Hazera would develop "heartier tomato seeds," thereby depriving U.S. consumers of the ability to buy "higher quality, better tasting winter tomatoes" and U.S. farmers of the opportunity to grow them, and further that the agreement "may" have allowed LSL to "charge more for [its] seeds" than it otherwise could have.[41] According to the Ninth Circuit, none of these effects was "direct" because each depended on "innovations" that might or might not have ever occurred.[42] The court reasoned that it was "speculative at best and doubtful at worst" to assume that Hazera would have figured out how to bring long shelf-life seeds to the North American market.[43] "An effect cannot be 'direct,'" the court held, "where it depends on such uncertain intervening developments."[44]

The *LSL Biotechnologies* decision was not unanimous. Writing in dissent, Judge Aldisert endorsed the DOJ's interpretation of "direct" as a "synonym for proximate cause."[45] Like the DOJ, Judge Aldisert expressly invoked the doctrine of antitrust standing.[46] In his view, the DOJ's claims should have been allowed to proceed past the pleading stage.[47]

The Seventh Circuit: So far, other circuits have not followed the Ninth Circuit's lead in *LSL Biotechnologies*. Most notably, in *Minn-Chem, Inc. v. Agrium Inc.*,[48] the Seventh Circuit, sitting en banc, disagreed with the Ninth Circuit's interpretation of "direct."[49]

The Seventh Circuit pointed out that in *Weltover*, the case on which the Ninth Circuit relied, the Supreme Court "reached its definition of 'direct' for FSIA purposes only after refusing to import from the legislative history of that statute the notion that an effect is 'direct' only if it is both 'substantial' and 'foreseeable.'"[50] Observing that Congress used the words "substantial" and "reasonably foreseeable" in the FTAIA, but not in the FSIA, the Seventh Circuit reasoned that "[s]uperimposing the idea of 'immediate consequence' on top of the full phrase [in the FTAIA] results in a stricter test than the complete text

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40 *Id.* at 680–83.

41 *Id.* at 680–81.

42 *Id.* at 681.

43 *Id.*

44 *Id.*

45 *Id.* at 693 (Aldisert, J., dissenting).

46 *See id.* (Aldisert, J., dissenting) ("A definition of "direct" that focuses on consequential relationships draws support from another area of antitrust law—private plaintiffs' antitrust standing.") (citing *McCready*, 457 U.S. at 478 nn.12–13).

47 *Id.* at 696–701 (Aldisert, J., dissenting).

48 *Minn-Chem, Inc. v. Agrium Inc.*, 683 F.3d 845 (7th Cir. 2012) (en banc).

49 *See id.* at 857 ("In our view, the Ninth Circuit jumped too quickly to the assumption that the FSIA and the FTAIA use the word 'direct' in the same way.").

50 *Id.* (quoting *Weltover*, 504 U.S. at 617).

of the statute can bear."[51] As the Seventh Circuit explained, "[t]o demand a foreseeable, substantial, and 'immediate' consequence on import or domestic commerce comes close to ignoring the fact that straightforward import commerce has already been excluded from the FTAIA's coverage."[52]

Expressly relying upon the DOJ's approach and Judge Aldisert's dissent in *LSL Biotechnologies*, the Seventh Circuit defined "direct" to require only "'a reasonably proximate causal nexus'" between the defendant's conduct and the domestic effect.[53]

The Second Circuit: In *Lotes Co. v. Hon Hai Precision Industry Co.*, the Second Circuit sided with the Seventh Circuit in adopting the "reasonably proximate causal nexus" standard.[54]

Like the Seventh Circuit, the Second Circuit felt it was inappropriate to draw any connection between the FSIA's use of "direct" and that of the FTAIA. The Second Circuit distinguished the text and purpose of the two statutes: "With respect to purpose, the FSIA codifies foreign nations' sovereign immunity from suit, and 'provides the sole basis for obtaining jurisdiction over a foreign state in this country'. . . . The boundaries of the statutory exceptions to sovereign immunity, including the 'direct effect' exception construed in *Weltover*, must be carefully patrolled to preserve the FSIA's 'general rule of immunity.'"[55] In contrast, the court described the FTAIA as "a substantive antitrust statute designed 'to clarify . . . the Sherman Act's scope as applied to foreign commerce.'"[56] The Second Circuit also focused on the fact that the FSIA does not refer to substantiality or foreseeability.[57] The court expressed concern that "[r]eading 'direct' as 'immediate' would rob the separate 'reasonabl[e] foreseeab[ility]' requirement of any meaningful function, since we are hard pressed to imagine any domestic effect that would be both 'immediate' and 'substantial' but not 'reasonably foreseeable.'"[58]

The Second Circuit went further than the Seventh Circuit in grounding its reasoning in antitrust standing jurisprudence. "Interpreting 'direct' to require only a reasonably proximate causal nexus," the court explained, "address[es] antitrust law's classic aversion to remote injuries."[59] The court pointed to the Supreme Court's decisions in *Associated*

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51 *Id.* ("No one needs to read the words 'substantial' and 'foreseeable' into the FTAIA. Congress put them there, and in doing so, it signaled that the word 'direct' used along with them had to be interpreted as part of an integrated phrase.").

52 *Id.*

53 *Id.* at 856–57 (quoting Makan Delrahim, *Drawing the Boundaries of the Sherman Act: Recent Developments in the Application of the Antitrust Laws to Foreign Conduct*, 61 N.Y.U. Ann. Surv. Am. L. 415, 430 (2005)).

54 *Lotes*, 753 F.3d 395, 410–13 (2d Cir. 2014).

55 *Id.* at 410–11 (quoting *Argentine Republic v. Amerada Hess Shipping Corp.*, 488 U.S. 428, 443 (1989), and *In re Terrorist Attacks on Sept. 11, 2001*, 741 F.3d 109, 114 (2d Cir. 2013)).

56 *Id.* at 411 (quoting *Empagran I*, 542 U.S. at 169; ellipsis in original).

57 *Id.* at 410–11.

58 *Id.* at 411 (alterations in original); *see also id.* ("Indeed, *LSL's* reading of the FTAIA would violate the 'cardinal principle of statutory construction' that statutes must be construed, if reasonably possible, so that 'no clause, sentence, or word shall be superfluous, void, or insignificant.'") (quoting *TRW Inc. v. Andrews*, 534 U.S. 19, 31 (2001)).

59 *Id.*

General Contractors of California, Inc. v. California State Council of Carpenters (or "*AGC*") and *Blue Shield of Virginia v. McCready* as holding that antitrust standing is analyzed "using familiar principles of proximate causation."[60]

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In the wake of *Minn-Chem* and *Lotes*, even the Ninth Circuit has expressed doubt about its interpretation of "direct" in *LSL Biotechnologies*. In *United States v. Hsiung*, the Ninth Circuit's most recent precedential decision addressing the FTAIA, the court took note of the Second and Seventh Circuits' divergent view, but resignedly stated that it was "not within the province of this panel" to "reconsider the stricter standard we impose."[61]

III. WHY THE NINTH CIRCUIT'S INTERPRETATION IS CORRECT

The Ninth Circuit should not be having second thoughts about the "immediate consequence" standard enunciated in *LSL Biotechnologies*. The FTAIA may be a "web of words,"[62] but that does not mean all interpretations of the statute are created equal. As compared to the "reasonably proximate causal nexus" rule adopted in *Minn-Chem* and *Lotes*, the Ninth Circuit's "immediate consequence" standard is more firmly grounded in the statutory text. Not only that, the foreign affairs and comity concerns that motivated both the FTAIA and the FSIA support construing the statutes in harmony. Finally, it makes little sense to imbue the "direct effects" prong with antitrust standing principles, as the DOJ and Second Circuit have done; if anything, the "reasonably proximate causal nexus" test risks unnecessary doctrinal confusion.

