Antitrust Chronicle

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Innovation & IP

CPI COMPETITION POLICY INTERNATIONAL

TABLE OF CONTENTS

LETTER FROM THE EDITOR

Dear Readers,

The September 2019 CPI Antitrust Chronicle addresses issues related to the sixth annual LeadershIP Conference, which took place in Washington D.C. on March 26, 2019. The conference covered issued related to: (1) The impact of 5G; (2) The IP Policy Landscape: US and The World; (3) IP and Antitrust: Global Agency Dynamics; and (4) International Antitrust: What Rules and Whose Standards?

The panelists at the conference came from the private and public sectors: regulators, academics, and private practitioners. We are pleased to have articles from speakers at the LeadershIP conference from all of the panels as well as other leading voices in the field.

Additionally, we are very pleased to open this month's Chronicle with a CPI Talks interview with Makan Delrahim, Assistant Attorney General for Antitrust at the U.S. Department of Justice.

Lastly, please take the opportunity to visit the CPI website and listen to our selection of Chronicle articles in audio form from such esteemed authors as Maureen Ohlhausen, Herbert Hovenkamp, Richard Gilbert, Nicholas Banasevic, Randal Picker, Giorgio Monti, Alison Jones, and William Kovacic among others. This is a convenient way for our readers to keep up with our recent and past articles on the go, in the gym, or at the beach.

As always, thank you to our great panel of authors.

Sincerely,

CPI Team[1]

LEADERSHIP

DISCUSS. DEBATE. UNITE. LEAD.

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.

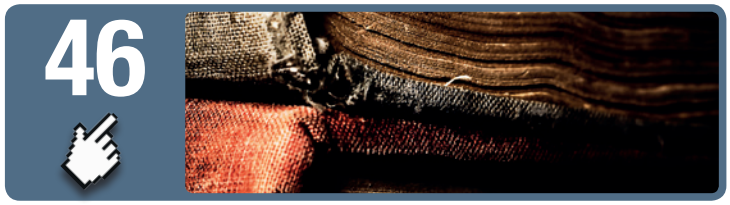
SUMMARIES

SUMMARIES

Understanding "Balance" Requirements for Standards-Development Organizations

By Jorge L. Contreras

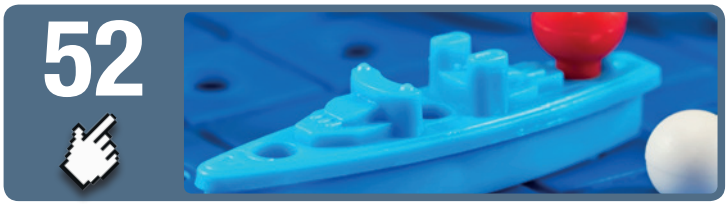
Most technical standards-development organizations ("SDOs") have adopted internal policies embodying "due process" criteria such as openness, balance of interest, consensus decision making and appeals. Yet these criteria lack a generally-accepted definition and the manner in which they are implemented varies among SDOs. Recently, there has been a renewed interest in the principle that SDOs should ensure a balance of interests among their stakeholders. This article explores the origins and meaning of the balance requirement for SDOs. In doing so, it identifies four "tiers" of balance requirements, ranging from those required of all SDOs under applicable antitrust law, to those required of SDOs that wish to benefit from particular statutory and accreditation schemes, to those that are purely voluntary. Beyond first tier balance requirements, which prohibit anticompetitive attempts to skew decision making processes within an SDO, the imposition of greater degrees of balance among SDO stakeholders, whether through numerical quotas or affirmative participant recruitment efforts, are largely voluntary and dependent on an SDO's policy preferences.



The IP Guidelines: Lessons from History

By Willard K. Tom

In the fierce debates over the proper relationship between antitrust and intellectual property, some of the hard-won underlying principles of the 1995 *Antitrust Guidelines for the Licensing of Intellectual Property* risks being forgotten. Of particular importance are: (1) the implications of applying the rule of reason, (2) the distinction between horizontal and vertical relationships, and (3) the importance of maintaining the incentive for licensing and therefore for innovation. Forgetting the history that predated the *Guidelines* and allowing a drift back to the nominalist approach of the Nine No-No's risks misguided antitrust enforcement that reduces the incentive for licensing and thus diverts investment from more productive to less productive uses. This article summarizes that history and the principles that grew out of its lessons.



Stealth Commoditization: The Misuse of Smartphone Antitrust

By Jonathan M. Barnett

Competition regulators around the world have targeted the patent enforcement and licensing practices of lead innovators in the smartphone market for over a decade. The result is a significant decline in the legal security of patent licensing arrangements that underlie the wireless communications market. Remarkably, these extensive interventions rely on theoretical assertions that are inconsistent with actual market performance. Given the paucity of supporting evidence, it appears that regulators' actions advance the private interests of producers and distributors in lower technology input costs, at the expense of the public interest in a dynamically efficient innovation ecosystem.

Antitrust and Balance of Interests in Standards Development – Lessons from *NSS Labs. v. Symantec*

By Justus Baron & Pierre Larouche

The recent decision of the District Court of the Northern District of California in *NSS Labs. v. Symantec* sheds light on the requirement that Standard Development Organizations ("SDO") achieve a balance of interests in their procedures. While the court ultimately did not rule on this point, the U.S. Department of Justice intervened in the case to insist – correctly in our view – that SDOs must meet that requirement in order to benefit from protection against antitrust liability under the Standard Development Organization Advancement Act ("SDOAA"). We argue that a balance of interests in standardization procedures is essential not only under the SDOAA, but also for the application of antitrust to SDOs more generally. Nevertheless, a balanced membership composition is not the only way for SDOs to achieve such a balance of interests.

SUMMARIES

A New Era of Licensing with China

By Mark A. Cohen

Changes in Chinese technology transfer law, foreign investment law and judicial practice have ushered in more liberal regime for foreigners seeking to transfer technology to China. Chinese courts have also increasingly adopted a fault-based conduct evaluation mechanism in the case of SEP licensing in China which has the potential to set normative standards for foreign licensors to China when there is a risk of litigation there. In general, the statistics show a positive trend in U.S. licensing of technology to China. However, these positive developments are counterbalanced by more restrictive U.S. export control sanctions affecting Chinese companies' abilities to participate in standards setting, acquire U.S. technology and enter foreign markets. As SEP-rich companies like Huawei find it difficult to sell their products in foreign markets, they may turn to a range of strategies to monetize their patents in markets where they have restricted possibilities of selling their products. While the current environment presents increased opportunities for licensing to China, these agreements are also be subject to increased political and legal uncertainty.

WHAT'S NEXT?

For October 2019, we will feature Chronicles focused on issues related to (1) **CRESSE**; and (2) **EU Competition Reports**.

ANNOUNCEMENTS

CPI wants to hear from our subscribers. In 2019, 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.

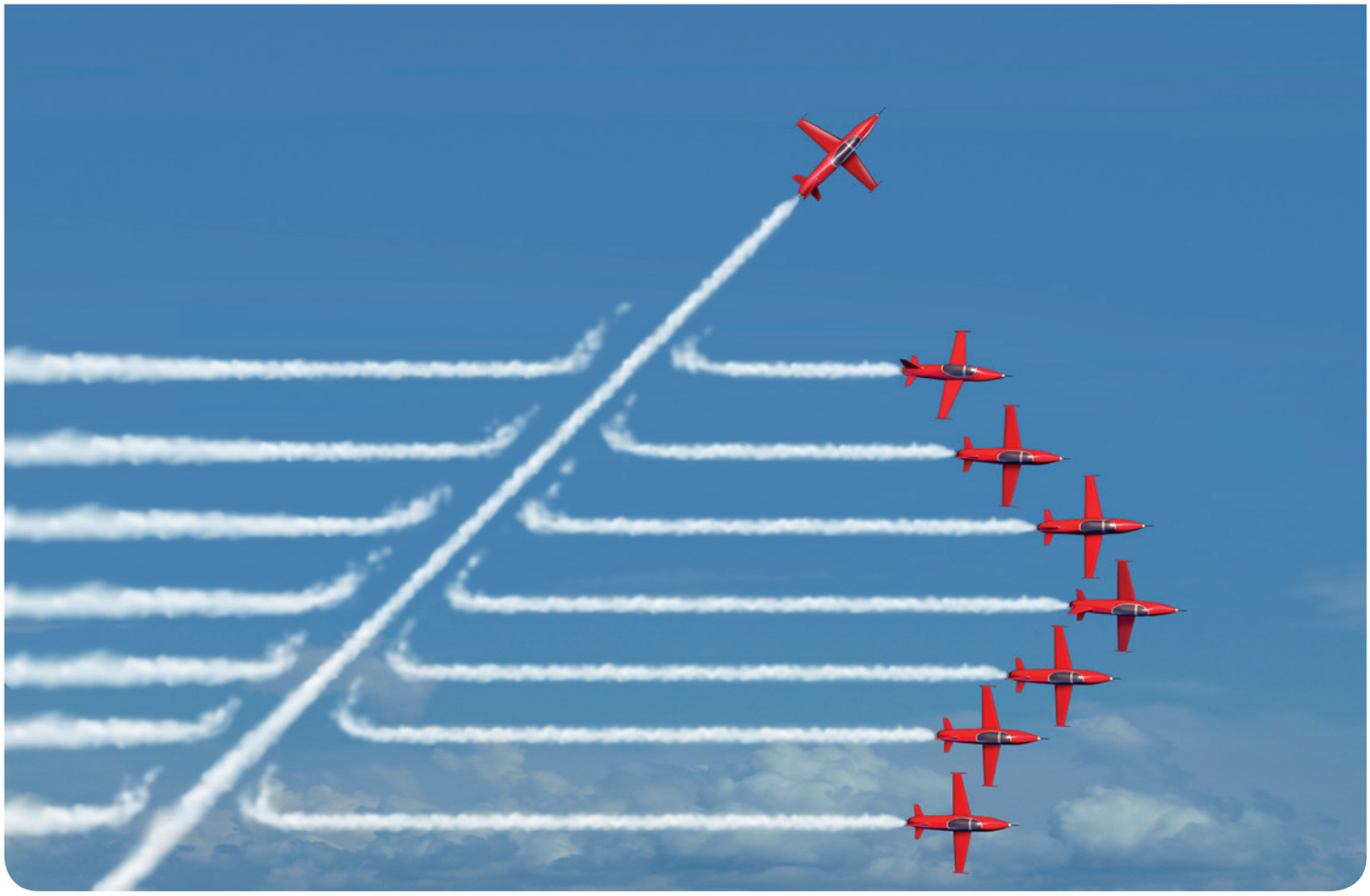
CPI ANTITRUST CHRONICLES NOVEMBER 2019

For November 2019, we will feature Chronicles focused on issues related to (1) **Compliance**; and (2) **Consumer Welfare**.

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.



CPI TALKS…

…with Makan Delrahim

In this month's edition of CPI Talks we have the pleasure of speaking with Mr. Makan Delrahim, Assistant Attorney General ("AAG") for the Antitrust Division of the U.S. Department of Justice ("DOJ").

Thank you, AAG Delrahim, for sharing your time for this interview with CPI.

1. **What do you see as the biggest issue facing the U.S. Intellectual Property system? And, what are some of the DOJ's priorities in analyzing the intersection between intellectual property protection and antitrust issues? Is there a holistic approach that can be used to "broaden the innovation ecosystem"?**

From the Antitrust Division's perspective, our primary concern regarding the intellectual property system is ensuring that competition law does not become a tool for policing the unilateral exercise of IP rights in a manner that curbs incentives for innovation. The balance struck by the Founders and Congress in creating a system of enforceable patent rights helped launch an innovation revolution in the early Republic, and that system has stood the test of time.

In recent years, we have seen a new skepticism toward the exercise of patent rights that has manifested itself in different ways — one of which is through the assertion that owners of standard-essential patents wield market power that should be curbed through the application of antitrust law. These critics assert that patent holders whose technology is essential to a standard engage in "hold up," by refusing to license until their royalty demands are met. As this idea has gained certain traction in the lower courts, we have observed that the prospect of treble damages is being used by patent implementers as a weapon in their licensing negotiations. That is, after a standard has been set, a licensee can threaten to bring an antitrust suit if it believes that a patent holder's royalty demands are too high.

We are concerned about this trend because this debate, for many years, appeared to be one-sided. A more holistic approach that "broadens the innovation ecosystem" should recognize that there are competing concerns in the standard-essential patent arena. Thus, over the past two years, the Division's advocacy has focused on re-balancing the debate over concerns regarding so-called patent "hold-up" with the prospect that patent implementers may engage in "hold-out." "Hold out" occurs where one or more patent licensees refuse to take a license from a patent holder, knowing that the only remedy the patent holder may pursue is an infringement suit or injunction. Some courts have interpreted Supreme Court case law regarding injunctions to make it very difficult for standard-essential patent holders to stop infringement. And patent implementers who infringe only may face damages in the amount of a reasonable royalty calculation. Thus, licensees have a strong incentive to hold out in their royalty negotiations.

At the same time, we believe that antitrust law should play a role in policing patent licensing conduct: that is, where a group of patent implementers or patent holders engage in concerted action to harm the competitive process. The Supreme Court has observed that standard-setting organizations "can be rife with opportunities for anticompetitive activity." While unilateral so-called hold up or hold out may not raise competition concerns, collective hold up or hold out could trigger antitrust liability.

2. As recently announced, the DOJ and USPTO will work together to update their 2013 joint policy statement to provide clarity on several matters, including SEP holders' rights to seek injunctions against infringements, and how best to ensure standards development organizations do not facilitate collusion that undermines innovation. What are some of the next steps in this policy-making effort?

The Antitrust Division has been working with the USPTO to clarify our joint views on the remedies available to SEP holders who bring infringement actions. Our goal is to encourage good-faith licensing negotiations that reflect the value of patented technologies, rather than the cost to a patent holder of having to litigate infringement when an implementer refuses to take a license, or the cost to an implementer of having its standards-compliant product excluded from the market entirely on account of a single patent holder's refusal to license. We hope to issue a joint statement that articulates the prevailing law, including that there is no special set of legal rules that limit remedies for infringement of SEPs subject to a F/RAND commitment. This is why we withdrew from the 2013 policy statement, as we found it misguided.

