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LeadershIP

CPI COMPETITION POLICY™ INTERNATIONAL

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LETTER FROM THE EDITOR

Dear Readers,

This Chronicle addresses the issues raised during the 2022 edition of the annual LeadershIP conference, held this April in Washington, D.C. As ever, LeadershIP invites scholars, policymakers, industry experts and other key stakeholders to discuss cutting-edge policy issues at the intersection of innovation, intellectual property, and competition.

The selection of articles in this Chronicle addresses these issues, drawing on the authors' unique expertise and insights.

Jonathan M. Barnett opens by providing a unique insight that runs counter to traditional assumptions as regards the relationship between patents and antitrust law. The standard assumption, is that incumbents generally favor patents and, in particular, policy actions that strengthen and extend patent protection. As the author discusses, in the real world, markets often fail to conform to this expectation. Historical and contemporary evidence shows that larger firms in a variety of industries tend to favor policy positions that seek to weaken patents or, in some cases, reject them entirely.

Erik Hovenkamp turns to the hot topic of antitrust reform in so-called "big tech" markets. Recent calls for reform are fueled mainly by concerns surrounding major "platforms" like Google, Facebook, and Amazon. Critics believe, in short, that these platforms have become too large and powerful. In the U.S., some of the most aggressive proposed reforms have recently been codified in two bills, which focus largely on "self-preferencing" by online platforms and various restrictions imposed by mobile operating systems. The article evaluates these proposed reforms, based on learnings from the last fifty years. In some situations, the reforms could help to curb genuinely anticompetitive unilateral conduct. The article concludes, however, that the proposals are ill-conceived. They are insufficiently limited in the conduct they target. It concludes that the self-preferencing proposals offer no sure-fire way to avoid scrutiny other than for platforms to stop introducing new products. This could have significant adverse effects on competition.

On a similar note, the article by **Kristen Osenga** notes how recent reforms could undermine U.S. standard-setting policy, and indeed national security. Although the U.S. has long been a leader in innovation and standards development, recent developments might discourage American companies from engaging in these activities. These developments include difficulties in obtaining patent protection, government overrides of patent rights, and effectively prohibiting injunctive relief for patents covering inventions incorporated in technology standards. In the author's view, because national security is intimately tied to innovation and competition, these developments could harm not just innovation, but also America's ability to defend itself.

Using a metaphor derived from optics, **David J. Teece** argues that U.S. antitrust law and policy (particularly as they relate to IP) needs to use a wider-aperture lens to consider the effect of growing pressure from China. China's policies have transformed the global economy such that the global economy is increasingly bifurcated between a China-centered authoritarian system and a market-oriented democratic systems. This generates previously unknown complications and perils. Scholars and policymakers need to adopt a wider-aperture, systems-theoretic view that will lead to cross-fertilization of ideas and collaboration with others. Only by doing so can competition policy remain relevant.

Jorge L. Contreras turns to the ever-present difficulty derived from competing FRAND jurisprudence in cross-border matters. The willingness of national courts to set global FRAND royalty rates has led to jurisdictional conflicts, competing anti-suit injunctions and a global "race to the courthouse." The author supports the adoption of legislation that rejects global FRAND rates set unilaterally by courts in other countries. Instead, the article supports the adjudication of FRAND royalty rates for national patents through multi-party proceedings. Hopefully, such a system would lead to a consolidated, international mechanism for the determination of global FRAND rates.

Finally, **Dina Kallay** addresses the February 2022 judgment of the Court of Appeals for the Fifth Circuit in *Continental v. Avanci.* Vacating a previous judgment, the Court decided that Continental had standing to bring an antitrust claim against an SEP licensing program characterized by a field of use licensing feature. Importantly, the judgment touched on the scope of compulsory license-to-all ("CLTA") arguments. This paper reviews the history of such (repeatedly-rejected) CLTA arguments and the ramifications of the *Continental* judgment for their future deployment. In sum, the articles above provide a fascinating insight into the state of the art of antitrust law as it applies to IP-related issues in today's break-neck environment.

As always, many thanks to our great panel of authors.

Sincerely,

CPI Team[1]

1 CPI thanks Qualcomm Inc. for their sponsorship of this issue of the Antitrust Chronicle. Sponsoring an issue of the Chronicle entails the suggestion of a specific topic or theme for discussion in a given publication. CPI determines whether the suggestion merits a dedicated conversation, as is the case with the current issue of the Chronicle, and takes steps to ensure that the viewpoints relevant to a balanced debate are invited to participate.

SUMMARIES

INTELLECTUAL PROPERTY AND TRANSACTIONAL CHOICE: RETHINKING THE IP/ANTITRUST DICHOTOMY

By Jonathan M. Barnett

It is common to characterize patents as monopolies. This assumption, which underlies the standard dichotomy between intellectual property and antitrust law, is challenged by evidence that large companies in technology markets (outside biopharmaceuticals) tend to advocate for weaker patent protection or, in some cases, no patent protection at all. This revealed preference for weaker patent protection reflects the fact that large integrated firms can often capture returns on innovation through economies of scale and scope and other non-patent-dependent capacities that few other firms can match. Relatedly, a weak-patent environment can confer a competitive advantage on integrated firms against smaller and more innovative firms that rely on patents to capture value on innovation through licensing and other contract-based monetization strategies.

PROPOSED ANTITRUST REFORMS IN BIG TECH: WHAT DO THEY IMPLY FOR COMPETITION AND INNOVATION?

By Erik Hovenkamp

There is widespread support for antitrust reform, fueled mainly by concerns about major platforms like Google, Facebook, and Amazon. Many believe that these companies have become too large and that they use their power in harmful ways. In the United States, some of the most aggressive reforms have recently been codified into two proposed bills, which focus largely on "self-preferencing" by online platforms and various restrictions imposed by mobile operating systems. This short article evaluates the proposed Big Tech reforms based on everything we've learned from antitrust's successes and failures over the last fifty years. In some situations, the reforms could help to curb anticompetitive unilateral conduct that is extremely difficult to challenge under current law. Overall, however, the proposals are an ill-conceived, knee-jerk reaction to a set of complex issues requiring a more careful response. They do a very poor job of limiting antitrust scrutiny to cases that plausibly involve anticompetitive behavior. The self-preferencing proposals in particular offer no secure way to avoid scrutiny other than to stop introducing new products. For these and other reasons, these proposed reforms would have significant adverse effects on competition and innovation — the two things they are supposed to protect.

BIG DATA, LITTLE CHANCE OF SUCCESS: WHY PRECEDENT DOESN'T SUPPORT ANTI-DATA THEORIES OF HARM

By Kristen O'Shaughnessy, D. Daniel Sokol, Jaclyn Phillips & Nathan Swire

As the digital economy has matured, "Big Data"— extremely large datasets that require sophisticated tools to analyze — has enabled extraordinary innovation, creating a number of benefits, including free products and greater efficiencies. Precisely because Big Data is such a powerful tool, though, scholars, governments, and litigants have called attention to what they view as its potential to harm both competition and consumers. In this article, we explore the advances enabled by Big Data, its competitive implications, and why applying an expansive interpretation of the antitrust laws regarding single firm conduct to Big Data would be out of step with legal precedent and sound economics.

FRIENDLY FIRE: HOW THE BIDEN ADMINISTRATION'S INNOVATION POLICY IS UNDERMINING U.S. NATIONAL SECURITY

By Kristen Osenga

Although the United States has long been a leader in innovation and an active participant in standards development activities, recent policy developments may discourage American companies from continuing to engage in these activities. These developments include difficulties in obtaining patent protection, government overrides of patent rights, and effectively prohibiting injunctive relief for patents covering inventions incorporated in technology standards. Because national security is intimately tied to innovation and competition, perhaps in unexpected ways, these policy developments are not just harming innovation, but also America's ability to defend itself. In effect, the United States is harming its national security through the friendly fire of its own policies.

SUMMARIES

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A WIDER-APERTURE LENS FOR COMPETITION POLICY: ANTITRUST IN THE CONTEXT OF SYSTEMIC COMPETITION FROM CHINA

By David J. Teece

The growth of China and President Xi's policies have transformed the global economy in ways that competition policy and business strategies have yet to fully grasp. The global economy is increasingly bifurcated between a China-centered authoritarian system and a market-oriented democratic system, generating complications and perils largely unknown since the end of the Cold War. To properly analyze this reality, scholars and policy makers need to adopt a wider-aperture, systems-theoretic view that will lead to cross-fertilization of ideas and collaboration with others. Only by doing so can competition policy remain relevant. The competition environment in many industries today bears faint resemblance to existing models of competition.

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NATIONAL FRAND RATE-SETTING LEGISLATION: A CURE FOR INTERNATIONAL JURISDICTIONAL COMPETITION IN STANDARDS-ESSENTIAL PATENT LITIGATION?

By Jorge L. Contreras

The willingness of national courts to set global FRAND royalty rates for patents that are essential to key industry standards has led to international jurisdictional conflicts, competing anti-suit injunctions and a global race to the courthouse. This essay supports the adoption of legislation that repudiates global FRAND rates set unilaterally by courts in other countries and instead mandates the adjudication of FRAND royalty rates for national patents through a multi-party proceeding. It is hoped that such a system will eventually lead to a consolidated, international mechanism for global FRAND rate determination.

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CONTINENTAL v. AVANCI: THE FIFTH CIRCUIT CONFIRMS THE FALLACY OF "COMPULSORY LICENSE-TO-ALL"

By Dina Kallay

In its February and June 2022 *Continental v. Avanci* decisions, the Court of Appeals for the Fifth Circuit affirmed, and then reaffirmed, dismissal of Continental's alleged antitrust claims against the licensing program of the Avanci's standards essential patents ("SEP") platform and some of its member licensors. The new decisions follow similar analyses by the Court of Appeals for the Ninth Circuit, District Court for the Eastern District of Texas, and the U.S. Department of Justice Antitrust Division. These decisions and policy pronouncements all rejected attempts to argue that antitrust law imposes a "compulsory license to all" ("CLTA") confirming, instead, that SEP holders are free to choose their licensing model, and technology users cannot impose a compulsory duty on them to do business on any particular terms preferred by the plaintiffs. After nearly a decade of judicial and regulatory resources spent on considering and dismissing CLTA arguments, it is time to move on.

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PATENT HOLDOUT EXPLAINS WHY PATENT HOLDUP IS STILL ON THE TABLE: IN *MEMORIAM* OF ALEXANDER GALETOVIC

By Jorge Padilla

The evidence reported in two empirical papers co-authored by the late Professor Galetovic, showing that all observable implications of the patent holdup theory are inconsistent with the data from the world mobile wireless industry, should have put an end to the debate about the relevance of patent holdup in the SEP context. Yet, it has not. This paper does not explain why that is the case, but it shows that the protracted debate about patent holdup mainly benefits those implementers who engage in patent holdout. As the Latin philosopher Seneca stated once "*He has committed the crime who has derived the profit.*" It is time to leave behind the debate about holdup and focus on holdout. The implications of patent holdout are not merely distributional, as it is likely to result in under-compensation of innovation, cause the dissipation of social surplus as it leads to excessive litigation, and lead to the exclusion of other implementers which act as willing licensees. Importantly, *ex post* court-mandated damages are unlikely to deter such a socially costly holdout strategy and compensate patent holders appropriately.

WHAT'S NEXT?

For August 2022, we will feature an Antitrust Chronicle focused on issues related to (1) **EAB Antipasto** ; and (2) **State AGs**.

ANNOUNCEMENTS

CPI wants to hear from our subscribers. In 2022, we will be reaching out to members of our community for your feedback and ideas. Let us know what you want (or don't want) to see, at: antitrustchronicle@competitionpolicyinternational.com.

CPI ANTITRUST CHRONICLES September 2022

For September 2022, we will feature an Antitrust Chronicle focused on issues related to (1) **Cartel Developments**; and (2) **Vertical Agreements**.

Contributions to the Antitrust Chronicle are about 2,500 – 4,000 words long. They should be lightly cited and not be written as long law-review articles with many in-depth footnotes. As with all CPI publications, articles for the CPI Antitrust Chronicle should be written clearly and with the reader always in mind.

Interested authors should send their contributions to Sam Sadden (ssadden@competitionpolicyinternational.com) with the subject line "Antitrust Chronicle," a short bio and picture(s) of the author(s).

The CPI Editorial Team will evaluate all submissions and will publish the best papers. Authors can submit papers on any topic related to competition and regulation, however, priority will be given to articles addressing the abovementioned topics. Co-authors are always welcome.

INTELLECTUAL PROPERTY AND TRANSACTIONAL CHOICE: RETHINKING THE IP/ANTITRUST DICHOTOMY

BY JONATHAN M. BARNETT[1]

1 Torrey H. Webb Professor of Law at the Gould School of Law, University of Southern California. Comments are welcome at jbarnett@law.usc.edu. This contribution is adapted from the author's recent book, Innovators, Firms, and Markets: The Organizational Logic of Intellectual Property (Oxford Univ. Press 2021).

I. INTRODUCTION

In antitrust jurisprudence and scholarship, it is common to characterize intellectual property ("IP") rights in general, and patents in particular, as a type of "monopoly."[2] Economists widely construe IP rights as sources of monopoly power that distort competitive markets.[3] A search of the Google Scholar federal case law database as of May 2022 finds 2,430 decisions that use the phrase, "patent monopoly." The "patent-as-monopoly" assumption has important implications for antitrust jurisprudence and scholarship, which often characterize patents as a special carve-out from antitrust law's commitment to competitive markets.[4] While agency guidelines and federal case law state that an IP right is not sufficient evidence of market power without supporting evidence[5], the patent-as-monopoly assumption continues to influence judicial opinions, regulatory action, and scholarship on the relationship between patents and antitrust law. Most critically, this assumption supports the conventional dichotomy drawn between antitrust law, which is committed to preserving competitive markets, and intellectual property rights, which purportedly confer monopoly entitlements to promote innovation.

Yet an inconvenient fact runs counter to this allegedly dichotomous relationship between patents and antitrust law. Following the standard assumption, it would be expected that incumbents would generally favor patents and, in particular, favor policy actions that strengthen and extend patent protection. However, real-world markets often fail to conform to this expectation. As I discuss, historical and contemporary evidence shows that larger firms in a variety of industries (outside the biopharmaceutical industry) tend to express policy positions that seek to weaken patents or, in some cases, reject them entirely. Following the patent-as-monopoly assumption, this is a curious finding since an incumbent would be expected to welcome a legal entitlement that can protect or enhance its pricing power by impeding the entry of potential competitors.

In this contribution, I address the puzzle raised by the IP policy preferences expressed by larger firms in certain technology markets and, specifically, the empirical challenge this puzzle poses for the conventional IP/antitrust dichotomy that remains an important fixture of antitrust law and scholarship.

Resolving this puzzle sheds light on a critical function played by patents in mitigating the expropriation risk that can impede a myriad of value-enhancing arrangements involving entities that have complementary assets and capacities in the innovation and commercialization process that leads to market release. Without patents, the expropriation risk to which innovators are exposed when negotiating and executing a business relationship with investors, producers, distributors or other firms (especially, sophisticated and well-resourced firms) may discourage innovators from entering into these transactions altogether. Expanding transactional choices in technology markets promotes competition by lowering entry barriers for firms that specialize in innovation but lack the capital or expertise to execute independently the commercialization process. When patents are weakened, expropriation risk re-emerges and innovation tends to concentrate in firms that can monetize R&D through a vertically integrated production and distribution infrastructure or a horizontally integrated product and service ecosystem. Contrary to the standard IP/antitrust dichotomy, weakening IP rights can result in adverse innovation and competition policy outcomes by impeding disaggregated supply chains that facilitate entry by specialized innovators and disseminate technology inputs among producers and other intermediate users. Strengthening IP rights tends to reverse these outcomes.

This contribution proceeds as follows. In Part II, I review historical and contemporary evidence on IP policy preferences among different firm and industry types. In Part III, I discuss the economic logic that can account for these differences in IP policy preferences. In Part IV, I discuss the implications that this evidence holds for conventional understandings of the relationship between IP law and antitrust law. Part V concludes.

2 On this point, see Giles S. Rich, Are Letters Patent Grants of Monopoly? 15 Western New Eng. L. Rev. 239 (1993). For further discussion, see Jonathan M. Barnett, *The "License as Tax" Fallacy*, Mich. Tech. L. Rev. (forthcoming 2022).

3 See e.g. Joseph E. Stiglitz, *Economic Foundations of Intellectual Property Rights*, 57 Duke L. J. 1698, 1700 (2008) (stating that intellectual property "creates monopoly power" and leads to "major distortions of resource allocations").

4 See e.g. Michael A. Carrier, *Unraveling the Patent-Antitrust Paradox*, 150 U. Penn. L. Rev. 761, 796-97 (2002) (referring to the "patent-antitrust conflict" and "the costs of the patent monopoly").

5 *Illinois Tool Works, Inc. v. Independent Ink*, 126 S. Ct. 1281, 1293 (2006) (rejecting the presumption that IP rights confer market power without specific supporting evidence); U.S. Dept. of Justice & Federal Trade Commission, Antitrust Guidelines for the Licensing of Intellectual Property (Apr. 6, 1995), at § 2.2 (stating that the agencies "will not presume that a patent, copyright or trade secret necessarily confers market power upon its owner"). The 1995 guidelines were largely reaffirmed by the agencies in 2017, see U.S. Dept. of Justice & Federal Trade Commission, Antitrust Guidelines for the Licensing of Intellectual Property (Jan. 12, 2017).

II. EVIDENCE ON PATENT POLICY PREFERENCES

Both historical and contemporary evidence shows that firms in a wide range of industries tend to advocate or support policy actions that weaken patents or block the extension of patents to new technologies. Expressed preferences for weak patent protection are most consistent in the case of firms that maintain vertically or horizontally integrated structures for converting innovations into commercially viable products and services. In contrast, expressed preferences for robust patent protection are most consistent in the case of entities that specialize in innovation but lack complementary assets and capacities to convert innovations independently into commercially viable products or services.

A. Historical Evidence

Two episodes from U.S. technology history can illustrate the resistance of large firms to the strengthening or extension of patent protections.[6] These two episodes also illustrate how, contrary to the standard IP/antitrust dichotomy, weakening IP protection can impede entry and strengthening IP protection can have the opposite effect.

In the mid- to late-19th century, the railroad industry sought to secure judicial precedents to overturn the "savings doctrine," which had inflated the damages awarded to patent owners in infringement litigation, and to establish claim construction principles that would construe patent scope narrowly.[7] Using rhetoric reminiscent of the language used today to describe non-practicing patent owners, the railroads disparaged patent owners that brought infringement suits as "patent dealers" that sought to impose a tax on the industry as a whole. This characterization obscured the fact that patent owners were often individual or small-firm inventors (such as George Westinghouse, the inventor of the air brake that increased railroad safety) who designed component-level innovations and sought to extract value on those innovations through licensing or assignment transactions with the railroads. The railroads' campaign was successful, resulting in favorable Supreme Court decisions on both points in 1871 and 1878.[8] But the railroads' success in altering the trajectory of patent law may have harmed the innovative vigor of the industry as a whole. Historical evidence shows that technological innovation in the railroad industry was subsequently undertaken mostly within the railroads' technical departments and concentrated on incremental cost-reducing improvements to existing technology.[9]

In the 1960s, IBM was the largest firm by far in the national and international computing industry.[10] IBM and other hardware manufacturers generally sold integrated computing packages that bundled hardware and software components. Independent producers of software principally operated on a contractual basis, providing customized software on a client-specific basis. As a federal governmental commission considered whether Congress should provide some form of IP protection for software through patent law, copyright law, or a sui generis right, IBM and other hardware manufacturers opposed all three possibilities. Ultimately, IP protection was definitively extended to software through copyright (by statutes enacted in 1976 and 1980)[11] and patent law (by a Supreme Court decision in 1981).[12] Concurrently with these extensions of IP protection, an independent market in software developed, enabling businesses and home users to "mix and match" hardware with a rich menu of software products.

In the case of both the 19th-century railroad and the 20th-century computing industries, incumbents' behavior diverged from the IP-as-monopoly assumption and policy outcomes departed from the IP/antitrust dichotomy. In the railroad industry, incumbents sought (successfully) to reduce the strength of IP protections. The economic logic is clear. The railroads maintained horizontally integrated structures in which innovations were monetized by being embedded within a complex product and services ecosystem that was not easily amenable to replication.

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6 For a fuller account, see Barnett, *supra* note 1, at 140-45.

7 This paragraph is informed by Steven W. Usselman, Regulating Railroad Innovation: Business, Technology and Politics in America, 1840-1920 (Cambridge Univ. Press 2002); Steven W. Usselman, *Patents, Engineering Professionals, and the Pipelines of Innovation*, in Learning by Doing in Markets, Firms, and Countries 61-102 (eds. Naomi R. Lamoreaux, Daniel M.G. Raff, and Peter Temin, Univ. Chicago Press 1999) [hereinafter Usselman 1999]; Steven W. Usselman, *Patents Purloined: Railroads, Inventors, and the Diffusion of Invention in 19th-Century America*, 32 Tech. & Culture 1047 (1991).

8 *Chicago & N.W. Railway Co. v. Sayles*, 97 U.S. 554, 556-57 (1878) (stating that courts should generally construe patent claims narrowly); *Mowry v. Whitney*, 81 U.S. (14 Wall.) 620, 650-51 (1871) (limiting infringement damages to the incremental benefits enjoyed by the infringer relative to all other non-infringing equivalent processes then available in the market).

9 See Usselman, *supra* note 7, at 186-89; Usselman 1999, *supra* note 7, at 76-80.

10 This paragraph is informed by Barnett, *supra* note 1, at 142-45.

11 Copyright Act of 1976, § 102(a), Pub. L. No. 94-553, 90 Stat. 2541 (codified at 17 U.S.C. § 102(a)) (definition of "original works of authorship"); Copyright Revision Act of 1982, § 101, Pub. L. No. 94-553, 90 Stat. 2541 (codified at 17 U.S.C. § 101 (1982)) (definition of "literary works")).

12 *Diamond v. Diehr*, 450 U.S. 175 (1981).

For the railroads, a robust patent system was unnecessary to protect internally developed innovations and increased the costs of using externally developed innovations. In the computing industry, incumbents sought (unsuccessfully) to block the extension of IP protection to software. Again, the economic logic is clear. Hardware manufacturers maintained vertically and horizontally integrated structures in which software innovations were monetized within a complex product and service package, and vertically integrated production and distribution infrastructure, that was not easily amenable to replication. As the manufacturers correctly anticipated, the extension of IP protection enhanced competitive conditions by enabling software developers to enter the market on a "stand-alone" basis without an associated hardware product.

B. Contemporary Evidence

For over two decades, there has been an intensive debate over proposed changes to weaken the patent system through legislative and judicial action. To gather data systematically on the expressed views among different firm and industry types concerning these proposed (and, in many cases, implemented) changes, I collected all amicus briefs filed in Supreme Court cases primarily relating to patent law during 2006-2016. The Table below presents some of the key findings.[13]

Table 1: Amicus Briefs in Patent-Related Supreme Court Cases (2006-2016)

Industry Type	Total Number of Briefs Filed	Favors Patentee	Favors Alleged Infringer	Favors Neither Party
All business entities	740	30%	56%	14%
Fortune 500 firms	266	21%	65%	14%
ICT	388	10%	75%	15%
ICT (platforms)	77	1%	87%	12%
ICT (semiconductors)	39	21%	72%	8%
Financial services	47	11%	81%	9%
Automotive	19	5%	84%	11%
Biopharmaceuticals	89	75%	19%	6%
Academic research (incl. technology transfer)	82	96%	1%	2%
Venture capital	26	100%	0%	0%

Source: This Table is adapted from Barnett, *supra* note 1, at 147 Table 7.2.

Notes: The percentage figures in some rows may not sum exactly to 100 percent due to rounding. "Filed" means that an entity is a signatory to a brief. An entity filing a brief is deemed to support the patent owner, alleged infringer, or neither party based on the brief's opening statement of its position. Filers are allocated to industry types based on information in each entity's annual report or website.

This data supports three notable findings. First, in general, business entities tended to favor the alleged infringer and this preference increased among larger "Fortune 500" firms. Second, three industries mostly tended to favor the alleged infringer: information and communications technology ("ICT"), financial services, and automotive. Within the ICT industry, platform firms almost always tended to favor the alleged infringer while there was a significant minority of semiconductor firms that favored the patent owner. Third, three industries mostly tended to favor the patent owner: academic research (including technology transfer divisions but excluding briefs filed by individual academics), venture capital ("VC"), and biopharmaceuticals.[14]

These findings diverge from the expectations of the patent-as-monopoly assumption, which would expect that business entities, and especially larger firms, would tend to favor robust patent protections that offer pricing power by erecting entry barriers against entrants. Rather, preferences for robust patent protections prevailed only in certain industries (biopharmaceuticals) and among certain firm types irrespective of

13 For all findings, see Barnett, *supra* note 1, at 146-50.

14 While not shown in the Table, the data on amicus briefs show that the chemical and agricultural industries also favored the patentee most of the time.

industry (academic research entities and VC firms, which arguably reflect the preferences of startups funded by VC firms). Other industries, and larger firms irrespective of industry (except biopharmaceuticals), tend to express preferences for weaker patent protections.

A simple pattern appears to govern these differences in patent policy preferences across firm and industry types. As was the case in the railroad and computing industries, firms that are integrated vertically or horizontally tend to resist robust patent protections. With some exceptions, firms in the ICT, automotive, and financial services industries tend to operate under either horizontally integrated models (a large bank offers customers a range of complementary services accessible through a single institutional interface) or vertically integrated models (an automotive manufacturer typically maintains a financing, production and distribution infrastructure). By contrast, firms and other entities (such as academic research entities or VC firms and the startups backed by VC firms) that specialize primarily in the innovation segments of the technology supply chain, and typically lack production and distribution capacities, tend to express a preference for robust patent protection. As will be discussed subsequently,[15] the biopharmaceutical industry presents an exception to this pattern since all firms in the industry, irrespective of the degree of integration, tend to favor robust patent protection.

III. WHY DO INTEGRATED FIRMS USUALLY PREFER WEAK PATENTS?

Patent policy preferences expressed by a range of industries and entity types, across multiple historical periods, often diverge from expected policy preferences based on the IP/antitrust dichotomy and associated IP-as-monopoly assumption. Most notably, there appears to be an inverse relationship between patent-favorable policy preferences and a firm's degree of integration. Generally speaking, as a firm or industry type exhibits a greater degree of integration (whether vertical or horizontal), it tends to exhibit a preference for weaker patent protections, and *vice versa*. In this Part, I explore the economic logic that can account for this apparent relationship between patent policy preferences and a firm or industry's degree of integration.

A. The Economic Logic of Patent-Skeptical Preferences

Patent-skeptical entities tend to populate the ICT, financial services, and automotive industries (with an important exception in the semiconductor segment of the ICT industry, which I discuss subsequently).[16] In these industries, firms can capture value on an innovation (whether originated or imitated) by embedding it within a horizontally integrated suite of products and services that is difficult for others to replicate. Additionally, in the automotive industry, firms can capture value through a vertically integrated production, distribution, and customer-service infrastructure that is not readily amenable to replication. As a result, firms in these industries are not especially reliant on patent protection to capture returns on innovation and are implicitly advantaged by a weak-patent environment that compels entrants to monetize innovations through vertically or horizontally integrated structures that often demand significant capital and expertise to construct and maintain.

To illustrate this point, consider the competition between Microsoft and Netscape in the early years of the internet browser market. While Netscape pioneered the technology and was initially the market leader, it apparently lacked a sufficiently robust IP portfolio to deter imitation. Microsoft was able to replicate the functionalities of the browser and then monetize its R&D investment by embedding its browser in the Windows operating system, a bundled product package that Netscape could not feasibly replicate. (Note that this replicates IBM's bundling strategy in the computing market prior to the extension of IP protection to the software market.) In this weak-IP environment, Netscape rapidly lost market share and was ultimately compelled to exit the market, leaving Microsoft as virtually the only provider. In this case, the absence of IP protection precluded the originator from capturing value on its innovation and drove the market toward a winner-take-all outcome.