Simply put, the Ninth Circuit got it right.

A. The Textual Argument

The first and most straightforward argument for why the Ninth Circuit's interpretation is correct is that it flows from the FTAIA's text—which is where we are supposed to start when construing a statute.[63] Insofar as possible, our construction of the FTAIA must "give a function to each word in [the] statute, thereby avoiding linguistic superfluity."[64] In enacting the FTAIA, Congress provided that *three* distinct conditions must be met under the statute's "domestic effects" exception: the effect on U.S. trade or commerce must be (1) direct, (2) substantial, *and* (3) reasonably foreseeable. The Ninth Circuit's "immediate consequence" rule gives a discrete meaning to "direct" that does not render "substantial" or "reasonably foreseeable" redundant.

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60 *Id.* at 412 (citing *Associated Gen. Contractors of Cal., Inc. v. Cal. State Council of Carpenters* ("*AGC*"), 459 U.S. 519, 540 (1983); and *McCready*, 457 U.S. at 476–77 & n.13).

61 *Hsiung*, 778 F.3d at 758 n.9. Nor did the Ninth Circuit need to step into the thicket. The court noted that, "even disregarding the domestic effects exception, the evidence that the defendants engaged in import trade was overwhelming," and "alone was sufficient to convict the defendants of price-fixing in violation of the Sherman Act." *Id.* at 760.

62 *Id.* at 751.

63 *See Ross v. Blake*, 136 S. Ct. 1850, 1856 (2016) ("Statutory interpretation, as we always say, begins with the text.").

64 *Scheidler v. Nat'l Org. for Women, Inc.*, 547 U.S. 9, 21 (2006).

The Second and Seventh Circuits' rule does not comport with this canon. In *Minn-Chem* and *Lotes*, the courts construed "direct" as synonymous with "proximate cause." In American jurisprudence, however, the "dominant test" for proximate cause is *foreseeability*.[65] To accept that "direct" is shorthand for "proximate cause" would make the FTAIA's "reasonably foreseeable" prong superfluous. While the rule against avoiding surplusage is "not absolute,"[66] this "most basic of interpretive canons"[67] favors construing the FTAIA so as to not render any of its operative language superfluous. The *Minn-Chem* and *Lotes* view muddies a distinction Congress deliberately drew.

Of course, as this author must acknowledge, the Seventh and Second Circuits engaged in their own textual analyses in *Minn-Chem* and *Lotes*—and still disagreed with the Ninth Circuit. What gives?

The Seventh Circuit and Second Circuit each pointed out that in *Weltover*, the Supreme Court's construction of "direct" was driven, in part, by the fact that the FSIA does *not* impose any "requirement of 'substantiality' or 'foreseeability.'"[68] True enough—but it is not clear why that militates against, rather than *in favor of*, construing the FTAIA's "direct effect" element consistent with that of the FSIA. The Supreme Court's point in *Weltover* was that because Congress chose not to require a showing of substantiality or foreseeability, the Court would not interpret "direct" to encompass either of those concepts. In enacting the FTAIA, Congress *did* choose to require a showing of substantiality and foreseeability—and that is only all the more reason to avoid construing "direct" in a manner that encompasses those distinct statutory requirements. Put another way, the FSIA's *exclusion* of "substantial" and "reasonably foreseeable" phraseology and the FTAIA's *inclusion* of those terms are both *consistent with* the conclusion that "direct" should be given a meaning that preserves the distinction between the three concepts.

In *Lotes*, the Second Circuit went so far as to suggest that construing "direct" to mean "immediate," as the Ninth Circuit does, would render the FTAIA's substantiality and foreseeability elements "'superfluous, void, or insignificant.'"[69] The court said it was "hard pressed" to think of an "immediate" and "substantial" effect that was not also "reasonably foreseeable."[70] With all respect, this author does not feel quite so "hard pressed." By way of illustration: most law students learn about the "eggshell skull" doctrine—that is, the principle that tortfeasors are "liable for any physical injury they

65 Meiring de Villiers, *Foreseeability Decoded*, 16 Minn. J.L. Sci. & Tech. 343, 344 (2015); *see Nelson v. Monroe Reg'l Med. Ctr.*, 925 F.2d 1555, 1563 (2d Cir. 1991) (observing that foreseeability is "the test of proximate cause 'currently prevailing in this country'") (quoting 4 Fowler V. Harper et al., The Law of Torts § 20.5 (2d ed. 1986)).

66 *Lamie v. U.S. Trustee*, 540 U.S. 526, 536 (2004).

67 *Corley v. United States*, 556 U.S. 303, 314 (2009).

68 *Weltover*, 504 U.S. at 618; *see Lotes*, 753 F.3d at 411; *Minn-Chem*, 683 F.3d at 857.

69 *Lotes*, 753 F.3d at 411 (quoting *TRW*, 534 U.S. at 31).

70 *Id.*

cause, *no matter how unforeseeable*."[71] A plaintiff with an "unusually thin skull"[72] or other unseen medical condition may suffer a harm that is "immediate" and "substantial"—say, death or permanent disfigurement—but which is not "reasonably foreseeable."[73] This is not intended as a commentary on the eggshell skull doctrine; it just goes to show that, as a matter of logic and linguistics, the Ninth Circuit's construction of "direct" does not create the redundancy the Second Circuit feared.

All said, the Second and Seventh Circuits' textual analyses are subject to at least some disagreement. In this author's view, the Ninth Circuit's "immediate consequence" standard best serves to give meaning to each word in the FTAIA's statutory text.

B. The Foreign Affairs Rationale

As shown, the Ninth Circuit's interpretation of the FTAIA's "direct effects" prong was driven by the Supreme Court's reading of similar language in the FSIA. Concededly, the fact that the Supreme Court has interpreted the FSIA's use of "direct" in one way does not, by itself, mandate that the FTAIA's use of "direct" be construed in the same manner. "The same words can have different meanings in different statutes."[74]

That said, "when Congress uses the same language in two statutes having similar purposes, particularly when one is enacted shortly after the other, it is appropriate to presume that Congress intended that text to have the same meaning in both statutes."[75] Applying this canon of construction, there is good reason to believe that the FTAIA and the FSIA—enacted just a few years apart[76]—*should* be read in harmony with one another.

For one, the FTAIA and the FSIA were both enacted pursuant to Congress's authority to regulate foreign commerce. As the Supreme Court stated in *Verlinden B.V. v. Central Bank of Nigeria*,[77] "in enacting the Foreign Sovereign Immunities Act, Congress expressly exercised its power to regulate foreign commerce."[78] In *Empagran*, the Court similarly

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71 *Gibson v. Cty. of Washoe, Nev.*, 290 F.3d 1175, 1192–93 (9th Cir. 2002) (emphasis added), *overruled on other grounds*, *Castro v. Cty. of L.A.*, 833 F.3d 1060, 1076 (9th Cir. 2016)); *see also Vosburg v. Putney*, 50 N.W. 403 (Wisc. 1891) (most well-known American case exemplifying the doctrine).