The Antitrust Division protects dynamic competition by preserving incentives to innovate in other ways as well. We look closely at whether standards development organizations have become havens for self-dealing among competitors. We advocate for standards development organizations to minimize the chance of anticompetitive conduct by maintaining an open and balanced membership with transparent procedures. For instance, the Division filed a Statement of Interest in *NSS Labs v. CrowdStrike, Inc.*, urging the District Court to consider carefully whether an antitrust exemption provided for in the Standards Development Organization Advancement Act of 2004 ("SDOAA")[1] applied to the organization at issue in the case. The statement explained the harm that would arise from interpreting that Act too broadly to protect the anticompetitive conduct of self-dealing groups of competitors.[2]

The Division also recently urged the American National Standards Institute ("ANSI") and accredited standards developers ("ASDs") to have balanced representation in decisional bodies so that diverse interests are represented and so that their decisions do not shift bargaining leverage in favor of any one particular set of interests. The Division also encouraged ANSI to promote flexibility among ASDs to experiment and compete with one another on their policies.[3]

3. As the debate on the Consumer Welfare standard rages on, what would you consider to be some important fundamentals that need to be preserved?

The U.S. antitrust agencies, and an increasing number of competition authorities around the world, use the consumer welfare standard to guide their antitrust analysis. The goal of the U.S. antitrust laws is to protect competition. Today, we know that the competition protected by our antitrust laws is broader than just the competition between two firms at the time a transaction is announced or when a business practice is implemented. Over the last 40 years or so, a consensus has emerged among antitrust practitioners and economists that the competition protected by the antitrust laws is a competitive process, the proper functioning of which is consumer welfare maximizing.

From time to time, the public has looked to antitrust to resolve complex economic problems, especially those related to wealth disparity, corporate power, and diminished bargaining power of workers vis-à-vis their employers, to name just a few examples. That has led some observers to question whether the consumer welfare standard is up the task of protecting consumers from anticompetitive actions. The consumer welfare standard offers several effective features that protect competition despite changing circumstances. As I will discuss in further detail, these features must be preserved.

It is Flexible. Any welfare standard that can withstand the test of time must be flexible enough to detect harms in existing, emerging, and unrealized industries. The antitrust laws were flexible enough to condemn anticompetitive practices in the analog world and the digital world alike, and I believe they are sufficient to detect anticompetitive harms in emerging markets as well. Indeed, antitrust enforcement improves as economic thinking improves, and the consumer welfare standard provides a framework that is flexible enough to take into account improved economic analysis.

1 15 U.S.C. §§ 4301-4306.

2 *Id.* § 4302.

3 See Letter from Principal Deputy Att'y General Finch to Patricia Griffin, Vice Present and General Counsel, American National Standards Institute (October 11, 2008), https://www.justice.gov/atr/page/file/1100611/download.

It Offers Consistency and Predictability. The consumer welfare standard provides enforcers, courts, and market participants with a consistent way of determining whether a business practice or transaction violates the antitrust laws. Deterrence is an important goal of antitrust enforcement, and companies that are able to determine what conduct is permissible and what is not are better able to self-regulate. Deterrence also preserves the agencies' limited resources.

It Avoids Muddling Competition with other Values. Competition must remain the sole focus of antitrust enforcement. By sharpening our focus on anticompetitive practices and transactions that are harmful to consumers, the goals of antitrust law are not misapplied to advance exogenous goals. To incorporate other values into antitrust analysis is not only unadministrable, it would open up the agencies to lobbying and rent-seeking that would erode public confidence in markets and law enforcement.

That is not to say that antitrust enforcement and broader social values are mutually exclusive. But to the extent that antitrust delivers those other values, it is by promoting competition. That is, by condemning restraints and transactions that harm competition, vigorous antitrust enforcement can protect free markets that lead to new innovative benefits, which can transform society and benefit consumers and workers alike. As the Supreme Court explained:

> The Sherman Act was designed to be a comprehensive charter of economic liberty aimed at preserving free and unfettered competition as the rule of trade. It rests on the premise that the unrestrained interaction of competitive forces will yield the best allocation of our economic resources, the lowest prices, the highest quality and the greatest material progress, while at the same time providing an environment conducive to the preservation of our democratic political and social institutions. But even were that premise open to question, the policy unequivocally laid down by the Act is competition.[4]

It Incentivizes Innovation. The consumer welfare standard is not synonymous with a policy always favoring lower prices. It is a framework that protects multiple dimensions of competition. Where competition is harmed, firms gain market power that can be used not only to raise prices, but also to degrade quality, diminish the rate of innovation, and even lower privacy protections. Protecting competition means protecting all those dimensions of competition. Sometimes, promoting innovation can mean higher prices. For example, high demand for an exciting new product may drive up its price, but that may simply reflect consumer preference for a superior product relative to alternatives. Antitrust law is intended to protect this behavior, not punish it, so that others will have incentives to innovate and compete themselves, all for the benefit of consumers. Such dynamic competition should be encouraged by our enforcement policies.

4. You recently gave a speech at the OECD entitled: "*'Don't Stop Thinking About Tomorrow': Promoting Innovation by Ensuring Market-Based Application of Antitrust to Intellectual Property*." What are some of the ways to maximize innovation incentives in the long and short run?

Our goals at the Antitrust Division are two-fold: first, make sure that companies do not engage in mergers or anticompetitive conduct that harm the competition for innovation; and, second, ensure that the development of antitrust law generally does not over-deter innovate companies from asserting their IP rights.

On the first point, our merger reviews regularly consider the impact of concentration on incentives to innovate. For instance, in *Bayer/Monsanto* and *Thales/Gemalto*, our investigations revealed that in certain markets where there were horizontal overlaps, the rivalry between the merging companies had been driving investment in developing innovative new products. In both cases, the Division required divestiture of IP and research capabilities for products under development. These structural remedies were designed to ensure that the acquirer of the divestiture assets would step into the shoes of the former competitor, and compete in the development of innovative new products and services.

We also look carefully at the effect on innovation in vertical mergers: a vertically integrated company could acquire the incentive or ability to foreclose innovative new rivals. Where there is evidence that this sort of effect is likely, the Division does not hesitate to use its enforcement authority. We would likewise enforce the antitrust laws against companies that engage in anticompetitive conduct to prevent the adoption of innovative new technologies or to harm competitors who might benefit from that change.

Additionally, we have been advocating to courts for a careful application of the antitrust laws to licensing disputes between patent holders and patent implementers.

4 *Northern Pacific Railway Co. pro v. United States*, 356 U.S. 1, 4-5 (1958).

5. Do you have any thoughts on the recent op-ed from Senator Mike Lee entitled "*Just one agency should enforce antitrust law*"?

I enjoyed reading Senator Lee's op-ed, and I believe there is wisdom in his observation that having a single agency enforce the antitrust laws may be more efficient than tasking two agencies with overlapping jurisdiction. We should continually examine our enforcement system and processes to ensure that we are best serving the American consumer. We nevertheless respect the current allocation of authority that Congress has granted federal enforcers at the DOJ and the Federal Trade Commission ("FTC").

In the spirit of innovation, we also may want to refresh our thinking about how authority within the existing statutory framework is allocated. Two ideas come to mind, one regarding state enforcement and the other regarding national enforcement of the antitrust laws.

First, we should not lose sight of the role that states have asserted for themselves in enforcing the federal antitrust laws. Senator Lee's op-ed focused on the two federal agencies, but in reality there are 53 agencies that wield this power: the DOJ, the FTC, 50 states, and the District of Columbia. As businesses increasingly expand their geographic range, the mergers that come before the Division more and more often have broad impacts on interstate and international commerce. While there is an appropriate role for antitrust enforcement by the states in intrastate matters, to permit every state enforcer to impose its own, unique remedy would be deeply problematic. Allowing states to impose their own remedies when they are inconsistent with a remedy that was imposed by federal authorities would be even more unworkable.

Second, even where the federal agencies have overlapping authority, it is important to ensure that the United States speaks with one voice regarding antitrust matters that impact international affairs, and that the Executive Branch speaks for the United States where there is any risk of disagreement between the two agencies on matters of antitrust law or policy. These principles follow from Article II of the U.S. Constitution, which grants the President authority to conduct foreign relations on behalf of the United States.

Although the U.S. government includes a number of independent agencies, only Executive Branch agencies may represent the United States and speak on its behalf in international affairs unless the President or Congress specifically has delegated authority to an independent agency to do so. The DOJ is responsible for enforcing the antitrust and competition laws, and representing the United States with respect to U.S. antitrust policy interests. In particular, the DOJ is authorized under 28 U.S.C. § 517 to attend to the interests of the United States, and those interests extend to conduct occurring abroad or involving foreign commerce that violates the U.S. antitrust laws.

Although Congress has granted the FTC certain authority to engage in international antitrust investigations and enforcement, including providing technical investigative assistance to foreign antitrust authorities, it would be inconsistent with our constitutional framework — in particular, the role of the Executive Branch under Article II — for the FTC to assert a policy position in an international forum that contradicts the policy position of the United States. When the agencies are at risk of disagreement on any matter of antitrust law or policy, it is crucial that they work out their differences and that, ultimately, the DOJ, on behalf of the Executive Branch, should represent the policy positions of the United States in any foreign relations, consistent with the U.S. Constitution.

6. In your remarks at the New York University School of Law on July 11, 2019, you announced a significant policy shift at the DOJ that would incentivize the adoption of adequate and effective corporate compliance programs. Can you please go into a bit more detail about this?

Antitrust compliance programs are the first line of defense against misconduct. The Division is committed to incentivizing antitrust compliance efforts by rewarding investment in compliance, even when the program did not deter all misconduct. I hope our announcement will increase corporations' commitment to antitrust compliance and thereby help stop costly crimes before they happen or, failing that, mitigate the damage to consumers and the free market by detecting wrongdoing sooner.

On July 11, I announced that the Division will consider and allow for crediting corporate compliance at the charging stage in criminal antitrust investigations. When considering corporate charges, Division prosecutors will now consider compliance together with all the other factors under the Principles of Federal Prosecution and the Principles of Federal Prosecution of Business Organizations, as well as our Corporate Leniency Policy. The potential credit is resolving the matter by a deferred prosecution agreement, rather than by guilty plea.

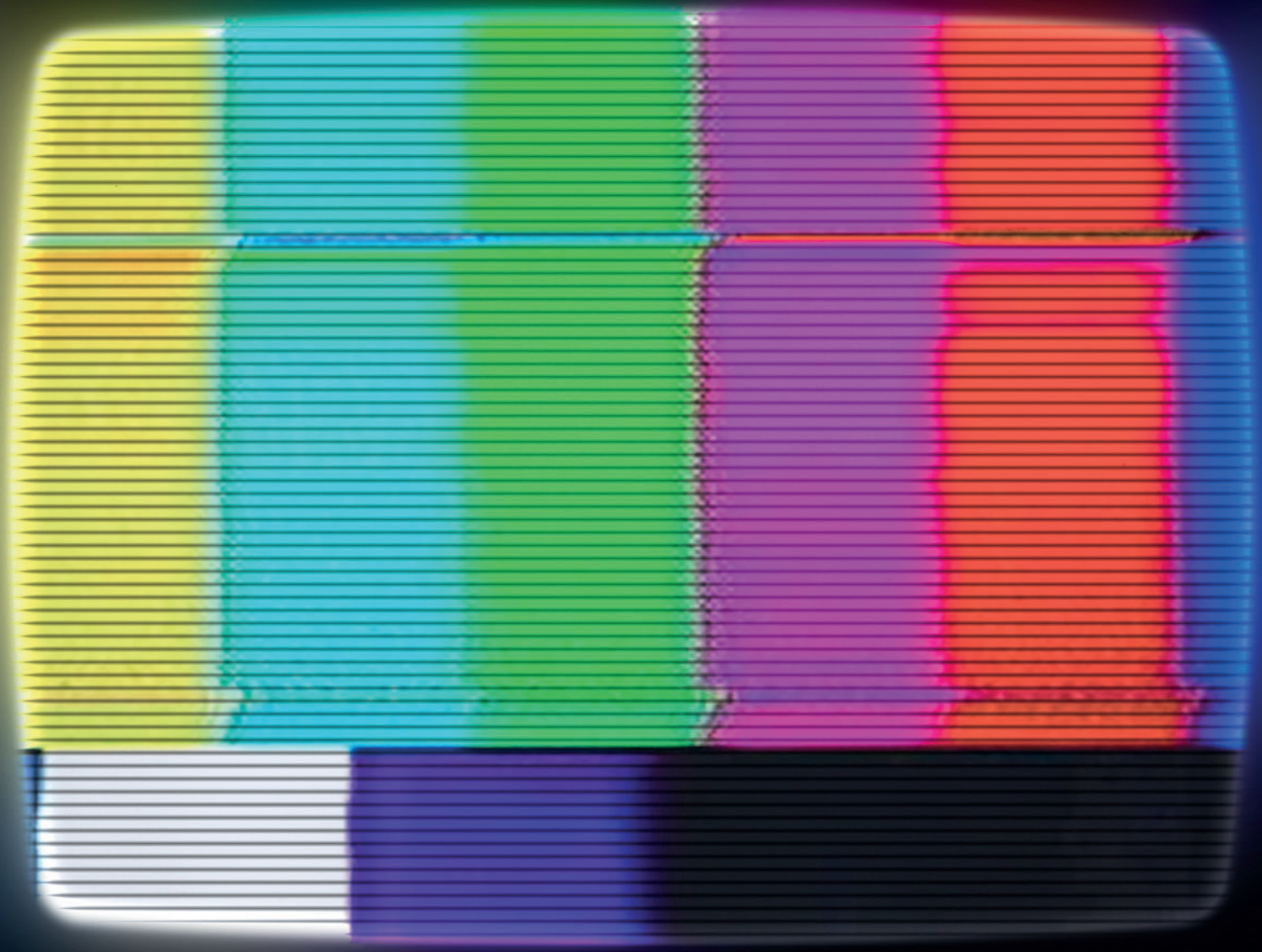
In connection with my announcement, the Division revised the Justice Manual to reflect this policy change, and updated the Antitrust Division Manual to address evaluating compliance programs, selecting monitors, and Division processes for recommending indictments and plea agreements. Finally, for the first time, the Division published a guidance document that focuses on evaluating compliance programs at both the charging and sentencing stages of criminal antitrust investigations. This guidance document is intended to assist Division prosecutors in their evaluation of compliance programs, and to provide greater transparency as to the Division's compliance analysis.