B. The Economic Logic of Patent-Favorable Preferences

The inverse relationship between the degree of integration and patent policy preferences can explain why three industries consistently favor robust patent protection: academic research, venture capital, and biopharmaceuticals. To appreciate the commonality among these entities, consider the following three hypothetical entities: (1) the technology transfer division of a research university that specializes in the development of influenza vaccines, (2) a biotech start-up that specializes in the same area, and (3) a VC firm that funds startups in the same area. All three entities have a policy preference for robust patent protection, which facilitates relationships between an innovator and suppliers of the testing, production, and distribution services without which a biopharmaceutical product cannot achieve market release.

15 See *infra* Part III.C.

16 See *infra* note 23.

This example is not entirely hypothetical. Rather, it approximately describes the path to market followed by BioNTech, the scientists-founded startup behind the COVID-19 vaccine that it developed, produced, and distributed in partnership with Pfizer, a large pharmaceutical firm. The ability of BioNTech to protect its vaccine technology through a portfolio of patents and patent applications in multiple jurisdictions[17] enabled it to initially secure VC funding[18] and subsequently to negotiate, structure, and execute a complex global partnership with Pfizer. Contrary to the IP/antitrust dichotomy, the availability of patent protection did not promote investment in vaccine development at the expense of market competition. Rather, the patent system enabled entry by a startup by providing it with a tool to protect against expropriation risk when entering into transactions with sophisticated and well-resourced suppliers of the financing, production, and distributing inputs that were necessary to achieve market release on a global scale. The result was a "win-win" outcome as a matter of both innovation and competition policy.

C. The Biopharmaceutical "Exception"

The transactional function of patents in facilitating information-exchange transactions prior to market release does not mean that patents no longer play the conventional function of deterring imitators following market release. In the biopharmaceutical market, this post-release function is critical because the costs of drug development are exceptionally high both in absolute terms (estimates exceed $3 billion, taking into account the costs of failed projects)[19] and relative terms compared to the imitation costs incurred by generic producers. These cost considerations, compounded by the high risk of project failure, explain why even large vertically integrated firms in the pharmaceutical industry support robust patent protection, unlike large integrated firms in most other industries. Post-release imitation risks may also explain why even large integrated firms in a broader range of industries may favor weak, rather than no, patent protection as a supplement to non-patent mechanisms to capture value on innovation.

IV. POLICY IMPLICATIONS: EVIDENCE FROM THE SEMICONDUCTOR INDUSTRY

Evidence on the patent policy preferences of different industries and firm types challenges the standard IP/antitrust dichotomy and the underlying characterization of patents as a monopoly entitlement that necessarily detracts from competitive conditions. In a broad range of industries and historical periods (which I discuss in greater detail in a book-length publication),[20] patents promote both innovation and competition by facilitating entry by entities that specialize in innovation and rely on contractual relationships to secure the financing, production, and distribution inputs required to reach market.

Robust patent protections can benefit not only innovation specialists in particular but the innovation ecosystem in general. This is for two reasons. First, as demonstrated by historical and empirical evidence, smaller "maverick" firms are often the most fertile sources of breakthrough innovations that challenge, rather than merely refine, existing technological paradigms.[21] Second, patents can facilitate the dissemination of technology inputs throughout the innovation ecosystem by reducing expropriation risk and consequently enabling licensing and similar information-exchange relationships among innovators, producers and other users. This can have a favorable impact on competitive conditions by expanding access to the "upstream" technology inputs that are necessary to achieve entry in the "downstream" segments of the supply chain.

The competition-enhancing effects of patents can be illustrated by studying the impact of increased patent usage on the organization of innovation and commercialization activities in the semiconductor industry.[22] In the industry's early decades following World War II, firms principally relied on a vertically integrated model in which chip design, production, and other supply-chain functions were undertaken within the same entity. During this period, semiconductor firms did not rely extensively on the patent system, as indicated by relatively modest patent application, litigation, and licensing activity. Following the establishment of the Court of Appeals for the Federal Circuit and the consequent strengthening of patent protections in the 1980s, however, patenting rates for semiconductor innovations increased and, in the 1990s and 2000s, accelerated significantly. Concurrently, some firms broke from industry norms that had discouraged patent litigation and licensing.

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17 For information on BioNTech's patent portfolio, see BioNTech Group, Form 20-F, filed with the U.S. Securities and Exchange Commission (Mar. 30, 2021), at 157-58.

18 *Early backers of vaccine maker BioNTech in $719 million payday*, Reuters, Feb. 4, 2021, https://www.reuters.com/article/us-health-coronavirus-biontech-investors-idUSKBN2A424F.

19 Joseph DiMasi, Henry G. Grabowski, and Ronald W. Hansen, *Innovation in the pharmaceutical industry: New estimates of R&D costs*, 47 J. Health Econ. 20 (2016).

20 See Barnett, *supra* note 1.

21 *Id.* at 54-56.

22 This discussion is informed by Barnett, *supra* note 1, at 125-28; Jonathan M. Barnett, *Intellectual Property as a Law of Organization*, 84 S. Calif. L. Rev. 785, 838-853 (2011).

Following standard expectations, sharply increasing patent usage would raise both innovation concerns due to higher transaction costs and competition policy concerns due to higher entry barriers. While the transaction costs associated with litigation and licensing activity may have increased, there was no adverse impact on entry conditions. To the contrary. Together with concurrent technological developments, increased use of the patent system facilitated the emergence of a "fabless" business model in which a firm specializes in chip design and outsources the costly and complex process of chip production (or "fabrication") to specialized outside producers (or "foundries"). Just as in the case of partnerships between startups and large pharmaceutical firms in the biotech industry, patents enabled chip-design firms and foundries to engage in information exchange with reduced risk of knowledge leakage. (This may account for the significant minority of semiconductor firms that filed amicus briefs favoring the patentee in the data presented previously).[23]

Patent-enabled cooperative relationships had two favorable effects on competitive conditions. First, the ability to outsource chip production dramatically lowered entry barriers by relieving entrants from incurring the billions of dollars in expenditures required to construct and maintain an independent fabrication facility. This result is a transactionally diverse market that is now populated by a mix of integrated and non-integrated firms: as of 2020, fabless firms represented almost 33 percent of global integrated-circuit sales, compared to almost 28 percent in 2012 and 13 percent in 2002.[24] Second, patents enabled the market to achieve specialization efficiencies by allocating supply-chain functions to the most efficient provider, bringing total costs to the technologically feasible minimum. Hence even integrated firms in the semiconductor industry now outsource certain tasks to foundries and other external providers. Contrary to the IP/antitrust dichotomy, increased use of the patent system not only promoted innovation but enhanced competitive conditions and facilitated specialization in the industry as a whole. By implication, policy actions to weaken patent protections would have impeded this favorable outcome, potentially resulting in a market characterized by higher entry barriers, excessive integration, and increased concentration, and consequently, higher prices for end-users of semiconductor-enabled products.

V. CONCLUSION

Scholars, courts, and regulators have extensively addressed the relationship between IP and antitrust law. It has generally been assumed that these bodies of law pursue divergent policy objectives that require an inevitable tradeoff between encouraging innovation through IP rights and promoting competition through antitrust law. Evidence on the patent policy preferences of different firm and industry types, complemented by evidence on the impact of patents on entry conditions and market structure, suggest that conventional wisdom fails to anticipate policy outcomes in a wide range of industries. Specifically, patents can often promote both innovation and competition by enabling transactional mechanisms that facilitate entry by firms that can "out-innovate" incumbents but fall short in executing the commercialization functions necessary to achieve market release. In those circumstances, IP and antitrust law do not stand at odds; rather, they work together in pursuit of the complementary objectives of enhancing innovative and competitive intensity.

23 See *supra* Table 1.

24 *Fabless Company Share of IC Sales to Set New Record in 2020 at 32.9%*, IC Insights, Dec. 29, 2020, https://www.icinsights.com/news/bulletins/Fabless-Company-Share-of-IC-Sales-To-Set-Record-In-2020-At-329-/#.

PROPOSED ANTITRUST REFORMS IN BIG TECH: WHAT DO THEY IMPLY FOR COMPETITION AND INNOVATION?

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I. INTRODUCTION

There is widespread support for antitrust reform, fueled mainly by concerns about major platforms like Google, Facebook, and Amazon. Many believe that these companies have become too large and that they use their power in harmful ways.

In the United States, some of the most aggressive suggested reforms have recently been codified into two proposed bills, both of which appear to have some bipartisan support. The American Innovation and Choice Online Act ("AICOA") concerns unilateral conduct by large online platforms, focusing especially on "self-preferencing"— treating one's own products more favorably than those of competitors.[2] The Open App Markets Act ("OAMA") deals specifically with mobile app stores and operating systems.[3] It similarly prohibits certain forms of self-preferencing. But it would also eliminate the "walled garden" business model that requires all app transactions to run through a single app store.

There are indeed good reasons for thinking antitrust could benefit from pro-enforcement reform. Courts' decisions are often guided by simplistic maxims — for example, that markets beset by anticompetitive conduct will conveniently "self-correct"— that reflect an idealized conception of competition. This has left the law increasingly out of synch with modern economics, which has a much deeper appreciation for the frictions and imperfections that leave real-world markets vulnerable to strategic behavior. As a result, courts tend to be unreasonably dismissive of antitrust claims in general.

This short article evaluates the most popular proposed reforms aimed at Big Tech, including those in AICOA and OAMA. It considers how they would likely affect competition and innovation based on everything we've learned from antitrust's successes and failures over the last fifty years.

There is one area in which the proposed reforms would genuinely help to curb anticompetitive conduct that is extremely difficult to challenge under existing law. This involves cases where a dominant platform unilaterally refuses to deal with competing sellers or otherwise impairs their ability to make sales over the platform.

However, on the whole, the proposed reforms do not represent a judicious effort to fix the problems with current law. Rather, they are an ill-conceived, knee-jerk reaction to a set of complex issues requiring a more careful response. The core problem is that the proposals simply do not make a serious effort to limit antitrust scrutiny to cases involving anticompetitive conduct. Indeed, in many instances they do not impose any affirmative obligation on the plaintiff to prove anticompetitive effects.[4] This is exacerbated by the fact that the violations articulated by the proposals are generally vague and broad in scope. In the case of the self-preferencing proposals, the only clear way for a large platform to avoid antitrust scrutiny may be to abstain from introducing new products. Consequently, while the proposed reforms are intended to promote competition and innovation, they are much more likely to diminish both.

II. PLATFORM REFUSALS TO DEAL

If challenged under existing law, most of the unilateral platform conduct at issue in the proposed reforms would be evaluated as a refusal to deal.[5] This doctrine — which applies in cases where a dominant refuses to do business with rivals or otherwise discriminates against them — has long been controversial.[6] In its 2004 Trinko decision,[7] the Supreme Court came close to killing it off altogether. Although the Court did not provide much specific guidance to lower courts, its sharp dicta made it clear that the scope of liability was to be extremely narrow.[8] Circuit courts have shaped their standards accordingly.[9]

2 S.2992, https://www.congress.gov/bill/117th-congress/senate-bill/2992/text.

3 S.2710, https://www.congress.gov/bill/117th-congress/senate-bill/2710/text.

4 See Section VII, *infra*.

5 Alternatively, it might be evaluated as a denial of access to an essential facility, which is a very similar type of claim.

6 See e.g. Phillip Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 Antitrust L.J. 841 (1990) (criticizing the doctrine).

7 *Verizon Commc'ns Inc. v. Law Offs. of Curtis V. Trinko*, LLP, 540 U.S. 398 (2004).

8 *Id.* at 399 (describing the doctrine as "at or near the outer boundary of §2 liability").

9 To my knowledge, no plaintiff has won a final judgment since *Trinko*. In one recent case, the plaintiff prevailed in district court, but the judgment was reversed by the 9th Circuit on appeal. *Fed. Trade Comm'n v. Qualcomm Inc.*, 969 F.3d 974, 994 (9th Cir. 2020).

A partial success of the proposed reforms is that they would do away with the modern refusal-to-deal framework in cases involving dominant platforms. That's a sensible thing to do, because *Trinko* and its progeny are unreasonably dismissive of unilateral refusal claims.[10] Additionally, the legal standards courts presently apply in such cases are not attuned to the appropriate theory of harm, and consequently they do a remarkably poor job of identifying those cases in which intervention would make sense.[11]

As I have argued elsewhere,[12] meritorious refusal-to-deal cases generally involve two distinct product markets and raise essentially the same theory of harm as anticompetitive tying: namely, that the defendant is exploiting its monopoly over a primary product to foreclose rivals in a secondary market.[13] As in a tie, this is accomplished by making it hard or impossible for secondary market rivals to make sales to users of the primary product. But the defendant achieves this not through vertical agreements with consumers, but rather by refusing to let rivals access the primary product. This can generate foreclosure in the secondary market if many consumers rely on the primary product to access the secondary one.

Consider an illustration. In *Microsoft*,[14] the government prevailed in its Section 2 challenge against Microsoft's tie of its Windows operating system and its Internet Explorer browser. The tie foreclosed competing browsers like Netscape. This was not a unilateral conduct case, because the tie was effectuated in part through vertical agreements with equipment manufacturers. However, consider a slight change in the facts. Suppose Windows contained a proprietary app store and that all software programs had to be obtained through it. In that case, Microsoft could have achieved the same result as its tie by simply refusing to let competing browsers like Netscape onto its app store. As with the tie, this would restrain consumers' ability to use competing browsers on a Windows machine.

Although this change in facts would not alter the relevant competitive effects, it would transform *Microsoft* into a refusal-to-deal case, making it virtually impossible to win under current law. This shows that the modern approach to unilateral refusals leads to nonsensical results through arbitrary line-drawing. If a unilateral refusal acts just like an anticompetitive tie, why should it be saved by the absence of a vertical agreement?[15]

A logical position to take in Section 2 cases is that if unilateral conduct emulates a vertical restraint then courts should evaluate it as such. That is, they should consider the same theory of harm, and they should look for the same markers of anticompetitive effects (namely foreclosure). In fact, this is more or less the approach courts already take toward other types of unilateral conduct.[16]

A good example is *Lorain Journal*,[17] which involved a *conditional* refusal to deal with customers.[18] The defendant ran the local newspaper, which gave it a dominant position in the market for advertising services. A new radio station threatened the defendant's market position, however. Local businesses began doing some of their advertising through the radio station. The defendant responded by refusing to provide advertising services to any businesses who ran ads over the radio station.

It was clear that the defendant's goal was to force most customers to make it their exclusive provider of advertising services. This foreclosed the radio station and threatened to maintain the defendant's dominant position in advertising. Although the Court did not say so explicitly, this was a case of de-facto exclusive dealing. And that is essentially how the Court treated it. In other cases, a defendant's unilateral conduct is instead treated as a form of de-facto tying.[19]

10 Of course, ideally the problems created by *Trinko* would be eliminated everywhere, not just in Big Tech.

11 Erik Hovenkamp, *The Antitrust Duty to Deal in the Age of Big Tech*, 131 Yale L. J. 1483 (2022), papers.ssrn.com/sol3/papers.cfm?abstract_id=3889774.

12 *Id.*

13 In platform cases, the primary product is typically the platform itself, while the secondary good is something sold or marketed over the platform.

14 *United States v. Microsoft Corp.*, 253 F.3d 34, 58 (D.C. Cir. 2001).

15 The only plausible response is that intervention in a unilateral refusal case could raise administrative challenges, while enjoining an agreement does not. However, no such difficulties arise if the platform already deals voluntarily with third parties, as would be expected in a case where a platform selectively excludes specific competing products. In that case, the court can simply order the defendant to deal with its rival on the same terms it offers to everyone else.

16 See Hovenkamp, *supra* note 11, at 1535-38.

17 *Lorain Journal Co. v. United States*, 342 U.S. 143 (1951).

18 In a conditional refusal, the defendant stops dealing with customers who do not abide by its preferred conditions. This is often (but not always) treated as unilateral conduct. Unlike a traditional unilateral refusal case, there is no allegation that the defendant unlawfully refused to deal with *competitors*.

19 Examples include cases of bundled discounting or exclusionary product design. The latter arise when a product is redesigned in a way that renders it incompatible with competing versions of a complementary good — a practice sometimes called "tech tying."

The point is that courts already recognize that unilateral conduct may emulate a vertical restraint, and in such cases, they usually evaluate the conduct as such. But, for whatever reason, they do not yet acknowledge that the same approach may be appropriate in some cases involving a unilateral refusal to deal with competitors.[20]

The proposed Big Tech antitrust reforms would allow for antitrust intervention in some meritorious cases involving unilateral refusals by dominant platforms. That's a good thing. Unfortunately, as the remaining sections explain, they do a very poor job of limiting antitrust scrutiny to those cases that plausibly threaten competition.

III. SELF-PREFERENCING

An outright refusal to deal is the most severe way that an integrated platform can discriminate against rivals in an adjacent market. By contrast, the term "self-preferencing" generally refers to very mild forms of discrimination. This typically involves the defendant giving its own product the most visible or prominent placement on its platform — such as by listing it first in the search results — without otherwise degrading consumer access to competing products.

For example, when a consumer looks up a restaurant on Google Search, the results page displays a Google "OneBox" at the top of the page — a box of relevant information about the restaurant, such as its address, phone number, and reviews. The reviews come from Google, not from Yelp. (However, the restaurant's Yelp page will typically be among the first organic search results on the page.) Yelp has alleged that this is anticompetitive because it prioritizes Google's content over that of Yelp, whose content is superior (according to Yelp, at least).[21] Amazon has similarly been accused of promoting its own products above those of competitors on its storefront.[22] And Apple has been accused prioritizing its own apps over competing apps within the iOS App Store.[23]

To begin, it is worth noting that mild self-preferencing is in fact ubiquitous, and not only in concentrated markets. Whenever a firm offers two complementary goods or services, it will have an incentive to encourage customers of one to consider using the other as well. A grocery store might give the most visible shelf space to its own private label goods. A cable network might use the most desirable advertising slots to run ads for its own programming. And a hotel brochure might list the hotel's own restaurant above those of local competitors. But nobody seems to view examples like this as problematic. If nothing else, this shows that self-preferencing is not inherently anticompetitive.

Proponents of the proposed reforms will point out that these examples are different because they do not involve dominant platforms that consumers depend upon to find products. A dominant platform may indeed have the ability to materially undermine competition in some of the markets that rely on them, as discussed in the previous section. However, mild self-preferencing does not implicate those concerns, because it does not materially impair consumers' ability to pick rivals' products over those of the platform.

Mild self-preferencing allows a platform to capture a larger share of those consumers who are indifferent among the competing alternatives — those who are inclined to click on the top result no matter what it is. To be sure, capturing these consumers could be very lucrative. But that does not make it anticompetitive exclusion. The latter involves a dominant firm capturing many customers who strictly preferred to buy from the firm's competitor instead. That requires a meaningful restraint — something that prevents consumers from choosing their preferred brand. Merely listing the platform's own product first does not do this.

It is also worth noting that it is not usually possible to make all competing alternatives equally visible on a platform's storefront. For example, in a list of search results, someone has to be listed first. Why shouldn't it be the platform? One possible response was hinted at in the Yelp example mentioned above. A plaintiff might argue that it's unfair for a platform to give its own product the most visible placement if there exist superior competing alternatives. In other words, perhaps the highest quality seller deserves to be listed first. However, this raises an obvious practical difficulty: who's to say which product is best? There could be many firms with plausible rationales for ranking

20 Not all unilateral refusal cases are properly evaluated in this way, however. Some do not raise a tie-like theory of harm, but rather represent an effort by prospective rivals to free ride on the defendant's technology. Such cases are likely responsible for most of the judicial hostility toward unilateral refusal cases generally. See Hovenkamp, *supra* note 11.

21 See e.g. Lauren Feiner, Yelp gives senators its list of grievances against Google in antitrust hearing, CNBC (March 10, 2020), www.cnbc.com/2020/03/10/yelp-testifies-against-google-in-antitrust-senate-hearing.html.

22 See e.g. Sara Morrison, The true cost of Amazon's low prices, Vox (Jan 13, 2022), www.vox.com/recode/22836368/amazon-antitrust-ftc-marketplace.

23 See e.g. Jack Nicas & Keith Collins, How Apple's Apps Topped Rivals in the App Store it Controls, NY Times (Sept. 9, 2019), www.nytimes.com/interactive/2019/09/09/technology/apple-app-store-competition.html.

their products first, including the platform itself. This is a largely subjective inquiry that courts are not equipped to resolve in any satisfying way.[24]

Such practical challenges are a reminder of why antitrust generally takes a passive approach, condemning specific anticompetitive acts rather than attempting to micromanage markets to maximize efficiency. The latter approach is simply infeasible in most situations. But it is also important to remember that the antitrust system is not costless even when it works as intended. Antitrust cases take years and cost many millions of dollars to litigate. This calls into question the wisdom of using antitrust to police conduct that has such a limited impact on competition.

The high costs of antitrust litigation — and the uncertain scope of antitrust liability under the proposed reforms — would threaten incentives for competition and innovation. They may discourage platforms from introducing desirable new products based on the fear that competing sellers could then sue for any perceived slight. Indeed, no matter what an integrated platform does, there will almost always be *some* rival who can claim to be a victim of unequal treatment. For example, even if Amazon lists its own batteries 4th in the search results, it will still have to worry about potential complaints by rivals listed 5th or below. It might decide that remaining in the battery market would be more trouble than it's worth. And that withdrawal of a significant competitor likely has a far greater impact on competition than Amazon's position in the search results. In this way, overbroad restrictions on self-preferencing may have the perverse effect of diminishing both competition and innovation.

If Congress is determined to police self-preferencing, it would be helpful to include some clear and simple safe harbors. One possibility would be to grant the platform safe harbor if it applies a visual marker to its own product listings, similar to the "sponsored" label that attaches to paid listings appearing in internet search results. The marker would convey to consumers that the product's placement on the platform may not be organic. Such a safe harbor would reduce uncertainty about potential liability and would not strongly interfere with trade.

IV. ANTICOMPETITIVE DISCRIMINATION AND FORECLOSURE

Mild self-preferencing does not materially impair rivals' ability to make sales, but more severe forms of discrimination could do so, even if they fall short of a full-blown refusal to deal. For example, suppose a rival's product initially appears at the top of the first page of Google Search results but Google demotes it to the bottom of the 10th page. Very few consumers will click through to the 10th page, so this is practically the same as excluding the rival from the search results altogether. If the rival were instead demoted to, say, the 3rd page, there could still be some anticompetitive effects, but they might be less acute.

The competitive impact of platform discrimination is thus a matter of degree. This raises the question of what standard or test antitrust should use to distinguish those cases in which liability is appropriate. The most natural answer is to limit antitrust scrutiny to those cases in which the discriminatory conduct could plausibly generate appreciable foreclosure in the adjacent product market.[25]

This is consistent with how antitrust already evaluates other exclusionary practices that resemble tying. A good example is bundled discounting.[26] If the discount is sufficiently large, there is no practical difference between this arrangement and a literal tie. In that case, foreclosure is certainly plausible if the defendant is dominant. But if the discount is tiny, then the arrangement will not disturb competition at all. To draw the line between harmful cases and benign ones, courts require some showing that the discount is large enough to create a risk of significant foreclosure.

Lawmakers could improve the proposed reforms substantially by requiring plaintiffs to show a likelihood of appreciable foreclosure in order to carry their initial burden. This would not necessarily have to require the same amount of foreclosure that courts demand in other types of exclusion cases.[27] But it is not reasonable to let plaintiffs carry their initial burden without having to show any foreclosure at all.

24 One might posit that courts could instead police platforms' ranking algorithms to make sure they rank different products in a reasonable way. But this is likely to raise the same kinds of practical difficulties, as there may plausible justifications for numerous alternative ranking algorithms. And the algorithms themselves are likely to be difficult for courts to evaluate.

25 See Hovenkamp, *supra* note 11, at 1544-46.

26 This is where a defendant sells two complements separately while also offering a discount to consumers who buy a bundle of both goods.

27 As an example, in a tying or exclusive dealing case, courts usually require about 40 percent foreclosure to establish a *prima facie* violation.

V. PLATFORM VERTICAL INTEGRATION

The most extreme proposed reform would prohibit large platforms from vertically integrating into adjacent product markets. For example, one proposed bill, the Ending Platform Monopolies Act,[28] would prohibit any sufficiently large platform from owning or controlling any "line of business other than the covered platform" that creates a "conflict of interest" in the sense that it could create an incentive to use the platform to exclude or discriminate against rivals in the same line of business.

Under such proposals, Amazon could not introduce products that compete with any other goods sold on Amazon. Microsoft could not sell software that competes with other Widows-compatible software. And Apple and Google could not offer apps that compete with any other apps sold through their app stores.

It is hard to overstate how misguided this proposal is. Vertical integration offers significant efficiency benefits, such as reducing transaction costs or eliminating a double markup problem. Moreover, when integration is achieved through internal expansion rather than merger, this is form of competitive entry. The proposal would block such entry by large platforms. In addition to diminishing competition, this would eliminate platforms' incentive to develop innovative new products.

Clearly the better approach is to attack anticompetitive conduct by integrated platforms directly whenever it occurs (and thus to deter it from occurring in the first place). That would allow antitrust to purge the relevant harms without creating widespread collateral damage to competition and innovation. This point has been well-understood in antitrust for many decades.

The hostility toward platform vertical integration likely derives not from traditional antitrust concerns, but rather a desire to protect small businesses from the rigors of competition. A large platform will often benefit from economies of scale or scope that allow it to offer better deals than smaller rivals can afford to match. There is a common populist sentiment that this is unfair. But antitrust's objective is to protect the competitive meritocracy, not to predetermine who should win and who should lose. That determination is properly left to consumers.

VI. WALLED GARDENS

On Apple and Android mobile devices, a consumer can obtain apps only through the official app store associated with her operating system. These app stores take a cut (usually 30 percent) of app transactions, including purchases of in-app content. One significant proposed reform, which is codified in OAMA, is to prohibit this "walled garden" business model. Specifically, it would prevent an app store from requiring app makers to use its own in-app payment system. And it would require the companies who control the most popular mobile operating systems (most notably Apple and Google) to let users "sideload" apps — to acquire them by means other than the companies' official app stores.

One widespread concern with this proposal is that, by eliminating the major platforms' ability to screen out malicious or invasive apps, it could undermine users' security and privacy interests. This is a valid concern that Congress should investigate carefully before adopting the proposals into law.[29]

The more traditional antitrust question centers on the proposal's likely economic effects. This includes its impact on prices and on the selection of apps available to consumers, among other things. The focus on the security concerns has distracted from these questions to some extent. But it would be a mistake not to consider them carefully, because it is not obvious that the economic effects of this proposal would be beneficial.

Eliminating the walled garden model is likely to have polarizing economic effects on consumers. It will likely benefit "high intensity" users who purchase a lot of apps and in-app content. But it will likely harm low intensity users who spend little on apps. This makes it hard to conclude that mobile users will collectively benefit from the elimination of walled gardens — particularly since most mobile device users are in the low-intensity group.

28 H.R. 3825, https://www.congress.gov/bill/117th-congress/house-bill/3825/text.

29 OAMA does offer safe harbors for certain conduct aimed at protecting user security or privacy, but there is disagreement as to whether they are sufficient to allay the concerns. See e.g. Caitlin Chin, *Breaking Down the Arguments for and Against U.S. Antitrust Legislation*, Center for Strategic and International Studies (April 22, 2022).