72 *See Dulieu v. White & Sons*, 2 K.B. 669, 679 (1901) ("If a man is negligently run over or otherwise negligently injured in his body, it is no answer to the sufferer's claim for damages that he would have suffered less injury, or no injury at all, if he had not had an unusually thin skull. . . .").

73 *See, e.g.*, *McCahill v. N.Y. Transp. Co.*, 94 N.E. 616, 617–18 (N.Y. 1911) (defendant held liable where one of its taxicabs struck a pedestrian who, due to a "pre-existing alcoholic condition," "rapidly developed delirium tremens" and died).

74 *United States v. Sterling Nat'l Bank & Trust Co. of N.Y.*, 494 F.2d 919, 923 (2d Cir. 1974).

75 *Smith v. City of Jackson, Miss.*, 544 U.S. 228, 233 (2005) (citing *Northcross v. Bd. of Educ. of Memphis City Schs.*, 412 U.S. 427, 428 (1973) (per curiam)).

76 The FSIA was enacted in 1976, just six years before the FTAIA was enacted. *See* Foreign Sovereign Immunities Act of 1976, Pub. L. No. 94-583; Foreign Trade Antitrust Improvements Act of 1982, Pub. L. No. 97-290, § 401.

77 *Verlinden B.V. v. Central Bank of Nigeria*, 461 U.S. 480 (1983).

78 *Id.* at 496.

explained that "Congress designed the FTAIA to clarify [and] perhaps to limit . . . the Sherman Act's scope as applied to foreign commerce."[79]

Not only that, both the FTAIA and the FSIA embody the principle of international comity. The Supreme Court has long held that "foreign sovereign immunity is a matter of grace and comity on the part of the United States."[80] The "FSIA's objective is to give 'protection from the inconvenience of suit as a gesture of comity.'"[81] Consistent with that purpose, foreign sovereigns generally enjoy immunity from suit in the United States, subject only to "certain express exceptions" enumerated in the FSIA[82]—such as where the sovereign engages in foreign commercial activity that "causes a direct effect in the United States."[83]

Similar considerations animate the FTAIA. In *Empagran*, the Supreme Court reasoned that "if America's antitrust policies could not win their own way in the international marketplace for such ideas, Congress, we must assume, would not have tried to impose them, in an act of legal imperialism, through legislative fiat."[84] In keeping with "principles of comity," "Congress sought to release . . . anticompetitive conduct from Sherman Act constraints when that conduct causes foreign harm."[85] Foreign anticompetitive conduct *only* becomes subject to U.S. antitrust law where "causes domestic harm."[86]

Given that the "direct effect" provisions of the FSIA and the FTAIA target substantially similar questions of comity—the circumstances in which conduct that occurs outside of the United States, and subject to the jurisdiction of foreign sovereigns, can support legal liability in the United States—it would be incongruous to construe similar statutory language in an inconsistent manner.[87] When it comes to "regulating commercial relations with foreign governments," after all, "the Federal Government must speak with one voice."[88]

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79 *Empagran I*, 542 U.S. at 169; *see also* 128 Cong. Rec. 18,952 (1982) (statement of Rep. Rodino) ("The bill has a simple and straightforward purpose: to clarify application of our antitrust laws to the foreign commerce of the United States.").

80 *Verlinden*, 461 U.S. at 486 (citing *The Schooner Exch. v. McFaddon*, 7 Cranch 116 (1812)).

81 *Bolivarian Repub. of Venez. v. Helmerich & Payne Int'l Drilling Co.*, 137 S. Ct. 1312, 1322 (2017) (quoting *Dole Food Co. v. Patrickson*, 538 U.S. 468, 479 (2003)).

82 *Rubin v. Islamic Repub. of Iran*, 138 S. Ct. 816, 822 (2018).

83 28 U.S.C. § 1605(a)(2).

84 *Empagran I*, 542 U.S. at 169.

85 *Id.* at 165–66 (emphasis omitted).

86 *Id.* at 166.

87 *See City of Jackson*, 544 U.S. at 233.

88 *Michelin Tire Corp. v. Wages*, 423 U.S. 276, 285 (1976).

C. The Irrelevance of Antitrust Standing Jurisprudence

The DOJ and the Second Circuit each relied on antitrust standing jurisprudence in construing "direct effect" as referring to a "reasonably proximate causal nexus."[89] It is true, of course, that antitrust standing incorporates the common-law understanding of proximate causation.[90] But there is a problem: neither the DOJ nor the Second Circuit explained why antitrust standing bears any connection to the FTAIA's "direct effect" prong. Nothing in the statute suggests that antitrust standing *should* inform the construction of "direct effect."

To the extent there is any relation between antitrust standing and the FTAIA, it is found not in the "direct effects" prong, but in the "gives rise to" prong, which deals with the viability of plaintiffs' "claims." As noted at the outset, it is not enough that foreign conduct has a direct, substantial, and reasonably foreseeable effect on U.S. commerce—*that effect* must also "give rise to" the plaintiff's "claim."[91] Consistent with the Supreme Court's antitrust standing precedent, courts have roundly construed the FTAIA's "gives rise to" prong as requiring that the domestic effect proximately cause the plaintiff's injury.[92]

As Judge Posner pointed out in *Motorola Mobility LLC v. AU Optronics Corp.*,[93] the "direct effect" prong "establishes that there is an antitrust violation," while the "gives rise to" prong "determines who may bring a suit based on it."[94] Determining "who may bring a suit" is the province of the antitrust standing doctrine; as the Supreme Court stated in *AGC*, antitrust standing inquires "whether the plaintiff is a proper party to bring [the] private antitrust action."[95] In *Motorola*, the Seventh Circuit was willing to assume that there had been a direct, substantial, and reasonably foreseeable effect on U.S. commerce—higher U.S. prices for products incorporating TFT-LCD screens—but nonetheless held that the domestic effect did not "give rise to" a valid "claim," in part because Motorola, as an indirect purchaser, did not have antitrust standing.[96]

And so, while the antitrust standing doctrine does embody a proximate causation standard, there is no statutory basis for applying antitrust standing principles to the FTAIA's "direct effect" prong. If anything, those principles should come into play when assessing whether a domestic effect "gives rise to" the plaintiff's "claim."

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89 *See Lotes*, 753 F.3d at 412 (citing *AGC*, 459 U.S. at 540; *McCready*, 457 U.S. at 476–77 & n.13); Brief for Appellant United States of America, *supra* note 32, at 36–37; *see also Minn-Chem*, 683 F.3d at 857 ("Just as tort law cuts off recovery for those whose injuries are too remote from the cause of an injury, so does the FTAIA exclude from the Sherman Act foreign activities that are too remote from the ultimate effects on U.S. domestic or import commerce.").

90 *See AGC*, 459 U.S. at 531–37.

91 15 U.S.C. §§ 6a(1), (2).

92 *See supra* notes 19–23 and accompanying text.

93 *Motorola Mobility LLC v. AU Optronics Corp.*, 775 F.3d 816 (7th Cir. 2015).

94 *Id.* at 818.

95 *AGC*, 459 U.S. at 535 n.31.

96 *Motorola*, 775 F.3d at 819–24. The Seventh Circuit also rejected Motorola's contention that the company and its foreign subsidiaries were a single entity, holding that the foreign subsidiaries were more immediate victims of the price-fixing cartel, and that their alleged injuries could not be imputed to the U.S. parent company. *Id.* at 818–20.