The Division's policy change, along with revisions to public documents and the publication of a guidance document, are intended to deter antitrust violations and reward the efforts of good corporate citizens who invest in, and commit to, a culture of compliance.

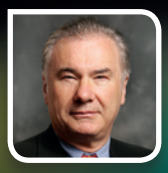
Despite our focus on compliance, the Division will not evaluate compliance programs in a vacuum. A truly effective compliance program is one of the ten factors the Justice Manual directs prosecutors to consider when weighing charges against a corporation. Of the ten factors, four stand out as hallmarks of good corporate citizenship. Good corporate citizens not only implement robust compliance programs, but if misconduct occurs, they promptly self-report, cooperate, and take remedial action. Effective compliance and prompt self-reporting are intertwined: the Justice Manual directs prosecutors to consider "the promptness of any disclosure of wrongdoing to the government," when evaluating the compliance program itself.[5] Accordingly, prosecutors will not credit compliance programs when the other hallmarks of good corporate citizenship are absent.

5 Justice Manual § 9-28.800.

5G AND THE GLOBAL ECONOMY: HOW STATIC COMPETITION POLICY FRAMEWORKS CAN DEFEAT OPEN INNOVATION



BY DAVID J. TEECE[1]



1 Professor, Institute for Business Innovation, Haas School, U.C. Berkeley; Chairman, Berkeley Research Group. I'd like to thank John Blair and Charles Clarke for useful insights, comments, and assistance.

I. INTRODUCTION

Wireless telecommunications help knit together the global economy. The efforts of hundreds of thousands of engineers employed by thousands of firms have cooperated and competed to deliver solutions, not just compatible across firms but continually improving across time. This miracle of coordination is due to *Open Innovation*,[2] a paradigm by which innovating firms use external as well as internal ideas to improve their devices and enhance the consumer experience. This paradigm has helped make mobile telecommunications one of the most, if not the most, innovative engines in the world economy. Today almost two-thirds of the world's population – close to 5 billion subscribers – enjoy the fruits of this technology.

With the advent of 5G, mobile wireless promises to connect everyone and everything all the time with high speed (100x 4G/LTE) and with super-low latency – the time between a command's being issued and its response being received. With 5G, delay is nearly nonexistent, which is central for controlling drones and robots. This technology is both evolutionary and revolutionary, in that it will work with (and draws lessons from) existing 4G/LTE networks, but it is much faster. Before too long, mobile data rates will likely exceed wired network data rates. It will enable a new era of disruptive communication technology and create a digital virtuous cycle. Deployed networks will spur a new generation of applications from remote surgery to autonomous vehicles to drones to virtual reality – and whatever the collective power of the upstream technology community and the applications community can create. More data is consumed as the user experience improves.

With the initial rollout of 5G now occurring, we are in the very early stages of moving beyond person-to-person connectivity. Device-to-device connectivity is the next big wave and it will result in connected homes and connected machines, particularly in the industrial and automotive segments. "We're talking about smarter motorways, smarter factories, smarter cities,[3] smarter homes."[4]

This paper explains how the mobile wireless open innovation model has been impaired by regulatory interventions and judicial decisions – so much so that the open innovation model, which has been so important in the evolution of the mobile wireless industry to date, could well collapse and be replaced by a vertical integration "stack" model which would be less friendly and beneficial to consumers. In this new reality open dialogue between technology developers, chipset partners, and device manufacturers would become less open, less frequent, and more proprietary.

In the context of mobile wireless, the 3rd Generation Partnership Project ("3GPP") has united Standards Development Organizations ("SDO") such as the European Telecommunications Standards Institute ("ETSI") and others to ensure compatibility and, most importantly, improvement. In the existing Open Innovation paradigm, new wireless technologies must first be ratified in the 3GPP standard, but also must be validated in network equipment. ETSI fosters rapid innovation by "adequately and fairly" rewarding contributors of intellectual property (IP) in order to encourage nonexclusive licensing versus exclusive own-use. The pricing criterion to encourage development, adoption and licensing of upstream mobile wireless technology is fair, reasonable, and nondiscriminatory ("FRAND") royalty rates. These should be high enough to encourage development but not so high as to discourage adoption. The nonexclusive licensing model enabled by ETSI's FRAND policy has led to the twin technological triumphs of cooperative development and widespread adoption.

Overzealous – and I would argue myopic – competition authorities and courts have been lured into the belief that FRAND terms implicate antitrust (and not just contractual) issues, due to a hypothetical, narrowly, and wrongly defined fear of "holdup" (opportunism) by patent owners leading to royalty rates that are "too high." Patent owners, having collectively sunk billions into R&D to support the mobile ecosystem, are themselves deeply exposed to "holdout" (evasion of licensing) by implementers whose investments may not be sunk, and who can take advantage of the fact that patents are not self-enforcing. The SSNIP test inappropriately applied to IP rights takes too narrow a view of the market and has led to some antitrust scholars seeing "monopolies" associated with each standard-essential patent – monopoly power which should be curbed through antitrust intervention.

By siding with device makers – often very large companies like Apple, who have the financial resources to litigate in multiple venues – antitrust agencies and courts have in my view injected antitrust theories based on incorrect assumptions into licensing issues where they don't belong. In doing so, the authorities have come close – and may succeed – to destroying the highly competitive Open Innovation model that they (ironically, in less contentious forums) recognize as virtuous. Jonathan Barnett recently asked whether academia has led patent law astray.[5] In a similar spirit, this paper expresses a concern that academia (and in particular antitrust economists wedded to static frameworks) may too have led elements of the U.S. FTC and some judges astray.

2 See Henry Chesbrough, *Open Innovation: The New Imperative for Creating and Profiting from Technology*, Boston: Harvard Business School Press, 2003.

3 Smart cities should finally flourish with 5G, which will allow real-time data flows about pollution levels, traffic flows, and energy use.

4 Rahim Tafazolli, 5G Innovation Centre, University of Surrey, quoted in *Business Life*, June 2019, p. 27.

5 Jonathan Barnett, "Has the Academy Led Patent Law Astray?," 32 *Berkeley Technology Law Journal* 1313 (2018).

To survive, the Open Innovation model must promote sufficient returns to allow a technology market to work. Otherwise the licensing model breaks down and innovation falters, or is confined to vertically integrated firms that fund R&D internally.

In the U.S. the FTC has taken actions which are likely to, at minimum, impair Open Innovation in wireless telecommunications, and possibly destroy it. The consumer, whom those agencies supposedly champion, will be the loser. Clearly that is not the agencies' goal. But competition authorities and the courts need to look with a wider lens in cases when innovation issues, ecosystems, and international competition are front and center, as they are with 5G.

This wider lens would have sufficient aperture to view the relevant competitive arena, which is the entire mobile wireless innovation ecosystem. It is only by doing so that policy makers have a chance of doing more good than harm. Antitrust economists often start by defining some relevant market, but that lens as commonly employed is too narrow to comprehend the interconnected and complex systems that form the relevant competitive arena in which Open Innovation has thrived.

Indeed, another ambition of this short essay is to stimulate antitrust scholars to question received notions about relevant markets, and in particular, so-called "technology markets," where each individual standard-essential patent becomes a market. This formulation is *reductio ad absurdum*.

II. MOBILE WIRELESS TECHNOLOGY AS ENABLING TECHNOLOGY

In my view it is important to recognize that a good many wireless innovations enable other innovations. An *enabling technology* possesses both the capacity for ongoing improvement and the stimulus for complementary innovation in separate, adjacent or downstream "application" sectors.[6] It naturally stimulates spillovers into those sectors. Because of these spillovers, and because you cannot easily integrate your way around the associated bargaining issues, enabling technology faces serious market failure issues. Legislatures and the courts need to be sensitive to this and not compound the problem with fallacious antitrust theories which end up amplifying the problem.

The essence of enabling technology is that it has spillovers in many complementary or downstream applications, opening up downstream opportunities. For example, 4G allowed networked transport applications like Uber and Lyft to work well. Therefore, incentivizing its creation and improvement is critical to the downstream sector(s). Under-incentivizing enabling technology is not unlike shutting down irrigation in California's Central Valley. Lack of water would deny many crops the occasion to flourish; from almonds to beans to corn to grapes to oranges to rice to walnuts.

Implementers of enabling technology, like device makers in the case of 5G, build on the upstream innovation. The device maker's business model to capture value is typically to sell bundles of technology with tangible inputs. This is relatively straightforward and doesn't require much help from the courts, as the technology sale is embedded in the product sale. The revenue loss due to product theft is less catastrophic to the implementer than widespread patent infringement would be to the patent-owning technology contributor.

Widespread infringement of the upstream enabling technology can lead to royalties being permanently depressed. The weakening of injunctive relief in the U.S. post-*eBay* allows infringement (and the avoidance of royalty payments) to continue for long periods.[7] The results are hinted at by the global share of smartphone industry profits, which have largely accrued to the two leading device makers, Apple and Samsung.[8]

In short, IP protection for enabling wireless technology – which has very large and positive externalities, or "spillovers" – has become weak and uncertain because courts have allowed antitrust issues to be injected into what is a contractual issue – namely, the appropriate FRAND

6 See David J. Teece, "Profiting from Innovation in the Digital Economy: Enabling Technologies, Standards, and Licensing Models in the Wireless World," 47 *Research Policy* 1367 (2017); David J. Teece, "Enabling Technology, Social Returns to Innovation, and Antitrust: The Tragedy of Depressed Royalties," *CPI Antitrust Chronicle* (June 2018); and David J. Teece, "The 'Tragedy of the Anticommons' Fallacy: A Law and Economics Analysis of Patent Thickets and FRAND Licensing," 32:4 *Berkeley Technology Law Journal* 1489 (2017), 1515-1522.

7 Michael P. Akemann, John A. Blair & David J. Teece, Patent Enforcement in an Uncertain World: Widespread Infringement and the Paradox of Value for Patented Technologies, 1 *Criterion J. on Innovation* 861 (2016).

8 ZDNet, "Apple, Samsung capture all of industry's smartphone profits," August 22, 2016, citing Canaccord Genuity finding Apple earned 91 percent of total 2015 industry profit; Samsung 14 percent; Microsoft, Sony, others posted losses. https://www.zdnet.com/article/apple-samsung-capture-all-of-industrys-smartphone-profits/.

royalty.[9] Thus, in addition to the inherent long-standing difficulty of collecting payment for IP, proper reward for IP now suffers from misdirected antitrust intervention animated by empirically unsupported holdup theories, court-created *de facto* royalty caps following the "smallest salable patent-practicing unit" doctrine, and other inimical notions untethered from the basic economics of technological innovation. Addressing this imbalance is a critical policy issue if 5G is to reach its full potential, and if the open innovation model is to stay alive.

III. OPEN INNOVATION AND 5G AS A SOFTWARE TECHNOLOGY

5G wireless is fundamentally a software technology: expensive to create, cheap to copy, and very much in need of strong IP rights. In that regard 5G and mobile wireless are little different from some other industries. With increasing frequency, innovative companies have software as their core asset. Although known for other products – Apple for the iPhone and iPad, Amazon for retailing, Qualcomm for Snapdragon mobile processors – nearly all technology companies have software at their core. With more powerful software, hardware is abstracted away, and combinatorial innovation accelerates. These developments were heralded eight years ago, when Mark Andreessen explained that "software is eating the world."

Markets for technology don't function well without strong IP rights.[10] Technology may still get developed without IP protection, but it will be confined in vertically integrated organizational structures, to be embedded in, and priced into, goods and services supplied via a vertically integrated organization. That's how consumers and producers usually pay for technology. Thus, the proprietary technology to develop drugs is paid for when one buys the product.[11] The same is true for many intermediate products, like automotive parts. It is only in unusual cases that the division of labor between technology developer and product maker is nearly complete, at which point the technology is made available through licensing. 3G, 4G, and (hopefully) 5G wireless telecommunications are cases in point.

Competition policy advocates admire the Open Innovation model.[12] "Consumers benefit from open innovation strategies," according to the Federal Trade Commission.[13] Allowing the market for knowhow to flourish – and with it the Open Innovation model – requires that licensing regimes be supported with royalties at levels sufficient to draw forth the investment needed to make the ecosystem robust, and open innovation to succeed.

Unlocking the full potential of 5G will require robust protection for 5G technological contributions to ensure rewards sufficient to induce investment by the developer-owners of open collaborative technologies. Each generation of wireless technology – 3G, 4G, now 5G – has taken more than 5 years (10 years for 5G) to define and many more years to perfect. While initial 5G wireless standards have been set, there will be many updates and improvements – assuming that antitrust authorities and courts don't interfere with the improvement process by, for example, destroying the licensing model that has made the earlier generations' improvement profitable and possible.

The likelihood of error by regulators and courts is high given their limited toolkit for understanding complex innovative environments, and their simplistic penchant to believe that almost any non-zero price for mobile wireless technology embedded in standards is too high… despite the billions that still need to be spent to develop the enabling technology that is required and desired. Antitrust policy that fixates on licensor market power (weak at best), while remaining oblivious to implementers' free-riding on standards technology developed by others, threatens the development of a dynamic 5G market and myriad other innovations that dynamic markets can enable.

The wireless technology market designed and supported by ETSI/3GPP is the linchpin of the Open Innovation model. Without it the "closed innovation" of proprietary stack-to-stack oligopolistic competition would prevail. The oligopolistic stacks would admit no (or only limited) licensing of wireless technologies outside each stack. Entry barriers – the price of admission to for new entrants to each stack – would be much higher, especially for device makers. Hence, it may well be that the major incumbent device makers would prefer to see the Open Innovation licensing model collapse. They seem to have coopted the U.S. FTC (perhaps unknowingly) into that strategy.