The key point is that, while eliminating walled gardens will likely reduce prices of apps and in-app content, it will also likely raise prices at the device level. A company that controls an operating system faces a two-part pricing problem, because there are two distinct ways it can charge prices.[30] This leads to two alternative pricing models. First, the OS maker might decline to take a cut from app transactions and instead charge a one-time lump sum fee for access to its OS. This has long been the model employed by Microsoft Windows. Microsoft charges equipment manufacturers a license fee for installing windows on their computers; much of these fees will then be passed through to consumers in the form of higher computer prices. But Microsoft does not subsequently take a cut out of software transactions.

Alternatively, the firm could make the OS cheap or even free, and instead collect fees by taking a percentage cut of each software purchase. This model, which economists sometimes call "metering," is the one currently employed on smartphones. For example, Google does not charge fees for its Android OS, but it takes a cut of most app transactions in its app store.

Metering is very common. Its purpose is to keep the product affordable to the large majority of consumers while allowing the firm to extract more fees from those consumers who use it more intensively. The latter is achieved through aftermarket transactions that gauge (or "meter") the intensity of a consumer's use. For example, a video game console might be sold at or below cost, and the seller will instead earn its profits by taking fees from game sales. Similarly, many printer manufacturers charge low prices for the printer and high prices for the ink cartridges.

Metering is often essential in network industries, where success depends on building a large network of users. In these cases, it is important not to price low-intensity users out of the market by charging high upfront access fees. Instead, the firm will often give everyone basic access for free, but then charge fees for premium aftermarket content that only appeals to high-intensity users. This is embodied in the "freemium" pricing model employed by many mobile games.

The hitch with metering is that the seller must be able to prevent customers from circumventing its aftermarket fees by transacting with third parties instead.[31] In the mobile context, this is where the walled garden comes in. It ensures that the OS maker can charge fees for all app transactions by requiring that all such transactions run through its own app store.

If walled gardens are outlawed, an OS maker will maximize profits by shifting to the Windows-style model under which it charges a high fee upfront but does not take a significant cut from most app transactions. In the case of a vertically integrated firm like Apple, which sells its own devices utilizing its own OS, this will take the form of a direct increase in the device price.[32] Either way, the result will be cheaper app transactions but more expensive mobile devices.

One could still attempt to justify the policy shift by arguing that the benefits of lower transaction fees will outweigh the higher prices of devices.[33] However, this is an empirical question, and to my knowledge policymakers did not consider it before proposing to eliminate the walled garden model.

Moreover, any justification Congress might give will have to confront the most unappetizing aspect of its proposal: it effectively asks the large majority of mobile device users (most of whom do not spend much on apps) to subsidize a relatively small group comprising mainly children and young adults who spend a lot on mobile games. Eliminating walled gardens will benefit the latter users (and perhaps their parents), but only at the expense of raising overall costs for everyone else.

Of course, a platform's ability to control the flow of app transactions on its OS can lead to competition concerns other than just higher transaction fees. Most notably, the firm might exploit this control to exclude apps that compete with its own apps. This could affect not only app pricing but also the variety of apps available. As discussed above, that is an important concern that current law largely dismisses. But the most direct way to address this concern is to make sensible reforms to *Trinko*'s unreasonably restrictive refusal-to-deal framework.

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30 On the economics of two-part pricing, see Richard Schmalensee, *Monopolistic Two-Part Pricing Arrangements*, 12 Bell J. Econ. 445 (1981).

31 For example, in the case of printers and ink cartridges, metering will not work if consumers can easily buy compatible ink cartridges from third parties.

32 To see why, note that, under metering, the average app transaction fees collected per device act like a subsidy on device sales. This induces the seller to cut the price of the device. Absent metering, that subsidy goes away and the firm will raise the price of the device.

33 For example, it is possible that device level competition could prevent device prices from rising by enough to outweigh the benefits of lower transaction fees. In general, however, the net effect of eliminating metering is ambiguous. See, e.g., Erik Hovenkamp & Herbert Hovenkamp, *Tying Arrangements, in* Oxford Handbook of International Competition Policy, (D. Daniel Sokol & Roger Blair, eds.) (2014).

VII. PRESUMPTIONS AND PROOF BURDENS

In an exclusion case, a plaintiff typically must show market power along with some indicia of anticompetitive harm. It is one thing to argue that these proof requirements have become unreasonably hard to satisfy (a position I agree with). It is another to suggest that they should be eliminated altogether. But the proposed reforms come close to doing exactly that.

First, in most instances, the proposed reforms place no burden on the plaintiff to prove a likelihood of anticompetitive effects. Rather, the burden is typically on the defendant to disprove them. For example, AICOA enumerates ten violations, and in seven of them anticompetitive harm is simply presumed from the conduct itself. The defendant then carries the burden of rebutting that presumption. OAMA similarly presumes anticompetitive harm, but it recognizes only certain specific defenses relating to user protection, national security, and IP rights.

Second, the proposals eschew any analysis of market power. Instead, they effectively presume market power whenever the platform is sufficiently large, measured either in terms of its market capitalization or subscriber base. Relatedly, they presume that control of a large platform is sufficient to disrupt competition in any adjacent product markets.[34] This is problematic given that most large tech platforms operate in many different product markets that vary widely in the extent to which they rely upon the platform. For example, suppose Amazon sells its own coffee, but that 99 percent of all retail-level coffee is purchased in brick-and-mortar grocery stores. Then it is hard to see how Amazon could hope to undermine competition in the coffee market. As this illustrates, the fact that a platform is large does not imply that it has the power to thwart competition in every market that it operates in.

VIII. CONCLUSION

There are good reasons for seeking pro-enforcement antitrust reform, including in high-tech industries. But to be successful, such an undertaking must make a serious effort to distinguish anticompetitive practices from reasonable or benign ones. The proposed Big Tech reforms fall woefully short in this regard. They shoot first and ask questions later. As a result, they pose a major risk to competition and innovation. Policymakers should continue to pursue valuable antitrust reform, but they should not settle for ill-conceived proposals designed to achieve liability by any means necessary. We can do much better.

34 AICOA does require that a platform is a "critical trading partner" in the sense that it has the power to "materially impede" a seller's ability to reach consumers. However, under the bill this need be true for only one product sold over the platform. Thus, there is no need to show the platform has such power over the specific product market at issue in a given case – only that it has such power over *some* market.

BIG DATA, LITTLE CHANCE OF SUCCESS: WHY PRECEDENT DOES NOT SUPPORT ANTI-DATA THEORIES OF HARM

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1 Any views expressed in this publication are strictly those of the authors and should not be attributed in any way to White & Case LLP.

I. INTRODUCTION

As the digital economy has matured, "Big Data"— extremely large datasets that require sophisticated tools to analyze[2] — has enabled extraordinary innovation, creating a number of benefits, including free products and greater efficiencies. Precisely because Big Data is such a powerful tool, though, scholars, governments, and litigants have called attention to what they view as its potential to harm both competition and consumers.[3]

The debate over the effect of Big Data on competition is occurring amidst renewed interest in Section 2 of the Sherman Act, which governs single-firm monopolistic conduct. States, regulators, and private plaintiffs have brought numerous high-profile cases against large technology companies with access to Big Data in recent years, with varying degrees of success.[4] Courts have generally remained skeptical of these attempts to use the competition laws to challenge large technology firms' uses of and provision of access to their data. Government enforcers, though, are signaling that the near future may hold more litigation (both civil and criminal), and scrutiny of mergers involving Big Data and other forms of technology.[5]

If we see more of these challenges, courts will have to consider the question of whether and how the use of Big Data can be anticompetitive. These cases may arise not just in traditional digital platforms, but also in the application of emerging technologies that enable new applications of Big Data, including healthcare, connected automobiles, smart cities, supply chain optimization, and energy efficiency.

Antitrust claims over the use of Big Data are most likely to proceed under the theory that the data constitutes an "essential facility" or that withholding a rival's access to the data constitutes an anticompetitive refusal to deal. However, these arguments are dubious from a legal perspective given how the antitrust law has evolved over nearly four decades since the Supreme Court's decision in *Aspen Skiing Co v. Aspen Highlands Skiing Corp*.[6]

From an economic perspective as well, these theories may have high potential downsides because allowing claims based on the essential facilities or reinvigorated refusal to deal doctrines threaten to undermine the procompetitive benefits created by the new digital economy.[7] In this article, we explore the advances enabled by Big Data, its competitive implications, and why applying an expansive interpretation of the antitrust laws regarding single firm conduct to Big Data would be out of step with legal precedent and sound economics.

II. POTENTIAL COMPETITIVE IMPLICATIONS OF BIG DATA

Data enables the modern internet, where many resources and services are available without charge. Many of the most popular online services and applications in the world are able to offer their services to consumers for free by harnessing and monetizing the data they collect from users.[8] For instance, one way firms utilize data is to target and customize ads for consumers, increasing consumer surplus both by assisting them in finding the products they desire, and by allowing the firms to provide their products for free.[9]

Big Data, though, allows these firms to go beyond focusing advertisements to deliver the right products to the right consumers; it also serves as an input for innovation. Search engines can continuously refine the design of their searches by querying which links users click, online

2 Anja Lambrecht & Catherine E. Tucker, *Can Big Data Protect a Firm From Competition?* at 1, Competition Policy International (2017), https://www.competitionpolicyinternational.com/wp-content/uploads/2017/01/CPI-Lambrecht-Tucker.pdf.

3 E.g. Filippo Lancieri & Patricia Morita Sakowski, *Competition in Digital Markets: A Review of Expert Reports* at 4-8, Chicago Stigler Center (2020), https://www.chicagobooth.edu/-/media/research/stigler/pdfs/workingpapers/303competitionindigitalmarketslawreview.pdf.

4 See, e.g. *New York v. Facebook, Inc.*, 549 F. Supp. 3d 6 (D.D.C. 2021); *Epic Games v. Apple Inc.*, 2021 U.S. Dist. LEXIS 172303 (N.D. Cal. Sep. 10, 2021).

5 Assistant Attorney General Jonathan Kanter, Antitrust Enforcement: The Road to Recovery, Address before the Chicago Stigler Center (Apr. 21, 2022), https://www.justice.gov/opa/speech/assistant-attorney-general-jonathan-kanter-delivers-keynote-university-chicago-stigler#_ftnref11.

6 472 US 585 (1985).

7 Marco Iansiti & Karim R. Lakhani, Competing in the Age of AI: Strategy and Leadership When Algorithms and Networks Run the World (2020).

8 See Sokol & Comerford, *Antitrust and Regulating Big Data* at 1133-34.

9 D. Daniel Sokol & Roisin Comerford, *Antitrust and Regulating Big Data*, 23 George Mason Law Review 1129, 1133-34 (2016); Sigurd Naess-Schmidt, et al., *Empowering the European Business Ecosystem – An Impact Study of Businesses Using Facebook Apps and Technologies* at 28, Copenhagen Economics, (2020).

markets can recommend products to users based on the purchase history of other users, and media companies can design new products based on data-driven metrics.[10] Consumers place a high value on these free services. For instance, one study of European consumers showed that "WhatsApp, Facebook, and digital maps on phones are highly valued . . . with median compensations for losing 1 mo[nth] of access of €536, €97, and €59, respectively."[11]

A related use for Big Data, with applications far beyond the internet, is as an input for artificial intelligence-driven prediction modeling. Sectors as diverse as public health, pharmaceuticals, finance, education, logistics, and e-commerce have been able to develop new or more-effective products and services — such as higher-yield vaccines or more-accurate fraud detection — through the application of Big Data and artificial intelligence.[12]

Critics contend that large firms' access to Big Data may distort competition and harm consumers. One critique is that many digital platforms depend on network effects, whereby the utility of the platform increases based on the number of users and connections between users, which these critics say creates significant barriers to entry of new competitors.[13] Another critique is that digital platforms can access real-time market data regarding both users and third-parties, which one Congressional committee characterized as "akin to near-perfect market intelligence."[14]

Because many firms whose business model is based on Big Data offer their products to consumers for free, critics have noted that lack of competition can manifest not in increased prices but in reduced quality, such as more-intrusive ads or fewer privacy protections.[15] Critics also contend that a firm exercising market power in a two-sided market can raise prices on only the enterprise side, which is invisible to consumers, but may ultimately result in higher prices.[16]

However, the nature of data itself undermines many of these concerns about competition. For one, even though large firms benefit from network effects, data-driven markets as a whole are characterized by low barriers to entry.[17] A new entrant to the market can quickly overtake an established player if it offers a novel product, targets an underserved demographic, or uses modest data more effectively.[18] For example, the music video-based social media site TikTok became enormously popular beginning in 2018 by focusing narrowly on the youth demographic and by utilizing particularly powerful algorithms to guide users to content.[19]

A second factor is that data is ubiquitous and easy to produce. In most cases, data is "non-rivalrous" in both its consumption and production.[20] In other words, in terms of consumption, the data is not used up like a physical good when transferred from one party to another. In

10 Andres V. Lerner, *The Role of 'Big Data' in Online Platform Competition* at 10-11 (August 26, 2014), SSRN: https://ssrn.com/abstract=2482780 or http://dx.doi.org/10.2139/ssrn.2482780.

11 Erik Brynjolfsson, et al., *Using Massive Online Choice Experiments to Measure Changes in Well-Being* 116 Proc. of the Nat'l Acad. of Sciences 7250, 7252 (2019), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6462102/pdf/pnas.201815663.pdf.

12 *See* American Bar Association, Antitrust Law Section, Artificial Intelligence & Machine Learning: Emerging Legal and Self-Regulatory Considerations Part II: Competition Implication of Big Data and Artificial Intelligence/Machine Learning 9-10 (David D. Golden & Wyatt Fore, eds., 2021), https://www.americanbar.org/content/dam/aba/administrative/antitrust_law/comments/feb-21/aba-big-data-task-force-white-paper-part-two-final-215.pdf.

13 Stucke, *Data-opolies,* at 320-21. But this approach overlooks the established economics and strategy work on issues such as network saturation, diminishing returns for network effects, and inter-temporal network effects. See e.g. Zhou Zhou et. al., *How Users Drive Platform Value*, ICIS 2020 Proceedings (2020), https://scholars.cityu.edu.hk/en/publications/how-users-drive-platform-value(c1c92a04-4913-4099-8da5-28d34f68784f).html; Carmelo Cennamo, *Building the Value of Next-Generation Platforms: The Paradox of Diminishing Returns*, 44 J. Mgmt. 3038 (2018); N. Venkatraman & Chi-Hyon Lee, *Preferential Linkage and Network Evolution: A Conceptual Model and Empirical Test in the U.S. Video Game Sector*, 47 Acad. Mgmt. 876 (2004).

14 Committee of the Judiciary, Subcommittee on Antitrust, Commercial and Administrative Law, Investigation of Competition in Digital Markets at 378 (2020), https://judiciary.house.gov/uploadedfiles/competition_in_digital_markets.pdf.

15 Stucke, *Data-opolies,* at 285-290.

16 Stucke, *Data-opolie*s, at 298-299.

17 D. Daniel Sokol & Jingyuan Ma, *Understanding Online Markets and Antitrust Analysis*, 15 Northwestern J. of Tech. and I.P. 44, 48-49 (2017).

18 John M. Yun, *The Role of Big Data in Antitrust*, 28 Global Antitrust Inst. Rep. Digital Economy 220, 229-232 (2020), https://gaidigitalreport.com/2020/08/25/big-data-and-barriers-to-entry/; Sokol & Ma, *Understanding Online Markets* at 49.

19 Joe Tidy & Sophia Smith Galer, *TokTok: The story of a social media giant*, BBC (Aug. 5, 2020), https://www.bbc.com/news/technology-53640724.

20 Sokol & Comerford, Antitrust and Regulating Big Data at 1137-38.

terms of production, a single act by a consumer — such as visiting a website — can provide data to many different parties simultaneously.[21] A robust and competitive market of data brokers has therefore emerged, meaning that even a minor player or new entrant in the market can acquire enough data to be usable without having to collect that data itself.[22]

Of course, this very ease of collecting data has spurred government and consumer concerns over privacy and security.[23] But harms to consumer privacy or data security arising from the use of Big Data, are likely better answered through consumer protection and privacy rules rather than through an antitrust lens.[24] The collection and utilization of data is not the domain of a few dominant firms; rather, essentially all businesses in the online ecosystem are incentivized to collect consumer data because it can be used to improve services and marketing, or as an input to their products.[25]

Indeed, the data ecosystem consists of data from numerous sources, often sold by data brokers: first party information, data scraping, sensors, devices, crowdsourcing, customer data, and "exhaust" data unrelated to a business transaction such as physical movement or actions.[26] For example, the business model of the "people analytics" firm hiQ, discussed below, depends on collecting and analyzing large amounts of publicly available data.[27] Antitrust is thus a poor fit for addressing privacy concerns; its use carries the risk of distorting competition by focusing on only the largest firms, while ignoring data collection by the many smaller players in the online ecosystem.[28]

As to the critique that large platforms may use their access to data to directly compete with third parties in separate markets, there is empirical evidence that this type of market strategy can be procompetitive on the whole.[29] This not a new business strategy either; brick-and-mortar stores such as Target, Walmart, and grocers have long provided private-label goods that compete for shelf space with third-party brands while benefiting from the stores' ability to gather data about the market.[30]

The concern for overall efficiency is particularly important in two-sided markets as well, as the Supreme Court held in the recent case *Ohio v. American Express*, where it recognized that the two sides of the market in credit card transactions (consumers and merchants) could not be analyzed in isolation, but must be analyzed together.[31] And as will be explained below, the nature of single-firm conduct makes it especially tricky to determine when behavior that may appear at first glance to be anticompetitive, actually is.

III. POTENTIAL LEGAL FRAMEWORKS TO ANALYZE USES OF BIG DATA

Current trends in antitrust cases against large technology companies, and in the FTC's increased scrutiny of mergers, are making lawsuits and enforcement involving Big Data more probable. To date, though, there is limited case law dealing directly with potential anticompetitive concerns involving Big Data, and courts have shown little interest in expanding antitrust doctrine regarding single-firm conduct.

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21 Catherine Tucker, *Digital Data, Platforms and the Usual [Antitrust] Suspects: Network Effects, Switching Costs, Essential Facility* at 13-15 (2019), SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3326385.

22 Tucker, *Usual [Antitrust] Suspects* at 14-15 (2019).

23 Federal Trade Commission Chair Lina M. Khan, remarks before IAPP Global Privacy Summit 2022 (Apr. 11, 2022), https://www.ftc.gov/system/files/ftc_gov/pdf/Remarks%20of%20Chair%20Lina%20M.%20Khan%20at%20IAPP%20Global%20Privacy%20Summit%202022%20-%20Final%20Version.pdf.

24 Sokol & Comerford at 1144-45.

25 See *Statement of the Federal Trade Commission Concerning Google/DoubleClick* at 1, Federal Trade Commission File No. 071-0170 (2007) ("Of course, the consumer privacy issues presented by 'behavioral advertising' are not unique to Google and DoubleClick. To the contrary, these issues extend to the entire online advertising marketplace."); *Data is the new gold – how and why it is collected and sold*, Usercentrics (Oct. 21, 2021), https://usercentrics.com/knowledge-hub/data-is-the-new-gold-how-and-why-it-is-collected-and-sold/ (describing how online businesses collect and utilize user data).

26 See generally Laia Pujol Priego et al., *Data Sharing Practice in Big Data Ecosystems,* ESADE Business School Research Paper No. 273 (2019), SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3355696; Llewellyn D. W. Thomas & Aija Leiponen, *Big Data Commercialization*, 44 IEEE Engineering Mgmt. Rev. 74 (2016).

27 *hiQ Labs, Inc. v. LinkedIn Corp.*, 2022 U.S. App. LEXIS 10349, at *9-10 (9th Cir. Apr. 18, 2022).

28 Olivia T. Creser, *In Antitrust We Trust?: Big Tech Is Not the Problem - It's Weak Data Privacy Protections* 73 Federal Communications Law Journal 289, 310-11 (2021).

29 Feng Zhu & Qihong Liu, *Competing With Complementors: An Empirical Look at Amazon.com* at 28 (2018), https://www.hbs.edu/ris/Publication%20Files/amazon_2018-06-05_4a83c515-af0c-4366-9fba-8fb059d0b4f6.pdf.

30 *See* PLMA's 2021 Private Label Yearbook: A Statistical Guide to Today's Store Brands at 4, Private Label Manufacturers Association (2021), https://plma.com/sites/default/files/files/2021–05/plma2021yearbook2.pdf (showing that 20 percent of the value of goods bought at surveyed stores in 2021 was from private-label brands).

31 138 S. Ct. 2278, 2285-86 (2018).

Single firm conduct, including a dominant firm's refusal to deal with a rival, is governed by Section 2 of the Sherman Act.[32] Some commentators have suggested that such refusals to deal in the context of Big Data could give rise to a cause of action under the antitrust laws because large platforms with access to vast amounts of data could qualify as "essential facilities."[33]

Applying this theory to the digital economy, the Congressional Subcommittee of the Judiciary has suggested that "Congress consider revitalizing the 'essential facilities' doctrine, the legal requirement that dominant firms provide access to their infrastructural services or facilities on a nondiscriminatory basis. To clarify the law, Congress should consider overriding judicial decisions that have treated unfavorably essential facilities- and refusal to deal-based theories of harm."[34]

As the Subcommittee noted, however, modern case law is highly skeptical of both the refusal to deal and essential facilities doctrines. In essence, this is because the general rule under the antitrust laws is that a private actor is free "to exercise his own independent discretion as to parties with whom he will deal."[35]

The essential facility doctrine historically has been applied to natural monopolies such as bridges and power grids, price-regulated utilities, or state-owned enterprises, where the party controlling the facility refuses a rival access to a physical "essential input," and it is impractical for the rival to obtain or duplicate the resource.[36] The Supreme Court itself has never recognized the essential facilities doctrine, but it has been recognized (albeit rarely) by several circuit courts.[37]

Courts have had little opportunity to consider the application of the essential facilities doctrine to Big Data. One of the few cases to touch on the issue is *hiQ Labs, Inc. v. LinkedIn Corp.*,[38] where the plaintiff hiQ, a data analytics firm, alleged that defendant LinkedIn had denied it access to an essential facility because it refused to allow hiQ to "scrape" public information about LinkedIn's users. HiQ asserted this public data was essential to its business model, which relied on LinkedIn users' profiles to create predictive insights of worker behavior.[39] Yet the court never assessed the viability of hiQ's essential facility claims because it determined hiQ had failed to properly define the market.[40]

The court refused to accept hiQ's contention that the "people analytics" market depended, as a practical matter, on LinkedIn's dataset, explaining: "that does not mean that useful publicly available information cannot be gleaned [f]rom other sources such as Google and Facebook or other industry directories and sources."[41] As explained above, the court's reasoning here tracks with one of the main theoretical reasons why it is so difficult for data to be truly essential: it is often available from another source.

The recent case of *Sanborn Library LLC v. Eris Info.*, while not involving Big Data directly, dealt with a similar issue of access to a copyrighted database.[42] In this copyright infringement case, counterclaim plaintiff ERIS, a provider of environmental data, alleged that Sanborn Library, the owner of the world's largest collection of fire insurance maps, engaged in monopolistic conduct by refusing to license its map database.[43] While the court agreed with ERIS that Sanborn Library's database could theoretically constitute an essential facility, the court stated ERIS had failed to allege facts sufficient to show it was not feasible for a rival to recreate the database, therefore recommending dismissal of the claims.[44]

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32 Phillip E. Areeda & Herbert J. Hovenkamp, Antitrust Law: An Analysis of Antitrust Principles and Their Application ¶ 773a.

33 See, e.g. Lao, *Search, Essential Facilities*, at 317-18; Committee of the Judiciary at 397-98.

34 Committee of the Judiciary at 397-98.

35 *Verizon Communs., Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 408 (2004).

36 Herbert J. Hovenkamp, *Unilateral Refusals to Deal, Vertical Integration, and the Essential Facility Doctrine*, 1779 Faculty Scholarship at Penn Law 1, 5 (2008); Phillip E. Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 Antitrust L. J. 841, 852 (1989); *MCI Commc'ns. Corp. v. American Tel. & Tel. Co.*, 708 F. 2d 1081, 1132-33 (7th Cir. 1983).

37 *Trinko*, 540 U.S. at 411 ("We have never recognized [the essential facilities] doctrine, and we find no need either to recognize it or to repudiate it here.") (citations omitted); see, e.g. *MetroNet Servs. Corp. v. Qwest Corp.*, 383 F.3d 1124, 1128-29 (9th Cir. 2004); *MCI Commc'ns Corp.*, 708 F.2d at 1132-33.

38 485 F. Supp. 3d 1137, 1143, 1151-52 (N.D. Cal. 2020)

39 485 F. Supp. 3d at 1143.

40 485 F. Supp. 3d at 1152.

41 485 F. Supp. 3d at 1148-49.

42 2021 U.S. Dist. LEXIS 165496 (S.D.N.Y. Aug. 30, 2021), *affirmed Order, Sanborn Library LLC v. Eris Info.*, 19-cv-2049 (S.D.N.Y. Sep. 15, 2021), ECF No. 136.

43 2021 U.S. Dist. LEXIS 165496, at *5-7.

44 2021 U.S. Dist. LEXIS 165496, *38-41.

The *Sanborn Library* case illustrates one of the major flaws in applying the essential facilities doctrine to any kind of dataset, including Big Data—the likelihood of a dataset being truly "essential." As Hovenkamp notes: "A particular facility or input is not 'essential' simply because one particular firm would prefer to rent it from the monopoly rather than provide it for itself. Rather, it must be shown that rivals in general are unable to duplicate the facility."[45] And as explained above, data as a resource is far easier to duplicate or obtain from third parties than is physical infrastructure.[46] It is therefore uniquely unsuited to being treated as "essential."

A second, and perhaps more serious problem with applying the essential facilities doctrine to Big Data is that it calls for forced sharing, which carries a high risk of negative economic consequences.[47] These efficiency problems are baked into any refusal to deal theory.

The legal standard controlling a firm's unilateral refusal to deal stems from *Aspen Skiing*.[48] There, the Supreme Court ruled that a monopolist can face liability for refusing to deal when it withdraws from a voluntary and profitable prior course of dealing with a rival, sacrificing short-term profits to harm that rival or harm competition.[49]

The Supreme Court subsequently narrowed the reach of the refusal to deal doctrine in *Verizon Communs., Inc. v. Law Offices of Curtis V. Trinko* where it stated that the ruling from Aspen Skiing was "at or near the outer boundary of [Section] 2 liability."[50] The Court reiterated that there is no general duty to aid competitors, cautioning that a court compelling a monopolist to deal with its rivals "may lessen the incentive for the monopolist, the rival, or both to invest in those economically beneficial facilities."[51] After Trinko, courts do still occasionally find a firm can be liable for refusal to deal—for example, in the recent case *Viamedia, Inc. v. Comcast Corp*.[52] the Seventh Circuit applied *Aspen Skiing* to find potential refusal-to-deal liability in Comcast's decision to block a rival from accessing a certain advertising platform over which it held a monopoly — but such cases remain rare.

Many scholars (and courts) have concluded that a firm's unilateral refusal to deal can only be truly anticompetitive when that firm gives up a profitable cooperative arrangement for a less profitable strategy of exclusion.[53] Thus, most courts have refused invitations to engage in broad interrogations of unilateral conduct.[54]

Furthermore, even if one assumes that a large technology company is a monopolist, forcing it to share that monopoly does not ultimately benefit the consumer, because such an intervention would only lead to multiple firms sharing the same monopoly profits—reducing their incentive to compete.[55] Such forced sharing also stifles innovation by discouraging both the monopolist and the rival from making economically beneficial investments in the shared product, and by discouraging the rival from developing alternatives.[56]

A similar dynamic exists for intellectual property. Just as the protections provided by intellectual property laws incentivize innovation, so too may forced sharing counteract those incentives.[57] Thus, the DOJ/FTC's 2017 guidance on the intersection of antitrust and intellectual prop-

45 Hovenkamp, *Essential Facility Doctrine* at 24.

46 Tucker, *Usual [Antitrust] Suspects* at 13-15.

47 See, e.g. Thom Lambert & Alden F. Abbott, *Recognizing the Limits of Antitrust: The Roberts Court Versus the Enforcement Agencies*, 11 J. Competition L. & Econ. (2015); Frank H. Easterbrook, *The Chicago School and Exclusionary Conduct*, 31 Harv. J.L. & Pub. Pol'y 439, 442 (2008).