D. Layering Proximate Cause on Proximate Cause Creates a Doctrinal Morass

Construing "direct effect" as requiring only a "reasonably proximate causal nexus" poses another doctrinal problem: it layers proximate cause upon proximate cause.

Consider the following: under the *Lotes / Minn-Chem* reading of the FTAIA, (1) the defendant's conduct must proximately cause an effect on U.S. commerce, and (2) that effect must proximately cause ("give rise to") the plaintiff's injury. There are two separate proximate causal links separating the defendant's conduct from the plaintiff's injury.

Injecting two proximate causation requirements into the FTAIA analysis obscures the fact that, under *AGC*, the defendant's conduct must *also* proximately cause the plaintiff's injury. Put more simply, *Minn-Chem* and *Lotes* say that the A must proximately cause B, and B must proximately cause C—while *AGC* says that A must proximately cause C.

This is a recipe for doctrinal confusion. When it comes to proximate causation, there is not a "transitive property." If A causes B and B causes C, A is not necessarily the proximate cause of C. As the Supreme Court stated in *AGC*, quoting Justice Holmes, "'[t]he general tendency of the law . . . is not to go beyond the first step.'"[97] In *AGC* itself, for instance, the plaintiff union alleged that the defendant employers had coerced third parties into doing business with nonunion contractors (to the exclusion of union contractors), thereby injuring the union.[98] The Court found this causal theory too attenuated.[99] The defendants' alleged coercion may have had an effect on union contractors from whom business was diverted, and *that* effect may in turn have impacted the union—but the link between the coercive conduct and the union's injury was "indirect" at best.[100]

By construing the FTAIA as encompassing two proximate cause inquiries—the foreign conduct must proximately cause a domestic effect, and the domestic effect must proximately cause the plaintiff's injury—*Lotes* and *Minn-Chem* risk blurring *AGC*'s mandate that plaintiffs prove a "direct" causal link *between the conduct and the injury*. Requiring a tighter nexus between the conduct and the domestic effect, as the Ninth Circuit does, helps ensure that the FTAIA does not conflict with or undermine the separate requirement that the conduct also proximately cause the plaintiff's injury.

IV. CONCLUSION

It is unclear how soon we can hope for a resolution of this internecine dispute. Since the Ninth Circuit decided *Hsiung* in early 2015, only one other Court of Appeals

97 *AGC*, 459 U.S. at 534 (quoting *S. Pac. Co. v. Darnell-Taenzer Lumber Co.*, 245 U.S. 531, 533 (1918) (Holmes, J.)).

98 *Id.* at 521–24.

99 *Id.* at 540–43.

100 *Id.*

has addressed the FTAIA in a published opinion.[101] The circuit split created by *LSL Biotechnologies* and *Minn-Chem* is now eight years old.

That does not make the divide any less concerning. District courts continue to grapple with the clumsily worded "domestic effects" test.[102] The "clarity" that Congress hoped to provide in enacting the FTAIA nearly 40 years ago remains elusive.

One can hope that resolution is on the distant horizon—if not by coalescence among the Courts of Appeals, then by dictate of the Supreme Court. If and when that happens, this author is confident the Justices will agree: the Ninth Circuit got it right.

101 *See Biocad JSC v. F. Hoffman-La Roche*, 942 F.3d 88, 94–101 (2d Cir. 2019) (addressing FTAIA's "import commerce" exclusion). In 2016, the Ninth Circuit addressed the FTAIA in a short unpublished decision. *See In re TFT-LCD (Flat Panel) Antitrust Litig.*, 637 F. App'x 981, 984 (9th Cir. 2016).

102 *See, e.g.*, *Shields v. Federation Internationale de Natation*, 419 F. Supp. 3d 1188, 1218–19 (N.D. Cal. 2019); *Sonterra Capital Master Fund Ltd. v. Credit Suisse Grp. AG*, 277 F. Supp. 3d 521, 568–69 (S.D.N.Y. 2017).

FOURTH ANNUAL "CELEBRATING WOMEN IN COMPETITION LAW IN CALIFORNIA"

Women's entry and rising representation in the legal profession is viewed by some to be one of the most remarkable, "revolutionary" changes to the legal profession. Today, more than ever before in our profession, women have become accomplished litigators, inspirational leaders, and generous mentors. Yet there is still a persistent, large, and unexplained gap between the earnings of men and women law school graduates and a perceived absence of women lawyers in top-level positions and in courtrooms. In March of this year, the Section hosted its fourth annual flagship program focusing on women practitioners in competition law and celebrated the exceptional progress women have made in the pursuit of their careers by overcoming a multitude of obstacles. The panelists shared their invaluable experience and advice about business development, mentoring, and making a difference within the legal profession. We reprise the program below.

PANELISTS

The Honorable Yvonne Gonzalez Rogers was appointed to the United States District Court for the Northern District of California in 2011. Judge Gonzalez Rogers joined the federal bench from the superior court in Alameda County, where she had served from 2008 to 2011, presiding over both criminal and civil cases. Judge Gonzalez Rogers earned her undergraduate degree from Princeton University in 1987 and her law degree from the University of Texas in 1991. After graduating from law school, Judge Gonzalez Rogers practiced civil litigation with the law firm of Cooley Godward LLP in San Francisco from 1991 to 2003 where she was elected an equity partner, and served the superior court in several capacities including judge *pro tem* until her appointment to the bench in 2008. In her capacity as both a state and federal judge, she has presided over thousands of civil and criminal cases, including a number of high-profile antitrust matters and over a hundred trials.

Paula Blizzard is currently a Deputy Attorney General in the California Attorney General's Antitrust Section. She has been with the Attorney General's office for almost three years, and most recently led the state lawsuit to block the Sprint–Mobile merger. Previously she was at the Federal Communications Commission from 2014-2016, and a partner at Keker, Van Nest & Peters from 2004-2014. She began her legal career at the U.S. Department of Justice Antitrust Division. Prior to becoming a lawyer, she worked for eight years as an aerospace consultant, designing communications systems and working on the space station program for NASA. She is a graduate of UC Berkeley School of Law and MIT.

Amy T. Brantly is the managing partner of Kesselman Brantly Stockinger LLP, a boutique litigation firm specializing in antitrust and unfair competition. Ms. Brantly has significant experience in a range of complex litigation cases, including antitrust, fraud, trade secrets, breach of fiduciary duty, and class actions. Before co-founding Kesselman Brantly Stockinger, Ms. Brantly was an attorney at Susman Godfrey LLP, where she worked on some of the biggest antitrust cases in the country as well as numerous class actions. Her antitrust experience includes litigating group boycott cases, exclusionary contracting practices, price fixing, and bid-rigging involving numerous markets, including cosmetics, semiconductors, medical devices, insurance, and sports.

Jackie Lem is an assistant chief in the San Francisco office of the U.S. Department of Justice, Antitrust Division. She has worked on both criminal and civil antitrust matters. Jackie has led multiple international cartel investigations including electrolytic capacitors and aftermarket auto-lights. She has also participated in civil merger and conduct investigations. Before joining the Justice Department through the Attorney General's Honors Program, Jackie served as a law clerk to the Honorable Marilyn Hall Patel, United States District Court for the Northern District of California. She received a JD from Stanford Law School, a PhD in economics from the Massachusetts Institute of Technology, and BA and BS degrees from the University of Texas at Austin.