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9 A sitting FTC commissioner put it this way: "Judicial alchemy also converted a contractual obligation into an antitrust one." Christine Wilson, "A Court's Dangerous Antitrust Overreach," *The Wall Street Journal*, May 28, 2019. https://www.wsj.com/articles/a-courts-dangerous-antitrust-overreach-11559085055.

10 See David J. Teece, "Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy," 15 *Research Policy* 285 (1986).

11 See David J. Teece, "Business Models, Business Strategy and Innovation," 43 *Long Range Planning* 172 (2010).

12 Open Innovation is defined by Henry Chesbrough as the use of purposeful inflows and outflows of knowledge to accelerate internal innovation, and expand the market for external use of innovations. See Henry Chesbrough, *Open Innovation, supra* note 2. FRAND licensing is an open innovation business model enabled by ETSI/3GPP.

13 Federal Trade Commission, *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition*, March 2011, p. 7.https://www.ftc.gov/sites/default/files/documents/reports/evolving-ip-marketplace-aligning-patent-notice-and-remedies-competition-report-federal-trade/110307patentreport.pdf.

IV. STRUCTURAL IMPLICATIONS OF COMPETITION POLICY RUN AMOK

Qualcomm, the American standard bearer for 5G, has been ordered by Judge Koh in San Jose to, in effect, dismantle the licensing model that has funded its past innovation. The decision is being appealed, and interestingly the US DOJ has filed an amicus brief with the Ninth Circuit seeking to overturn Judge Koh's unfortunate (for competition and innovation) decision.[14]

The only other global leader in 5G is the Chinese standard bearer, Huawei, a robust innovator that does not rely on judicial royalty-rate determinations for its success. The effect of the recent federal court decision against Qualcomm's business model will be to cede global leadership in 5G to Huawei. As licensing regimes falter, so does the whole 3GPP Open Innovation ecosystem.

A. The Death of Open Innovation and the Re-emergence of the Oligopolistic Integrated "Stack" Model?

For antitrust economists, the courts, and policy makers to comprehend the full impact of their myopic theories, perhaps it is necessary to map out what might happen if rewards for investing in 5G mobile wireless technology are in fact set too low. The likely consequence is that: (1) R&D on mobile wireless is reduced and invention that relies on the licensing model slows. 5G updates occur less frequently, if at all. (2) Device makers and application developers suffer slowing, even declining, sales. There is little reason to buy new phones and other devices if the new ones don't do much more than the old ones as technology obsolescence is what causes most customers to upgrade their devices. (3) To combat declining upstream innovation, device makers like Apple facing eroded sales may for the first time start to contemplate subsidizing upstream R&D. But this will be difficult because, in the shadow of *FTC v. Qualcomm*, the upstream wireless technology developers must provide FRAND licenses to all, subsidizer and free rider alike, at "nondiscriminatory" rates.[15] Device makers subsidizing upstream technology developers is a strategy likely to fail, as individual device makers that consider subsidizing upstream R&D will have to compete with other free riding device makers. (4) Because such efforts to patch up open innovation are likely to fail, the large players (e.g. Apple, Google, Samsung, Huawei) are likely to begin to build their own proprietary technology stacks, causing the ETSI/3GPP open innovation model to collapse further. The integrated players will no longer wish to tender their technology to ETSI and be exposed to the FRAND commitment. The open innovation FRAND model will then no longer support sufficient technological development. This might not in the end trouble the big players like Samsung, Apple, and Huawei who can bring the technology in-house and not license it to the other usually smaller players. However, innovation will slow, and concentration in the downstream device markets would likely increase dramatically.

The irony would be that the same antitrust policy makers that might take pride from the breakup of the vertically integrated Bell System ("AT&T"), would have in fact stimulated the emergence of a vertically integrated model in mobile wireless, one that would likely suffocate a good deal of follow-on innovation and squeeze out downstream players. New entry into the device market would be much, much harder. The highly competitive model we have now, with scores if not hundreds of players, would collapse to a few players with proprietary software stacks. Perhaps these stacks would cooperate to achieve some amount of compatibility. Oligopoly would replace the vigorous competition we see today. Lower innovation is a likely corollary.

There is not much in this scenario that is appealing from a competition policy perspective. Should this scenario play out, antitrust zealots in the US and the EU should then have on their tombstone the inscription that they "helped destroy the greatest model of technological cooperation and innovation in the history of human civilization" – all because they used too narrow an analytical lens. The poorest members of global society, who have benefited enormously from mobile technology, are likely to suffer disproportionately.

B. Early Indicator

The sale of Intel's modem business to Apple is an early indicator of the demise of the open innovation model. On July 25, 2019, Apple announced its acquisition of the majority of Intel's smartphone modem business.[16] Apple's senior vice president for hardware technologies took note that the acquisition would "allow Apple to further differentiate moving forward." The Apple stack could well separate more completely from rival stacks in the future. It is still early days, and key judicial outcomes are still in the balance.

14 See David J. Teece, "FTC v. Qualcomm Should Be Viewed Through A Wider Lens," Law360, May 21, 2019, https://www.law360.com/articles/1160642/ftc-v-qualcomm-should-be-viewed-through-a-wider-lens; and David J. Teece, "FTC's Antitrust Win Against Qualcomm Should Not Stand," July 29, 2019, https://www.law360.com/articles/1182240/ftc-s-antitrust-win-against-qualcomm-should-not-stand.

15 Presumably, Apple might argue that it had paid the upfront contract R&D courts and ought to take this as a deduct from its FRAND royalty in order for the FRAND rate others are getting to be fair to it. However, given the propensity of courts to make errors around complex economic issues, it would have no such immediate assurances.

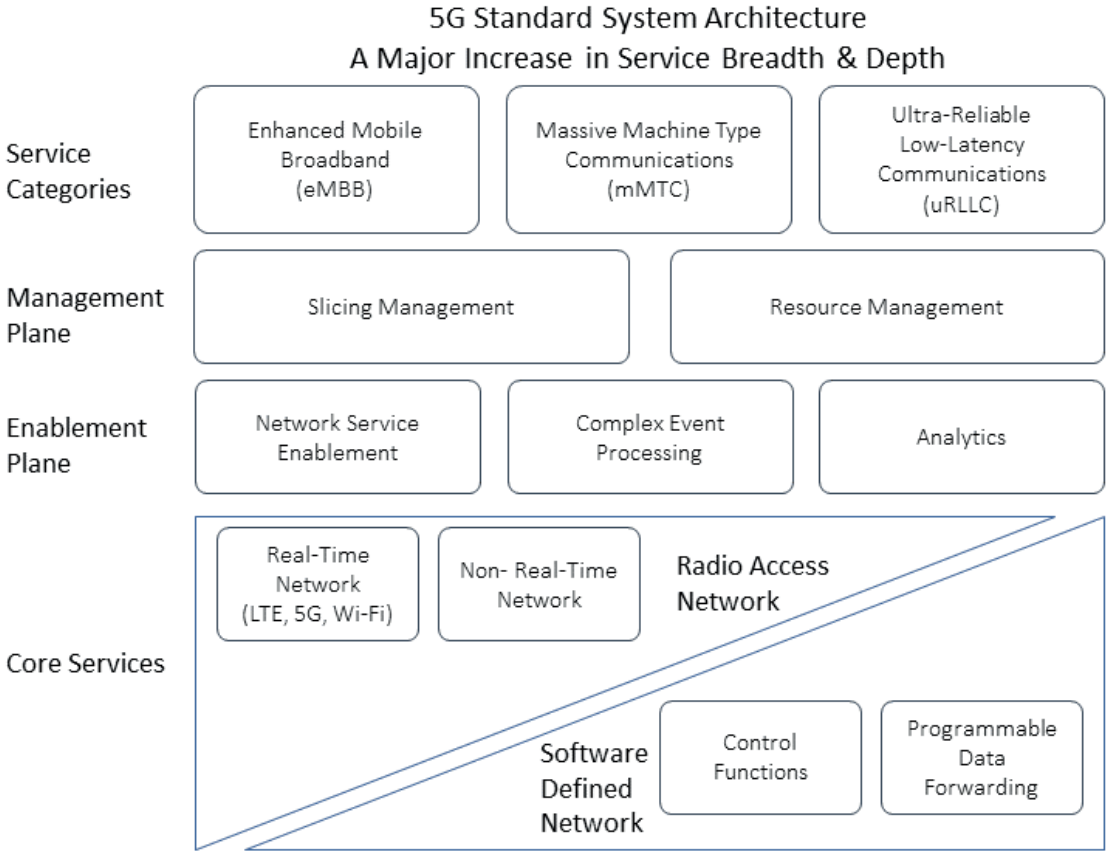
16 Apple Inc., "Apple to acquire the majority of Intel's smartphone modem business," July 25, 2019 press release. https://www.apple.com/newsroom/2019/07/apple-to-acquire-the-majority-of-intels-smartphone-modem-business/.

C. Why the Open Innovation Model is Better for the World than the Closed or Semi-closed Stack Model.

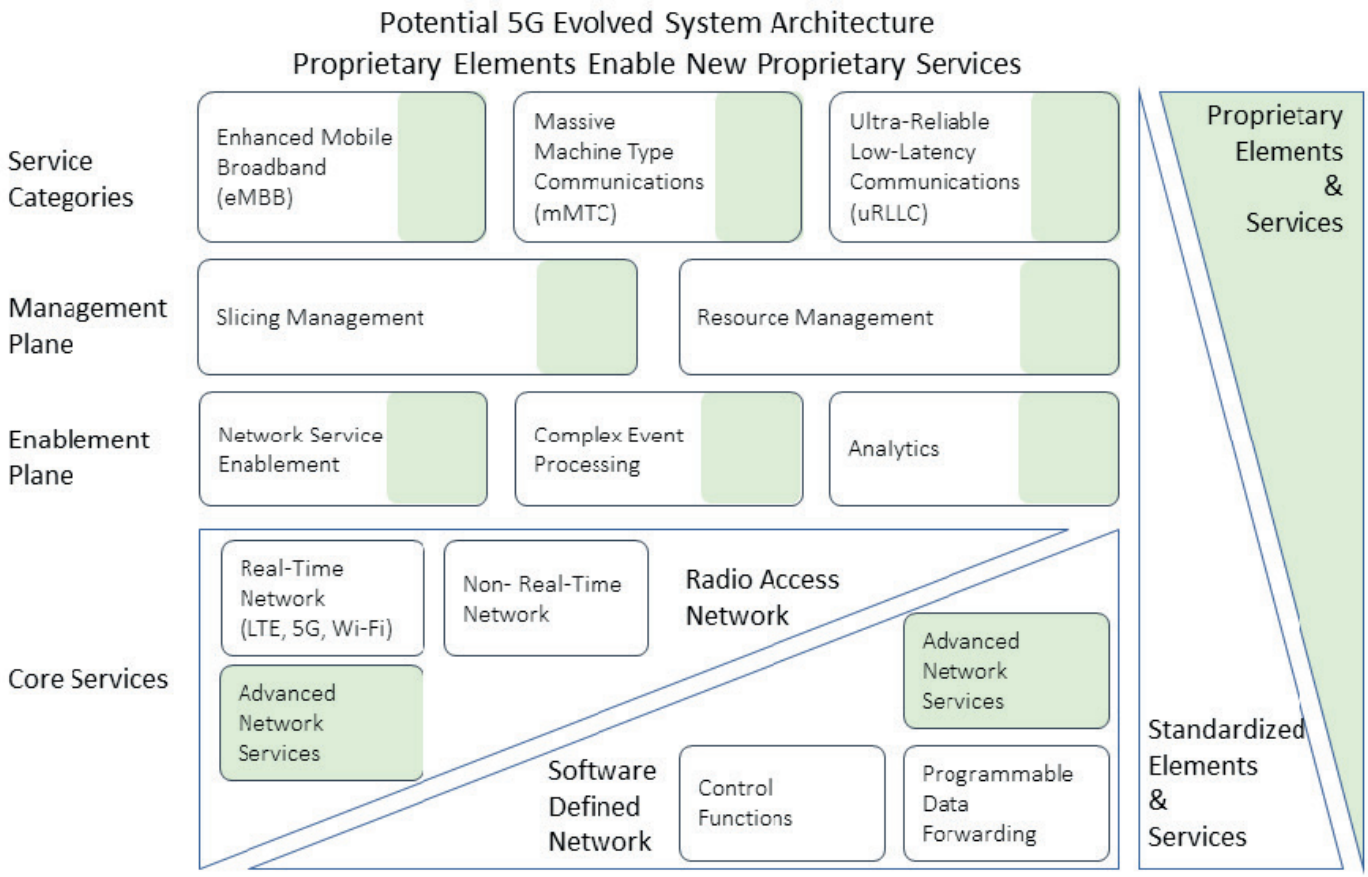
As discussed, the likely collateral damage of antitrust interference with the Open Innovation model is that licensing-based financial support for upstream wireless innovation collapses. A possible downstream response would have device makers (e.g. Apple, Samsung, Huawei) subsidize upstream innovation, but free riding – a likely consequence of FRAND licensing in the shadow of *FTC v. Qualcomm* – would likely doom that business model.[17] The device makers might then be forced to become stack sponsors, possibly doing more wireless innovation inside their stack but not licensing to rival stacks, or licensing only among themselves (the oligopoly model). Mobile wireless research still happens, but its diffusion across stacks would be limited. One version of this might be that Apple or Samsung acquire Qualcomm or Ericsson. (The purchase of Qualcomm by Huawei would likely be blocked by CFIUS).

From a global consumer welfare perspective, one might ask whether the situation is markedly different. Not only does oligopoly seem less attractive on its face than the highly competitive model that currently exists on pure static (efficiency) grounds. It's likely worse on dynamic grounds.