48 472 U.S. 585.

49 *Aspen Skiing*, 472 US at 608.

50 540 U.S. 398, 409 (2004).

51 *Trinko*, 540 U.S. at 407-08.

52 951 F.3d 429 (7th Cir. 2020).

53 See, e.g. Janusz A. Ordover & Robert D. Willig, *Access and Bundling in High-Technology Markets*, in Competition, Innovation and the Microsoft Monopoly: Antitrust in the Digital Marketplace 103, 109 (J.A. Eisenach and T.M. Lenard eds., 1999); Areeda & Hovenkamp, Antitrust Law ¶ 772d3.

54 See *Trinko*, 540 U.S. at 409; Herbert Hovenkamp, *The Monopolization Offense*, 61 Ohio St. L.J. 1035, 1044–1045 (2000); Geoffrey Manne & Joshua Wright, *If Search Neutrality Is the Answer, What's the Question?*, 2012 Colum. Bus. L. Rev. 152, 192-193 (2012).

55 Herbert J. Hovenkamp, *Essential Facility Doctrine*, at 35; Gus Hurwitz, *Digital Duty to Deal, Data Portability, and Interoperability*, 28 Global Antitrust Inst. Rep. Digital Economy 1024, 1056 (2020).

56 *Trinko*, 540 U.S. 407-408; Areeda & Hovenkamp, Antitrust Law ¶ 771b.

57 Richard J. Gilbert & Carl Shapiro, *An Economic Analysis of Unilateral Refusals to License Intellectual Property*, 93 Proc. Nat'l Acad. Sci. 12749, 12754 (1996).

erty laws recognized that the antitrust laws generally impose no duty to deal, "in part because doing so may undermine incentives for investment and innovation."[58]

IV. REGULATORY TRENDS IN TECHNOLOGY AND BIG DATA

While plaintiffs have so far been generally unsuccessful in bringing antitrust claims related to technology platforms and data, the power of the FTC and DOJ is not as constrained by current essential facilities and refusal to deal jurisprudence. This has manifested recently in their attitude towards mergers. While regulators have not yet blocked any mergers specifically because of the parties' data assets, they have recently signaled the intent to pursue a more aggressive stance.

Up to the time of this writing, the DOJ and FTC's treatment of data assets in mergers has been relatively less aggressive than the rhetoric. For example, when Turbotax owner Intuit acquired personal financial company Credit Karma in 2020, the DOJ required divestiture of Credit Karma's tax services, but placed no restraints on Intuit's acquisition of data from Credit Karma's hundred million users.[59] Similarly, though the DOJ did probe the deal, Google acquired the fitness tracking company Fitbit in 2021 — and Fitbit's user health data — without any conditions.[60] In contrast, the European Commission approved the deal only upon the conditions that Google segregate user data collected by Fitbit and that Google continue to maintain its smartphone Android's compatibility with competitors' smartwatches.[61] Where regulators in the United States have placed conditions on mergers, those have generally been to require the merging party to license or sell its data to third parties who would not otherwise have access.[62]

Over the past year, though, regulators have been setting the groundwork to put all mergers, including those involving data and technology, under a much finer microscope. In August of 2021, the FTC issued a "warning letter" regarding its required review of mergers pursuant to the Hart-Scott-Rodino ("HSR") Act.[63] Under the HSR Act, the FTC and DOJ have 30 days from the merging parties' submission of their filing in order to pursue an initial investigation. The letter informed industry that the FTC was changing its policy regarding these 30-day reviews by reserving the right to investigate or challenge mergers even after closing the initial investigation.[64] Then in September 2021, the FTC and DOJ reversed their 2020 guidelines on vertical mergers, saying their theories in those guidelines regarding "purported procompetitive benefits of mergers" were "flawed."[65] Most recently, on January 18, 2022, the FTC and DOJ announced their intent to strengthen current merger guidelines.[66] Regulators have signaled that technology and data will be a particular priority.

In September 2021, the FTC also released a study examining past acquisitions by the largest technology firms that did not reach the threshold for review under the HSR Act.[67] FTC Chair Lina Khan characterized these acquisitions as part of a strategy by these large tech firms to systematically "buy their way out of competing."[68] On the DOJ side, in prepared remarks on April 22, 2022 before the Stigler Center, Assistant

58 Antitrust Guidelines for the Licensing of Intellectual Property at 3, Department of Justice & Federal Trade Commission (2017), https://www.justice.gov/atr/IPguidelines/download.

59 See Justice Department Requires Divestiture of Credit Karma Tax for Intuit to Proceed with Acquisition of Credit Karma, Department of Justice (25 November 2020); Press Release, Intuit, Intuit and Credit Karma Receive Clearance from Department of Justice for Acquisition of Credit Karma (3 December 2020), https://investors.intuit.com/news/news-details/2020/Intuit-Completes-Acquisition-of-Credit-Karma/default.aspx.

60 See Clare Cho, Cong. Rsch. Serv., R46739, *Mergers and Acquisitions in Digital Markets* at 13-15 (2021).

61 European Commission, Mergers: Commission Clears Acquisition of Fitbit by Google, Subject to Conditions, European Commission Press Corner, December 17, 2020, https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2484.

62 See Corelogic/DataQuick merger: Press Release, FTC Puts Conditions on CoreLogic, Inc's Proposed Acquisition of DataQuick Information Systems, Federal Trade Commission (24 March 2014) https://www.ftc.gov/news-events/press-releases/2014/03/ftc-puts-conditions-corelogic-incs-proposed-acquisition-dataquick; see also *Decision and Order, In the Matter of The Dun & Bradstreet Corporation*, Federal Trade Commission (Sept. 10, 2010) https://www.ftc.gov/sites/default/files/documents/cases/2010/09/100910dunbradstreetdo.pdf (requiring Dun & Bradstreet to sell a copy of the existing K-12 teacher database to a competitor).

63 Holly Vedoca, Federal Trade Commission Bureau of Competition, Adjusting merger review to deal with the surge in merger filings (Aug. 3, 2021).

64 Holly Vedoca, Federal Trade Commission Bureau of Competition, Adjusting merger review to deal with the surge in merger filings (Aug. 3, 2021).

65 Press Release, Federal Trade Commission, Federal Trade Commission Withdraws Vertical Merger Guidelines and Commentary (Sep. 15, 2021).

66 Press Release, Federal Trade Commission, Federal Trade Commission and Justice Department Seek to Strengthen Enforcement Against Illegal Mergers (Jan. 18, 2022).

67 Press Release, Federal Trade Commission, FTC Staff Presents Report on Nearly a Decade of Unreported Acquisitions by the Biggest Technology Companies (Sep. 15, 2021).

68 Press Release, Federal Trade Commission, FTC Staff Presents Report on Nearly a Decade of Unreported Acquisitions by the Biggest Technology Companies (Sep. 15, 2021).

Attorney General Jonathan Kanter signaled the Department's intent to pursue greater enforcement in digital markets, "vigorously enforce" Section 2 of the Sherman Act, and "litigate, not settle" to block anticompetitive conduct or anticompetitive mergers.[69]

Legislators are also focusing on the competitive implications of technology. The May 25, 2022 update to the American Innovation and Choice Online Act ("AICOA"), which would bar certain types of self-preferencing and refusal to deal by large online platforms, included a new carve-out for banking and telecommunications — placing the impact squarely on technology firms.[70] Another bill, the Augmenting Compatibility and Competition by Enabling Service Switching Act of 2021 ("ACCESS Act") would attempt to reduce barriers to entry in data-driven industries by requiring covered platforms to maintain data in a manner that is both portable (allowing transfer to other platforms) and interoperable (allowing transfer to other businesses).[71] These are just two of the changes to the antitrust laws that politicians taking aim at data and tech-driven industries have proposed.

The FTC has also taken preliminary steps to expand its authority to police competition through the use of rulemaking, though competition rulemaking remains murky legally.[72] Section 5(a) of the FTC Act grants the FTC the power to bring actions against any company for unfair or deceptive practices.[73] Between 2015 and 2021, the FTC maintained a policy of bringing Section 5(a) competition-related enforcement actions only in accordance with the principles underlying the antitrust laws: the promotion of consumer welfare, and the assessment of a firm's conduct under the rule of reason standard, which includes weighing efficiencies and business justifications.[74] On July 1, 2021, the FTC rescinded this policy.[75] On the same day, the FTC updated its rulemaking procedures under Section 18 of the FTC Act to streamline and speed up rulemaking.[76] As the FTC announced in its 2022 Statement of Regulatory Priorities, these changes will enable it to develop specific rules defining what constitutes unfair or deceptive acts or practices under Section 5(a).[77]

The FTC already uses its Section 5 authority regarding all manner of alleged unfair or deceptive conduct, some of it involving misuse of data.[78] But the precedent from states' laws barring unfair and deceptive practices suggests that any new FTC rules may broaden its reach with respect to competition. For example, returning to hiQ v. LinkedIn, the district court denied hiQ's competition claims only after it already granted hiQ a preliminary injunction in 2017 on the theory that LinkedIn's decision to block it could constitute breach of contract, tortious interference, or unfair competition.[79] The Ninth Circuit affirmed the preliminary injunction in April of 2022.[80] With respect to the unfair competition claims, the district court concluded that LinkedIn's conduct in blocking hiQ could be potentially unfair because it violated the "spirit" of the antitrust laws.[81] Notably, the district court did not conduct a rigorous market analysis in analyzing the unfair competition claims (as it would, later, for the federal antitrust claims), but instead looked primarily to LinkedIn's intent.[82] The unfair competition laws remain at issue in the ongoing litigation.[83]

69 Kanter, Remarks on Antitrust Enforcement.

70 American Innovation and Choice Online Act (AICOA), S. 2992, 117th Cong. (2022); see also Ben Brody & Issie Lapowsky, *Big Tech antitrust is moving. Here are the newest rules.*, protocol (May 27, 2022), https://www.protocol.com/newsletters/policy/big-tech-antitrust-changes?rebelltitem=10#rebelltitem10.

71 HR 3849, 117th Cong. (2021).

72 Richard J. Pierce Jr, *Can the Federal Trade Commission Use Rulemaking to Change Antitrust Law?*, GW Law Faculty Publications & Other Works 1561 (2021), https://scholarship.law.gwu.edu/faculty_publications/1561.

73 15 U.S.C. § 45(a)(1)–(2).

74 *Statement of Enforcement Principles Regarding "Unfair Methods of Competition" Under Section 5 of the FTC Act*, Federal Trade Commission (Aug. 2015).

75 Statement of Chair Lina M. Khan Joined by Commissioner Rohit Chopra and Commissioner Rebecca Kelly Slaughter on the Withdrawal of the Statement of Enforcement Principles Regarding "Unfair Methods of Competition" Under Section 5 of the FTC Act, Federal Trade Commission (July 1, 2021).

76 Statement of Commissioner Rebecca Kelly Slaughter, Joined by Chair Lina Khan and Commissioner Rohit Chopra, Regarding the Adoption of Revised Section 18 Rulemaking Procedures, Federal Trade Commission (July 1, 2021).

77 Statement of Regulatory Priorities, Federal Trade Commission (Dec. 10, 2021).

78 See, e.g. Complaint, *In re Flo Health, Inc*, Commission File No 1923133 (Jan. 13, 2021) https://www.ftc.gov/system/files/documents/cases/flo_health_complaint.pdf.

79 273 F. Supp. 3d 1099, 1117-18.

80 2022 U.S. App. LEXIS 10349. The long temporal gap came about because one of LinkedIn's justification for blocking hiQ's access was that hiQ's data scraping violated the federal Computer Fraud and Abuse Act (CFAA), and the Ninth Circuit was awaiting the Supreme Court's ruling in *Van Buren v. United States*, 141 S. Ct. 1648 (2021), regarding the scope of that Act. Based on *Van Buren*, the Ninth Circuit determined that hiQ's scraping of publicly-available data on LinkedIn was probably not illegally "without authorization" as defined by the CFAA, meaning hiQ itself had not clearly violated the law so as to nullify its request for a preliminary injunction. 2022 U.S. App. LEXIS 10349, at *7.

81 273 F. Supp. 3d at 1117.

82 273 F. Supp. 3d at 1117-18.

83 2022 U.S. App. LEXIS 10349 at *27-28.

HiQ v. LinkedIn is therefore notable in illustrating how a court may deny federal antitrust claims and allow state unfair competition claims for the exact same conduct based on their differing standards. At the federal level, an expansion in the FTC's definition of anticompetitive conduct could lead to the same result.

What is certain is that the landscape of antitrust enforcement is shifting in a manner that will affect the future of Big Data. Currently, the expansive theories espoused by plaintiffs and enforcers are out of touch with the narrow scope of the relevant case law. However, given the movement in this area, including regulatory and agency proposals, theories involving Big Data are likely to continue to evolve in the short term.

FRIENDLY FIRE: HOW THE BIDEN ADMINISTRATION'S INNOVATION POLICY IS UNDERMINING U.S. NATIONAL SECURITY

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I. INTRODUCTION

Amid the various conflicts occurring around the world and the recent campaign against the global pandemic, there is quieter struggle occurring in the innovation space. It is not the usual race to the Patent Office or battle for greater market share; it is a struggle for control over the direction of innovation in several key industries. While this may seem minor in comparison to the other wars being waged right now, the issue of technological control will have extraordinary impact on the question of whether the United States will be able to defend itself and aid others in future conflicts against a foreign adversary or a virulent disease. This is because the national security of the United States depends on its ability to maintain a position of leadership and control over innovation.

The United States has long been considered a strong country and a leader in national security. Part of this dominance is due to its excellence in and direction of innovation. This success has allowed the country to protect itself and assist other countries for decades. Recently, however, the Biden Administration has adopted or proposed policies that will harm the United State's position of prominence by driving American companies away from the innovative activities that underly and support our national security. Essentially, our national security is being injured by friendly fire.

This short essay is inspired by the LeadershIP 2022 conference, held on April 5, that brought together scholars, policy makers, and industry experts to discuss cutting-edge policy issues at the intersection of innovation, intellectual property, and competition.[2] One striking aspect of the daylong conference was the pervasiveness of national security as an issue – and not just during the panel entitled *Innovation, Standards, and National Security*. The relationship between innovation, competition, and national security is critical and needs to be better understood by policy makers. Policies that inhibit innovation and competition in ways that jeopardize our national security need to be dismantled. It's time to cease the friendly fire.

II. THE RELATIONSHIP BETWEEN INNOVATION & NATIONAL SECURITY

The relationship between innovation and competition is well-understood, even if the correct balance between policies affecting the two are routinely debated.[3] The link between innovation, competition, and national security, however, is less obvious. The idea of national security tends, at least for most people, to evoke thoughts of military prowess. And, to be sure, the excellence of a nation's military is a significant and important part of its national security. However, national security also relies ever increasingly on technology – and technology depends on innovation and competition.

There are two obvious and direct connections between national security and innovation. First, innovation, and specifically innovation in new technologies, is a key economic driver and a thriving economy is required to support national security.[4] Second, modern military operations depend extensively on technology. For example, the United States Department of Defense relies heavily on telecommunication innovations, such as 5G, for everything from controlling drones, to targeting smart munitions, to commanding troops all over the world.[5] As inconvenient as our civilian lives are when we forget our phone or find ourselves with no network service, current military actions would be even more constrained in the absence of technology.

A less recognized link between national security and innovation is the issue of control, and specifically the ability to control the direction and development of key technology areas. Many technologies that are implicated in national security are also subject to standardization – from agriculture, to artificial intelligence, to autonomous vehicles, to the internet of things ("IoT") and telecommunications. These technologies protect our healthcare systems, our transportation hubs, our food and other supply chains, and our economy – not to mention our military. Standardized technologies are also typically areas of great innovation, through the collaborative efforts of standards development

2 See https://ipleadership.org/events/leadership-2022/.

3 See e.g. Elizabeth Webster, *The Nexus Between Innovation & Competition: Will the New Digital Technologies Change the Relationship?*, CPI Antitrust Chronicle (Feb. 2020), available at https://www.competitionpolicyinternational.com/wp-content/uploads/2020/02/CPI-Webster.pdf; Koren W. Wong-Ervin, *The FTC Hearings on IP and Innovation: Key Testimony, Economic Lessons, & Recommendations for Further Study*, 33 ABA Antitrust 43 (Spring 2019), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3281452.

4 See e.g. Michele Nash-Hoff, *What Does the Economy Have to Do with National Security?*, Industry Week (Mar. 21, 2012), available at https://www.industryweek.com/finance/software-systems/article/21954333/what-does-the-economy-have-to-do-with-national-security.

5 See e.g. Department of Defense, *DOD Announces $600 Million for 5G Experimentation and Testing at Five Installations*, Press Release (Oct. 8, 2020), available at https://www.defense.gov/News/Releases/Release/Article/2376743/dod-announces-600-million-for-5g-experimentation-and-testing-at-five-installati/.

organizations ("SDOs"), and competition, and competition, as the collaborators within the SDO seek to have their technology incorporated into the standard.

Active participation in SDOs affords the ability to both control the direction of innovation in a particular technology space as well as understand where potential vulnerabilities may exist within these technologies.[6] In some respects, the issue of control is even more important to national security than economic or operational reliance on the technology. If a military or economic adversary were to gain control over critical aspects of any of these important technologies, it would have an entry point into the very systems that we rely on for our national security. Access that could shut down our supply chains, cripple our economy, or bring our transportation systems to a standstill would have devastating effects on our country's ability to defend itself and aid others.

While this sounds like the plot of a dystopian novel or film, entry points of this type based on "enemy" control have already been seen at least once in modern times. Telecommunication companies are required to implement "back doors" in their equipment to allow law enforcement agencies to access mobile phone networks, but are also required to ensure that they themselves do not retain access. In 2020, the United States announced that Huawei Technologies, a Chinese company, had built its equipment to retain for itself access to these networks and the ability to obtain personal and sensitive information from anyone using its equipment.[7] A number of economic and strategic allies of the United States, including Germany and the UK, have allowed the use of Huawei equipment in building out their nations' 5G networks.

Other countries have recognized the value of controlling the direction of innovation. Economic and strategic adversaries, such as China and North Korea, are actively supporting their countries' innovative companies by investing in the development of critical technologies and supporting the intellectual property regimes and standards development participation that makes control of these technologies possible.[8] For example, President Xi of China has pledge government support for technological innovation in key areas and has created incentives for research and development in industries such as artificial intelligence and semiconductors.[9] In 2020, China released a 15-year plan entitled "China Standards 2035," calling for increased participation by its nationals in the development of standards.[10] This push has already led to more Chinese companies participating in SDOs, more Chinese citizens obtaining leadership positions in SDOs, and more technological contributions being submitted to SDOs by Chinese companies.

The best way for the United States to ensure its national security is to continue to be a leader in innovation and to retain control over the direction of innovation through active participation in standards development. America has long been an undisputed leader in innovation, especially in the technology space. Some American companies, such as Qualcomm and Interdigital, have also ensured that the United States is prominent in standards development by contributing technology for incorporation into standards and participating actively in SDOs. To safeguard the United States, it is critical that innovative activities and participation in standards development by American companies be incentivized; unfortunately, the opposite is true.

III. FRIENDLY FIRE IN THE FORM OF HARMFUL INNOVATION POLICIES

Because national security depends on innovation generally and standardized technology specifically, it would make sense for the United States to adopt policies that encourage American companies to engage in these activities. Recently, however, the Biden administration has adopted or proposed policies that are likely to drive American companies away from research and development in these areas, as well as away from participating in standards development activities. Friendly fire is defined as weapon fire coming from one's own side, especially that which causes accidental injury or death to one's own forces. Implementing national policies that ultimately hurt your own national security is a perfect example of this. In looking at the types of innovation necessary to support national security, friendly fire is coming from a number of different directions.

6 See e.g. Secretary of Defense, *Department of Defense (DoD) 5G Strategy (U)*, at pp. 7-8 (May 2, 2020), available at https://www.cto.mil/wp-content/uploads/2020/05/DoD_5G_Strategy_May_2020.pdf.

7 See e.g. Bojan Pancevski, *U.S. Officials Say Huawei Can Covertly Access Telecom Networks*, Wall St. J. (Feb 12, 2020, 8:41a).

8 Daniel R. Russel & Blake H. Berger, *Stacking the Deck: China's Influence in International Technology Standard Setting*, Asia Society Policy Inst. (2019) at 9.

9 See e.g. Bloomberg, *Xi Jinping Eyes Innovation and Oversight to Grow China's Digital Economy*, Time (Oct. 19, 2021), available at https://time.com/6108481/china-digital-economy-technology/; Emily Weinstein, *Beijing's re-innovation strategy is key element of U.S.-China competition*, TechStream Blog (Jan. 6, 2022), available at https://www.brookings.edu/techstream/beijings-re-innovation-strategy-is-key-element-of-u-s-china-competition/.

10 See e.g. Arjun Kharpal, *Power is 'up for grabs': Behind China's Plan to shape the future of next-generation tech*, CNBC (Apr. 26, 2020), available at https://www.cnbc.com/2020/04/27/china-standards-2035-explained.html.

Discussions at the LeadershIP 2022 conference highlighted at least three ways in which the government's position is likely to discourage investment in innovation in the technology fields that are critical to national security. Two of these sources of friendly fire are based largely in patent policy, while the third source of friendly fire is based in both innovation and competition policy.

A. Friendly Fire in the Form of Patent Policy

The current administration is supporting patent policy that decreases incentives to invest in innovation, both by making it difficult to obtain patent protection and, then if patents are obtained, unnecessarily threatening to override patent owner's rights for the government's benefit. Specifically, with respect to obtaining patent protection, the technology areas that are the most important to national security are the same technology areas for which patent eligibility and satisfying requirements of patentability are most uncertain. As to issued patents, the current administration has signaled its openness to override patent rights for the government's benefit. In both of these cases, companies may lose incentives to invest in the research and development necessary to innovate and control the direction of new technologies.

1. Uncertain Patent Eligibility & Disclosure Difficulties

The technology areas most important to national security, such as artificial intelligence, quantum computing, agriculture, and personalized medicine, are the same areas where obtaining patent protection is uncertain. These types of invention suffer from confusion surrounding patent eligibility, as well as difficulties related to satisfactorily describing innovative technologies, such as artificial intelligence. While these issues are not directly the fault of the current administration, there has been scant motivation for correcting these problems.

Under the current doctrine of patent eligible subject matter, patents are unavailable for inventions covering abstract ideas, laws of nature, and natural phenomenon. Read broadly, as is currently the case, these exceptions to patent eligibility largely impact software and biotechnology inventions. Following a string of Supreme Court cases from 2010 to 2014, the eligibility of software-related inventions in particular (and biotech to a lesser extent) has been in disarray. This has had a profound effect on the ability of innovative companies to obtain patents in the fields of artificial intelligence, quantum computing, and even telecommunications.[11]

Similarly, the requirement that patent applications include detailed descriptions of how an invention is made and operates is quite difficult to satisfy for inventions such as artificial intelligence, where the program itself learns and alters its behaviors. In efforts to reform concerns about patent eligibility, some parties have suggested that the disclosure requirements for software-related inventions be heightened.[12] The inability to explain in prose what underlies these types of inventions is already raising concerns about the likelihood of obtaining patent protection.

Where research and development costs are high, but patent protection is unlikely to be granted, companies are often hesitant to invest in innovating. After all, one reason patents are granted is to provide companies with the incentives to invest in inventive and innovative activities. Because the very types of technology that are critical to national security are the same ones where obtaining a patent is most uncertain, continuing with the same troublesome patent acquisition policies is likely to be harmful to national security.

2. Government Override of Patent Rights

The current administration has floated the idea of using march-in rights, particularly with respect to the COVID-19 pandemic, or other government overrides as a way to address the perceived high cost of pharmaceuticals.[13] There are two primary legal provisions that have been suggested for overriding existent patent rights – march-in rights under the Bayh-Dole Act and effective "compulsory licensing" under 28 U.S.C. § 1498. While these are legitimate provisions created for the government to use in particular circumstances, their use does not come cost-free. As speakers noted at the LeadershIP 2022 conference, the first time the government uses these rights inappropriately, companies will reconsider whether to invest in costly research and development in these fields.

Under the Bayh-Dole act, the federal government has the right to "march-in" and force patent owners to license inventions to other companies, particularly where an original licensee is not making sufficient efforts to commercialize the invention or where the forced license is necessary to address a health or safety concern. Although these rights have never been exercised, there have been numerous calls over the years

11 David J. Kappos, *National Security Consequences of U.S. Patent (In)eligibility*, Morning Consult (Nov. 4, 2019), available at https://morningconsult.com/opinions/national-security-consequences-of-u-s-patent-ineligibility/.

12 Kristen Osenga, *Saving Functional Claiming: The Mismatch of § 112 Reform in the § 101 Reform Debate*, Hudson Institute (Jan. 10, 2020), available at https://www.hudson.org/research/15618-saving-functional-claiming-the-mismatch-of-112-reform-in-the-101-reform-debate.

13 The United States has also signaled its support of the proposed World Trade Organization waiver of intellectual property rights for COVID-19 vaccines; while this action may provide similar disincentives for investing in research and development by innovative companies, this essay is focused primarily on domestic issues and national security.

for the government to do so, including during the height of the COVID-19 pandemic, when 34 states attorneys general petitioned the government to march-in for the use of remdesivir.[14]

Independent from march-in rights are the provisions of 28 U.S.C. § 1498(a), which states that if a patented invention is infringed by or for the United States without permission of the patent owner, the patent owner's remedy shall be "reasonable and entire compensation" for such infringement. Essentially, infringement of a patent by the United States will result in a compulsory license in favor of the government; no injunctive relief is possible. One recent example of this is the letter submitted by Senator Warren and a number of advocacy groups and law professors to the Department of Health and Human Services, asking the agency to invoke 28 U.S.C. § 1498 to "break" pharmaceutical patents.[15] The idea is that, in order to lower drug costs, the government should intentionally infringe pharmaceutical patents and then pay a royalty rate determined by the Court of Federal Claims that will be significantly lower than the prices being charged by the patent owner for the same medications.

Both of these provisions allow the government to infringe patent rights; however, there are three significant differences. March-in rights apply only where the patented invention was developed using federal, public funds, whereas § 1498 applies to every U.S. patent, regardless of funding source. Private companies can take the initiative to seek march-in rights from the government, whereas § 1498 only applies where the government practices a patented invention on its own behalf or requests a government contractor. March-in rights are awarded licenses on reasonable terms "under the circumstances" and pay royalties to the patent owner, where § 1498 requires the patent owner to file suit and receive damages to compensate.

Just as making patent protection unattainable will disincentivize companies from investing in innovation, so too will taking away or de-valuing patent rights once obtained. While the ability of the government to override patent rights exists, it is notable that thus far that ability has been rarely, if ever, used. The current administration, however, has seemed more amenable to the potential exercise of these rights, which again may have significant impact on innovation and, ultimately, national security.

B. Friendly Fire in the Form of Competition Policy

The third barrage against innovation is more intimately tied to competition policy. When patented technology is incorporated into a standard, the patents are known as standard-essential patents, or SEPs. Oftentimes, the standards development organizations, or SDOs, have implemented FRAND policies that apply to these SEPs. Specifically, owners of SEPs commit to license these SEPs on fair, reasonable, and non-discriminatory terms. The purpose of FRAND is to provide a balance between companies who develop new technology for incorporation into technology standards and companies who want to manufacture and sell products and services that incorporate standardized technology. FRAND policies allow the SEP owners to license these patents and recoup some of the costs related to research and development, as well as standards development activities, while ensuring that companies wishing to implement the standardized technology have sufficient access to these patents and the underlying technology.