Judith A. Zahid is Managing Partner of the San Francisco office of Zelle LLP and is co-chair of the firm's Antitrust group. Judith's practice is focused on assessing complex antitrust claims and pursuing recoveries on behalf of both individual corporate clients and class plaintiffs in many different industries. She has represented plaintiffs in numerous high-stakes price-fixing and monopolization cases, with recoveries from those cases totaling well over $2 billion. While Judith is involved in all aspects of the cases she litigates, she places particular emphasis on her work with industry and damages experts.

JUDGE YVONNE GONZALEZ ROGERS:

Good evening, everyone. I'm delighted to be here. I too, like some of us in this room, am currently in trial and managing lots of different things.

But it occurred to me what would be a good evening for all of you. So here's a thought. If you can leave this room with one practical tool for doing things better and leave with one card—I was going to say card, but I don't know these days with Facebook and other stuff where it's all electronic—so some new contact, and feeling energized, then tonight's a good night. And I too want to thank all the sponsors and especially the panelists who are going to share with you. That's the goal.

This is an issue that is very near and dear to my heart. Anytime someone asks me to do these kinds of panels I do, because I think it is so important. When I was at the firm, I was the first Latina ever hired. We have come a long way but there is a long way still to go.

Those of us and those around this table who have succeeded have lots of great tips for you. And I certainly feel like my role on the bench is to push the envelope. And I have, as I think people can attest.

In the *Batteries* case, when I got nothing but men up at the podium and I finally was kind of tired of it, I said, "Where are the women?" Now, many judges won't do that. But I did. And I tell you, the next hearing I only had women at the podium. And it was great.

So I'm glad to push the envelope. Because if we don't, and we don't support each other, and if we don't teach each other, and if we don't hire each other, then things won't change. So it's all within our power. So I'm so excited to be here.

We have decided not to do too much in terms of formality. We really want to get to the substance of all of this. So I'm going to ask each of the panelists to introduce themselves. But rather than just kind of giving us the basics, tell us something about your

leadership style, or maybe something that you're really proud of that you did. So Judith, can you start us off?

MS. ZAHID:

Sure. I'm Judith Zahid. I'm the managing partner at Zelle LLP in San Francisco. I grew up in the plaintiffs' antitrust bar. Something that I'm proud of is that we had a changing of the guard at our firm and there was a lot of space left when our senior partners moved on. I sort of filled the space with hesitation and feeling I was too young to be doing it. I just sort of buckled down and said, "I'm just going to do what I've got to do each day. And I can always jump ship and go somewhere else and beg someone for a job." But I'm just like, why not? Just do it. And I thought, if I just do this I'll improve myself. If I just do that I'll improve myself.

And finally I woke up one day, and whether it was worth it or not, I just was like, I don't have to prove myself anymore. It's not that I reached some maximum place. It was just I was exhausted from the desperation of having to prove myself. And so for those who still feel like they are doing that every single day, it's just to let that go, I think, has been a proud moment for me to realize that I have.

JUDGE GONZALEZ ROGERS:

Very important. By the way, judges feel that way, too.

MS. BRANTLY:

Hi, I'm Amy Brantly. I'm the managing partner of a small firm. We have about ten lawyers, five partners. And I'm the only female partner in my firm. We only have one other woman litigator. So I come from a male-dominated firm, like most of you probably do, too.

I guess a problem for me, because I'm a trial litigator, is we were hired to do an appeal before the Hawaii Supreme Court. The trial court had kicked the case out on summary judgment and the court of appeal affirmed. And I was really intimidated by this assignment because I'm not an appellate lawyer.

But I loved it. The Hawaii Supreme Court allowed 20 minutes for argument. I got to argue before them. It was against the NCAA, so no small adversary on the other side. We won unanimously and the case was remanded for trial. And I will be lead trial counsel, or co-lead trial counsel. We'll see how that goes. It was a good confidence boost to remind ourselves that we can do things that are new and different, and we should keep challenging ourselves.

JUDGE GONZALEZ ROGERS:

Thanks, Amy. Jacklin?

MS. LEM:

Hi, I'm Jackie Lem. I'm an assistant chief at the Department of Justice Antitrust Division here in the San Francisco office. I'm really happy to see a lot of familiar faces—old friends and new friends that are about to join our office.

A proud moment for me—I have a little bit of a different background. Before I went to law school, I actually had this dream of being an academic economist. So I went to grad school and got a Ph.D. in economics. And earlier this year Esther Duflo won a Nobel Prize for some really important work she's done in studying and thinking about why people are poor and what can be done to lift them up. She's the youngest person to ever win a Nobel Prize in economics and only the second woman to do that.

I think in the legal profession we've made great strides in diversity and inclusion and women. The economics profession is still a little bit behind. I was stunned at the statistic: only 30 percent of undergraduates—economics majors—are women. I was stunned by that.

So I was just very particularly proud that day that this is happening. I know it's not the legal profession but given the antitrust bar, we know economists. And so seeing Esther Duflo win that prize was an incredibly proud moment for me.

JUDGE GONZALEZ ROGERS:

Okay, Paula?

MS. BLIZZARD:

I'm Paula Blizzard. I'm with the California Attorney General's office. And one of the things that I'm most proud of is I just led the trial team where the states sued to block the merger of Sprint and T-Mobile. Everybody was against us. I not only had a lead role at trial, I really had a lead role in trial strategy, in deciding whether in hiring outside counsel in holding the 15 states together or not. And I am extremely proud of the way that trial went. I'm extremely proud of the way the evidence went in, the way everything worked out. But as everybody in this room probably knows, we lost.

And so when I was thinking about this and what to say, I think women worry constantly that they're going to lose. That they're going to be wrong. That, "Oh, I don't want to stand up," or "Oh, I don't want to do this." Or, "I'm going to ask for a raise and what if he says no? What if I don't get it?"

And we need to get over that. It's hard. It's an easy thing to say, "Oh, I'm not afraid to lose." It's a hard thing to do. And it's a hard thing to actually take that step. Because you take the step, and it doesn't go the way you wanted. And you still have to be proud of yourself. And you still have to say, "Yeah, but I did it." Or say, "Yeah, but I asked for the raise." Or "I made the comment in the meeting." Or "I asked the partner for the better role."

And so the next time you're sitting there and you're thinking, oh, I don't know if I can do it. Or I'm going to go do some more research before I tell anybody my theory. No. It's good enough. And you should think of me coming here and telling you that I am

really proud of that case. And that is one of the biggest antitrust cases of the year, and we lost, and I'm still proud.

JUDGE GONZALEZ ROGERS:

So let's jump right into business development. We've got a mix of both associates and partners and in-house in the room. I think it's really difficult for women to find business, right? Not everybody's out there on the golf course. I'm not sure that the golf course is the place anymore, since I don't look for business. In fact, I'm always pushing business away. [laughter]

But if we could start there. Judith, maybe you can give your tips for strategy for business development and any thoughts about the women versus men approach.

MS. ZAHID:

So one thing, and I saw it firsthand, so you can all just take my word for it. But I went to a conference, a local one, were there were about 10 GCs or heads of litigation from local corporations sitting in a row talking to a women attorney audience. There were men and women on the panel, and they all went down the line to say who's calling them all the time, for coffees, meetings, stop-bys. What are you doing right now? All that.

And they all went down the line and said it's 95 percent men calling us. And I remember just watching the visual of them all nodding and like, "Yeah, it's all guys! It's men calling us!" And that has totally stuck with me.