Consider the "standard" system architecture enabled by 5G, as depicted in the upper panel below. 5G is likely to enhance mobile broadband (make it more ubiquitous, faster); enable massive Machine Type Communications (the "Internet of Things"); and promote ultra-reliable low-latency communications (e.g. "the self-driving car").



17 This decision has been appealed to the Ninth Circuit. The Department of Justice has weighed in with the United States' statement of interest for issuance of a stay, "The court's remedy is intended to deprive, and risks depriving, Qualcomm of substantial licensing revenue that could otherwise fund time-sensitive R&D…" *Federal Trade Commission v. Qualcomm Inc.*, United States' Statement of Interest Concerning Qualcomm's Motion for Partial Stay of Injunction Pending Appeal (9th Cir. Case No. 19-16122), July 16, 2019, at 12.



The lower panel depicts an "evolved" 5G system architecture in which each "stack" contains a "proprietary" element in the shaded regions of every architectural object. A mundane example, even today, would be the Apple iOS-exclusive FaceTime service that is not, and cannot, be supported by the rival Android "stack." The proprietary nature of the evolved-5G would be FaceTime writ large.

The fundamental reason consumer welfare would likely be worse is because, as discussed, 5G and future generations are precious "enabling technologies." As noted above, such technologies benefit from engagement with downstream players who deliver a myriad of further applications. The "stack" or "oligopoly" model contains less incentive to license such technologies – IP owners can keep it to themselves and limit competition downstream. This not only denies consumers lower prices, but shuts down a good deal of device innovation. The existing Open Innovation licensing-dependent framework does not suffer this fate.

Former DOJ chief economists Fiona Scott Morton and Carl Shapiro have criticized this position: "Defendants sometimes point to these market improvements (cheaper and faster products) as evidence that no exclusionary conduct has taken place. However, the correct question is whether the improvement in speed and reductions in price would have been even larger absent the exclusionary conduct."[18] The former chief economists set themselves a very low bar indeed if they need not pay attention to the performance of the actual market that an accused defendant has succeeded in, and the actual consumer benefit that defendant has delivered. This low bar likely extends to whatever counterfactual they eventually settle on, for which hints and whispers of some hypothetically superior but unoffered product are deemed sufficient evidence to condemn the actual technology that enabled actual innovation to please actual consumers. As one commentator has asked, "By what standard of proof should one judge the plausibility of the supposedly brighter world that never was?"[19]

It is apparent to me that antitrust economists must use a wider lens if they are to do more good than harm. They have confused "assertive" antitrust policy with *wise* antitrust policy.

18 Giulio Federico, Fiona M. Scott Morton & Carl Shapiro, "Antitrust and Innovation: Welcoming and Protecting Disruption," NBER Working Paper No. 26005, May 24, 2019, p. 25. https://www.nber.org/papers/w26005.

19 J. Gregory Sidak, "Is Patent Holdup a Hoax?" 3 *The Criterion Journal on Innovation* 447 (2018). See also Harold Demsetz, "Information and Efficiency: Another Viewpoint," 12 *Journal of Law and Economics* 1 (April 1969) ("In practice, those who adopt the nirvana viewpoint seek to discover discrepancies between the ideal and the real and if discrepancies are found, they deduce that the real is inefficient.")

V. CONCLUSION

Too many antitrust economists and their legal brethren have a trained incapacity for strategy and strategic thinking, coupled with an unwillingness to study and understand innovation at the enterprise level.[20]

The recent drift of antitrust enforcement, exemplified by the U.S. district court decision in *FTC v. Qualcomm*,[21] has narrowed its focus upon the shortest-run considerations, such as contract negotiations between technology creator and technology implementer, to the exclusion of providing for fair and adequate incentives for innovative technology creation. This too-narrow focus has led to a judicial order[22] requiring the business model that has to date delivered very substantial telecommunications improvements be enjoined (discontinued).

Discontinuation of that business model means that it will likely be replaced by another business model – one that is inferior in terms of the innovation it is likely to deliver, and the degree to which it is competitive. Because wireless technology is expensive to create, but prospectively will be rendered less remunerative in the shadow of *FTC v. Qualcomm*, either that technology will be underprovided or, if created, may migrate from today's Open Innovation standards development organizations such as ETSI into the proprietary stacks of a few sponsors (such as Apple, Huawei, Samsung, or Google/Alphabet).

The zeal and litigation success of a section of the FTC will likely, but paradoxically, lead to greater market concentration because of the collapse of today's Open Innovation marketplace for technology into proprietary stacks. By crippling the business model of one successful technology creator (Qualcomm), the short-run effect will make existing technology, such as the current version of 5G established over the past decade, cheaper for implementers. But in the medium run 5G's improvement path will be less innovative than before, due to less remunerative licensing – including the very real possibility of continued widespread patent infringement by implementers.

But in the long run implementers dependent upon 5G improvements to serve their own business models may end up being forced to sponsor those improvements themselves. The precarious state of Open Innovation licensing due to the current hostility to reasonable royalties will favor bundled technology and product sales, making sponsoring implementers less likely to share those improvements with rivals. This new world is not demonstrably more "competitive," let alone better for consumers. It is a degradation from the world we have now. Advocates for our entering this new world should provide a far larger quantum of proof for its superiority before conclusively destroying the existing highly innovative Open Innovation model that has served global society – and especially the poor in the developing world – so well.[23]

20 Even solid surveys by mainstream economists seem remarkably wooden. See Nicholas Bloom, John Van Reenen, and Heidi Williams, "A Toolkit of Policies to Promote Innovation," 33:3 *Journal of Economic Perspectives* 163-184 (Summer 2019). Innovation scholar Richard Nelson in private correspondence to this author commented as follows: "The authors cover a lot of material, and draw from a number of empirical studies. There are only a few things I found foolish in it but nothing particularly insightful. In my view the basic problem with the paper is the authors' lack of familiarity with the significant empirical literature on how technology actually evolves, the roles of different kinds of institutions in the process, various changes that occur as the technology matures, and the very major differences across technologies and industries. The fact that there is no reference to Rosenberg is indicative." (correspondence with R.R. Nelson, August 10, 2019)

21 *Federal Trade Commission v. Qualcomm Inc.*, Findings of Fact and Conclusions of Law, Case No. 17-CV-00220-LHK (N.D. Cal. May 21, 2019).

22 *FTC v. Qualcomm*, Findings of Fact and Conclusions of Law, May 21, 2019, pp. 227-233.

23 J. Gregory Sidak, "The Morality of Innovation," working paper, 2019.

DUE PROCESS IN INTERNATIONAL ANTITRUST ENFORCEMENT: AN IDEA WHOSE TIME HAS COME

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I. INTRODUCTION

The past few decades have witnessed an upsurge in the number of authorities worldwide engaged in competition enforcement. The magnitude of this change is demonstrated eloquently by the fact that the membership of the global organization of competition enforcement agencies known as the International Competition Network ("ICN") has now swelled to more than 130.

The proliferation of enforcement authorities has given new impetus to longstanding calls for increased substantive and procedural convergence across jurisdictions. One area of potential harmonization that has received particularly strong attention over the years is due process and transparency in enforcement. Discussions about this longstanding area of interest has been reinvigorated in the past year by new comparative studies a well as recent initiatives launched by the ICN and the Competition Committee of the Organization for Economic Cooperation and Development ("OECD"). This article reviews those developments and looks ahead to what comes next.

II. NEW COMPARATIVE STUDIES

In order to be successful, reform proposals must have a sound theoretical and empirical basis. Two recent comparative studies have helped provide the type of research and analysis needed to support improvements in due process.

The Procedural Transparency Task Force of the American Bar Association's Section of Antitrust has conducted an assessment of how a sample of countries are performing on thirty-one of the best practices previously identified in the Section's 2015 report.[2] For each of these practices, the Task Force selected roughly five jurisdictions from different regions of the world and evaluated the extent to which each of those jurisdictions is complying with a particular Best Practice. Compliance was determined by whether a jurisdiction had adopted written, publicly available directives with respect to that practice and whether it honors that practice on a consistent basis, with the best jurisdictions satisfying both criteria and the worst jurisdictions satisfying neither. Rather than offering an absolute grade or labeling any jurisdiction as compliant or non-compliant, the Task Force instead chose to make relative comparisons by ranking the jurisdictions selected for each Best Practice from best to worst. The report concluded that a significant gap remains between the Best Practices identified by the ABA and the way that many jurisdictions enforce competition law.

Another recent comparative study of due process in antitrust enforcement is being conducted by academics from universities in China, Europe, and the U.S., including myself.[3] Our study began by reviewing the academic literature identifying the benefits of due process. These include:

- Compliance with basic norms of impartiality
- Greater accuracy of decisions
- Stronger economic growth
- Greater respect for the government
- Better control of the bureaucracy
- Restraints on the influence of special interest groups
- Stronger visibility of corruption.

2 ABA Section of Antitrust Law, Assessment of Global Competition Agency Implementation of ABA Best Practices for Antitrust Procedure (2019), available at http://www.americanbar.org/content/dam/aba/administrative/antitrust_law/sal-procedural-transparency-2019-04-29.pdf. For the ABA's 2015 Best Practices, see ABA Section of Antitrust Law, Best Practices for Antitrust Procedure (2015), available at http://www.americanbar.org/content/dam/aba/administrative/antitrust_law/at_comments_bestprac_20150522.pdf.

3 Christopher S. Yoo et. al., Due Process in Antitrust Enforcement Through the Lens of Comparative Law (2019), available at https://ssrn.com/abstract=3440571. The other members of the research team include Professors Yong Huang and Shan Jiang of the Competition Law Center of the University of International Business and Economics in China and Professor Thomas Fetzer of the Mannheim Center for Competition and Innovation at the University of Mannheim in Germany.

Unlike the ABA study, which examined a broad range of global jurisdictions, our study takes a deeper dive into enforcement practices in China, the European Union, and the U.S., which represent the world's three largest economies and are widely regarded as the most important competition law jurisdictions. Our analysis breaks the enforcement process down into twenty-eight discrete steps, spanning document requests, inspections, agency deliberations, issuance of decisions, commitments/settlements, and judicial review, and conducted a detailed assessment of the performance of all three jurisdictions with respect to each.

The analysis identified three practices that would have the biggest impact on improving due process:

- Agency disclosure of the evidence on which it wishes to rely
- Separation of investigatory/prosecutorial and adjudicatory functions
- The availability of rigorous judicial review of economic reasoning.

Our study also offered six secondary recommendations.

These analyses have already exerted an important influence over many of the new initiatives that are now underway and will no doubt continue to do so in the future.

III. THE INTERNATIONAL COMPETITION NETWORK

The growing interest in due process in antitrust enforcement led to two major developments at the ICN's May 2019 Annual Conference in Cartagena, Colombia. First, the ICN adopted its *Recommended Practices for Investigative Process*. Second, the ICN adopted its Framework on Competition Agency Procedures ("CAP"). Together, they represent complementary measures, with the *Recommended Practices* representing the ceiling to which agencies should aspire and the CAP representing the floor below which no agency should fall.

A. Recommended Practices for Investigative Process

The *Recommended Practices for Investigative Practices* represents the culmination of years of effort by the ICN's Agency Effectiveness Working Group since 2012.[4] Preceded by the ICN's adoption of its *Guidance on Investigative Process* in 2015[5] and its *Guiding Principles for Procedural Fairness in Competition Agency Enforcement*[6] and *Guidance on Investigative Process* in 2018,[7] the *Recommended Practices* represent the most authoritative type of document that the ICN issues.

The *Recommended Practices* begin by noting that agency transparency and engagement with the parties yield numerous benefits, including more efficient, effective, accurate, and predictable enforcement and enhanced agency credibility. The document then organizes into forty-nine paragraphs into eleven key principles and six overarching categories:

- **Sufficient and appropriate investigative tools**, including sufficient resources, clear legal frameworks setting out clear criteria and procedural requirements, disclosure of internal procedures, and ability to apply tools in a tailored and reasonable manner.
- **Transparency about agency policies and standards**, including substantive legal standards and processes and public disclosure of reasoned decisions.

4 Int'l Competition Network, ICN Recommended Practices for Investigative Process (2019), available at http://www.internationalcompetitionnetwork.org/portfolio/recommended-practices-for-investigative-process/.

5 Int'l Competition Network, ICN Guidance on Investigative Process (2015), available at http://www.internationalcompetitionnetwork.org/wp-content/uploads/2018/09/AEWG_Guidance_InvestigativeProcess.pdf.

6 Int'l Competition Network, ICN Guiding Principles for Procedural Fairness in Competition Agency Enforcement (2018), available at http://www.internationalcompetitionnetwork.org/wp-content/uploads/2018/09/AEWG_GuidingPrinciples_ProFairness.pdf.

7 Int'l Competition Network, ICN Guidance on Investigative Process (2018), available at http://www.internationalcompetitionnetwork.org/wp-content/uploads/2018/09/AEWG_Guidance_InvestigativeProcess.pdf.

- **Transparency during an investigation**, including notice as soon as feasible of the existence of an investigation, its subject matter, its legal basis, the expected timing, the basic facts and evidence gathered, and theories of competitive harm, and access to evidence, subject to appropriate protections for confidential information.

- **Meaningful engagement during an investigation** on significant factual, legal, economic, and procedural issues, including open discussion of investigative theories and factual evidence, the opportunity to present evidence and arguments in a timely manner, and the opportunity for third parties to submit their views.

- **Agency safeguards**, including internal procedures and practices to ensure avoidance of conflicts of interest, consistency across investigations, periodic reassessment, conclusion of investigations within a reasonable time, periodic reevaluation of procedures, evaluation of investigative recommendations before the agency makes a final decision based on the full record, meaningful opportunity to be heard and respond, and sufficient written decisions.

- **Confidentiality protections and legal privileges** under clear, publicity available policies.

Three times longer than the Annex to the CAP, the *Recommended Practices* represent the ICN's most fulsome elaboration of what constitutes a good enforcement process. As is the case with most ICN work product, the *Recommended Practices* are nonbinding, and members are under no obligation to adhere to its content. As such, it represents an aspirational ceiling to which all agencies are encouraged to strive.