The friendly fire in this case comes in the form of a Draft Policy Statement on Licensing Negotiations and Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments, published in December 2021.[16] The Draft Policy Statement, in addition to setting forth an unrealistic example of a good faith negotiation between patent owner and licensee, effectively prohibits injunctive relief for infringement of standard-essential patents ("SEPs"). Just as with the government override of patent rights described above, the near-prohibition on injunctive relief devalues the SEP owner's patent right and creates a disincentive for companies to engage in both innovative and standards development activities.

The 2021 Draft Policy Statement is a step backwards from the previous leadership of Makan Delrahim at the Department of Justice-Antitrust Division. Mr. Delrahim's New Madison Approach included, among other provisions, the notions that antitrust remedies were inappropriate for disputes between SEP owners and implementing companies and that injunctive relief should be readily available for infringement of SEPs. This New Madison perspective was manifest in the 2019 Policy Statement on Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments, issued by the DOJ, the US Patent and Trademark Office, and the National Institute of Standards and Technology ("NIST").[17] The

14 See e.g. Milad Emamian, *Oh, When the Feds Go Marching-In*, The Regulatory Review (Feb. 24, 2021), available at https://www.theregreview.org/2021/02/24/emamian-feds-marching-in/.

15 See e.g. Adam Lidgett, *HHS Urged to Lower Drug Costs By 'Breaking Patent Barriers'*, Law360 (Apr. 25, 2022, 6:59p), available at https://www.law360.com/articles/1487146.

16 Department of Justice, *Draft Policy Statement on Licensing Negotiations and Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments* (Dec. 6, 2021), available at https://www.justice.gov/atr/page/file/1453471/download.

17 Department of Justice, *Policy Statement on Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments* (Dec. 19, 2019), available at https://www.justice.gov/atr/page/file/1228016/download.

2019 Policy Statement stated: "All remedies available under national law, including injunctive relief and adequate damages, should be available for infringement of standards-essential patents subject to a F/RAND commitment." As of June 8, 2022, the 2019 Policy Statement has been withdrawn by all three agencies that issued it.[18] Although the 2021 Draft Policy Statement has not been adopted and the agencies have recently suggested that these issues will be addressed on a case-by-case basis, the future of how and whether the administration will craft innovation policy remains unknown.[19]

In July 2021, President Joseph Biden issued the Executive Order on Promoting Competition in the American Economy, where, among other things, he "encouraged [the Attorney General and the Secretary of Commerce] to consider whether to revise their position on the intersection of intellectual property and antitrust laws, including by considering whether to revise" the 2019 Policy Statement.[20] The 2021 Draft Policy Statement was issued in response. The theory, unsupported by evidence and actually disproven by empirical studies, is that SEP owners can wield their patent rights in anticompetitive ways, seeking to charge unreasonably high royalty rates and engaging in patent holdup through the threat of injunction. Despite a lack of data and analysis, the 2021 Draft Policy Statement seeks to prevent the purported anticompetitive behavior by taking away the threat of injunctive relief.

Although the Draft Policy Statement acknowledges the value of "widespread and efficient licensing of SEPs" and recognizes that "efficient negotiation of F/RAND licenses is likely to improve standardization efforts and support competition and innovation," it then proceeds to eviscerate SEPs by essentially taking away injunctive relief. Where injunctive relief is unavailable, efficient infringement is an attractive option. Efficient infringement is the idea that the infringer chooses not to license a patent, but opts to "infringe now, pay later," usually after a lawsuit and often at a court-ordered royalty rate that is more attractive than one it could have gotten through negotiation.

Because of this, the Biden administration's Draft Policy Statement on SEPs is more likely to discourage American companies from participating in SDOs and ultimately allow our adversaries to control the direction of innovation, as well as the very technology we rely on for our safety. The Draft Policy Statement is essentially setting up a second, inferior class of patents in SEPs. If patents lose value when they become part of a technology standard it would make sense for innovative companies in the United States to stop participating in SDOs or stop investing in the R&D that develops technology underlying these important technology standards. In either case, the United States loses its ability to direct innovation and control the direction of technology, including the technology that supports our national security.

IV. CONCLUSION

Policies that decrease incentives to invest in innovation may be an end to innovation of key technologies the United States needs to win wars – either military-based or against global pandemics. Policies that discourage American companies from participating in SDOs may lead to the end of our ability to control the direction of innovation and technology. The relationship between innovation, competition, and national security can hardly be overstated, and yet it seems to be largely ignored by policy makers. Going forward, it is critical for this relationship to be understood. American companies should be incentivized to engage in innovative and standard development activities, particularly in technology areas that support national security.

During the panel on *Innovation, Standards, and National Security* at the LeadershIP 2022 conference, one of the speakers asked the following question: Can America go to war without private industry? A more important and acute question is whether the current administration will stop taking aim at private industry and start supporting the innovative companies whose technology is essential our national security.

18 Department of Justice, *Withdrawal of 2019 Policy Statement on Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments* (June 8, 2022), available at https://www.uspto.gov/sites/default/files/documents/SEP2019-Withdrawal.pdf.

19 See e.g. Ryan Davis, *Feds' Patent Injunction Views Murky After Dropped Policies*, Law360 (June 9, 2022 10:00p), available at https://www.law360.com/competition/articles/1501270/feds-patent-injunction-views-murky-after-dropped-policies.

20 President Joseph Biden, *Executive Order on Promoting Competition in the American Economy* (July 9, 2021), available at https://www.whitehouse.gov/briefing-room/presidential-actions/2021/07/09/executive-order-on-promoting-competition-in-the-american-economy/.

A WIDER-APERTURE LENS FOR COMPETITION POLICY: ANTITRUST IN THE CONTEXT OF SYSTEMIC COMPETITION FROM CHINA

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I. INTRODUCTION

Since early 2020, businesses have had to cope with a pandemic, disrupted supply chains amplified by a land war in Europe and concomitant sanctions. The effects of these phenomena will gradually fade away; but these medium-term crises obscure a deeper challenge for competition policy, namely, the bifurcation of the world economy and the emergence of systemic competition with China.[2] A new paradigm of tangled global governance has emerged, but economic, business, and antitrust scholars have been slow to recognize it, leaving much recent scholarly research on competition policy lacking in perspective.

In the systemic competition that is emerging, the United States and Europe and an Indo Pacific group[3] will lead a liberal democratic bloc, favoring the rule of law, market-based competition, and democracy. China will lead an autocratic bloc, generating systemic competition, capricious and politically/economically, culturally motivated government "interference" with business, opaqueness, and authoritarianism along with targeted industrial and technology policy. In China, competition policy appears to be an adjunct to industrial policy, at least in the tech sector.[4]

This paper does not purport to show how to operationalize competition policy in the face of systemic competition from China. Rather, it lays out the global competitive landscape that has emerged. It outlines the contours of this landscape in order to challenge policy makers, practitioners, and scholars to refashion competition policy in a manner that is relevant to the new world order. It is not pro or anti enforcement. It is about enforcement that is cognizant of the new drivers of competition and marketplace outcomes in global and domestic economies.

In particular, this paper highlights a new form of competition mentioned above that has only very rarely touched the consciousness of scholars and policy makers: systemic competition. With systemic competition, the distinction between private and public is so blurred. As a result, the focal point of competition analysis when Chinese corporates are involved ought to be the system; not individual companies, not cartels, but a semi-coordinated Chinese economic system. Because the distinctions between the state and the enterprise are often immaterial, and competition policy in China is merely a tool of industrial policy, competition agencies around the world need to recalibrate in order to properly assess competitive situations at home and abroad.

Strategic rivalry between China, the U.S., Australia, and a few other nations have been highlighted by commercial conflict.[5] Trade, intellectual property, and national security issues have been implicated. The rule of law, human rights, and the territorial rights of other nations are also impacted. At the core are efforts by the two blocs to have global governance shaped by either liberal democracy[6] or autocracy. However, as in the Cold War with the Soviet Union, lines are blurred, as democracies may ally with autocracies when it seems to serve a larger purpose.

II. CHINA AND THE NEW GLOBAL COMPETITION

A. Introduction

The advance of globalization since 1945 eliminated many national/international distinctions, with few barriers to trade or investment amongst most developed nations. Enterprises headquartered abroad often provide stiff competition in home-country markets. Moreover, research and development ("R&D"), innovation, and even the development of new enterprises have all become enmeshed in a global system with deep interdependencies. Together with coauthors, I somewhat prematurely celebrated the arrival of "meta-multinationals." Meta-multinationals were (and remain) a U.S. and European organizational form when globalization could be assumed, and the logic of shareholder value maximization was dominant. In such a system, strategy and the choice of business models by management could remain relatively place-neutral.

With a wider-aperture systems view of competition policy, policy makers and antitrust enforcers can no longer relegate foreign investment and technology transfer to the sidelines and have even a semi coherent policy framework, particularly in the tech sector. China has clearly

2 Petricevic, O., & Teece, D. J. (2019). The structural reshaping of globalization: Implications for strategic sectors, profiting from innovation, and the multinational enterprise. *Journal of International Business Studies*, 50(9), 1487–1512.

3 India, Japan, South Korea, Australia, and New Zealand.

4 Measures of transparency (e.g. the Corruption Perceptions Index from Transparency International) and political freedom (e.g. the Democracy Index from the Economist Intelligence Unit) are strongly correlated. For the purposes of this paper, they will be treated as a single dimension.

5 Tariffs and export controls imposed by the Trump administration which have been carried on less vociferously under Biden

6 By liberal democracy, I mean liberal in the European sense. In the U.S. this is sometimes referred to as "classical liberalism."

delineated itself as a strategic rival to Western nations and has issued plans to lead in key technologies, and has no commitment to a "level playing field." Many executives and policy makers are now far more alert to the nature of the challenge from China, but few competition policy academics and professionals have recognized what economic historians call a climateric.

Some scholars had warned early on that offshore outsourcing arrangements made to boost short-term financial results could lead to a loss of capabilities and competitive decline.[7] Pisano and Shih among others, have argued that the shift of procurement and manufacturing overseas has caused the U.S., in particular, to lose capabilities required to compete.[8] Industrial "hollowing out" in the wake of offshore investment has also been documented in Japan.[9] The competitive effects of China's subsidized exports accelerated the loss of Western manufacturing capabilities and jobs.

Some evidence exists that management's failure to foresee the industrial and social problems that offshoring would cause represents a "strategic failure."[10] The loss of capabilities from offshoring or outsourcing could have been mitigated by conscious management for the long term, as has been the case at Samsung,[11] or by supportive industrial policy, as in Germany.[12] The result of weakened capabilities is of course less vigorous competition by firms in the West. This is not due to a lack of desire to compete. Rather, it's due to a weakening of the capabilities needed to compete. This ought to be a competition policy concern; but in Europe and the U.S. it isn't.[13] The analytical lenses of mainstream competition analysis cannot stretch far enough to embrace such considerations, despite their obvious importance. The nature of the required changes has already been outlined, though not yet fully operationalized.[14]

B. China's "Dual Circulation" Strategy

In recent years, China has begun to implement a strategy of selective decoupling from the global economy. This axiomatically leads to tilting of the playing field, and has industrial policy and competition policy implications that do not seem to have caught the attention of either scholars or practitioners.

President Xi formally revealed this "dual circulation" strategy in May 2020.[15] The first "circulation" is global integration; the second is domestic self-sufficiency. The goal of this two-pronged approach is to adjust China's international economic exposure to make it more resilient to geopolitical disruptions, which has been characterized as "hedged integration."[16] China's leadership sees the need to insulate itself from growing geopolitical chaos in which a floundering U.S. lacks strategic intent but could still blunder into a war with a rising China. In fact, one analysis found that China has been reducing its relative exposure to the rest of the world in terms of trade, technology, and capital since about 2007, well before the dual circulation strategy became official.[17] This change is not the results of competitive market forces at work. It reflects government policy.

7 Bettis, R. A., Bradley, S.P., & Hamel, G. (1992). Outsourcing and industrial decline. Academy of Management Perspectives, 6(1), 7-22. https://journals.aom.org/doi/abs/10.5465/ame.1992.4274298; Lei, D., & Slocum Jr, J. W. (1992). Global strategy, competence-building and strategic alliances. *California Management Review*, 35(1), 81–97.

8 Pisano, G. P., & Shih, W. C. (2012). Does America really need manufacturing? *Harvard Business Review*, 90(3), 94–102.

9 Cowling, K., & Tomlinson, P. R. (2011). The Japanese model in retrospective: industrial strategies, corporate Japan and the "hollowing out" of Japanese industry. *Policy Studies*, 32(6), 569–583.

10 Bailey, D. (2003). Explaining Japan's Kūdōka [hollowing out]: a case of government and strategic failure? *Asia Pacific Business Review*, 10(1), 1–20. Balding, C., & Clarke, D. C. (2019). Who Owns Huawei? Available at SSRN: http://dx.doi.org/10.2139/ssrn.3372669.

11 Lee, K., & Jung, M. (2015). Overseas factories, domestic employment, and technological hollowing out: a case study of Samsung's mobile phone business. Review of World Economics, 151(3), 461–475.

12 Elliott, L. (2016). The UK could learn a lot from Germany's long-term industrial strategy. *The Guardian*. https://tinyurl.com/4nufseub.

13 There is a general problem in the field of economics that stems from a failure to study the capabilities of firms. This in turn stems from fundamental problems with the theory of the firm in modern economics. See Teece, DJ "The Foundations of Enterprise Performance: Dynamic and Ordinary Capabilities in an (Economic) Theory of Firms" *Academy of Management Perspectives* 8(4) (2014),328–352.

14 Petit, N, & Teece, D.J., Innovating Big Tech firms and competition policy: favoring dynamic over static competition, *Industrial and Corporate Change*, Volume 30, Issue 5, October 2021, Pages 1168–1198, https://doi.org/10.1093/icc/dtab049.

15 Lin, J. Y., & Wang, X. (2021). Dual Circulation: A New Structural Economics view of development. *Journal of Chinese Economic and Business Studies*, 1-20. DOI: 10.1080/14765284.2021.1929793.

16 China Power Team. (2021, updated 2022). Will the dual circulation strategy enable China to compete in a post-pandemic world? *China Power*. https://chinapower.csis.org/china-covid-dual-circulation-economic-strategy/.

17 Woetzel, J., Seong, J., Leung, N., Ngai, J., Manyika, J., Madgavkar, A., Lund, S., & Mironenko, A. (2019). China and the world: Inside the dynamics of a changing relationship. McKinsey Global Institute. https://tinyurl.com/5cpmumsj.

Under its dual circulation strategy, China aims to enhance domestic manufacturing so as to reduce its supply chain dependence on the West while still engaging with Western businesses and banks where it sees the potential for advantage. The domestic branch of this policy calls for efforts to upgrade the technological capabilities of Chinese enterprises, a process that is well underway in all key technology areas. International capital is being attracted to support this endeavor. Trade agreements such as the Regional Comprehensive Economic Partnership, which went into effect in 2022, are also part of the strategy.

China is, in effect, continuing to benefit from globalization while protecting its economy to the extent possible from any further pullback by the West. In effect, while Western media and scholars debate the extent to which the West can (or should) decouple from China, China is already partially decoupling in a way that maintains the dependence of (i.e. Chinese leverage over) the West.[18] It has, for example, been gradually expanding a parallel international payments system denominated in its own currency that may eventually reduce its vulnerability to U.S. sanctions of the type that have frozen the Russian economy.[19]

Neither government nor private enterprises in the West have a unified strategy for countering these moves. Only occasionally do U.S. technology export controls stand in the way of further technology transfer, and Europe and Japan seem to have even fewer qualms. That said, the Netherlands has stood fast since 2019 against Chinese pressure to grant an export license for a specialized piece of equipment made only by a Dutch company (ASML), without which China will not be able to manufacture the most advanced semiconductors.[20] And, citing human rights concerns, the European Parliament froze a major investment deal with China that had been on the cusp of ratification.[21]

Western countries and companies are just waking up to the downside of the extent to which they have been relying on illiberal economies to provide critical goods. Scholarly research has done little to assist in this process. Competition policy ignores the issue entirely. The Covid pandemic shone a harsh light on this vulnerability when China was temporarily unable to satisfy the sudden increase in demand for the protective masks, gowns, and goggles it had been supplying around the world. Clearly there were price and output implications: the very stuff that competition policy focuses on; yet competition policy academics and professionals had nothing to say.

And Germany believed it was engaging Russia in oil diplomacy by becoming a key customer while eschewing infrastructure to enable alternative suppliers, only to discover during the Ukraine invasion that President Putin was willing to leverage this dependence. In short, Europe and in particular Germany created an uncompetitive situation, all aided by using regulation to force open access to the European pipeline network. In short, regulatory and competition policy aided the development of today's uncompetitive outcomes for the supply of gas to Europe, with monumentally negative consequences. This catastrophe was partially engineered by competition authorities in Germany and elsewhere in the EU. To my knowledge there were only two scholars in the debate who were deeply concerned about long term supply reliability issues.[22] Led by competition agencies, short term consumer welfare won the day both in Europe and the US.

In China, meanwhile, the national strategy of dual circulation binds official institutions, state-owned firms, and private enterprises behind a coherent unitary policy. While China's industrial and competition policies often fall short of their stated goals (e.g. the decades-long effort to build a semiconductor industry), the government has the ability to mobilize productive resources in the desired direction on a massive scale. Authoritarian command-and-control is highly effective, but it puts a premium on the industrial strategy being correct, and competition policy falling into line.

In the West, government policy is fragmented across nations and relies on incentives, consultation, and regulation, leaving private firms largely to their own devices with respect to strategy. Competition policy, industrial policy, and science and technology policy are in their own largely hermetically sealed silos. Short-termism has led firms to pursue cost reduction and/or market access in China, leading to the erosion of important capabilities. Western policy has been at best reactive. There have been few, if any, efforts to encourage, let alone assist, firms to upgrade home-country or regional capabilities so as to reduce dependence on China. No pressure is coming from shareholders, either — especially with many large investors just now getting access to China's financial markets. Furthermore, antitrust prohibitions make

18 Economist, The. (2020). China's "dual-circulation" strategy means relying less on foreigners. https://tinyurl.com/bdfubf3r.

19 Jin, E. (2022). Why China's CIPS matters (and not for the reasons you think). *Lawfare*. https://www.lawfareblog.com/why-chinas-cips-matters-and-not-reasons-you-think.

20 Woo, S., & Jie, Y. (2021). China wants a chip machine from the Dutch. The U.S. said no. *Wall Street Journal*. https://www.wsj.com/articles/china-wants-a-chip-machine-from-the-dutch-the-u-s-said-no-11626514513.

21 Liboreiro, J. (2021). MEPs vote to freeze controversial EU-China investment deal. *EuroNews*. https://tinyurl.com/3hm7htjb.

22 See Teece, DJ and Dirrheimer, M. "Struktur und Organisation der Deutschen und der US-Gaswirtschaft im Vergleich: Folgerungen für den Status der Gasversorgungsunternehmen" *Zeitschrift für Energiewirtschaft* 1 (1989), 36–50; and Teece DJ "Structure and Organization of the National Gas Industry: Differences between the United States and the Federal Republic of Germany and Implications for the Carrier Status of Pipelines" Energy Journal 11.3. July 1990 p4-35.

it nearly impossible for firms in the West to coordinate decoupling strategies, or even to reduce dependence on China, should they wish to do so.

China's dual circulation strategy is an extension of its ongoing industrial development efforts. It clearly shapes market structure and global competition. It is powered by tools that include direct funding for industry, government procurement, government R&D support, development of China-specific standards, recruitment of overseas talent, and the legal and extralegal acquisition of foreign technology.[23] National strategies are announced through China's Five-Year Plans and supplementary policies, such as "Made in China 2025" (released in 2015) and "China Standards 2035" (released in 2020), in terms that make clear China's expectations that it will dominate the growth industries of the near future.[24]

China's strategy places heavy reliance on innovation. President Xi has emphasized the need for "indigenous innovation" to increase China's self-reliance, and to this end China has been relentlessly closing its gap in R&D spending with the U.S.[25]

U.S. sanctions to slow China's technological development make little sense unless coupled with a domestic technology development plan to stay ahead in the key technologies of the future. Achieving targeted development goals may require Europe, Japan, and other allies to work together. The welfare of the consumer, while relevant, is hardly the organizing framework best suited to deal with such uncompetitive policies.

As executives in Europe were just beginning to understand that the autocratic regimes in Russia and China have every intention of leveraging supply chain dependencies in rare-earth minerals and other commodities for geopolitical advantage, Russia's invasion of Ukraine in 2022 showed the risk of sleepwalking through these supply chain dependencies. Germany insisted for years that the Russia-led Nord Stream 2 pipeline project, which would allow Russia to send more of its gas west without transiting Ukraine (depriving Ukraine of significant fees and, potentially, natural gas supplies), was purely a commercial project backed by private investors, even as outsiders worried the pipeline would strengthen Russia's leverage over the supply chain of German industry.[26] Supply reliability should have been a goal of competition policy.

Instead, competition policy experts argued that one more competitor (Gazprom) would improve competition in European markets. But in February 2022, as Russia began its attempt to eradicate Ukrainian sovereignty (still unresolved as of this writing), Germany was forced to halt the pipeline approval process and began looking for alternate sources of energy supply.[27]

The actions and policies of China and Russia impact competition at its core… and they need to be as seen as lying with the confines of competition policy. Put differently, if competition agencies cannot open the aperture of the analytical lenses used to assess competition, their chances of harming competition and the economy and the institutions of democracy are likely quite high.

III. SYSTEMIC COMPETITON FROM CHINA: WHAT IS IT?

The German industry board refers to China as delivering "systemic competition" because the firm and the nation–state often are integrated in ways that are uncommon in the West.[28] This is indeed a good way to summarize the nature of competition with China. where industry, government, and society are fused together when it comes to competing with foreign firms. Competition policy agencies in the U.S., the EU, and elsewhere have barely begun to consider the implications for competition policy, be it M&A activity, predatory pricing, or collusion.

23 Koleski, K., & Salidjanova, N. (2018). China's Technonationalism Toolbox: A Primer. U.S.–China Economic and Security Review Commission Issue Brief. https://www.uscc.gov/sites/default/files/Research/China%27s%20Technonationalism.pdf.

24 Gargeyas, A. (2021). China's "Standards 2035" project could result in a technological Cold War. *The Diplomat*. https://tinyurl.com/kvbmef7r.

25 In a 2018 speech on innovation, Xi Jinping said, "Self-reliance is the foundation of the struggle for the Chinese nation to stand on its own among the nations of the world, and indigenous innovation is the only way for us to climb the world's technological peaks." (cited in China Power Team, 2021/2022).

26 Steinhauser, G. (2015). Germany's Merkel defends Russian gas pipeline plan. *Wall Street Journal*. https://www.wsj.com/articles/germanys-merkel-defends-russian-gas-pipeline-plan-1450447499.

27 Oltermann, P. (2022). Germany halts Nord Stream 2 approval over Russian recognition of Ukraine "republics." *The Guardian*. https://tinyurl.com/2p8nnb2d.

28 Federation of German Industries. (2019). "China — Partner and Systemic Competitor: How Do We Deal with China's State-Controlled Economy?" BDI document number: D 1009. https://english.bdi.eu/publication/news/china-partner-and-systemic-competitor/.

The scholarly literature in competition policy and antitrust has been embarrassingly slow to recognize that China has a very different business system of organization from those of most of the world's democracies. Moreover, standard models of competition and enterprise development do not properly characterize business in China. Rather, they lure us into complacency. Moreover, business firms and banks from the West have made many strategic blunders with respect to their engagement with China. Competition policy officials have been caught flatfooted (e.g. the Alstom/Siemens merger).

Multiple aspects of how China's government and industry participate in markets are distinct from — and potentially incompatible with… Western models. In light of China's rise, the rapid changes in its economy, and its continued attractiveness as a market, strategy scholars, and policy makers need a much deeper understanding of China's business institutions and entrepreneurial management styles. The subject has received lengthy treatments, so I sketch here only some key points, but not necessarily in order of importance.

A. Competition Policy a Tool to Assist Industrial Strategy

Public policies in China are adapted and implemented by thousands of local governments; but the design and implementation of industrial policy is centralized and promulgated through a relatively compliant hierarchy.[29] This allows major policies to be consistent through time. It can be argued that China's remarkable growth resulted from the long-term vision of 1980s-era leaders who saw the opportunity to leverage what the West had to offer as a springboard to economic growth.

China's own R&D spending has grown tremendously over the past 30 years, to the point that it is fast approaching the same level as U.S. R&D in nominal terms. As in most other countries, roughly one fifth of the spending is government financed, with the rest primarily spent by the business sector.[30] Properly resourced industrial policy in China is a fairly recent phenomenon, dating from about 2006.[31] Many reports summarize China's rapid progress in various technological fields, challenging America's leadership in science and engineering.[32]

The Chinese government exerts more influence over R&D spending and market outcomes than most Western governments. In 2010, for example, the government, after consulting with scientists, engineers, and entrepreneurs, identified 20 strategic emerging industries, from recycling to commercial aircraft .[33] The government sets targets and provides incentives; individual firms are then expected and incented to step up to the challenge.

The ultimate effectiveness of this system has yet to be proved,[34] but it shapes how China interacts with foreign firms, since investment in targeted industries receives special attention. It is also, arguably, influencing the revival of elements of industrial policy in the U.S., which only recently upgraded the level of scrutiny it applies to foreign investments in innovative U.S. businesses.[35]

When China targets an area of technology for development by Chinese firms, it has no qualms about tilting the playing field. For example, it often introduces steep tariffs on imports and subsidies for domestic suppliers [36] and protective regulatory barriers. Pfizer, for example, faced 15 years of litigation before it could introduce Viagra in China, by which time it faced competition from counterfeiters and a Chinese producer of a generic equivalent.[37] In the data realm, China's "Great Firewall" censorship effectively blocked its citizens from accessing major foreign social media sources, including Facebook, Twitter, and YouTube, starting in the late 2000s.[38]

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29 Naughton, B. (2021). *The Rise of China's Industrial Policy*, 1978 to 2020. Ciudad Universitaria, México: Universidad Nacional Autónomica de México, Facultad de Economía.

30 China Power Team. (2018, updated 2022). *Is China a global leader in research and development?* China Power. https://chinapower.csis.org/china-research-and-development-rnd/.

31 *Ibid.*

32 Allison, G., Klyman, K., Barbesino, K., & Yen, H. (2021). *The Great Tech Rivalry: China vs the US.* Cambridge, MA: Belfer Center for Science and International Affairs. https://www.belfercenter.org/sites/default/files/GreatTechRivalry_ChinavsUS_211207.pdf

33 *Ibid.*

34 *Ibid.*

35 Ferek, K. S. (2020). Treasury Department unveils new rules for foreign investors in U.S. businesses. *Wall Street Journal*. https://tinyurl.com/38h3yxxn.

36 Howell, S., Lee, H., & Heal, A. (2014). Leapfrogging or Stalling Out? Electric Vehicles in China. HKS Working Paper No. RWP14-035. Available at https://ssrn.com/abstract=2493131.

37 Schotter, A., & Teagarden, M. (2014). Protecting intellectual property in China. *MIT Sloan Management Review*, 55(4), 41–48.

38 TechCrunch. (2009). China blocks access to Twitter, Facebook after riots. https://techcrunch.com/2009/07/07/china-blocks-access-to-twitter-facebook-after-riots/.

Competition policy is merely a tool to achieve broader industrial policy and political goals. In particular, foreign firms are often targeted by enforcement agencies so as to extract concessions… usually of a technological kind… that benefit their Chinese competitors or other companies in China's innovation ecosystem.