Because whether you're calling a man or a woman but you're looking for something—you're trying to find that in or that opportunity. Or you're calling whoever it is where you feel like you're imposing. In the past, I used to think those were impositions. I don't think that way anymore. I've removed "impose" from my vocabulary.

And at this point now, I just call. Because if I don't call, there are 12 other guys who just did or are about to. And I don't begrudge them for doing it. I would begrudge myself for holding myself back. And so that is something I have absolutely changed.

I've got one other tip on this, because sometimes we want to make business ideas or engage with friends, or women friends, or any friends. I've found that that also is really hard for women to do, that they're talking to a friend and they're like, "Can we stop talking about kids and whatever and start talking about work?"

So I will actually set up a meeting or a lunch by saying, "I have something I want to talk to you about business and I really want to have lunch with you." Every time I've ever done that, before the salad is done the person will be like, "What was that business thing you want to talk about?" Because they want to know, too. We're not all business-immune people. And so I just get it out there.

JUDGE GONZALEZ ROGERS:

What do you think, Amy?

MS. BRANTLY:

That's great advice. I've had lunch with a GC before where we've just chitchatted through the whole lunch. And then at the end she's like, "Are you going to ask me for work?" [laughter] "I'm about to pay the bill." And it was a good lesson that I too feel like I'm imposing.

I think that trying to work past implicit bias is sometimes hard for women. If you look even just at the Democratic primary, we had Amy Klobuchar and Elizabeth Warren. They were super-qualified and great candidates, but they never really got the traction that you would think they should have deserved. I know a lot of people are asking is that because they're women?

I do think that we see judges as older white-haired men, and we see lead counsel as a man, and we see a president as a man. And I'm hoping that we can get past that. And I do think that in-house people make a huge difference in that regard. You really have the power to create diverse teams and effectuate that kind of change. And I've seen it happen now that more women are getting involved. I think that's really exciting and it's very encouraging for me.

JUDGE GONZALEZ ROGERS:

Give one tip for them about how you've been successful in getting business.

MS. BRANTLY:

The best tip I can give is to stay at it—be consistent—and to not spread yourself thin by random lunching, which I used to do and is not helpful. Really focus on your strategy and who you can work for who has the work that you do. And then stay in touch with those people and constantly remain in contact with them.

JUDGE GONZALEZ ROGERS:

I would say too, everybody should remember that jurors care. It matters to jurors. I spoke at the patent bar's conference. I was making pitch for more diversity. And it finally occurred to me, I kind of saw a lot of blank faces out there with these patent litigators. And I finally said to them, "You know what? You may not care, but jurors care." And I've had jurors literally say, "Well, you know, that side, you saw they were all white guys. I mean, why would I trust them?" Women on a jury say that.

So it is something you can use to your advantage. And if they're litigating in the Bay Area, are you kidding me? You don't have a diverse trial team in the Bay Area, one of the most diverse areas in the nation? That may be fine in Texas. It doesn't work in California.

And so you need to be part of that and say, I can do this. I can help the team. And by the way, they know if you're just sitting there versus actually doing something. Jurors are very smart. They actually get this.

The other thing that I've heard GCs say—and you can tell me if you think this is true—all of you—is that, remember that you build up with your peer group. And so stay in touch. Right now, you're very young. Some of you are young. [laughter]

You may not be convincing Paul Grewal to hire you. But he was once a lowly guy, too. And so those around you may be GCs, so have you connected? Are you staying connected? Women, I think, are pretty good with relationships. Stay in touch. If someone needs help, give them help. You don't have to necessarily bill. But they remember those little things. That's what I've heard GCs say, that you're not always kind of nickel and diming them. But if you could help them, they remember and they want to give back. It's kind of a holistic approach, I think, to some of these topics.

How about having a female voice in the room? Either in government or in the firms. Jackie, what do you think about having a female voice in the room for your kind of work?

MS. LEM:

Yeah. I don't have any private sector experience. I went straight from a clerkship to the DOJ. So I'm kind of guessing a little bit. But I do truly believe in the government especially. It's very much a meritocracy. And I think that reflects in, our office just had some really great victories in a recent trial. And I think about teams that have been outward facing in the courtroom, and they're strong women.

JUDGE GONZALEZ ROGERS:

Does it matter if women are on those trial teams on the government side versus not?

MS. LEM:

I think it does. And this picks up on the point you made about jury trials especially, right? We're all lawyers and we have a very narrow experience, a very common experience. The jurors are not us. The jurors have a very diverse experience.

It was Michael Anderson in the Eastern District of California, AUSA, the best advice I ever got was, You are bringing those life experiences with you. And you're making certain inferences based on the evidence you have. And you're saying this fact means this, and that's what you're going to argue to the jury. But you're not realizing that your jurors may have a completely different life experience and the same set of facts. That's a completely different inference for them.

And he had a great example that just clicked in my mind about a family who had to move out of their home very, very quickly. I won't bore you with the details. But I think it really, really does matter. You put together a diverse team, a diverse team with different experiences. They're going to react to the evidence differently. And you need that kind of diverse perspective to put together a stronger trial team.

MS. BLIZZARD:

I absolutely think it makes a huge difference in a jury trial. And I also think it makes a difference in a bench trial. Like our judge here is saying, I have had other judges say the same thing and look out and go, "Where are the women?"

It can come down from the top like that, but I want to encourage all of you to also bubble it up. And this comes back to what we were saying about being 60 percent good enough or 90 percent good enough. You're good enough right now to do that direct or

that cross, or stand up in that courtroom and argue that motion. You may not think you are but you need to do that. And then you need to just ask. And they're going to say no a bunch of times. It's okay. Ask again. And keep asking. And you can do it.

We had a very diverse trial team in Sprint T-Mobile on both sides, actually. But I'll say one thing that was annoying was, there wasn't any media or cameras in the courtroom, only the old-fashioned sketch artists. I swear, even though the women had put on the CEOs and crossed the CEOs, everything else, all the sketches were the men. I was so annoyed! I was like, "Oh yeah, I guess that's my hair in the background. Seriously?" [laughter] So it still happens sometimes.

One other quick thing about women in the room. I was in private practice. I was at Keker for 10 years. And then I went back into government to the Federal Communications Commission to do net neutrality and so forth in Washington, D.C. And communications law is so different than antitrust, and so different than trial lawyers. I would even say it's female dominated. There are so many female lawyers. I would be sitting in a room working on something, and I'd have the representatives from AT&T, Comcast, whatever—all these big companies—they'd all be women. I had so many meetings and discussions where maybe there was one guy in the room. And that just never happens in antitrust.

I also discovered communications lawyers are paid a lot less than antitrust lawyers or trial lawyers. But it was very different. And it was a different approach. I've tried to put my finger on it and I'm not sure what it is. I'm not sure if everybody waits and lets the other person finish speaking. Whether it's that everybody tries to get everybody's opinion. It is different to be in a room—to deal with very serious, important topics or whatever—but to have all women in there. So I think it's super important.

JUDGE GONZALEZ ROGERS:

Does it matter to have women in the room either, let's say, in firm committees or maybe in depositions? Or in mediations? Does that matter?

MS. ZAHID:

I could talk for an hour about this topic. But I will try to be quick.

I'm at a place where for a while I was the only senior woman partner in our firm. So I was invited onto every single management committee because there was no one else to pick. And I found—and this is something I was thinking about last night, and there's no one more senior than me from my firm here, so it's all good.