B. Framework for Competition Agency Procedures

The more surprising development in Cartagena was the widescale endorsement of the ICN's new *Framework for Competition Agency Procedures* ("CAP").[8] ICN consideration of the CAP was motivated by the leadership of the Antitrust Division of the U.S. Department of Justice in proposing a Multilateral Framework of Procedures ("MFP") in June 2018 as a way for competition law enforcement agencies to agree to certain basic due process principles.[9]

The ICN began consideration of the parallel initiative that became the CAP in November 2018. The ICN's twenty-member steering group approved the CAP in April 2019, and the CAP was officially launched at the ICN Annual Meeting in May 2019 with sixty-two inaugural participating agencies. The speed with which this initiative came together is stunning, as is the breadth of its support. As of this writing, the number of participating agencies has reached seventy, which represents more than half the membership of the ICN.

The substantive principles are contained in the CAP's Annex, which as noted earlier are less detailed than the *Recommended Practices*. The Annex consists of twenty-four paragraphs organized into eleven principles:

- **Non-discrimination** – participating agencies will not treat persons from other jurisdictions less favorably.

- **Transparency and predictability** – every agency should have substantive laws, procedural rules, and any applicable guidance that are publicly available.

- **Investigative process** – agencies will inform persons under investigation of the investigation, its legal basis, and the conduct under investigation as soon as possible; provide them with meaningful and timely opportunities for engagement; and make sure that requests for information are focused and given a reasonable time for response.

- **Timing of investigations and enforcement proceedings** – agencies will endeavor to conclude their investigations and proceedings within a reasonable period.

- **Confidentiality** – agencies will have publicly available rules, policies, or guidance regarding confidential information and protect that information from unlawful disclosure, taking into account the interests of the parties and the public.

8 Int'l Competition Network, ICN Framework on Competition Agency Procedures (2019), available at http://www.internationalcompetitionnetwork.org/wp-content/uploads/2019/04/ICN_CAP.pdf.

9 Makan Delrahim, Asst. Att'y Gen. U.S. Dept. of Justice, Promoting Due Process in Global Antitrust Enforcement, Council on Foreign Relations (June 1, 2018), available at http://www.cfr.org/event/promoting-due-process-global-antitrust-enforcement.

- **Conflicts of interests** – officials will be objective and impartial and not have conflicts of interest in cases, with agency being encouraged to have rules, policies, or guidance regarding such conflicts.

- **Notice and opportunity to defend** – agencies will give parties timely notice of alleged violations or claims against them, including facts and relevant legal and economic reasoning; and reasonable and timely access to the information necessary to prepare an adequate defense; and reasonable opportunities to defend, including the opportunity to be heard and present, respond to, and challenge evidence.

- **Representation by legal counsel and privilege** – agency will not deny representation by legal counsel of a person's choosing without due cause, will provide persons a reasonable opportunity to present views, and recognize applicable privileges, preferably according to available rules, policies, or guidelines.

- **Decisions in writing** – agencies will issue publicly available final decisions in writing, setting out the findings of fact and conclusions of law, as well as any remedies or sanctions and commitments, along with the reasons for them.

- **Independent review** – no agency will impose a prohibition, remedy, or sanction unless there is an opportunity for review by an independent, impartial adjudicative body (e.g. a court, tribunal, or appellate body).

- **Additional standards** – agencies may maintain additional standards consistent with providing effective and fair procedures, such as the ICN's Recommended Practices for Investigative Process.

Much of the substance overlaps with the principles identified in prior studies. The mechanisms for encouraging member compliance with the CAP principles are more innovative. For example, the CAP operates on an opt-in basis, inspired by prior provisions in the *Framework for Merger Review Cooperation* and the *Framework for the Promotion of the Sharing of Non-Confidential Information* that included provisions allowing members to opt-in to establishing a center point of contact. Indeed, the CAP broadens its scope further by permitting agencies that are not members of the ICN to join as well. At the same time, the CAP permits participating agencies to join subject to limitations when particular laws or procedural rules prevent them from applying CAP principles. This stands in contrast to other ICN work product, which does not require any explicit endorsement or agreement for ICN members. The fact that members must take affirmative actions to join the CAP and expressly note any limitations signals the signatories' greater commitment to adhere to its principles and raises the normative obligation to comply with the terms to which they have agreed.

In addition, the CAP creates two new tools to promote its implementation. First, it creates a "cooperation process" through which agencies may request "dialogues" with other agencies regarding issues relevant to the CAP, much like consultation provisions included in many bilateral trade agreements. The recent consultations between the U.S. and South Korea under the chapter on Competition-Related Matters contained in the United States-Republic of Korea Free Trade Agreement (KORUS) to address U.S. concerns about companies' lack of opportunity to review and rebut the evidence supporting allegations against them may provide a useful indication of how effective this particular avenue for dispute resolution will ultimately turn out to be.

In addition, the CAP creates a "review process" that requires CAP participants to submit templates to the CAP Co-Chairs detailing their procedures and explaining how they meet the CAP principles. CAP participants are also required to convene dedicated sessions to review how well the CAP is functioning, to advocate for implementation of the CAP principles, report on general trends and to consider possible modifications to the principles. The CAP held its initial meeting in June 2019. The co-chairs were the Australian Competition and Consumer Commission, the German *Bundeskartellamt*, and the U.S. Department of Justice Antitrust Division.

These measures go beyond the ICN's usual mechanisms of promoting awareness via teleseminars, fostering transparency through public templates, and encouraging self-assessments. Instead, the CAP envisions agencies taking a more active role in evaluating their peers.

IV. OECD DRAFT RECOMMENDATION ON TRANSPARENCY AND PROCEDURAL FAIRNESS IN COMPETITION LAW ENFORCEMENT

The other organization that has taken a leading role in promoting due process in antitrust enforcement is the Competition Committee of the OECD. They took an early interest, convening a series of policy roundtables in 2010 and 2011,[10] which they consolidated into a *Key Points* document in 2012.[11] OECD interest in the topic revived in June 2018, where the Competition Committee identified transparency and procedural fairness as a long-term theme for 2019-20.[12]

All of these preliminary efforts eventually led to begin consideration of a *Draft Recommendation on Transparency and Procedural Fairness in Competition Law Enforcement* on June 4, 2019. Although the text of the draft recommendation is not yet available to the public, the scoping note launching the initiative identified two aspects as "crucial for a well-functioning competition enforcement system." The first is transparency, which the scoping note described as making publicly available laws, policies, guidelines, procedures and practices, as well as agency and court decisions. The second is procedural fairness in investigations and decisions, including:

- Establishing and following procedures that are fair and clear on the rights and limitations of affected and interested parties
- Providing opportunities for parties to take part in investigative and decision-making processes.
- The right to seek access to the case file and request the independent judicial review of competition enforcement decisions.

Transparency and procedural fairness promote important goals, including:

- Ensuring the impartial and reasonable treatment of subjects of competition investigations and provide them with legal certainty and predictability.
- Improving the quality, accuracy and comprehensiveness of competition agencies' analyses and decisions by making sure that all arguments are heard and assessed.
- Building the credibility of competition enforcement and reinforcing the legitimacy of competition law and policy.
- Imposing internal clarity and self-discipline on agency decision-making.

The institutional choices that agencies make play a key role in "guarantee[ing] that enforcement actions and decision-making processes are effective, predictable and transparent, and perceived to be so by affected and interested parties, as well as all citizens." They can include:

- A separation between investigators and decision-makers.
- Using independent internal advisors to provide a "fresh eyes" review of cases.
- Separating the investigating and legal teams using a firewall.
- Having procedures to assess the likely success of an investigation at an early stage.
- Holding frequent meetings between the parties, case teams and senior decision-makers.

10 Org. for Econ. Cooperation & Dev. Competition Comm., Policy Roundtable on Procedural Fairness: Transparency Issues in Civil and Administrative Enforcement Proceedings (2010), available at http://www.oecd.org/daf/competition/48825133.pdf; Org. for Econ. Cooperation & Dev. Competition Committee, Policy Roundtable on Procedural Fairness: Transparency Issues in Civil and Administrative Enforcement Proceedings (2010), available at http://www.oecd.org/daf/competition/mergers/48825133.pdf; Org. for Econ. Cooperation & Dev. Competition Comm., Policy Roundtable on Procedural Fairness: Competition Authorities, Courts and Recent Developments (2011), available at http://www.oecd.org/daf/competition/ProceduralFairnessCompetition%20AuthoritiesCourtsandRecentDevelopments2011.pdf.

11 Org. for Econ. Cooperation & Dev. Competition Comm., Procedural Fairness and Transparency: Key Points (2012), available at http://www.oecd.org/daf/competition/mergers/50235955.pdf.

12 Org. for Econ. Cooperation & Dev. Competition Comm., Scoping note on Transparency and Procedural Fairness as a long-term theme for 2019-2020 (2018), http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/WD(2018)6&docLanguage=En.

- Publishing commitments with regard to transparency.

To support this initiative, the Competition Committee held roundtables on the treatment of legally privileged information in competition proceedings in December 2018 and on the standard of review by courts in competition cases in June 2019. The scoping note suggests that the Competition Committee may schedule an additional roundtable on access to file and protection of confidential information in December 2019.

The OECD's renewed interest in this area is a potentially significant development. First, the scoping note endorses separating the investigative and decision-making teams within the competition authority. Second, unlike ICN work product, which is created by the agreement of competition agencies, OECD work product is approved by national governments. As such, the Draft Recommendation is likely to have greater visibility within governments and may be regarded as carrying more weight.

V. THE PATH FORWARD

The amount of high-level attention that due process in antitrust enforcement is receiving is as startling as it is welcome. The recent focus provided by the proposal of the MFP appears to have galvanized widespread interest that had been laying latent in the community. That said, several factors will likely have a significant influence on the future success of these efforts.

As an initial matter, the ICN and OECD documents both recognize the complexity of applying uniform procedural standards to legal systems that are quite diverse. For example, the reliance of civil law systems on inquisitorial processes in which the judge controls questioning of witnesses and the evaluation of evidence instead of the parties means that due process concepts as developed in common law regimes will require some degree of adaptation. That said, this particular concern is somewhat inapt in the context of competition law, which is enforced administratively instead of judicially in most civil law countries. Although some commentators have been tempted to equate the role of administrative enforcement officials with that of a judge, those enforcement officials are interested parties in the litigation and lack the independence and impartiality needed to justify permitting the decisionmaker to control the presentation of evidence and counter evidence.

In addition, the procedural protections contained in these various instruments largely overlap one another, although sometimes they vary in terms of emphasis. The overall similarity of the procedures contained in these instruments suggests that their impact may depend more on the robustness of their implementation than on the principles embodied in them. As a result, the fact that the initial Co-Chairs of the ICN CAP are all vigorous champions of due process is heartening. The long-term future of the initiative depends on supporting the current leadership and consistently finding successors who are just as strongly committed to this endeavor.

Lastly, the process of implementation and evaluation will necessarily depend on the active involvement of parties who have been subject to enforcement proceedings in the past. That said, parties who are either currently subjects of antitrust enforcement or who believe they are likely to be subject to them in the future are often reluctant to participate candidly in such proceedings. The parties' willingness to overcome these concerns and to share their experiences as inputs into review processes will be a critical determinant of whether we will look back at 2019 as a turning point or a missed opportunity.

5G AND ITS ANTICIPATED INTELLECTUAL PROPERTY AND ANTITRUST POLICY ISSUES

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I. INTRODUCTION

5G is the game changing generation of mobile connectivity designed to connect everything, everywhere. 5G will eventually connect every car we drive, every home we live in, every appliance we use, every computer or smartphone we own, and every technology we possess, making connectivity accessible across all cases and industries.

Like previous generations of wireless technologies, 5G strives to solve the complex engineering problems necessary for optimizing data and voice transmission over a fundamentally scarce and expensive physical resource: radio spectrum. The science and engineering that makes wireless communications possible is captured by the creation of 5G technology standards. Technology standards are technical specifications that define and design how 5G works. Technology standards are best understood as the "blueprint" of a building, creating a technical foundation that supports all other products and services that implement 5G worldwide.

Each generation of wireless standards takes about a decade for the standards bodies to develop through a series of "releases," each adding new technical features. The 5G standards process has just begun, and only the first release has been developed so far. It is therefore important for the industry and policy makers to support policies that encourage these 5G and other critical standards attract the best inventors the best inventions, to enable the development of the most useful technologies with the best solutions.

As the success of wireless technologies has grown from 1G through 5G over the last four decades, the growing impact on business has led to an increasing policy focus on standards. The sale of mobile handsets based on 3G and 4G technology standards alone exceeded the sales of all other consumer electronics put together in 2016, and the only industries to surpass mobile phones in revenue were oil, gas, pharmaceuticals, and automobiles.[2] It is therefore not surprising that there has been an enormous focus on standards development organizations ("SDOs"), SDO intellectual property rights ("IPR") policies, and Standards Essential Patents ("SEPs") from the IP and antitrust communities, especially as they relate to wireless technology standards.

This article discusses some of the upcoming policy debates that are anticipated to continue or grow as the 5G ecosystem develops. It also examines a balanced policy framework for incentivizing investment in research and development ("R&D") for foundational technologies such as 5G. Briefly, this article explores why promoting strong IP protections that incentivize costly research is especially important to facilitate the 5G revolution. In order to enforce strong IP protections, the promotion of fair, evidence-based antitrust enforcement worldwide is critical, as is imposing safeguards against the use of antitrust regulation as a tool for implementing industrial policy. Finally, the SDOs themselves, where the standards are being developed, need to safeguard open, transparent, and consensus-based processes to avoid being politicized or dominated by one-sided interest groups.

This article starts by briefly introducing what 5G means and enables in Section II. Section III describes the divide between innovators and implementers of foundational technology standards that has led to much debate in this area, a divide which will continue to grow with 5G. Section IV explores some efforts to redefine fair, reasonable, and non-discriminatory ("FRAND") licensing terms and suggests a more balanced approach, and Section V discusses the importance of balanced SDO IPR policies. Section V concludes.