B. Selective Intellectual Property Rights Enforcement

Many Chinese firms routinely infringe patents and misappropriate trade secrets, and the courts are poor at providing redress,[39] especially in areas of technological importance to China. Moreover, China repeatedly has been accused of engaging in outright industrial espionage.[40] The techniques employed include trespass, trade secret theft, theft of samples, cyber intrusion, bribery, and electronic eavesdropping.

Few CEOs have risked the consequences of making an issue of IP theft. President Xi has been clear that he believes that obtaining market access (leveraging the "gravitational pull of the large, dynamic Chinese market") is adequate to ensure continued acquiescence from Western investors. U.S. executives and boards have been slow to recognize and devise strategies to address the risks. As one IP strategy expert recently wrote:

> *"…corporations line up like lemmings to do business in China because of the market size and the potential of nearly 2 billion Chinese. But the loss of intellectual property isn't just lost once, or over a day, it is lost in perpetuity and compounded. The cost of what is lost is never considered against any alleged "savings" corporations show on their books and convince themselves they have made. But ultimately, they just wind up competing against themselves in the global marketplace with their own technologies."*[41]

The naivety of U.S. and many other executives amplified by the short-term incentive structure they face (with stock options vesting short of the likely period of negative impact from technology transfers) coupled with uninformed corporate boards, many have led to the recent too polite rebuke to management and boards by U.S. Secretary of State, Antony J. Blinken:

> *"We believe – and we expect the business community to understand – that the price of admission to China's market must not be the sacrifice of our core values or long-term competitive and technological advantages. We're counting on businesses to pursue growth responsibly, assess risk soberly, and work with us not only to protect but to strengthen our national security."*[42]

For Western governments, the old "engagement" — the naïve idea that, if the U.S. and others tolerated transgressive behavior by China, then capitalism would take root and the rule of law, if not democracy *per se*, would follow — has started to be abandoned. The U.S. government has made clear that engagement is no longer the main goal. The Trump administration piled tariffs on Chinese imports, and sanctions caused Huawei's top-ranked smartphone business to evaporate in the course of a year.[43] Multinational corporations have been slow to react because individual action brings severe short-term penalties and collective action is illegal under the antitrust laws of most advanced countries.

A new twist to intellectual property disputes is Anti-Suit Injunctions ("ASIs") around which there is considerable opaqueness.[44] These prohibit a patent owner from seeking judicial relief from outside of China if a proceeding in the same matter is ongoing in China.[45] He has classified these as *"the newest of several Chinese tools to undermine foreign parallel intellectual property litigations."* They are intended to: *"build the main battlefield for foreign-related dispute resolution."*[46]

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39 Brander, J. A., Cui, V., & Vertinsky, I. (2017). China and intellectual property rights: A challenge to the rule of law. *Journal of International Business Studies*, 48(7), 908–921.

40 Hannas, W. C., Mulvenon, J., & Puglisi, A. B. (2013). *Chinese Industrial Espionage: Technology Acquisition and Military Modernisation*. London: Routledge.

41 Quinn, G. (2022). Russia's invasion of Ukraine reiterates why companies must rethink their China IP strategies. *IPWatchdog*. https://www.ipwatchdog.com/2022/04/07/russias-invasion-ukraine-reiterates-companies-must-rethink-china-ip-strategies/id=148226/.

42 Antony J. Blinken, George Washington University, May 26, 2022

43 Strumpf, D. (2021). China's Huawei reports 38% revenue drop as U.S. sanctions bite. *Wall Street Journal*. August 6. https://www.wsj.com/articles/chinas-huawei-reports-38-revenue-drop-as-u-s-sanctions-bite-11628237938.

44 Cohen, M. A. "China's Practice of Anti-Suit Injunctions in SEP Litigation: Transplant or False Friend?" University of California, Berkeley, June 2022.

45 In February 2022, the EU filed "a request for consultation" with the World Trade Organization concerning ASIs by Chinese courts.

46 Zhu, Z. (2020). Interpreting China's "Wolf-Warrior Diplomacy." *The Diplomat*, 15, 648–658. https://thediplomat.com/2020/05/interpreting-chinas-wolf-warrior-diplomacy/.

The wariness of Western firms toward China must extend beyond developing the right relationships and keeping certain IP assets isolated from any China operations. Managers must also develop a deeper appreciation for the reality that any engagement at least indirectly involves the state and, potentially, the military. This should weigh in all decisions related to technology, materials, and data that may have values unrelated to their roles in the firm's business model. Competition policy must be cognizant of these issues too.

C. Weak Rule of Law and General Lack of Transparency

By "rule of law," I mean equal treatment of all firms (foreign and domestic) and separation of the state and the courts (i.e. independence of the judiciary), along with rights of appeal to a higher (independent) court. In China, large Chinese SOEs and "private" enterprises with opaque ties to the state are assisted against foreign rivals by government regulators.[47] They also receive loans and cash infusions from government-linked banks and from a weakly regulated "shadow" finance sector. The "rules" are politically derived, ambiguous, and rarely subject to appeal.

Moreover, there is nothing close to a free press anymore, leaving companies vulnerable to whatever line, positive or critical, that state media adopts, and that China's rapid-fire social media censorship allows. China's internet censorship, known popularly as the Great Firewall (and more officially as the Golden Shield Project), has been implemented and refined since 2008, effectively blocking any sources of outside information the government deems undesirable, including most Western news and social media sites.[48]

Other sources of information also should be viewed with skepticism. Government data on the economy have long been suspect, although the situation is improving gradually.[49] The dividing line between public and private ownership can be blurry, which has contributed to the tension over the activities of telecom supplier Huawei.[50] In China, all economic interactions are in some sense interactions with the state.

Perhaps of most concern to many firms is that the lines surrounding what information is construed to be sensitive are not clearly drawn. In 2010, for example, an American geologist working for IHS, a market research firm, was sentenced to eight years in prison for collecting standard information, such as the location of oil wells, that the government determined was a state secret.[51] The blurriness of China's red lines was not improved a decade later when China enacted a Data Security Law. The law identified, without defining, categories of "important data" and "national core data" that carried penalties for their mishandling, whether it occurred in China or elsewhere (Wang, et al., 2021).[52]

D. Government Control of Business

While state-owned firms are directly under government control, the Chinese Communist Party recently has been asserting dominance over the private economy. It has also been "convincing" many of the country's most prominent entrepreneurs that they would be better off not running their large, successful companies, starting with Jack Ma's exit from Alibaba.[53] China has also been saddling its tech firms with new regulations clearly designed to limit their scale and growth, even more or less outlawing the large private-tutoring sector.[54]

This bears some superficial resemblance to Western economies, where for the most part, the government sets rules and firms are allowed to compete within prescribed boundaries. However, all private firms in China, whether foreign-owned or domestic, are required to allow the creation of Chinese Communist Party cells on company premises, effectively reducing the distinction between private and state ownership

47 Milhaupt, C. J. & Zheng, W. (2015). *Beyond ownership: State capitalism and the Chinese firm. Georgetown Law Journal*, 103, 665–722. http://scholarship.law.ufl.edu/facultypub/696.

48 Chandel, S., Jingji, Z., Yunnan, Y., Jingyao, S., & Zhipeng, Z. (2019). The golden shield project of China: A decade later—an in-depth study of the Great Firewall. In *2019 International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery (CyberC)*. IEEE, pp. 111–119.

49 Ip, G., & Davis, B. (2015). *For all its heft, China's economy is a black box*. Wall Street Journal. https://www.wsj.com/articles/for-all-its-heft-chinas-economy-is-a-black-box-1440467253.

50 Balding, C., & Clarke, D. C. (2019). Who Owns Huawei? Available at SSRN: http://dx.doi.org/10.2139/ssrn.3372669.

51 Areddy, J. T. (2010). Geologist sought oil-industry data. *Wall Street Journal*. https://www.wsj.com/articles/SB10001424052748704178004575350751232321946.

52 Wang, X., Swaminathan, A., Sussman, H., Hu, M., & McKenney, R. (2021). China's New Data Security Law: What International Companies Need to Know. *Orrick*. https://www.orrick.com/en/Insights/2021/09/Chinas-New-Data-Security-Law-What-International-Companies-Need-to-Know.

53 Zhai, K., Wei, L., & Yang, J. (2021). Jack Ma's costliest business lesson: China has only one leader. *Wall Street Journal*. https://www.wsj.com/articles/jack-mas-costliest-business-lesson-china-has-only-one-leader-11629473637.

54 Wong, J. (2021). Beijing goes full nanny state on Internet tech. *Wall Street Journal*. https://www.wsj.com/articles/beijing-goes-full-nanny-state-on-internet-tech-11638353061.

and control .[55] By 2018, nearly half of all private firms in China had internal Party organizations .[56] Most large firms, including most of China's listed internet firms, have these Party committees.[57] While the cells are supposed to facilitate productive activities and ensure workers' welfare, they are nonetheless directly linked to the country's political organization[58] and work to obtain full alignment of corporate decisions between the company and the state.

In the key area of data ownership, China, invoking cybersecurity concerns, enacted a law in 2016 requiring companies to store all China-related data within China's borders in order to pass security reviews and to standardize the collection of personal information, "effectively giving the government access to vast amounts of private data."[59] Moreover, China's cybersecurity regulations are vague and have caused widespread worries among technology firms as they place new requirements and restrictions on data storage and data flows.[60] In 2018, pressure was ratcheted up further by new rules allowing police officers to access corporate networks remotely to check for potential security loopholes .[61]

Nor have domestic firms been spared scrutiny. As part of a wider crackdown on its big internet firms, China has been conducting firm-level data security reviews. The government had apparently become worried about the troves of potentially sensitive data amassed by firms such as ride-hailing leader Didi Chuxing.[62]

The conduct and activities of firms are permitted only to the extent that they support, or at least do not harm, economic development, social stability, and the dominance of the Party. It is becoming increasingly difficult for foreign companies to continue operating in China without compromising their business models, intellectual property ("IP"), and corporate values. All of these special rules impact competition. Special rules and regulations in the West have impact too. The main difference is the scale and magnitude of the impact.

E. Cavalier Attitude to International Commitments

China has stretched the limits of what global regulators such as the World Trade Organization ("WTO") can handle. Contrary to WTO rules, Chinese firms have flooded world markets[63] with subsidized production in one industry after another.[64] Yet, since 2016, China has claimed that it is automatically entitled to "market economy" status that would limit the anti-dumping leverage of other countries against it.[65] Meanwhile, the U.S. has pushed back with tariffs and other ad hoc measures initiated by the Trump administration and largely continued under Biden.

Technology extraction has been a particular source of contention. When China joined the WTO, it committed not to condition the approval of investment or market access on technology transfer.[66] Yet there have been numerous reports by foreign firms of being pressured to transfer proprietary technology "voluntarily" to Chinese partners as a condition for access and/or for less punitive regulatory oversight. Many firms are reluctant to telegraph such manipulation for fear of subtle and not so subtle commercial retaliation.

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55 Wong, C., & Dou, E. (2017). Foreign companies in China get a new partner: The Communist Party. *Wall Street Journal*. https://tinyurl.com/329mm2y9.

56 Borst, N. (2021). Party committees in Chinese companies, *Seafarer Capital Partners*. https://www.seafarerfunds.com/prevailing-winds/party-committees-in-chinese-companies/.

57 Lin, Z. (2018). Chinese Communist Party needs to curtail its presence in private businesses. South China Morning Post. https://tinyurl.com/794p248w.

58 Yan, X., & Huang, J. (2017). Navigating unknown waters: The Chinese Communist Party's new presence in the private sector. *China Review*, 17(2), 37–63.

59 Lund, S., & Tyson, L. (2018). Globalization is not in retreat: Digital technology and the future of trade. *Foreign Affairs*, 97, 130–140.

60 Lin, L., & Kubota, Y. (2017). U.S. tech firms spooked by China's arcane cybersecurity law. *Wall Street Journal*. https://tinyurl.com/zz5d3dww.

61 Li, S. (2018). China expands its cybersecurity rulebook, heightening foreign corporate concerns. *Wall Street Journal*. https://tinyurl.com/ys8rcdds.

62 Bloomberg. (2020). Why China is cracking down on its technology giants: QuickTake." *Bloomberg News*. https://tinyurl.com/mu2dfw6s.

63 Badkar, M. (2013). China stimulated its economy like crazy after the financial crisis ... and now the nightmare is beginning. *Business Insider*. https://www.businessinsider.com/chinas-excess-capacity-problem-2013-6.

64 DiPippo, G., Mazzocco, I., & Kennedy, S. (2022). Red ink: Estimating Chinese industrial policy spending in comparative perspective, *Center for Strategic and International Studies*. https://tinyurl.com/2cep9a8d.

65 Bulloch, D. (2017). China is not a market economy, and the WTO won't survive recognizing it as such, *Forbes*, December 8. https://tinyurl.com/56awtu99.

66 WTO (World Trade Organization). (2001). *Accession of the People's Republic of China*, WT/L/432. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/L/432.pdf&Open=True.

The growth of China's economy has given it even more leverage to bend and shape the rules of the global economy in this and similar ways. The latest five-year plan touts the "powerful gravitational field" of the Chinese market to continue attracting global resources.[67] There are many ways in which China is trying to establish global norms and standards to its benefit. China's legal system lacks transparency, as discussed below. In this regard, multiple courts in China have asserted extraterritorial powers by setting royalty rates that purport to apply on a global basis.

F. Military/Civilian Fusion

Another distinctive aspect of China's governance is the close connection between its military and civilian sectors. "Military-civilian fusion" ("MCF") in China embraces broad coordination and planning of economic development and national security.[68] This allows every commercial issue to become a matter of national security, a linkage that is invoked less in the U.S. and rarely in the EU and Japan.

While the commerce/security linkage is not unknown in the West, in China — ruled by a single party committed to its self-preservation in power — all economic activity is seen through a strategic political lens.[69] Yet Western executives seem unaware, or at least unconcerned. Consider China State Shipbuilding Corporation ("CSSC"), which accounts for about one-fifth of the world's shipbuilding market.[70] Shippers based in France, Japan, and Taiwan number among CSSC's key customers, and so does the People's Liberation Army Navy, the world's largest in terms of number of vessels.[71] While it is not unusual for other major shipbuilders to undertake both civilian and military work, it is unusual for companies from strategic rival nations to fill up their order book.

IV. A WIDER-APERTURE LENS FOR COMPETITION POLICY

Walter Russell Mead described how the international institutions of the twentieth century were designed for a world in which economic and political systems converged as they developed.[72] That remained a good approximation for many decades, but "the international order will increasingly be shaped by states that are on diverging paths."[73] For firms, this means unlevel playing fields and at a minimum existing dispute resolution mechanisms that will become less predictable as global institutions become more politicized.

The divergent global order also means that competition policy must become more holistic. The spread of illiberal and autocratic values in countries with strong trading economies poses a collective, systemic risk to the liberal democracies that policy makers should not ignore. Financier George Soros, for example, has written that U.S. investment firms are deceiving themselves by accepting China's invitation to enter the market. He sees such investment as inconsistent not only with the interests of clients but also with "the national security of the U.S. and other democracies."[74] All industries engaged in potential dual-use technologies must begin making similar wide-angle assessments.

The job of scholars and practitioners is to take a broader, systems-theoretic view and guide policy makers as they navigate a bifurcated economy of a type that is now qualitatively different from what existed just a decade ago. President Xi's rise to power is the single most salient event producing what economic historians call a "climacteric," beyond which stretches a new historical epoch. Too many policy makers are naïve about the geostrategic ramifications of China's policies. An entirely new paradigm of competition has emerged in China. Market rules are subverted to national strategic goals, leaving companies competing directly or indirectly with China with few degrees of freedom along with competitive vulnerable.

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67 Xinhua. (2021). Outline of the People's Republic of China 14th Five-Year Plan for National Economic and Social Development and Long-Range Objectives for 2035, translated by the Center for Security and Emerging Technology. https://cset.georgetown.edu/wp-content/uploads/t0284_14th_Five_Year_Plan_EN.pdf.

68 Xinhua. (2017). Xi urges efforts to boost integrated military and civilian development. *China Daily*. http://www.chinadaily.com.cn/china/2017-06/20/content_29820237.htm.

69 Yuan, L. (2021). An insider details the "black box" of money and power in China. *New York Times*. https://www.nytimes.com/2021/09/24/business/china-business-memoir.html.

70 Si, K. (2022). China claims world leading shipbuilding nation in 2021. *Seatrade Maritime News*. https://tinyurl.com/mvzn25s.

71 Funaiole, M. P., Hart, B., & Bermudez, J. S., Jr. (2022). In the shadow of warships, *Center for Strategic and International Studies*. https://features.csis.org/china-shadow-warships/.

72 Mead, W. R. (2021). The end of the Wilsonian era: Why liberal internationalism failed. *Foreign Affairs*, 100(1), 123–137.

73 *Ibid.*

74 Soros, G. (2021). BlackRock's China blunder. *Wall Street Journal*. https://tinyurl.com/mr6dszj8.

Clearly, not all sectors are equally subject to these concerns. In October 2021, the acting director of the National Counterintelligence and Security Center in the U.S. identified five key technologies — semiconductors, biotechnology, artificial intelligence, quantum computing, and autonomous systems — that will be prioritized for preventing theft or transfer from U.S.-based firms and research units[75] It is with respect to such strategic industries that competition policy in China is most distortionary, and where public policy (including competition policy) needs to adopt a very different posture. Some industries, such as retail, are unlikely to be thought of as strategic caught up in the potential conflicts, but what constitutes "dual-use" technology will change over time.[76] And certain industries not directly involved with the strategic technologies, such as finance, still have some tough choices to make about helping China meet its goals.

V. CONCLUSION

The competitive business environment of the twenty-first century is dramatically different from what it was in the post-World War II Pax Americana epoch. As Jannace & Tiffany note, the global commons is no longer governed by a rule of law that provides stability and predictability.[77] It has been disrupted by the "rule of rulers," as autocratic regimes in China and elsewhere seek geopolitical and economic advantage from the activities of MNEs. Existing competition policy research inadequately reflects this system-to-system competition.[78]

Those seeking to build models and create frameworks to assist competition policy will need to immerse themselves in the nature of the linkages and cleavages that matter in the bifurcated global economy that now exists and defines the competitive landscape. Building a better understanding of the current business environment necessitates multidisciplinary research.

Few scholars are recognizing the new reality of systemic competition. Frameworks in business and antitrust economics have been slow to encompass new institutional arrangements and variables that reflect the broader forces driving the global economy.

The rise of China and the impact that Chinese firms operating from China or in foreign markets is palpable, and much of it is very positive. However, one must understand that China is challenging the democracies with a very different form of competition… systemic competition in which the enterprise and the state are effectively one. China is establishing different rules of the game. The goal of competition policy in China is not in the main to help the consumer, or to aid the competitive process as that is commonly understood in the West. Rather, it is to support China's technology policy and industrial policy and thereby aid the competitiveness and advancement of business in China. The advancement of Chinese national interests vis a vis their foreign rivals is paramount.

Competition agencies in the democracies must respond by (1) recognizing that China represents systemic competition and (2) adopting an integrated "whole of government" approach. Technology policy, industrial policy, and competition policy can no longer live in hermetically sealed silos. As analytically convenient and delightful as that might be to the professionals responsible for shaping and enforcing competition policy, it is no longer viable and will undermine consumer welfare, economic welfare, national security, and democracy itself. The siloed approach is what China would wish; but it is not what is required for the democracies to combat and survive the existential threats they now face.

75 O'Keeffe, K. (2021b). Counterintelligence head narrows focus to five technologies critical to U.S. dominance. *Wall Street Journal.* https://tinyurl.com/yc4t2kj4.

76 Forge, J. (2010). A note on the definition of "dual use." *Science and Engineering Ethics*, 16(1), 111–118.

77 Jannace, W., & Tiffany, P. (2019). A new world order: The rule of law, or the law of rulers? *Fordham International Law Journal*, 42(5), 1379-1417.

78 China's system is coordinated and completely aligned with the Chinese Communist Party. The Western system is decentralized, driven more by market realities than by particular leaders.

NATIONAL FRAND RATE-SETTING LEGISLATION: A CURE FOR INTERNATIONAL JURISDICTIONAL COMPETITION IN STANDARDS-ESSENTIAL PATENT LITIGATION?

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Courts have increasingly been asked to adjudicate disputes over the level of fair, reasonable and nondiscriminatory ("FRAND") royalty rates that holders of standards-essential patents ("SEPs") are permitted to charge manufacturers of standardized products. Courts making these determinations may assess FRAND rates only as to SEPs issued in their own countries (the "national FRAND approach") or as to all SEPs worldwide that would be included in a license had it been negotiated by the parties (the "global FRAND approach"). These competing approaches are discussed below, along with some of the international jurisdictional issues that they have raised and potential legislative solutions that could address these issues.

I. NATIONAL FRAND APPROACH

Patents are instruments of national law and, as such, have legal effect only in the issuing jurisdiction. A court may thus adjudicate infringement, and remedies for infringement, solely as to patents within its jurisdiction. As one U.S. district court has explained, though "the dominant practice in the industry is to license [SEPs] on the basis of worldwide sales … the court may not impose a royalty on such a basis because the court's powers do not extend beyond the United States."[2] Thus, in *Ericsson v. D-Link*, which involved a dispute over three SEPs allegedly covering Wi-Fi standards, a jury in the Eastern District of Texas determined damages in the form of a royalty payable only with respect to those three U.S. patents.[3] And in *Optis v. Huawei*, the same district court dismissed a SEP holder's demand for a determination that it complied with its FRAND obligation with respect to non-U.S. patents.[4]

The national FRAND approach has also been followed by courts outside of the U.S. For example, in *Huawei v. Conversant*, the Nanjing Intermediate People's Court in China established a FRAND royalty for the three Chinese SEPs asserted by Conversant,[5] and in *Samsung v. Apple Japan*, the Intellectual Property High Court of Japan assessed FRAND royalties only for Samsung's Japanese SEPs.[6]

II. GLOBAL FRAND APPROACH

The parties to FRAND disputes are often multinational corporations with operations around the world, and many privately negotiated SEP licensing agreements have a worldwide scope. Even though a national court typically lacks the authority to adjudicate damages with respect to the *infringement* of foreign patents, the fact that a FRAND commitment is often a contractual undertaking gives the court jurisdiction to determine, as a contractual matter, a rate for all of the SEPs that would be licensed.[7]

The global FRAND approach was first adopted five years ago by the UK High Court (Patents) in *Unwired Planet v. Huawei*,[8] which determined the terms of a FRAND license covering not only two UK SEPs at issue, but also foreign patents. The court ruled that if Huawei did not accept a license on these terms, it would be enjoined from selling infringing products in the UK.[9] Courts in France are also reported to have indicated a willingness to set global FRAND royalty rates in this manner.[10]

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2 *Hynix Semiconductor Inc. v. Rambus Inc.*, 609 F. Supp. 2d 951, 987, n.30 (N.D. Cal. 2009).

3 *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1225–29 (Fed. Cir. 2014). See also *Microsoft v. Motorola*, 2013 U.S. Dist. LEXIS 60233 (W.D. Wash., 2013), aff'd 795 F.3d 1024 (9th Cir. 2015) (recognizing the existence of non-US patents, but focusing its analysis only on US patents), *In re. Innovatio IP Ventures LLC*, 2013 U.S. DIST. Lexis 144061 (N.D. Ill. 2013).

4 *Optis Wireless Tech., LLC v. Huawei Device USA, Inc.*, No. 2:17-cv-123-JRG-RSP, Findings of Fact and Conclusions of Law, 2019 U.S. Dist. LEXIS 43489 *20 (E.D. Tex., Mar. 18, 2019).

5 *Huawei Technologies Ltd v Conversant Wireless Licensing SarL*, Nanjing Intermediate People's Court of Jiangsu Province, Judgment dated 16 September 2019 in actions raised by Huawei ((2018) Su 01 Min Chu No 232, 233 and 234). See Jacob Schindler, *Nanjing Judge Sets Chinese SEP Rate in Dispute Between Conversant and Huawei*, INTELL. ASSET MGMT. (Sept. 23, 2019), https://www.iam-media.com/frandseps/nanjing-judge-sets-chinese-sep-rate-in-dispute-between-conversant-and-huawei.

6 *Samsung Electronics Co Ltd v Apple Japan Godo Kaisha* (Case No 2013 (Ne) 10043) (16 May 2014).

7 For a discussion of the differences between adjudication of patent damages and FRAND royalty rates, see Jorge L. Contreras, et al., *The Effect of FRAND Commitments on Patent Remedies*, in Patent Remedies and Complex Products: Toward a Global Consensus, 160, 161-63 (C. Bradford Biddle et al., eds., 2019) [hereinafter INPRECOMP].

8 *Unwired Planet Intl. Ltd. v. Huawei Techs. Co. Ltd.* [2017] EWHC (Pat) 711 (Eng.), aff'd [2020] UKSC 37.

9 *Unwired Planet Intl. Ltd. v. Huawei Techs. Co. Ltd.* [2017] EWHC 1304 (Pat), aff'd *Unwired Planet Intl. Ltd. v. Huawei Techs. Co. Ltd.* [2020] UKSC 37. See also *Optis Cellular Tech. LLC v. Apple, Inc.* [2021] EWHC 2564 (Pat.) ¶¶ 86, 89 (adopting similar reasoning).

10 See Matthieu Dhenne, *Overview of FRAND litigation in France: is a new era coming?* Kluwer Patent Blog, Nov. 19, 2020, http://patentblog.kluweriplaw.com/2020/11/19/overview-of-frand-litigation-in-france-is-a-new-era-coming/#_ftn3 (discussing *TCL v Philips and ETSI), and Matthieu Dhenne, XIAOMI Case: Paris, the "New World" of FRAND*, Kluwer Patent Blog, Dec. 27, 2021 (discussing *Xiaomi v. Philips*).

U.S. courts have set global FRAND rates, but only when both parties have requested that they do so.[11] Thus, in 2012, the court in *Motorola v. Microsoft* determined a FRAND rate for Motorola's global portfolios of SEPs covering two standards based on worldwide licensing evidence introduced by both parties.[12] And in *TCL v. Ericsson*, a district court determined global FRAND rates for Ericsson's SEP portfolio after the parties requested that the court make a global rate determination.[13]

But the country that has attracted the most recent attention for setting global FRAND rates is China. In June 2020, smartphone manufacturer Xiaomi asked the Intermediate People's Court in Wuhan to establish a global FRAND rate for InterDigital's SEPs covering the 3G and 4G standards.[14] The Wuhan court indicated its willingness to declare a global FRAND rate when it issued an anti-suit injunction ordering InterDigital to withdraw a parallel suit in India.[15] A similar request was made to the Shenzhen Intermediate People's Court in *OPPO v. Sharp*, which indicated that its determination of a global FRAND rate could improve efficiency by avoiding litigation in multiple jurisdictions.[16] Then in December 2020, Samsung petitioned the Wuhan court to establish a global FRAND rate for SEPs held by Ericsson, resulting in the Wuhan court's issuance of an anti-suit injunction against Ericsson.[17] At least three other recent complaints have sought the determination of global FRAND rates by Chinese courts.[18]

III. JURISDICTIONAL RACES

As these cases demonstrate, a court in any country adjudicating a FRAND dispute can seek to claim jurisdictional authority to determine a global FRAND rate.[19] And a manufacturer will effectively be forced to accept a court's global FRAND rate in any country where it has significant assets or market share, because refusing to sign a license on those terms could result in an injunction prohibiting sales in that country. This ability of one national court to determine FRAND rates for patents around the world can lead to two forms of legal "race."