What I'm trying to do is influence the chatter that happens among the highest ranking and most influential men in the firm. And I mean that in the smoothest ways. Not head right at them, but I've become really close with the CFO in my firm. We're friends. When something sort of bad happens to us as women litigators, we could easily moan to our friends. They'd get it. They're like, "Oh, that happened? He called you out on the phone? That judge passed you over?" Whatever it is.

But when you call your CFO, who's a man with grown daughters and high up in the firm, and you go, "Frank, do you believe this? The judge asked everyone at the table

something but me." I'll do it just like, "Huh! Isn't that crazy? That that happened?" And he's like, "That happened to you? Huh!" "This kind of stuff happens all the time, man!" And I'm trying to just get it in there or they're talking about male applicants or male partners and they're like, "Yeah, he's a real adult." And I'm like, "What does that mean? What do you guys say about me? Do you call me an adult?" And I do it in like subtle, little like chitchat. Just pushing it a little bit. Because for me, I feel that's the most effective way to effectuate change in my firm. Because I'm not on every phone call or in every meeting.

JUDGE GONZALEZ ROGERS:

Let me just piggyback on a little thing you said there. For you, that works. I think it is really important to figure out who you are in your own skin and do it your way, because it's hard to fake it forever. I mean, you can't do that.

So part of this is figuring out how do I work. And then just being comfortable in it and going with it. And perhaps that means you sit around and have a glass of wine with your buddies. You try things out. How does this work for you or how does that work for you? When you're in a deposition, this is what happened to me. Well, how am I going to respond? Some women will put it right back in their face. Other women will use humor. Other women will create the best absolute record so that they can go and get sanctions. There are lots of different approaches.

And the question is, what is your approach going to be? Because I think we lose women as litigators after a while because sometimes it's just too tough. It's too hard. And you get tired. But if you're doing it in your own skin and getting comfortable with that, then you'll last longer, I think.

What do you think about, in the room?

MS. BRANTLY:

I'm one of five partners. There are no committees at my firm. And I'm very close with my partners of the same age as me. Many of you know them. They're all male feminists. They're great. But I think sometimes they don't notice when there's some subtle discriminatory behavior going on. And I can just go right out and tell them because we're the same level and we're the same age, and they get it. But sometimes they still don't notice it.

I had a situation where three of us were on a case and we were co-counsel with another firm who had no antitrust experience. And so they brought us in to handle the antitrust part of the case. I wrote a brief, and they knew I wrote the brief. And we ended up winning on the papers. Our co-counsel sent an email to my male partners and copied me, and thanked them by name for doing such a great job. I was like, okay. And they always started every email, "Hello, gents." Or "Hey, boys."

And so I said to them once, "What is with these people? I just don't get it." And they were both like, "Oh, yeah." They didn't even notice that that was happening. And so I think that now that they know that, they will make sure it doesn't happen again. And they will speak up on my behalf. Often other women speak up for other women in a meeting or a room, but it's good to get the men on board, too.

JUDGE GONZALEZ ROGERS:

Let me jump over to Paula. How about bigger firms? Thoughts?

MS. BLIZZARD:

Well, Keker's not that big.

It is important to find your own style, whatever that is. And a wide variety of styles can work. I am kind of a more in-your-face person. Just recently, some of this sort of subtle stuff where there would be some email from opposing counsel and gosh, they wouldn't copy me. I nipped that in the bud and hit the roof and was very upset.

One time one of my counsel said, "Oh yeah, I'll check with a guy and some others." I'm like, "No, no, no. I'm not an other. You're not checking with the boys and an other." And so for me, I'll go right at them.

Now, that being said, I don't find it productive to go at them in a group. Nine times out of ten, when you bring it to someone's attention they will be mortified. The guy who referred to me as an other thought he would die. He was just so aghast and didn't realize that he had said that phrase, or that he didn't mean it that way. Of course they didn't mean it that way.

And so I do do this—it's like, okay, let it go. The next day I say, "Hey, can I talk to you for a minute?" And just the two of us. "You said this. And do you know how I felt when you referred to me as 'other'?" And I find a direct confrontation but one on one aside, not maybe right in the moment. And just explain. And I often explain in terms of how it made me feel. I say, "I'm sure you didn't mean it. I'm sure it was a slip of the tongue. But wow, it felt horrible." Like, "You said this thing." Or "You did this thing." Or "There was this whole email chain and I wasn't on it. And I'm kind of a decision-maker, so that was wrong."

And so I try to be a little more confrontational, but I try and pull people aside one on one. And I always give them the absolute benefit of the doubt. Nine times out of ten they are just going with the manners, the words we use every day, the "hey guys." Right? That's things people say. And they don't realize it can be exclusionary. And if you tell them, sometimes they're just grateful. And they will work on it. So that's my style. But I also know it's not going to work for everyone.

MS. LEM:

Can I add something? There's "Hey, guys." There are just some words and phrases we use. The other one I hate is, you were talking about jury addresses or like how do we put together our complicated antitrust case for a jury. And it's like, "Oh, try to do it so you're explaining it to your mother." I hate that one. [laughter]

And I've heard that so many times from so many people in different contexts. And I don't wait to do a one-on-one. I try to just do it very nicely. I'm like, "Or your brother. Or your father. Or your grandfather." Because I've heard it so many times. And that one, I just do that right away. Because it's just an expression that comes from kind of these biases. But it's something that we just pick up.

MS. ZAHID:

Can I jump in, too? Something Paula said. One thing also is I think that you get left off emails and you stew about it, and then you let it go. Or you react as these people have.

But one thing I noticed, where I was once left off an email coming from outside our firm that had to with money. And I had been part of every discussion. And then the email that transmitted the final number left me off. And I was like, "Are you kidding me?" Because if you think about it—and I'm not some crazy egomaniac—but that email gets forwarded to the firm or the executive committee. That person who forwarded it, who was just as equal to me in the discussion, he now is associated with that income.

These are things that affect us. And you have to stop and go, "Why did that drive me so nuts? And I put the pieces together. And if we keep letting ourselves not get associated with greatness or goodness, and just being like, "Oh, it's okay. I'll just . . ."

So I actually wrote the person and said, "You will not do that again." He wasn't even in my firm; I just did it. And I did it very nicely and politely. And one other little tip. I gave it five minutes. He wrote immediately back apologizing, because they act like they don't realize it. And I did not respond. I don't need to make him feel like I'm okay. So that was very empowering. You don't have to always respond. That was like, take that away. [laughter]

JUDGE GONZALEZ ROGERS:

I want to get to mentoring. This is an important topic as well. We're getting kind of close to the top of the hour. If each of you could give folks some mentoring tips, either on the receiving or the giving of it, depending on perspective.

MS. BLIZZARD:

I do think that distinction is important. I think it can be hard in the legal profession to get honest feedback. And I don't mean just sort of the edits and the "You did a crappy memo" or whatever kind of nonsense. But to somebody to give you, "Yeah, you know, that didn't really go well." Or "Yeah, that was awesome and that's the springboard to this next thing."

And so I think it's important to find somebody you can talk to that will give you honest feedback. And that may or may not be the person assigned at your firm to be your mentor. It may not even be anybody that much senior to you. It can just be somebody who's in the room with you. And you can say, "How did that go?" And try and get some honest feedback.