II. WHAT IS 5G?

5G is a game-changing generation of wireless technology aimed at creating a universal fabric of connectivity. Diverse industries and a variety of products will utilize 5G to communicate with each other.

According to a 2018 report by IHS Markit, 5G will grow global real gross domestic product ("GDP") by an amount equivalent to India's current GDP. By 2035, 5G will be responsible for $1.3 to $1.9 trillion of economic output — and more than 3.6 million jobs — in the United States alone. The worldwide 5G value chain will account for an average of $200 billion in annual investment, supporting as many as 22 million jobs.[3]

In order to connect everything, everywhere, 5G was officially developed with the following key requirements:

2 For total company revenue for Forbes ranking for top integrated oil companies. IDC CY16 global retail revenue, 17Q2 IDC Worldwide Mobile Phone Tracker. CE Devices: Global Market Forecast per Strategy Analytics, July 2016.

3 Karen Campbell, et al., *The 5G economy: How 5G technology will contribute to the global economy*, IHS Economics & IHS Technology (January 2017), available at https://cdn.ihs.com/www/pdf/IHS-Technology-5G-Economic-Impact-Study.pdf.

1. **Ultra-fast data speeds** that enable unlimited storage on the cloud, access to computing on demand, audio and virtual reality, bringing AI to our daily lives, wherever we are.

2. **Very low latency** (delays no longer than one thousandth of a second) and **ultra-high reliability** that could make possible such things as remote surgery, *safe* self-driving cars that communicate with other vehicles or infrastructure, smart grid sensors in electric and water grids, and more.

3. **Massive Internet of Things ("IoT") and dense networks** that enable smart cities, homes, and wearable devices such as medical sensors that provide 24/7 monitoring wherever you go.

Like previous generations of wireless standards, 5G cellular technologies strive to solve the complex engineering problems related to optimally transmitting data, and the complex scientific issues related to spectrum capacity, speed, security, and reliability. The result of this work, by thousands of teams of engineers from various companies across the world, is a **technology standard**, like the foundation of a building, that forms the base layer upon which other all other parts of the ecosystem are built. For 5G, standards provide the foundation upon which all other wireless products, including the network infrastructure, wireless devices (such as mobile phones and IoT devices), components, and the business models (including new business models like Uber and other apps) that employ those features are built.

The standards developed by the Third Generation Partnership Project ("3GPP") – a group of seven international SDOs – will be accredited by the International Telecommunications Union as the definitive 5G standards. The development of technology standards in 3GPP takes place across various "releases." Each release is made up of a set of core new features or requirements that the industry would like included in the next generation of communications technologies. The first 5G standards release, 3GPP "Release 15," was finalized in March 2018. Several other releases can be expected as 5G develops further over the next five to seven years.

This foundational layer — or **5G technology standards** — is where the real race for 5G is happening.

III. A POLARIZED WORLD: FIGHT OF THE BUSINESS MODELS

The development of mobile technology standards is R&D intensive, requiring early and risky investment in solving complex engineering problems.[4] As with other industries of this nature, only a handful of companies serve as the "R&D arm" of the wireless industry. While hundreds of companies participate in the development of standards, only 10 companies contribute the majority of the technology to these standards. Others in the industry focus on implementing these foundational technologies and building products enabled by them.[5]

As a variety of different 5G use cases develop, entirely new types of vertical markets based on 5G technologies will emerge. The companies that participated in the generation of 3G and 4G standards belonged to the "traditional mobile value chain," including R&D technology companies, component manufacturers, mobile device manufacturers, communications infrastructure manufacturers, and network operators. In the "5G Economy" study, IHS-Markit polls various industries, and ultimately analyzes the impact over 17 different industries that are most likely to use 5G technologies, to estimate the direct and indirect impact of the 5G economy.[6] Such new industry verticals have already started attending the 3GPP standards meetings. For example, participation by the Radio Access Network ("RAN") working groups grew from 148 unique companies attending these standards in 2010 to 262 unique companies in 2017, including never before seen participation from automotive manufacturers, sensor and grid manufacturers, and other industries seeking to use 5G in novel ways.

At the same time, the number of innovators, or companies actively contributing their technologies to wireless standards has fallen significantly. Some once-major contributors, such as Motorola, no longer exist, and the leadership position of some others has significantly weakened. Thus, the gap between the number of innovators and implementers in the standards bodies is larger than ever before.

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4 The mobile industry is one of the most R&D intensive industries world-wide, second only to biotechnology. Thus, all firms aren't capable of investing in long-term, risky, large upfront R&D costs. See, Bezerra, J., Bock, W., Candelon, F., Chai, S., Choi, E., Corwin, J., DiGrande, S., Gulshan, R., Michael, D. & Varas, A. (2015), *The Mobile Revolution: How Mobile Technologies Drive a Trillion-Dollar Impact*, available at https://www.bcg.com/en-us/publications/2015/telecommunications-technology-industries-the-mobile-revolution.aspx.

5 See, Gupta, K. November 2017, *How SSOs Work: Unpacking the Mobile Industry's 3GPP Standards,* available at https://ssrn.com/abstract=3063360 or http://dx.doi.org/10.2139/ssrn.3063360.

6 IHS, *supra* note 3.

Contributing technologies to standards requires significant investment in R&D to be made years in advance, as the design of every "G" begins a decade prior to implementation and commercialization (if at all) of that technology.[7] This creates a difficult problem. Unlike other technology fields, technologies incorporated into wireless standards become publicly available and easily accessible. Any return on investment can be recouped via licensing of those technologies only *after* the technologies are made accessible, then implemented and commercialized in tangible products. This process can take years. At the same time, once technologies are incorporated into the standard, implementers need to license the patented technologies. This difference in incentives has led to an innovator-implementer divide, which has polarized the wireless communications industry. This growing divide is likely to further polarize policy discussions around 5G standards as well.

Indeed, over the past decade, some parts of the U.S. government policy have exacerbated the innovator-implementer divide by departing from the traditional view of patents as constitutionally protected property rights. Instead, the Federal Trade Commission adopted the view that government should use antitrust enforcement powers to regulate the licensing of SEPs, in part due to fear of "hold-up" by innovators (or patent owners) by charging higher royalty rates once implementers begin to use the standardized technology. More recently, however, the government has moved toward acknowledging the lack of empirical evidence for hold-up, and the symmetrical risk of "hold-out" by implementers once the technology is successful, by reducing or refusing to pay royalties after the sunk cost investment has been made by the innovators.

As the U.S. Department of Justice ("DOJ") has stated:

> It is important to recognize that innovators make an investment before they know whether that investment will ever pay off. If the implementers hold out, the innovator has no recourse, even if the innovation is successful. In contrast, the implementer has some buffer against the risk of hold-up because at least some of its investments occur after royalty rates for new technology have been determined. Because this asymmetry exists, under-investment by the innovator should be of greater concern than under-investment by the implementer.[8]

Policy makers must balance the incentives of inventors and implementers, with measures to sustain incentives to invest in long-term and risky innovation, which ultimately drives economic growth.

IV. REDEFINING FRAND COMMITMENTS

For some time now, scholars, policymakers, and advocates have argued over whether the term Fair Reasonable and Non-Discriminatory ("FRAND"), which describes the patent licensing terms that SDOs typically impose on their members who own SEPs, is defined sufficiently clearly. FRAND typically refers to a commitment by the holder of an SEP to offer a license to implementers of standards-compliant products on "reasonable" terms and conditions, and to make the license available to different parties on a "non-discriminatory" basis. SDOs have refrained from creating exact definitions for these terms and guidelines, instead allowing the parties to a particular negotiation to define the terms of the license.

The flexibility in the definition of a FRAND commitment is viewed by the SDOs and several scholars, policy makers, and operating firms as a practical solution, allowing the involved parties to negotiate terms bilaterally and effectively. FRAND obligations, therefore, can be viewed as an incomplete contract, enforceable (or disputed) under modern contract law, like many other contracts that do not specify price, quantity, or product (for example, franchise contracts).[9]

However, some others portray the contractual flexibility of FRAND commitments as a weakness of the system, causing concern that patent licensing negotiations may lead to violations of competition law. While not necessarily reaching similar conclusions, some scholars and competition agencies have proposed various limitations on the freedom of parties negotiating a license to SEPs. Some of the proposed remedies require that, in order to comply with a FRAND commitment, a patent holder is not entitled to seek injunctive relief against an implementer over the use of its SEPs.

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7 Some technology standards fail and never see light of day after millions of dollars of investment in R&D. For example, 4G LTE standards are now well known, but other 4G competitors such as WiMAX and UMB that did not succeed in gaining widespread adoption had been created over several years of R&D.

8 Makan Delrahim, Assistant Att'y Gen., Antitrust Div., U.S. Dep't of Justice, Remarks as Prepared for the USC Gould School of Law's Center for Transnational Law and Business Conference (November 10, 2017), available at https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-remarks-usc-gould-school-laws-center.

9 Joanna Tsai & Joshua D. Wright, Standard Setting, *Intellectual Property Rights, and the Role of Antitrust in Regulating Incomplete Contracts*, 80 ANTITRUST L.J. 157 (2015).

In recent years, some competition agencies around the world, including the Korean Federal Trade Commission ("KFTC"), China's National Development and Reform Commission ("NDRC"), the Japanese Federal Trade Commission ("JFTC"), and the Canadian Competition Bureau ("CCB") have imposed competition law sanctions on the ability to seek injunctive relief for SEPs against "willing licensees." What constitutes a "willing licensee," however, or what obligations need to be fulfilled by licensees and licensors negotiating in good faith, was clarified by the European Court of Justice's ("CJEU's") *Huawei v. ZTE* (2015) decision.[10] It sought to provide a framework for good faith negotiations between rights holders and implementers by identifying obligations for each party at each stage of the licensing negotiations. This framework encourages innovators and implementers to negotiate licensing agreements in good faith, and allows innovators to fulfill their FRAND obligations while minimizing implementers' risk of an injunction. Since this decision, several cases in which injunctions have been sought for SEPs have been handled by the courts without intervention from competition agencies.

As 5G continues to develop, the lopsided risks between inventors and implementers in the current FRAND regime are becoming clearer. There is a need for creating a balanced playing field between the necessary dynamics of inventors making risky R&D investments well before the implementers have adopted new technologies. The current FRAND regime across SDOs requires a commitment only from licensors, but none from licensees. As *Huawei v. ZTE* clarified that there should be obligations on both sides for licensing negotiations, there should also be a commitment from both sides of SDOs for negotiating licenses. Therefore, just as licensors make a commitment to SDOs to offer licenses to implementers on FRAND terms, some commitment from licensees should also be required to abide by the FRAND terms *at the time of* or *before* standards development, prior to inventors incurring all the R&D costs for developing the standard.

In addition, competition law sanctions on the ability to seek injunctive relief for SEPs leads to "efficient infringement" of innovators' patent rights. By eliminating the threat of an injunction for patent infringement, implementers are incentivized to hold out. In the event of a patent lawsuit, the worst-case scenario for implementers is that they pay reasonable royalties to the SEP owner—likely years after dispute resolution—making it more attractive to delay payment. As the DOJ has explained:

> Patents are a form of property, and the right to exclude is one of the most fundamental bargaining rights a property owner possesses. Rules that deprive a patent holder from exercising this right—whether imposed by an SSO or by a court—undermine the incentive to innovate and worsen the problem of hold-out. After all, without the threat of an injunction, the implementer can proceed to infringe without a license, knowing that it is only on the hook only for reasonable royalties.[11]

V. MAINTAINING BALANCED SDO IPR POLICIES

Traditionally, SDOs have followed principles of technical meritocracy, with the best technologies chosen based on the principles of consensus or majority voting. However, due to the growing innovator-implementer divide in the standards bodies, several SDOs have faced aggressive lobbying efforts to change their IPR policies *ex post*, well after the innovators have already made substantial investments in R&D and the standards development process is underway or completed. SDOs with governance rules that do not follow the principles of balance, openness, transparency, due process, consensus-based decision-making, and inclusive voting processes have been subject to such policy changes.

IEEE-SA's 2015 patent policy change is one of the most important examples of such an *ex post* SDO IPR policy change. IEEE-SA is known for its widely used 802.11 family of standards for wireless Internet connections ("wi-fi"). In March 2015, IEEE-SA made significant and controversial changes to its patent policy, widely interpreted to favor implementers. The most important aspects of the new policy include the following:

- Calculation of "reasonable royalties" based on the value that a patent claim contributes to the "smallest saleable component" that practices that claim;
- "Reasonable royalties" imply the "*ex ante*" value of the patented invention, excluding any value resulting from the inclusion of the invention in the standard;
- Comparable licenses only include those not obtained under the threat of an injunction;
- Patent owners cannot seek injunctions unless the implementer fails to participate in or comply with the outcome of an adjudication, including an affirming first-level appellate review.[12]

10 Case C-170/13, *Huawei Technologies Co. Ltd. v. ZTE Corp.*, ECLI:EU:C:2015:477.

11 Delrahim, *supra* note 8.

12 See http://standards.ieee.org/develop/policies/bylaws/sect6-7.html.

During the development of this IPR policy, some commentators raised antitrust concerns about the revised IPR policy possibly facilitating a buyer's cartel.[13,14] In light of these alleged and serious antitrust concerns, IEEE requested a business review letter from the Antitrust Division at DOJ to assess whether the revised policy would comply with U.S. law. The Antitrust Division determined that the revised policy would have procompetitive effects by increasing clarity around the meaning of the FRAND obligation.[15] However, this decision prompted an unprecedented spike in negative letters of assurances ("LoAs"), or commitments from patent owners NOT to license their SEPs under this new revised policy, making licensing and implementation of IEEE standards more uncertain than ever.[16]

There is evidence of various SDOs rejecting the adoption of IEEE-style policy changes for defining reasonable royalties, after a long process of deliberation.[17] One of the main reasons for this is the differences in the governance structure across SDOs. While IEEE is governed under an appointment-based leadership model, most SDOs have an election-based leadership. In an appointment-based system, leaders of a board are chosen by current and outgoing leaders, and in the long run its membership runs the risk of losing touch with appropriate representation across the member organizations at the level of workers, whose interests are at stake. An election-based SDO, by contrast, selects its leadership by vote of the existing members.