First is a "race to the bottom" among jurisdictions — a documented phenomenon in which jurisdictions intentionally adapt their rules, procedures, and doctrines to attract litigants.[20] Second, differences among jurisdictions encourage parties to initiate litigation in a favorable jurisdiction as quickly as possible, often to foreclose a later suit in a less favorable jurisdiction. This situation is referred to as a "race to judgment" or a "race to the courthouse," and it may prematurely drive parties to litigation rather than negotiation or settlement.[21] As one UK court recently observed, "if SEP owners have unfettered freedom to select the jurisdiction in which to bring an action for infringement, it means that potentially they get to select the jurisdiction likely to settle FRAND terms most favourable to them. ... This cuts both ways. If implementers have unfettered freedom to bring a claim in any jurisdiction for the settlement of FRAND terms, they will select the country most favourable to them. A race to the bottom is no more attractive than a race to the top."[22]

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11 The unilateral determination of global FRAND rates had been requested by parties in U.S. cases, but the courts in those cases did not ultimately make such determinations. See e.g. *Lenovo (United States) Inc. v. IPCom GmbH & Co. KG*, No. 5:19-cv-01389-EJD, 2019 WL 6771784 (N.D. Cal. Dec. 12, 2019) (Lenovo brought an action claiming that IPCom breached its FRAND obligations and asking the court to determine a global FRAND royalty rate, but the case was resolved prior to a substantive ruling on the matter).

12 *Microsoft Corp. v. Motorola, Inc.*, 871 F. Supp. 2d 1089, 1097 (W.D. Wash. 2012), aff'd, 696 F.3d 872 (9th Cir. 2012).

13 *TCL Commun. Tech. Holdings Ltd. v. Telefonaktiebolaget LM Ericsson*, Case 8:14-cv-00341-JVS-DFM, Memorandum of Findings of Fact and Conclusions of Law at *44 (C.D. Cal., Dec. 21, 2017), rev'd on other grounds 943 F.3d 1360 (Fed. Cir. 2019) ("the parties have requested a global adjudication").

14 *Xiaomi Commc'n Tech. Co. v. InterDigital Tech. Corp.*, (2020) E 01 Zhi Min Chu No. 169-1 (Wuhan Interm. People's Ct., Sept. 23, 2020), translated at https://patentlyo.com/media/2020/10/Xiaomi-v.-InterDigital-decision-trans-10-17-2020.pdf.

15 *Xiaomi v. InterDigital, supra* note 4.

16 See also Guangdong *OPPO Mobile Telecommunications Co. Ltd v. Sharp Corp. OPPO*, China Just. Observer (Oct. 16, 2020), https://www.chinajusticeobserver.com/law/x/guangdong-oppo-mobile-telecommunications-v-sharp-corp-20201016.

17 See *Ericsson Inc. v. Samsung Elecs. Co.*, No. 20-CV-00380, 2021 WL 89980 (E.D. Tex. Jan. 11, 2021).

18 See Bing Zhao, *Coolpad files Chinese FRAND litigation against Pantech*, Intell. Asset Mgt., 22 Mar. 2022, https://www.iam-media.com/frand/coolpad-files-chinese-frand-litigation-against-pantech (discussing *Coolpad v. Pantech, Nokia v. Oppo and Nokia v. Vivo*).

19 To date, the principal countries involved in these disputes include the U.S., UK, France, Germany, Netherlands, Japan, China, Taiwan, South Korea, Brazil, Indonesia, and India.

20 See Jorge L. Contreras, *The New Extraterritoriality: FRAND Royalties, Anti-Suit Injunctions and the Global Race to the Bottom in Disputes over Standards-Essential Patents*, 25 B.U. J. Sci. Tech. L. 251, 280-83 (2019).

21 See *id.* at 283-86.

22 *Nokia Technologies OY v. Oneplus Technology (Shenzhen) Co., Ltd.*, [2021] EWHC 2952 ¶¶ 117-18.

Yet while the UK Supreme Court, in confirming the jurisdiction of UK courts to set global FRAND rates, expressly acknowledged that a single court's authority to set rates across the globe could result in forum shopping, it largely dismissed this concern, reasoning that it is up to SDOs and parties, rather than courts, to adopt policies to avoid this result.[23] Thus, despite calls that they do so,[24] courts, at least in the UK, seem disinclined to refrain from determining global FRAND rates.

IV. ANTI-SUIT AND ANTI-ANTI-SUIT INJUNCTIONS IN FRAND CASES

To complicate matters further, in several of the cases noted above, one or both parties sought anti-suit injunctions ("ASI") or similar procedural orders to prohibit the other party from initiating or continuing litigation in another jurisdiction. The first such ASI in a FRAND case was granted by a U.S. district court in *Microsoft v. Motorola*,[25] which prohibited the SEP holder, Motorola, from enforcing an injunction that it had obtained in Germany during the pendency of a FRAND rate determination in the U.S. Other ASI requests followed in a half-dozen U.S. cases over the next several years.[26]

By 2018, international courts began to resist the imposition of ASIs in the U.S. with anti-anti-suit injunctions (AASIs). For example, in *IPCom v. Lenovo*,[27] after a U.S. district court granted Lenovo an ASI prohibiting IPCom from pursuing parallel SEP litigation outside the U.S., French and UK courts each issued AASIs prohibiting Lenovo from enforcing those ASIs in their jurisdictions.[28] A German court responded similarly in *Continental v. Avanci*, issuing an AASI to prevent the enforcement of a U.S. ASI that would have prevented several SEP holders from pursuing litigation in Germany.[29]

Though Chinese judicial actions have been the targets of ASI orders since at least 2015, it was not until 2020 that Chinese courts began to issue ASIs of their own. Then, during the course of that year, Chinese courts issued ASIs in four major FRAND cases, a development that has attracted significant international attention.[30]

V. RESPONSES BY POLICY MAKERS

The increasing use of ASIs and AASIs in global FRAND disputes and the resulting jurisdictional competition have prompted policy makers around the world to take action. For example, in February 2022 the European Union lodged a complaint with the World Trade Organization ("WTO") alleging that China's use of ASIs impermissibly restricts SEP holders from exercising their rights and creates barriers to trade.[31] The United States, Canada and Japan have made requests to join the EU's case.[32]

Chinese ASI activity also prompted U.S. Senator Thom Tillis, in March 2022, to announce that "[t]he Chinese Communist Party's attempt to make Chinese courts the world arbiter of intellectual property must be stopped."[33] In doing so, he and four other senators introduced draft

23 *Unwired Planet Intl. Ltd. v. Huawei Techs. Co. Ltd.* [2020] UKSC 37 ¶ 90.

24 See Jorge L. Contreras, *Anti-Suit Injunctions and Jurisdictional Competition in Global FRAND Litigation: The Case for Judicial Restraint,* 11(2) NYU J. IP & Ent L. 171 (2021) (urging courts voluntarily to refrain from setting global FRAND rates until a global solution is developed).

25 *Microsoft Corp. v. Motorola, Inc.*, 871 F. Supp. 2d 1089, 1097 (W.D. Wash. 2012), aff'd, 696 F.3d 872 (9th Cir. 2012).

26 For a summary and analysis of these cases, see Contreras, *Extraterritoriality, supra* note 20, at 265-78.

27 *Lenovo (United States) Inc. & Motorola Mobility, LLC v. IPCom GmbH & Co.*, No. 19-1389 (N.D. Cal., filed Mar. 19, 2019).

28 Tribunal de Grande Instance de Paris, Case No RG 19/59311, 8 November 2019, aff'd *IPCom v. Lenovo*, Court of Appeal of Paris – RG 19/21426, 3 March 2020 - Case No. 14/2020 (English trans. at http://caselaw.4ipcouncil.com/french-court-decisions/ipcom-v-lenovo-court-appeal-paris-rg-1921426), *IPCom v. Lenovo*, [2019] EWHC 3030 (Pat).

29 Landgericht München I, docket nos. 21 O 9333/19 and 21 O 9512/19.

30 For a detailed analysis of the issuance of ASIs by Chinese courts, see Peter K. Yu, Jorge L. Contreras, Yu Yang, *Transplanting Anti-Suit Injunctions*, 71 Am. U. L. Rev. 1537 (2022).

31 Request for Consultations by the European Union, China—Enforcement of Intellectual Property Rights, WTO Doc. WT/DS611/1 (Feb. 22, 2022).

32 See Mark Cohen, Three Countries Seek to Join the EU SEP Case, China IPR, Apr. 22, 2022, https://chinaipr.com/2022/04/22/three-countries-seek-to-join-the-eu-sep-case/.

33 Tillis, Coons, Cotton, Hirono, and Scott Introduce Bipartisan Bill to Prevent the Chinese Communist Party from Stealing American Intellectual Property, (Mar. 10, 2022), https://www.tillis.senate.gov/2022/3/tillis-coons-cotton-hirono-and-scott-introduce-bipartisan-bill-to-prevent-the-chinese-communist-party-from-stealing-american-intellectual-property.

legislation (the "Defending American Courts Act" or "DACA") that would impose penalties on parties seeking to enforce foreign ASIs in U.S. patent suits.[34]

VI. CONSISTENCY, TRANSPARENCY, AND COMPREHENSIVENESS IN FRAND RATE-SETTING

As I have previously observed, judicial FRAND rate determinations today suffer from a lack of *consistency* (as different courts are not bound to apply consistent methodologies in establishing FRAND rates, even for the same patents covering the same standards), *transparency* (as confidential licensing agreements are not open to review by parties in other cases or outside the litigation arena), and *comprehensiveness* (as bilateral litigation rarely takes into consideration the value of SEPs held by non-parties to the litigation).[35] These problems are exacerbated by international judicial competition, as there are few, if any, common procedures or methodologies for FRAND rate determination that are recognized across borders.[36] The combination of these factors places even greater pressure on parties to race to the jurisdiction that they deem most favorable to their own positions.

The clear solution to these issues lies in the determination of FRAND rates for all SEPs covering a given standard in a single, consolidated proceeding, whether judicial[37] or arbitral.[38] Yet despite various calls for reform,[39] neither courts, SDOs nor parties have taken concrete steps toward such a solution. As a result, more targeted governmental intervention may be required.

VII. LEGISLATIVE REPUDIATION OF FOREIGN GLOBAL FRAND RATES

As noted above, a group of U.S. senators recently proposed legislation (DACA) that would penalize parties that enforce foreign ASIs in U.S. patent suits. While DACA-type legislation addresses one symptom of the global race to set FRAND rates, it is not likely to be effective in addressing the root problem. Specifically, the penalties that it imposes will become moot as soon as a foreign court establishes a global FRAND rate that is incorporated into a SEP licensing agreement, as that agreement will render the U.S. litigation in which those penalties would have been imposed moot (i.e. an infringement suit cannot be maintained against a licensee).[40] Thus, even if legislation like DACA were enacted, parties to FRAND disputes will continue to race to favorable jurisdictions and national courts will respond accordingly.

A more effective legislative solution would instead reject the recognition of global FRAND rates that have unilaterally (i.e. without the consent of both parties) been set by foreign courts. For example, the U.S. Congress could enact a statute to repudiate FRAND royalty rates with respect to U.S. patents that have been set unilaterally by foreign courts.[41] Importantly, this repudiation would apply even to foreign FRAND rates that purport to be "global" and even those that are incorporated into licensing agreements that have been signed under threat of a foreign injunction.

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34 S. 3772, 117th Cong. § 2 (penalties include a presumption of willfulness, if infringement is found, a presumption of extraordinary circumstances, in connection with cost recovery claims, and the inability to challenge the litigated patents at the Patent Trial and Appeals Board ("PTAB")).

35 Jorge L. Contreras, *Global Rate-Setting: A Solution for Standards Essential Patents?*, 94 Wash. L. Rev. 701 (2019).

36 See Thomas J. Cotter, *Is Global FRAND Litigation Spinning Out of Control?*, 2021 Patently-O Patent L.J. 1, 24 (2021) (suggesting that national governments seek to develop consensus, or at least best practices, around certain contentious FRAND calculation issues).

37 Jason R. Bartlett & Jorge L. Contreras, *Rationalizing FRAND Royalties: Can Interpleader Save the Internet of Things?*, 36 Rev. Litig. 285 (2017).

38 See Contreras, *Global Rate-Setting, supra* note 35 (proposing non-governmental, multilateral global rate-setting). This multilateral proposal differs from prior proposals for *bilateral* arbitration of FRAND disputes, which would facilitate the resolution of rate disputes between the parties, but would not establish FRAND rates applicable for all market participants. See Richard Arnold, *SEPs, FRAND and Mandatory Global Arbitration*, 2/2021 GRUR 123 (2021) (proposing global bilateral arbitration); Jorge L. Contreras & David Newman, *Developing a Framework for Arbitrating Standards-Essential Patent Disputes*, 2014 J. Dispute Resol. 23 (2014) (considerations for bilateral FRAND arbitration); Mark A. Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, 28 Berkeley Tech. L.J. 1135 (2013) (proposing bilateral "best offer" arbitration).

39 See e.g. Group of Experts on Licensing and Valuation of Standard Essential Patents (E03600), *Contribution to the Debate on SEPs* (2021), Lemley & Shapiro, supra note 38; King Fung Tsang & Jyh-An Lee, *The Ping-Pong Olympics in Antisuit Injunction in FRAND*, Chinese University of Hong Kong Faculty Of Law Research Paper No. 2021-68 (28 Mich. Tech. L. Rev. forthcoming, 2022); Eli Greenbaum, *No Forum to Rule them All: Comity and Conflict in Transnational FRAND Disputes*, 94 Wash. L. Rev. 1085 (2019); and various articles by the author cited throughout this essay.

40 *See* Jorge L. Contreras, *A Statutory Anti-Anti-Suit Injunction for U.S. Patent Cases?*, Patently-O (Mar. 18, 2022), https://patentlyo.com/patent/2022/03/contreras-statutory-injunction.html.

41 A draft legislative proposal titled the "Standard Essential Royalty Act" (SERA) has been brought to the author's attention. It embodies some of the recommendations contained in this essay.

With such a statute in place, parties operating in the U.S. would no longer be beholden to the rapid adjudication of U.S. FRAND rates in foreign courts, thereby reducing the need for a race to the courthouse. And if other countries enacted statues repudiating foreign FRAND rates with respect to their own national patents, then the ability of courts in the UK, China, or any other country to dictate global FRAND rates would effectively vanish.

VIII. AGGREGATED JUDICIAL RATE-SETTING

A statute that repudiates global FRAND rates that have unilaterally been set by a foreign court should also offer an alternative method for determining FRAND rates within the country in question. This function could simply be left to national courts without further elaboration. Yet such an approach would solve only half of the problem: while it would eliminate the international jurisdictional competition described above, it would not fully achieve the goals of consistency, transparency or comprehensiveness that are also needed for effective FRAND rate determinations around the world.

Thus, in order to rationalize FRAND rate determinations for multiple SEPs across the same standard and to ensure that all SEP holders are treated in a consistent and fair manner, FRAND rates should be set in multilateral proceedings that include all holders of SEPs applicable to a given standard. Moreover, in order to take into account evidence regarding the benefits and relative value of particular patented and non-patented technologies that are included in standardized products, the manufacturers of standardized products should also be permitted to participate in such proceedings. These proceedings would then determine, in an economically sound manner, both the aggregate royalty rate to be paid for all SEPs covering a standard, as well as the allocation of royalties among individual SEP holders.[42]

Such FRAND proceedings would resemble rate-setting hearings that are currently conducted with respect to utility rates and various forms of copyright licensing.[43] It could be structured as a judicial proceeding using existing interpleader mechanisms, a new judicial procedure created by statute, or a designated arbitral proceeding. In the end, the form and venue of the proceeding are less important than ensuring that they establish a single FRAND rate for all SEPs covering a particular standard. To promote fairness, audit and verification mechanisms could be implemented to ensure that over-declaration of SEPs does not distort the allocation of compensation among SEP holders.[44] And in addition to the rate determination body, a neutral agent could be designated to collect FRAND royalties from manufacturers and distribute royalty shares to SEP holders.[45]

The efficiency gains from such a consolidated proceeding are many and have been discussed at length elsewhere.[46] Most importantly, it would eliminate dozens of different adversarial proceedings pertaining to SEPs covering the same standards, result in consistent and transparent results, and enable all interested parties to have a voice in these critical rate determinations.

IX. NATIONAL RATE-SETTING AS A PATHWAY TO GLOBAL RATES

The legislative solution described above would, by definition, be effective only in the country in which it was enacted. In that vein, both courts and commentators have worried that judicial determinations of FRAND rates that are limited to national patents could result in an inefficient multiplicity of judicial proceedings – one per country.[47] Yet even if this were the case, such country-by-country adjudication would only be conducted once for each standard, rather than multiple times for each SEP holder–implementer pair, as it is today. As such, significant efficiency gains would be achieved.

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42 This approach has sometimes been referred to as a "top down" approach to royalty determination. It is distinguished from a "bottom up" approach, in which the "value" of individual patents is assessed in an uncoordinated fashion. See Bartlett & Contreras, *supra* note 37, at 293-309.

43 See Contreras, *Global Rate Setting, supra* note 35, at 733-37.

44 See e.g. Jorge L. Contreras, *Fixing FRAND: A Pseudo-Pool Approach to Standards-Based Patent Licensing*, 79 Antitrust L.J. 47, 82-83 (2013) (proposing an "over-declaration penalty" when aggregated royalties are allocated among SEP holders).

45 This agent could operate in a manner similar to the "nonprofit collective" authorized under the U.S. Copyright Act to assess and collect royalties for certain digital sound recording transmissions. See 17 U.S.C. § 114(g).

46 See e.g. Contreras, *Global Rate Setting, supra* note 35; Bartlett & Contreras, *supra* note 37.

47 See e.g. Tsang & Lee, *supra* note 39, at 59 (noting inefficiencies of country-by-country adjudication). But see Eli Greenbaum, *No Forum to Rule them All: Comity and Conflict in Transnational FRAND Disputes*, 94 Wash. L. Rev. 1085, 1124 (2019) (collecting, then rejecting, arguments against country-by-country adjudication).

But more importantly, country-by-country rate adjudication need not be the end game for global FRAND rate setting. Ultimately, a single global tribunal (but not a self-appointed national court) would produce the most efficient and fair adjudication of FRAND rates. This much has been acknowledged by the UK courts, one of which recently acknowledged that a potential solution to "[t]he current unevolved framework for the settlement of a global licence between owners of SEPs and implementers … would be the establishment of an internationally recognised tribunal to which patentees and implementers must refer their disputes."[48]

Admittedly, a single tribunal, judicial or arbitral, for the determination of global FRAND rates could emerge organically through the voluntary efforts of SDOs and industry participants, or through some form of top-down international agreement. Yet this has not yet occurred, and few expect that it will.

The national legislation described above, however, could encourage countries to increase cooperation in making FRAND determinations. Thus, if a first country establishes a legitimate and respected forum for FRAND rate determinations, other countries could look to the determinations of that forum as informative in their own proceedings. Private parties could also benchmark negotiated FRAND royalty rates in other countries against the rates set by that forum. Better still, other countries could be permitted to join the adjudicative process established by the first country under appropriate conditions (e.g. some form of representation on, or input to, the adjudicatory body).

Given the inherent inefficiency of country-by-country rate determinations, it is hoped that parties and institutions will gravitate toward more consolidated decision-making structures, yet do so in way that is fair, procedurally sound, and not dependent on the outcome of a jurisdictional race to the bottom.

X. CONCLUSION

The willingness of national courts to determine global FRAND royalty rates and the resulting proliferation of international jurisdictional conflicts has motivated both private races to the courthouse and jurisdictional races to the bottom. This situation has raised legitimate concerns among policy makers and fueled international tension. Prior legislative proposals fail to address the root of this problem: the inherent inconsistency, non-transparency, and non-comprehensiveness of current judicial and arbitral FRAND rate determinations. A better solution could be effected through the adoption of national legislation that repudiates global FRAND rates set unilaterally by courts in other countries and instead mandates the adjudication of FRAND royalty rates for national patents through a multi-party domestic proceeding. Eventually, such a system could lead to the ideal resolution: a consolidated, international mechanism for global FRAND rate determinations.

48 *Nokia Technologies OY v. Oneplus Technology (Shenzhen) Co., Ltd.*, [2021] EWHC 2952 ¶ 116 (citing *Unwired Planet Intl. Ltd. v. Huawei Techs. Co. Ltd.* [2020] UKSC 37 ¶ 90).

CONTINENTAL v. AVANCI: THE FIFTH CIRCUIT CONFIRMS THE FALLACY OF "COMPULSORY LICENSE-TO-ALL"

BY DINA KALLAY[1]

1 Head of Antitrust (IPR, Americas & Asia-Pacific), Ericsson. Any views presented are the author's alone.

I. BACKGROUND

In its February 2022 *Continental v. Avanci* decision, the Court of Appeals for the Fifth Circuit vacated the district court's decision that Continental had standing to bring an antitrust claim against Avanci's standards essential patents ("SEP") licensing program characterized by a field of use licensing feature. It found Continental, a maker of automotive telematics control units ("TCUs") failed to plead facts to support any injury and, as a result, rejected the so-called compulsory license-to-all ("CLTA") argument that has served as a hold-out strategy in recent years.[2] In June 2022, the Fifth Circuit arrived at the same result by reaffirming that district court decision. This paper reviews some of the history of the repeatedly-rejected CLTA argument, the attempts to dress it as an antitrust issue, and the recent Fifth Circuit decisions and their ramifications.

II. *ERICSSON v. D-LINK* (A PATENT INFRINGEMENT AND FRAND CASE)

One of the early CLTA argument attempts appeared in the 2013 *Ericsson v. D-Link* District Court decision.[3] In that matter, Ericsson brought a patent infringement suit against a group of longtime infringers who included D-Link Systems, Netgear, Belkin International, Acer, Gateway, Dell, and Toshiba. The suit involved Wi-Fi patents that were subject to a Reasonable and Non-Discriminatory ("RAND") licensing commitment under the patent policy of a standards development organization called IEEE.

Intel Corporation, who was the supplier of components that went into the infringers' products, intervened in the case asking to join as a defendant. Intel's argument was that Ericsson's RAND licensing obligation to IEEE supposedly meant that it had to offer Intel, a component maker, a license. It then argued that Ericsson's failure to do so was a violation of that RAND commitment. In rejecting Intel's CLTA argument, the District Court explained:

> "Defendants basically argue Ericsson breached its RAND obligations by not suing Intel, then not seeking damages against Intel after it intervened in the case. This argument fails … Ericsson is the plaintiff. As the plaintiff, it is the master of its own case. Originally, Ericsson elected not to sue Intel, and Defendants cite no law requiring a patentee to sue all potential licensees. After Intel intervened in the case, Ericsson elected not to pursue damages from Intel. … Once again, Defendants cite no authority that a plaintiff must seek damages from all Defendants in a case."[4]

III. *FEDERAL TRADE COMMISSION v. QUALCOMM* (AN ANTITRUST AND FRAND CASE)

Another attempt to argue for a CLTA was presented in the Federal Trade Commission's January 2017 complaint against Qualcomm. In that complaint, the FTC majority alleged that Qualcomm's policy of not licensing competing baseband processors manufacturers was "in contravention of its FRAND commitments" and "contribute[d] to its ability to tax its competitors' sales and maintain its monopoly"[5]

While the District Court initially agreed with the FTC majority arguments that Qualcomm's licensing policy violated its FRAND commitment, and identified an antitrust duty to license theory,[6] that position was rejected by the Department of Justice Antitrust Division in an amicus brief filed in this matter,[7] as well as on appeal by the Court of Appeals for the Ninth Circuit.

In rejecting the arguments that Qualcomm's refusal to license rival chip makers was anticompetitive or violated its contractual FRAND commitments, the Ninth Circuit cited Supreme Court case law for two principles. First, that there is "no duty to deal under the terms and con-

2 *Continental Automotive Systems v. Avanci LLC* (Fifth Cir. 2022) available at https://law.justia.com/cases/federal/appellate-courts/ca5/20-11032/20-11032-2022-02-28.html.

3 Case No. 6:10-CV-473 *Ericsson Inc. v. D-Link Systems Inc.* (E. Dist. of Texas) (Aug. 6, 2013) Memorandum Opinion and Order available at https://law.justia.com/cases/federal/district-courts/texas/txedce/6:2010cv00473/125363/615/.

4 *Id.* at 32-33. The case was later appealed to the Federal Circuit on different grounds, hence the August 6 2013 Opinion and Order are final.

5 *Federal Trade Commission v. Qualcomm Inc.*, Federal Trade Commission's Complaint for Equitable Relief (Jan. 17, 2017) available at https://www.ftc.gov/system/files/documents/cases/170117qualcomm_redacted_complaint.pdf at §§ 6 115 and 134.

6 Case No. 17-CV-00220-LHK *Federal Trade Commission v. Qualcomm Inc.* Findings of Fact and Conclusions of Law (N. Dist. California) (May 21, 2019) At 124-134 and 134-141 https://www.ftc.gov/system/files/documents/cases/qualcomm_findings_of_fact_and_conclusions_of_law.pdf.

7 https://www.justice.gov/atr/case-document/file/1199191/download.

ditions preferred by [a competitor's] rivals."[8] And, second, that the "Sherman Act 'does not restrict the long-recognized right of [a] trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal.'"[9] Thus, the Ninth Circuit concluded that:

> "Qualcomm's practice of licensing its SEPs exclusively at the OEM level does not amount to anticompetitive conduct in violation of §2, as Qualcomm is under no antitrust duty to license rival chip suppliers. To the extent Qualcomm has breached any of its FRAND commitments, a conclusion we need not and do not reach, the remedy for such a breach lies in contract and patent law."[10]

IV. *CONTINENTAL v. AVANCI DECISION* (AN ANTITRUST AND FRAND CASE)

In 2019, Continental, a TCU supplier to the automotive industry, brought suit in the Northern District of California against Avanci, a wireless SEP licensing platform, and some of its licensor members including Nokia, Conversant Wireless, Optis, and Sharp.

The Avanci 4G licensing platform was only authorized to license SEPs at the OEM level (its framework did not include any restrictions on members ability to license separately outside of the pool). Its very similar proposed 5G licensing program, was reviewed by the Department of Justice Antitrust Division and received a positive Business Review Letter.[11]

Continental alleged that Avanci and its co-defendants breached their FRAND contract commitments and violated Sections 1 and 2 of the Sherman Act in a number of ways. According to the complaint, as amended, SEP owners who committed them FRAND licensing assurances "concealed [their] intent to [] refuse to license certain users of standards in a given supply chain, charge supra-competitive royalty rates, and demand discriminatory terms and conditions."[12] Continental alleged that, after being incorporated into the standards, the defendants, via their licensing vehicle Avanci, sought "inflated and non-FRAND royalty rates" that "Avanci knew Continental could not agree to." Continental alleged that these actions had amounted to "illegally maintaining the monopoly power [defendants] initially obtained when their patented technologies became standardized."[13] The lawsuit also claimed that Avanci and its licensor members supposedly "collusively agreed to only offer licenses to the automotive industry at the OEM level in an attempt to obtain elevated royalties."[14]

On August 30, 2019, the defendants moved to dismiss Continental's claims on a number of grounds. With respect to the Sherman Act Section 2 claims, the defendants argued that Continental's allegations are based on "an alleged breach of contract" not a violation of the antitrust laws, and that "a pricing disagreement over a contractual royalty rate commitment is not exclusionary conduct.[15] Defendants further argued Continental failed to plead with the required specificity that defendants deceived the relevant SSOs regarding their commitment to offer a FRAND rate.[16] The case was consequently transferred to the Northern District of Texas without deciding on that motion to dismiss.

A. The Department of Justice Statement of Interest

On February 27, 2020, the U.S. Department of Justice filed a statement of interest ("Statement"), arguing that Continental's breach of FRAND claims did not allege that defendants engaged in any unlawful exclusionary conduct for a few reasons.[17] Among other propositions, the State-

8 *Pac. Bell Tel. Co. v. linkLine Commc'ns, Inc.*, 555 U.S. 438, 457 (2009).