And then again, you have to take it and be grateful for it and not feel like, oh, I'm a lousy person. Or oh, I did it all wrong. It should feel like, wow, I am really learning, and next time I'm arguing that motion, leading that trial team, negotiating that settlement, whatever it is. So you should really take the feedback as an opportunity to grow, and try and find someone who will give you that type of feedback from which you can do things. And it can be hard, but keep looking.

MS. LEM:

I had the exact same point, but from the other end. So it's important to take feedback. But I think as women it's also very important to give feedback. And this is something I am still struggling with and learning how to do. But give feedback in a way that's going to be meaningful for that person, is not going to put that person on the defensive. And that takes knowing that person, having a relationship with that person, knowing what motivates that person.

The most effective feedback I have gotten has been said in a way that really appealed to me. And it was said, it was like a lightbulb went off. And I'm like, "Yeah, you're right!" So giving feedback is really important, too, because I think often you don't want to rock the boat, you don't want to make this person feel bad, you don't know how it's going to come across, and you feel awkward, too. So, thinking about how to give feedback depending on who you're talking to, I think it's an important skill to develop and sort of pay it forward.

MS. BRANTLY:

I agree with all of that. One thing I'll add, for what it's worth, is I really think it's important to be a cheerleader for somebody. I think in this profession we work really hard. You get kind of down. And sometimes I'm like, I need to tell this associate—I just need to tell them how great they're doing. I just need to give them that pep talk. Because we're working, we're serious, I'm giving feedback, whatever. But it's important to take that time, I think, to be someone's cheerleader. And I really appreciate when people do the same for me.

MS. ZAHID:

I'm going to leave with one phrase that I've said one other time at a plaintiff women's event, but I just love it and live by it. When our firm was kind of changing of the guard, suddenly there were some younger men in charge of the firm. And at a partner meeting, one of them said, "Let's drive it like it's stolen." I love that phrase, because I think about like our lives are so—they're not permanent. People are at a firm one day and then the firm's gone, and then they're at the government, and then they're at a client. There's so much change around us that if every moment you're just like, "I'm on this platform. What can I do with it this moment? Because I might not have the platform tomorrow. Or I might not want that platform tomorrow." So what I try to do with people in my firm and outside is just say, "Just use it." You don't know how long you're cruising around in that car.

JUDGE GONZALEZ ROGERS:

We wanted to leave some time for questions. And then after the formal session, we've got time to for people to connect and talk, and build that network.

So, are there any questions? And I can repeat it. Okay, there you go. The only guy in the audience.

MALE SPEAKER:

Hence the question. Which is, you look at the statistics, right? Seventy percent or whatever—equity partners, judges. So the question that I have is, what can men do? Because a lot of the conversation—sponsorship, mentorship—that is a very—women helping women, which is obviously critically important. But what can men who care about this as well do to help?

JUDGE GONZALEZ ROGERS:

I actually don't think sponsorship is just women. Sponsorship is men. And I can tell you, I would not be here but for numerous mentors and sponsors of mine who were men. And they did care. And so I did get placed as the lead person in smaller litigation, and then the key person on bigger company deals. And they did let me argue. And they did send me to depositions. And they did throw me out there to learn.

And when I put my name in for judge, they were on the front making the case. Because I had taken time off to be with my kids. And I didn't think that this was going to happen. It was a huge group, many of whom were men, making this happen. So men, I think, are critical to the process.

I've heard stories sometimes of guys who are really supportive of women who will—there was going to be a client pitch. And the woman totally could do it on her own. But of course the client didn't want to just trust the woman. And so, oh my gosh, ten minutes before the meeting, he couldn't make it. And so she had to go in on her own and sold it.

There are things that you can do, I think, that are very strategic about putting them there, and giving the client the comfort to trust your colleagues who are female. I feel very strongly about that; hence the reason I jumped in. I don't know if any of you guys think, what else can men do?

MS. BLIZZARD:

I have a suggestion too, or a couple of thoughts. One is, things you've been saying and doing for 20 or 30 years, it doesn't mean they're okay. Just because we've been saying, "Hey, guys" the whole time. So, think about things.

And then I wanted to tell another story about empowerment. John Keker at Keker & Van Nest was one of my mentors. But I was a relatively young lawyer. And I was prepping the CEO—I think it was Visa. It was a massive CEO for depo, and I was doing it. But of course the client had to have him there. So I've done all the work. He's letting me do it. He's like, "Yeah, here's Paula." And I was doing all the stuff. And at a certain point John just looks over, and he realizes my coffee cup is empty. And John Keker gets up and gets me coffee. "Paula, how do you want your coffee?" And he does this in front of the CEO, in front of a whole table full of men. And he gets me some coffee and brings it back. Because he's signaling, I'm the assistant. I don't need to be here. I came because the client wanted me but I am telling all of you, she's the one you're supposed to be paying attention to so I'm going to get her some coffee.

I've told John that story before. And I was very grateful for that, and that is how he acts in a lot of circumstances. He's a great mentor to have.

And so for guys, take opportunities like that if you, first of all, notice that the woman may not be getting the respect or the attention she deserves. And then do something subtle, or sit back. The women can lean in; you sit back. So little things like that can really change the dynamics in a room, and it's helpful.

JUDGE GONZALEZ ROGERS:

Other questions?

FEMALE SPEAKER:

Thank you so much for this wonderful event and for the speeches. It's really empowering.

My question is about when it comes to gender or race. When you question this type of behavior, what happens usually to the victim is they gaslight them, right? They make you question your sanity, or you weren't assuming the best. "No, no, that's not how it happened. This is how it happened." "No, that's not what I meant." That's usually the abuser's behavior. And also, they try to use that to advance their agenda. And in that fight, powerful women have that bravery to step up and advocate for themselves. So what would you suggest for when people start gaslighting them, when they start questioning them? What do you suggest? What should be the strategy?

MS. BRANTLY:

I think one thing, sort of like how you said you didn't respond. Sometimes when people are acting inappropriately in a deposition, or opposing counsel on the phone, or whatever, sometimes I'll just take a step back and be quiet and stare at them, and let them sort of ruminate in their ickiness until they realize that they've been inappropriate.

There was an instance recently where there were three of us on the same side on a call. And one of the men who was on our side—not at my firm but on our side—made an inappropriate remark. And he thought it was funny. And nobody laughed. We were all on his side, but we're not going to laugh at that.

And I think when people hear that silence, it makes them realize. And not apologize. Don't apologize when you have nothing to apologize for. Women are so calm. I do it all the time and I try so hard not to say, "We're sorry."

JUDGE GONZALEZ ROGERS:

Sometimes you're not going to convince everyone.

Other questions?

FEMALE SPEAKER:

How do you handle a situation—and I think we've all been in this situation—where you're in a meeting, maybe it's two or three or even a larger group of men and you. And the eye contact is only with the men. And that recently happened to me, actually. Someone from my company was there, and I mentioned it to him. He said, "I didn't notice that." I wonder if the panelists have any advice on how to handle this type of situation.

JUDGE GONZALEZ ROGERS:

I was going to say, I think as uncomfortable as it may feel, you have to assert yourself. If you don't in those situations, you just sort of fade into the background more. I know that's uncomfortable for some people, and that's not them being authentic. But I don't know how else to participate in a conversation that I'm excluded from other than participate. As uncomfortable as that may feel. You do have to get in the mix. One tip I heard when I was younger was step on the sentence. So someone can do it here. But if someone takes a breath, then—you jump in. And you do jump in and you engage. I mean, you do have to put yourself out there a little bit and get into the mix.

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