9 *Federal Trade Commission v. Qualcomm Inc.* (Ninth Cir. 2020) available at https://cdn.ca9.uscourts.gov/datastore/opinions/2020/08/11/19-16122.pdf at 31-32 (citing *Verizon Commc'ns Inc. v. Law Offices of Curtis v. Trinko, LLP*, 540 U.S. 398, 408 (2004).

10 *Id.* at 56.

11 Letter from Makan Delrahim, Ass't Attorney General for Antitrust to Mark H. Hamer, Baker & McKenzie (July 28, 2020), available at https://www.justice.gov/atr/page/file/1298626/download.

12 ¶¶ 87-98 of the complaint, available at https://images.law.com/contrib/content/uploads/documents/403/16984/Continental-v.-Avanci.Complaint.pdf.

13 *Id.* at ¶¶ 8 and 126, respectively.

14 *Id.* at ¶ 8.

15 See defendants' Motion to Dismiss, Doc. 162, at 13.

16 *Id.* at 13-14.

17 Case 3:19-cv-02933-M *Continental Automotive Systems v. Avanci LLC* Statement of interest of the United States (Feb. 27, 2020) https://www.justice.gov/atr/case-document/file/1253361/download.

ment explained that a patent holder's effort to maximize its licensing rates after agreeing to abide by FRAND terms does not constitute unlawful exclusionary conduct. It also explained there is no antitrust duty to deal, including in FRAND contexts. And it noted that FRAND negotiations are already adequately policed by contract and patent laws, and thus a third antitrust liability layer would be inappropriate.

B. District Court Dismisses the Case

In September 2020, the District Court granted the defendants motion to dismiss, finding that plaintiffs failed to plead antitrust standing, an unlawful agreement to restrain trade under § 1 of the Sherman Act, and an unlawful monopoly or conspiracy to monopolize under § 2 of the Sherman Act. The Court found the plaintiff's theories of defendants' unlawful agreement to price fix through the Avanci platform and unlawful monopolization through deception of the standards development organizations to be legally untenable, and thus ordered that these claims be dismissed with prejudice.

However, the district court declined to dismiss for lack of constitutional Article III standing and ripeness because, while any injury Continental might have from its potential obligation to indemnify OEMs was too speculative, it found it had sufficient injury" based on its alleged inability to obtain from Defendants, on FRAND terms, SEP licenses needed for its TCUs."[18]

With respect to standing under antitrust law, the court found Continental's alleged inability to obtain a FRAND license "does not harm its competitive position or its position as a consumer of products used in its devices." This was because:

> "Even in light of Defendants' allegedly anticompetitive conduct, [Continental] can still produce TCUs for the OEMs, since, according to Plaintiff, Defendants are actively licensing the SEPs to the OEMs. In fact, Plaintiff may be able to produce TCUs at a lower cost, since it would not have to pay a license for an SEP, because the OEMs have one.[19]"

Noting that "Plaintiff and the OEMs form distinct parts of the TCU supply chain. Plaintiff builds the TCUs that then go downstream to the OEMs, which install the TCUs in vehicles they manufacture," and citing the Ninth Circuit's 2020 *FTC v. Qualcomm* decision[20] the court held that "[t]he anticompetitive conduct allegedly directed at the downstream OEMs does not create an antitrust injury for the upstream TCU suppliers, like Plaintiff" and thus has no antitrust standing.[21] Because all of Continental's federal question claims were dismissed, the court declined to exercise supplemental jurisdiction and dismissed the federal claims with prejudice.[22]

C. Fifth Circuit Appeal Decision Affirms the Dismissal

Continental appealed the dismissal to the Court of Appeals for the Fifth Circuit. In its February 28, 2022 decision on the appeal,[23] the Fifth Circuit focused on Continental's constitutional Article III standing. The Fifth Circuit first addressed the company's theory that it had suffered an injury through the possibility that OEMs would take non-FRAND licenses and pass those costs onto Continental through indemnity agreements. It agreed with the district court that there was no standing because Continental's injuries were "not . . . actual or imminent."[24] Moreover, it found

> "[the] alleged injury is 'doubly speculative': Continental would not be harmed unless OEMs first accepted non-FRAND licenses and then invoked their indemnification rights against Continental. Here, the pleadings do not establish that OEMs have accepted such licenses and invoked such rights" … at most [Continental's submissions] demonstrate that OEMs may seek to have Continental offset costs associated with licensing."

The Fifth Circuit also found that "Continental does not appear to be an intended beneficiary contractually entitled to a license on FRAND terms. And as an incidental beneficiary, it would have no right to enforce the FRAND contracts between the Patent-Holder Defendants and the

18 See https://www.lit-antitrust.shearman.com/siteFiles/32796/Continental%20v%20avanci%20usdc%209-14.pdf at page 8.

19 *Id.* at 13.

20 *FTC v. Qualcomm* (Ninth Cir., 2020) https://law.justia.com/cases/federal/appellate-courts/ca9/19-16122/19-16122-2020-08-11.html.

21 See https://www.lit-antitrust.shearman.com/siteFiles/32796/Continental%20v%20avanci%20usdc%209-14.pdf at page 14.

22 *Id.* at 26.

23 Available at https://law.justia.com/cases/federal/appellate-courts/ca5/20-11032/20-11032-2022-02-28.html.

24 *Id.* at 8.

SSOs"[25]. However, that finding was not dispositive because the court found that, even if Continental were an intended beneficiary, it had "suffered no cognizable injury" because the patent owners had satisfied their FRAND commitment with respect to Continental:

> "The supplier acknowledges that Avanci and Patent-Holder Defendants are "actively licensing the SEPs to the OEMs[,]' which means that they are making SEP licenses available to Continental on FRAND terms" As it does not need to personally own SEP licenses to operate its business, it has not been denied property to which it was entitled. And absent a "denial of property to which a plaintiff is entitled," Continental did not suffer an injury in fact."[26]

Under the relevant circumstances, the Fifth Circuit observed that it would be "easier" for OEMs to establish an injury-in-fact if the defendants were to sue them for infringement or threaten to do so, and for standards development organizations to establish an injury if the defendants breached their FRAND contracts by imposing non-FRAND rates. Because those scenarios were not before the Court, and defendants were actively licensing their SEPs to Continental's customers, it vacated the lower court decision and remanded with instructions to dismiss for lack of Article III standing, declining to reach the issues of antitrust standing on the merits.

D. On Rehearing – Fifth Circuit Reaffirms Dismissal, Affirms District Court Decision.

On April 13, 2022, Continental petitioned for a rehearing en banc of the February 28, 2022, Fifth Circuit decision. Two months later, on June 13, the court decided to treat Continental's petition as a petition for a (same) panel rehearing, withdrew the February 28 decision and announced that "a revised opinion will be forthcoming".[27] About a week later, on June 21, 2022, the court issued a short unpublished decision affirming the dismissal of the complaint and the District court's decision as follows:

> "Having reviewed the district court's detailed order, and considered the oral arguments and briefs filed by the parties and amicus curiae, we AFFIRM the judgment of the district court that Continental failed to state claims under Sections 1 and 2 of the Sherman Act. *See Cont'l Auto. Sys., Inc. v. Avanci, LLC*, 485 F. Supp. 3d 712 (N.D. Tex. 2020)."[28]

V. CONCLUSION

Between 2013-2022, the two Fifth Circuit *Continental v. Avanci* decisions, the Ninth Circuit's 2020 *FTC v. Qualcomm* decision, the 2013 District Court decision in *Ericsson v. D-Link*, and DOJ Antitrust Division policy guidances in a Statement of Interest and a Business Review Letter, have all rejected the false CLTA argument. These decisions and policy pronouncements all confirmed that SEP holders are free to choose their licensing model, and that technology users cannot impose a compulsory duty on them to do business on any particular terms only because these are the plaintiffs' preferred terms.

After nearly a decade of judicial and regulatory resources spent on considering and, consequently, dismissing CLTA arguments as not raising any antitrust or other legal issues, it is time to move on.

25 *Id.* at 11.

26 *Id.* at 12.

27 No. 20-11032 *Continental Automotive Systems v. Avanci LLC* (5th Cir. June 13, 2022) Available at https://www.documentcloud.org/documents/22059572-22-06-13-5th-cir-order-granting-panel-rehearing.

28 No. 20-11032 *Continental Automotive Systems v. Avanci LLC* (5th Cir. June 21, 2022) available at https://s3.documentcloud.org/documents/22065093/22-06-21-fifth-circuit-revised-conti-v-avanci-judgment.pdf ("Pursuant to 5th Circuit Rule 47.5, the court has determined that this opinion should not be published and is not precedent except under the limited circumstances set forth in 5th Circuit Rule 47.5.4").

PATENT HOLDOUT EXPLAINS WHY PATENT HOLDUP IS STILL ON THE TABLE: IN *MEMORIAM* OF ALEXANDER GALETOVIC

BY JORGE PADILLA[1]

1 See e.g. Carl Shapiro & Mark A. Lemley: The Role of Antitrust in Preventing Patent Holdup, 168 U. PENN. L. REV., 2019, 2063 (2020).

I. PROFESSOR GALETOVIC AND THE SEP HOLD UP DEBATE

Professor Alexander Galetovic (1965-2022)[2] contributed decisively to one of the bitterest intellectual debates I have been involved as an economist; namely, the debate about the theoretical and empirical validity of the claim that owners of standard essential patents ("SEPs") possess monopoly power and do exploit it in spite of their Fair Reasonable and Non-Discriminatory ("FRAND") promises – the *patent holdup theory*.

Since the early 2000s, several authors have raised the alarm about the alleged risk of patent holdup in the licensing of SEPs.[3] Some have even assimilated this risk to that posed by climate change.[4]

Holdup is a classical problem in economics; it arises in circumstances when firms negotiate trading terms after they have made costly, relation-specific investments. Since the costs of these investments are sunk when trading terms are negotiated, they are not factored into the agreed terms. As a result, depending on the relative bargaining power of the firms, the investments made by the weaker party may be under-compensated.[5]

In the context of SEPs, patent holdup would arise if SEP owners were able to take advantage of the essentiality of their patents to charge excessive royalties to manufacturers of products reading on those patents that made irreversible investments in the standard.[6]

Those concerned with patent holdup have proposed drastic interventions ranging from reforms of the patent laws to antitrust intervention.[7] Those reforms are all directed at reducing patent holders' leverage in the negotiation with implementers that aim to license their technologies.

Thus, for example, some argue that SEP holders should not be able to seek injunctions,[8] though most proposals agree that at least they should be able to do so against unwilling licensees. Of course, a patent holder loses all leverage if it cannot injunct unwilling licenses. Others propose that SEP owners should be compelled to price their patents by reference to the price of the Smallest Saleable Patent Practicing Unit ("SSPPU") set before any royalties are paid.[9] Etc.

All of these proposals are argued with passion on the basis of high level and theoretical arguments about the meaning of the notion of FRAND, the need to promote innovation and hence efficiency, and also on the grounds of equity. Yet, it is obvious that the real goal of these measures is to redistribute rents away from patent holders to the benefit of implementers. A redistribution that could be justified if holdup was indeed a serious problem in practice.

However, after years of heated debate, there is no consensus about whether holdup exists. Some argue that there is no evidence of holdup in practice. If patent holdup were a significant problem, manufacturers would anticipate that their investments would be expropriated and would thus decide not to invest in the first place. But end-product manufacturers have invested considerable amounts in standardized technologies.[10]

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2 See https://www.hoover.org/profiles/alexander-galetovic.

3 See Justus Baron et al.: Contribution to the Debate on SEPs. European Commission - Internal Market, Industry, Entrepreneurship and SMEs - Industrial policy: Standard Essential Patents (2021), available at https://ssrn.com/abstract=3778166.

4 See e.g. Carl Shapiro & Mark A. Lemley: The Role of Antitrust in Preventing Patent Holdup, 168 U. PENN. L. REV., 2019, 2063 (2020).

5 See Oliver Williamson: Markets and Hierarchies: Analysis and Antitrust Implications, Free Press: New York, (1975).

6 See Mark A. Lemley & Carl Shapiro: Patent Holdup and Royalty Stacking, 85 TEX. L. REV., 1991, 2049 (2007).

7 See e.g. Rebecca Kelly Slaughter: *SEPs, Antitrust, and the FTC*, Remarks Prepared for Delivery1 ANSI World Standards Week: Intellectual Property Rights Policy Advisory Group Meeting (October 29, 2021.) See also Carl Shapiro & Mark A. Lemley (2020), op. cit..

8 See Mark A. Lemley & Carl Shapiro (2007), op. cit. See also Carl Shapiro, Injunctions, Hold-Up, and Patent Royalties,12 AM. L. &ECON. REV. 280, 282 (2010), and Greg Sidak, The Meaning of Frand, Part II: Injunctions, J. COMP. L. & ECON., 11(1), 201–269 (2015).

9 See Timothy Syrett, The SSPPU is the Appropriate Royalty Base for FRAND Royalties for Cellular SEPs, IPWatchdog, (2021), available at https://www.ipwatchdog.com/2021/05/11/ssppu-appropriate-royalty-base-frand-royalties-cellular-seps/id=133403/.

10 See Keith Mallinson, Mallinson on Patent Holdup and Holdout: for IP Finance 16th August 2016, available at https://efaidnbmnnnibpcajpcglclefindmkaj/https://www.wise-harbor.com/pdfs/Mallinson%20on%20Holdup%20and%20Holdout%20for%20IP%20Finance%2016%20Aug%202016.pdf.

Others claim that while investment is indeed observed, actual investment levels are "necessarily" below those that would be observed in the absence of holdup, if that were possible. They allege that, since that counterfactual scenario is not observable, it is not surprising that more than fifteen years after the patent holdup hypothesis was first proposed, empirical evidence of its existence is still lacking.[11]

This is where Professor Galetovic entered the debate with a series of articles in which he and his co-authors investigated the empirical relevance of patent holdup in an SEP context using rigorous economic and econometric techniques.

In a first paper titled "An Empirical Examination of Patent Hold-Up,"[12] co-authored with Professors Stephen Haber and Ross Levine, he sought to evaluate two key predictions of the SEP hold-up theory.

- First, that industries featuring SEPs (or SEP-reliant industries), such as the smartphone industry, should experience more stagnant quality-adjusted prices than similar non-SEP-reliant industries, such as watches, electricity, computers, etc..
- Second, that court decisions that reduce the excessive power of SEP holders should accelerate innovation in SEP-reliant industries.

They found no empirical support for either proposition. On the contrary, they found that SEP-reliant industries exhibited the fastest quality-adjusted price declines in the U.S. economy.

Later, in a paper titled "The Case of the Missing Royalty Stacking in the World Mobile Wireless Industry,"[13] co-authored with Dr Kirti Gupta, he showed that all observable implications of the patent holdup theory are inconsistent with the data from the world mobile wireless industry.

They found that, in sharp contrast with the theory's predictions, between 1994 and 2013, worldwide yearly device sales grew 62-fold, at an average rate of 20.1 percent per year, and both selling and quality-adjusted prices fell fast over time despite the large increase in the number of SEP holders, each of which is alleged to enjoy monopoly power.

They also found that theory predicts royalty yields which are more than an order of magnitude larger than the observed average cumulative royalty yield charged by SEP holders in practice.

In my opinion, these two papers, which to the best of my understanding remain uncontested, should have put an end to the debate about the relevance of patent holdup in the SEP context. Yet, as all of those familiar with the SEP world know, it has not.[14]
Why? I have no clear-cut answer to this question. But I can answer one that is closely related and can shed light on the former: Who benefits?

II. PATENT HOLD-OUT EXPLAINS THE PERSISTENCE OF THE PATENT HOLDUP THEORY

The persistent debate about patent holdup benefits those implementers engaging in *patent holdout*, euphemistically referred to as "efficient infringement."[15] As Epstein & Noroozi (2017) explain,[16]

> By "patent holdout" we mean [...] that an implementer refuses to negotiate in good faith with an innovator for a license to valid patent(s) that the implementer infringes, and instead forces the innovator to either undertake significant litigation costs and time delays to extract a licensing payment through court order, or else to simply drop the matter because the licensing game is no longer worth the candle.
>
> Unlike patent holdup, patent holdout is ubiquitous.

11 See Carl Shapiro & Mark A. Lemley (2020), op. cit.

12 Alexander Galetovic, Stephen Haber & Ross Levine, An Empirical Examination of Patent Hold-Up, J. COMP. L. & ECON., 11(3), 549–578 (2015).

13 Alexander Galetovic & Kirti Gupta, The Case of the Missing Royalty Stacking in the World Mobile Wireless Industry, IND. & CORP. CHANGE, 29(3) (2020).

14 To keep abreast of what is going on in the SEP world, visit Florien Mueller's FOSS patents blog, available at http://www.fosspatents.com/. I am not always sharing his views, though sometimes I do, but I know of no better way of keeping informed about recent developments concerning patent licensing in standardized industries.

15 Efficient in a private, self-interested sense, not in the collective interest, of course.

16 See Richard A. Epstein & Kayvan B. Noroozi: Why Incentives for "Patent Holdout" Threaten to Dismantle FRAND, And Why It Matters, 32 BER. TECH. L. J., 1381, 1431 (2017).

Patent holdout is particularly worrisome in the standardization context, since SEP owners, limited in their ability to request an injunction in case of patent infringement, have little or no leverage when negotiating a licensing deal.

The risk of holdout is more significant for SEP owners with many complementary patents reading across jurisdictions, since implementers typically challenge the validity and/or essentiality of SEP portfolios "patent-by-patent" and "jurisdiction-by-jurisdiction,"[17] which makes patent enforcement costly and inefficient.[18]

The former head of patent licensing at Apple, Boris Teksler, explained that in his opinion "*'efficient infringement,' where the benefits outweigh the legal costs of defending against a suit, could almost be viewed as a 'fiduciary responsibility,' at least for cash-rich firms that can afford to litigate without end."*[19]

Heiden & Petit (2017) empirically document that some implementers do engage in patent holdout by ignoring correspondence, postponing negotiations, or simply by making counteroffers that are inconsistent with industry practice.[20] Other strategies include trying to affect the policies of SSOs or appealing to competition authorities. Of course, by delaying and stalling negotiations, potential licensees aim to obtain better licensing terms.

Heiden & Petit argue that the delay and the costs associated to patent holdout may also be related to the significant decrease in licensing coverage in the mobile phone industry that has dropped from 73 percent to 36 percent between 2006 and 2016.

Some scholars, such as Shapiro & Lemley (2020),[21] disagree and claim that the patent holdout concern is a theoretical and groundless "chimera," which at most affects only the distribution of surplus from innovation, stating that, in any case, it could be addressed through ex post court-mandated damages.

According to these authors, "*[p]atent advocates have sought to deflect concerns about patent holdup not only by denying its existence but by concocting a supposedly parallel story of 'patent holdout.'" They claim that "[p]atent holdout is incoherent as a theoretical matter and rejected as an empirical matter" and conclude that "[t]hose who express concerns about patent holdout seem to want to increase the returns to patent holders whose inventions add little or no incremental value, possibly because they advise SEP owners."*[22]

Leaving aside the unnecessary innuendo,[23] what they aver is that when an implementer takes actions to stop paying licensors, such a strategy may harm patent owners, though they can always be compensated in court; but does not harm consumers, because the latter's slice of the pie is unchanged; nor those competitors paying for the use of the innovator's technologies.

Yet, as explained by Llobet & Padilla (2021), patent holdout can engender significant social-welfare losses under a wide range of realistic circumstances.[24]

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17 See Justus Baron et al.: Contribution to the Debate on SEPs. European Commission - Internal Market, Industry, Entrepreneurship and SMEs - Industrial policy: Standard Essential Patents (2021), available at https://ssrn.com/abstract=3778166.

18 In the Unwired Planet vs Huawei case, [2017] EWHC 2988 (Pat), Judge Birss asked "*[W]hat sort of license for Unwired Planet's portfolio would be FRAND in terms of its geographical scope when applied to a multinational licensee like Huawei? I will start by asking what a willing licensor and a willing licensee with more or less global sales would do. There is only one answer. Unwired Planet's portfolio today is (and in 2014 it was) sufficiently large and has sufficiently wide geographical scope that a licensor and licensee acting reasonably and on a willing basis would agree on a worldwide license. They would regard country by country licensing as madness. A worldwide license would be far more efficient.*"

19 See The Trouble with Patent-Troll Hunting, The Economist (Dec. 14, 2019), available at https://www.economist.com/business/2019/12/14/the-trouble-with-patent-troll-hunting.

20 See Bowman Heiden & Nicolas Petit: Patent 'Trespass' and the Royalty Gap: Exploring the Nature and Impact of Patent Holdout, 34 SANTA CLARA HIGH TECH. L. J., 179, 249 (2017). See also Brian J. Love & Christian Helmers, An Empirical Test of Patent Hold-out Theory: Evidence from Litigation of Standard Essential Patents, SANTA CLARA UNIV. LEGAL STUDIES RESEARCH PAPER, (2021), available at https://ssrn.com/abstract=3950060. The authors find some evidence of an association between inlitigation hold-out and both SEP portfolio size and patent quality; however, they find no evidence associating pre- or in-litigation hold-out with the international breadth of SEP rights.

21 Carl Shapiro & Mark A. Lemley: The Role of Antitrust in Preventing Patent Holdup, 168 U. PENN. L. REV., 2019, 2063 (2020).

22 See Shapiro & Lemley (2020), op. cit., footnote 91.

23 See footnote 1 above for a statement of interest.

24 See Gerard Llobet & Jorge Padilla: A Theory of Socially Inefficient Patent Holdout, CEMFI, (2021), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4021461.

They explain the reasons why the implications of patent holdout are not merely distributional. Implementers have the incentive to incur significant costs to litigate SEPs patent-by-patent and/or jurisdiction-by-jurisdiction when this is socially inefficient to lower royalty payments.

This may result in under-compensation of innovation, cause the dissipation of social surplus as it leads to excessive litigation, and lead to the exclusion of other implementers which, due to their smaller size or because of their start-up nature, cannot afford to engage in a similar litigation strategy.

Importantly, *ex post* court-mandated damages are unlikely to deter such a socially costly holdout strategy and compensate patent holders appropriately.

- Firstly, if the cost of a patent holdout strategy is payment of reasonable royalties ex post, then (rational) implementers will have no incentive to pay early, given that a dollar today is worth more than a dollar in the future.

- Secondly, when all that the SEP holder can recover in adjudication is cash royalties, not the other terms and conditions (e.g. a cross license) that would have been able to obtain during good-faith bilateral negotiations, then an injunction is strictly needed to make the SEP holder whole.

- Finally, when a delay in payment causes the SEP holder's bankruptcy or undermines its ability to fund valuable R&D, either by drying its own internal funds or weaking its credit relative to third-party investors, then an injunction may also be strictly needed.[25]

III. *CUI PRODEST SCELUS, IS FECIT*[26]

The late Professor Galetovic co-authored two papers employing state-of-the art economic and econometric tools that show that *all* observable implications of the patent holdup theory are inconsistent with the data from the world mobile wireless industry.

Following those contributions and unless anyone shows that those studies are wrong or presents evidence pointing in the opposite direction, the debate about the relevance of patent holdup in the SEP context should be over. Yet, it lingers on. In my opinion, this is because it is in the interest of those engaging in patent holdout to keep the debate alive.

This strategy, while privately rational, is socially costly, because patent holdout is likely to result in under-compensation of innovation, cause the dissipation of social surplus, as it leads to excessive litigation, and lead to the exclusion of other implementers which act as willing licensees.

It is time for regulators and competition policy agencies to adopt an evidence-based approach when dealing with SEP disputes. If they do so, they should realize that patent holdup is a distraction. As a former colleague and co-author once told me: "*We may trust in God but from everyone else we should demand data.*"

25 David Goldman: Qualcomm made a deal with Apple. Its stock has soared 40 percent, CNN Business (April 17, 2019), available at https://edition.cnn.com/2019/04/17/tech/qualcomm-stock/index.html. "*With the company no longer at risk of losing one of its most important sources of revenue, Qualcomm's stock has soared 40% to a 5-year high since it announced Tuesday it had settled all litigation with Apple. Qualcomm will continue charging Apple royalties for its patents, and Apple will pay Qualcomm a substantial fee as part of the agreement.*"

26 *He has committed the crime who has derived the profit.*

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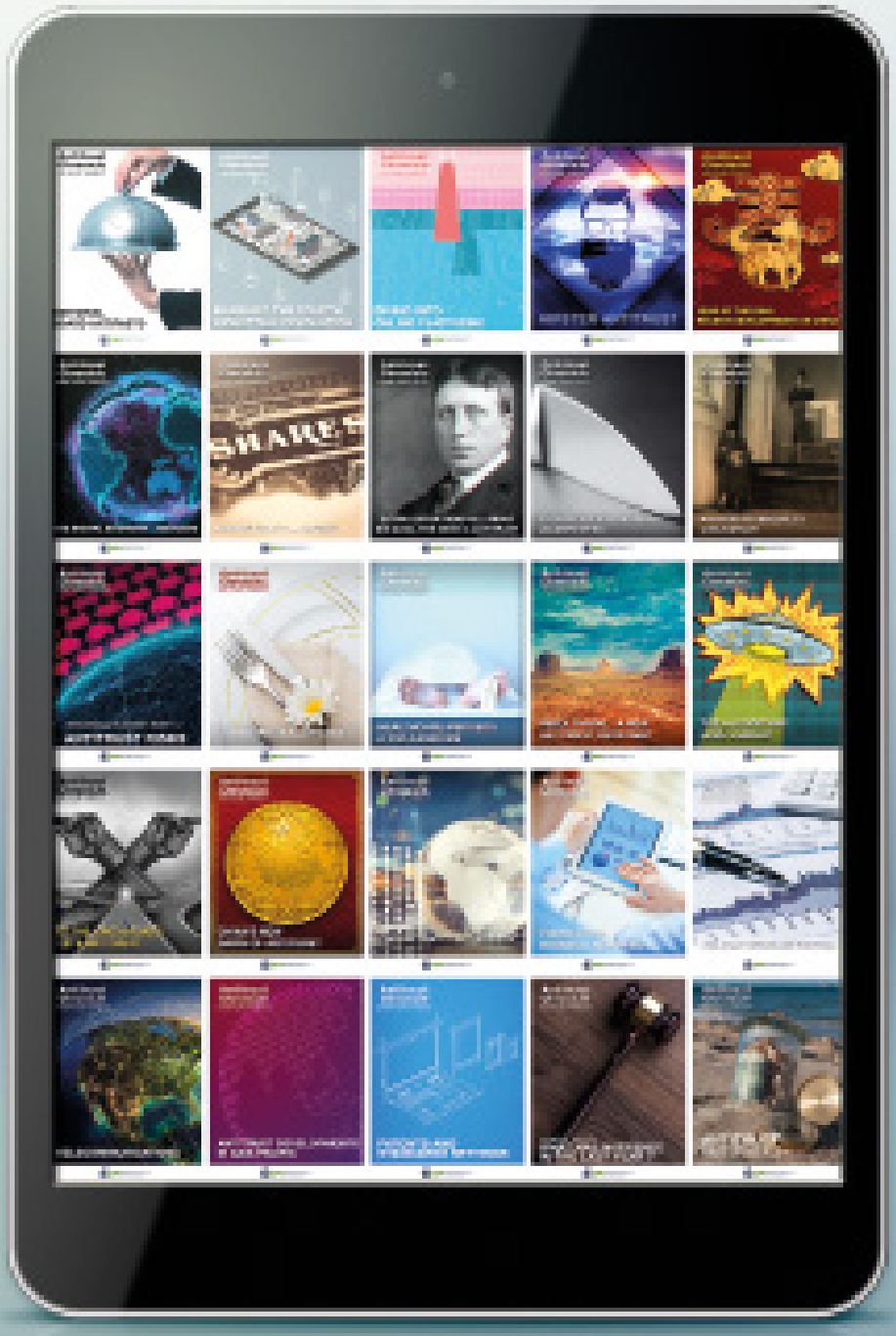


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