In light of the importance of SDO governance to innovation, it is critical that policy makers ensure that the principles of balance, openness, transparency, due process, and consensus-based decision-making are reflected in the rules of standards bodies, and that the rules are adequately enforced to discourage behavior that decreases innovation and competition. It is important to ensure that standards bodies do not change the policies *ex post*, years after R&D costs have been incurred, by later reducing the price of patented technology and imposing random price caps, defining new methods for the calculation of royalties, or reinterpreting the pre-existing standards IPR policies or industry practices established for decades.

A recent study examining how other SDOs responded to IEEE's 2015 policy changes noted that antitrust regulators around the world are beginning to recognize the risks of unbalanced IPR policies and how safeguards protecting principles of openness, transparency, balance, due process, and consensus-based decision-making in SDO governance mitigate these risks and promote competition and innovation.[18] The European Commission, for example, recently published a study examining SDO governance, recognizing the dangers of one-sided IPR policy changes, noting IPR policy changes that commit an SDO to one side of the discussion necessarily "affect generalized commercial practices and have redistributive implications for a large range of SDO stakeholders."[19] DOJ has stated that "the Antitrust Division will... be skeptical of rules that SSOs [standards bodies] impose that appear designed specifically to shift bargaining leverage from IP creators to implementers."[20]

In addition, DOJ recently suggested to the American National Standards Institute ("ANSI") that: "It is important for standards organizations to have balanced representation in their decisional bodies so that their actions are not susceptible to the outsized influence of one group or another. To achieve that balance, and to ensure that the output of the Task Group is reflective of the full range of views, the [U.S. Government] suggests that standards bodies include members with diverse interests in the area of standard setting in their leadership committees and the decision making bodies on policy changes, specifically, both from the innovator and the implementer side."[21]
Such a recommendation should apply to all standards bodies broadly.

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13 Letter from J. Gregory Sidak, Chairman, Criterion Economics, L.L.C., to Hon. Renata Hesse, Deputy Assistant Attorney General, U.S. Department of Justice (January 28, 2015).

14 IEEE-SA Standards Board Patent Committee, IEEE-SA Patent Policy: Draft Comments ID No. 38 (comments of Dina Kallay, Director for IP and Competition, Ericsson).

15 Business Review Letter from Hon. Renata B. Hesse, Acting Assistant Att'y Gen., U.S. Dep't of Justice, to Michael A. Lindsay, Esq., Dorsey & Whitney, L.L.P. (February 2, 2015), available at http://www.justice.gov/atr/public/busreview/311470.htm.

16 Gupta, Kirti & Georgios Effraimidis, *IEEE Patent Policy Revisions: An Empirical Examination of Impact,* available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3173799.

17 These SDOs include: including ETSI, JEDEC, Accllera, TSDSI, IETF, 5GAA, and DVB.

18 Gupta, Kirti, *Changing the Rules of the Game Ex-Post: Standards Development Organization Governance and Why It Matters*, working draft, July 2019.

19 Baron, J., Contreras, J., Husovec, M., and Larouche, P. (2019), *Making the Rules: The Governance of Standard Development Organizations and their Policies on Intellectual Property Rights*, page 149, available at http://publications.jrc.ec.europa.eu/repository/bitstream/JRC115004/sdo_governance_final_electronic_version.pdf.

20 Remarks of Assistant Attorney General Makan Delrahim at the USC Gould School of Law (November 10, 2017), available at https://www.justice.gov/opa/speech/assistant-attomey-general-rnakan-delrahimdelivers-remarks-usc-gould-school-laws-center.

21 A similar language was used in the letter from the U.S. Dep't of Justice (Antitrust Division) to ANSI in March 2018, when one-sided policy changes were being considered by ANSI's IPR policy governing body, available at https://www.justice.gov/atr/page/file/1043456/download.

VI. CONCLUSIONS AND RECOMMENDATIONS

5G wireless technology is ushering in a whole new generation of mobile connectivity, designed to connect everything, everywhere. This game-changing technology has captured the attention of policymakers across the U.S. government, from Congress, to the national security community, to trade negotiators, to SDO participants.

Standards embody the science and engineering that make wireless technology work. Standards describe in detail how specific technical systems and features function, so that anyone can manufacture a product compliant with those specifications. This technical work is carried out by engineers working through international SDOs, striving to ensure only the best technology is included in the standard.

To ensure innovation and competition in global standard setting, public policy must:

- Promote voluntary, consensus-based standardization, so that standards development is based on technological merit decided by consensus among engineers, and not based on any national political or economic interest.

- Ensure that the intellectual property rights ("IPR") policies of SDOs are balanced and do not discriminate between inventors and IPR owners on the one hand, and implementers on the other.

Any IPR policy changes to SDOs should be analyzed to make sure they are not one-sided, and that principles of openness, transparency, consensus, and due process are followed in any proposed changes to the policies.

UNDERSTANDING "BALANCE" REQUIREMENTS FOR STANDARDS-DEVELOPMENT ORGANIZATIONS

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I. INTRODUCTION

In 2015, the Institute of Electrical and Electronic Engineers Standards Association ("IEEE-SA") amended its patent policy.[2] The amendments were approved by the association's Standards Board, Board of Governors, and Board of Directors,[3] and the procedure for adopting them was the subject of a favorable Business Review Letter from the U.S. Department of Justice Antitrust Division ("DOJ").[4] Nevertheless, a number of IEEE-SA members opposed the amendments, arguing, among other things, that they were unduly biased against the interests of companies that derive significant revenue from the licensing of patents[5] (what I have previously termed "Patent-Centric" firms[6]). Both before and after adoption of the amendments, opponents argued, among other things, that their interests were not adequately represented on the "*ad hoc* committee" that initially drafted the amendments considered by the voting bodies noted above.[7] As such, they claimed that IEEE-SA, in adopting these amendments, "failed to achieve the balancing of interests" that its own rules require for the development of technical standards.[8]

NSS Labs, Inc. offers testing services for cybersecurity products and is a member of the Anti-Malware Testing Standards Organization, Inc. ("AMTSO"), an SDO that develops cybersecurity software standards. In 2018, NSS sued AMTSO and several of its members, alleging that they violated Section 1 of the Sherman Act by (1) colluding to develop standards that disadvantaged certain testing vendors and then (2) refusing to deal with vendors who did not comply with those standards.[9] NSS argued that the SDO and its members were liable both on a *per se* basis (e.g. for a group boycott) and under the rule of reason. AMTSO (through one of its principal members Symantec) filed a motion to dismiss, among other things, with respect to NSS's claims of *per se* liability.[10] AMTSO/Symantec argued that under the Standards Development Organization Advancement Act of 2004 ("SDOAA"),[11] an SDO is not subject to *per se* liability under the Sherman Act while engaged in "standards development activity."[12]

But in June 2019, the DOJ intervened in the case, arguing that the court should not dismiss NSS's *per se* liability claims, as a question of fact exists regarding AMTSO's qualification as an SDO under the SDOAA.[13] Specifically, the DOJ notes that the SDOAA defines an SDO as an organization that "plans, develops, establishes, or coordinates voluntary consensus standards using procedures that incorporate the attributes of openness, balance of interests, due process, an appeals process, and consensus…"[14] Yet, as alleged in NSS's Complaint, "AMTSO's member-

2 Institute of Electrical and Electronics Engineers [IEEE], IEEE-SA Standards Board Bylaws, § 6.1 (Mar. 2015).

3 Michael A. Lindsay & Konstantinos Karachalios, *Updating a Patent Policy: The IEEE Experience*, CPI Antitrust Chron. (Mar. 2015), at 4.

4 Business Review Letter from Hon. Renata B. Hesse, Acting Assistant Attorney General, U.S. Department of Justice, to Michael A. Lindsay, Esq., Dorsey & Whitney, L.L.P. (Feb. 2, 2015).

5 See, e.g. J. Gregory Sidak, *Testing for Bias to Suppress Royalties for Standard-Essential Patents*, 1 Criterion J. Innovation 301 (2016).

6 Jorge L. Contreras, *Technical Standards and Ex Ante Disclosure: Results and Analysis of an Empirical Study*, 53 Jurimetrics J. 163, (2013)

7 See Sidak, *supra* note 5, at 314-16.

8 *Id.* at 315. The IEEE controversy highlights an important distinction between SDO rules and procedures for the development of technical standards versus those for the creation and amendment of SDO policy (e.g. relating to patents). One recent study finds that many SDOs have significantly different procedures for these two functions. Justus Baron, Jorge Contreras, Martin Husovec & Pierre Larouche, *Making the Rules: The Governance of Standard Development Organizations and their Policies on Intellectual Property Rights*, JRC Science for Policy Report, EUR 29655 EN, at 989-1112 (Nikolaus Thumm, ed., Mar. 2019) [hereinafter JRC Report]. Because the body of literature and case law regarding standardization addresses balance requirements primarily in the context of standards-development (rather than SDO policy development), this article focuses on the former. Nevertheless, useful analogies can be drawn to discussions of SDO policy development.

9 *NSS Labs, Inc. v. Crowdstrike, Inc.*, Case No. 3:18-cv-05711, Complaint (N.D. Cal., filed Sept. 18, 2018) [hereinafter NSS Complaint].

10 *NSS Labs, Inc. v. Crowdstrike, Inc.*, Case No. 3:18-cv-05711, Defendant Symantec Corporation's Motion to Dismiss (N.D. Cal., filed Nov. 26, 2018).

11 Standards Development Organization Advancement Act of 2004, 15 U.S.C. §§ 4301-4306.

12 15 U.S.C. § 4302 ("In any action under the antitrust laws … the conduct of … a standards development organization while engaged in a standards development activity, shall not be deemed illegal per se; such conduct shall be judged on the basis of its reasonableness, taking into account all relevant factors affecting competition, including, but not limited to, effects on competition in properly defined, relevant research, development, product, process, and service markets").

13 *NSS Labs, Inc. v. Crowdstrike, Inc.*, Case No. 3:18-cv-05711, Statement of Interest of the United States (N.D. Cal., filed Jun. 26, 2019). The DOJ does not otherwise appear to be a party to the *NSS* case, nor does the case appear to arise from a DOJ investigation or enforcement action. Thus, the author assumes that the DOJ submitted its Statement of Interest in this case in its "advocacy role." See Makan Delrahim, Assistant Attorney Gen. Antitrust Div., U.S. Dep't Justice, *The Long Run: Maximizing Innovation Incentives Through Advocacy and Enforcement*, Keynote Address at LeadershIP Conference on IP, Antitrust, and Innovation Policy 7–8 (Apr. 10, 2018), https://www.justice.gov/opa/speech/file/1050956/download (explaining that as an "advocate," as opposed to an "enforcer," the DOJ will "clarify what conditions are ideal" for competition, while "at the opposite end of the spectrum, what conduct might attract enforcement scrutiny."). *See also* Jorge L. Contreras, *Taking it to the Limit: Shifting U.S. Antitrust Policy Toward Standards Development*, 103 Minn. L. Rev. Headnotes 66, 77 (Fall 2018) (discussing DOJ enforcement versus advocacy roles).

14 *Id.* at 2.

ship consists principally of cybersecurity companies [with] only a small number of companies who provide testing services…"[15] Accordingly, the DOJ reasons that AMTSO may not be in compliance with the balance requirement of the SDOAA, and if not, AMTSO would not qualify as an SDO entitled to the SDOAA's shield against *per se* liability.

The recent emergence of SDO balance issues in the IEEE and NSS cases, coupled with the DOJ's separate indication that it intends to increase its scrutiny of collective behavior within SDOs (particularly if they disadvantage Patent-Centric firms),[16] warrants a renewed look at the history and interpretation of SDO balance requirements.[17] This article reviews the history of such balance requirements and offers suggestions regarding their interpretation and intent.

II. BALANCE AND QUOTAS

Non-governmental SDOs have operated in the United States and Europe for more than a century, serving as neutral fora for the collaborative development of technical interoperability standards and protocols. In order to achieve broad acceptance and legitimacy of their standards, SDOs have long sought some degree of balance among their members, typically welcoming active participation by product manufacturers, product users, and unaffiliated experts.[18] SDO stakeholders have broadly identified "balance of interest" as a desirable feature of SDOs.[19]

While in many cases such balance was achieved informally by working group chairs and other SDO leaders, some SDOs such ASTM International adopted formal policies requiring that technical committees have minimum levels of representation from defined stakeholder categories (e.g. producer, user, and consumer).[20] Other SDOs required that in order for standards documents to be approved, a minimum number of votes from each of several designated stakeholder categories must be attained.[21] I refer to these numerical category balancing requirements as "quotas."

In observing the practical operation of the mandatory quota requirement at ASTM, Professor Robert Hamilton noted that while formal voting committees at ASTM do, indeed, hew to these quota requirements, much of the detailed standards-development work at ASTM is conducted by smaller expert working groups that largely represent the industrial sector.[22] Quota requirements present challenges both in defining useful stakeholder categories and ensuring that selected representatives of those categories actually represent the interests of other members of the category.[23] What's more, when categories include stakeholders who are diffuse or lack sufficient expertise or financial resources to engage substantively in SDO deliberations, it is often difficult to secure their meaningful participation in SDO activities.[24] Finally, quotas themselves may unfairly skew SDO decision making when the representatives of very small stakeholder groups are given the same voting privileges as representatives of much larger or more technically or economically significant groups. As such, it is not clear that mandatory quota requirements actually achieve their goals, or that such goals are even attainable in a practical sense.[25]

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15 NSS Complaint, *supra* note 9, at 13.

16 See, e.g. Makan Delrahim, Assistant Attorney Gen. Antitrust Div., U.S. Dep't Justice, *Take it to the Limit: Respecting Innovation Incentives in the Application of Antitrust Law*, Address Before the USC Gould School of Law (Nov. 10, 2017); *see also* Contreras, *supra* note 13 (analyzing shift in DOJ policy toward SDOs).

17 The focus of this article is on U.S. law and policy. However, it is worth noting that similar balance requirements for SDOs exist in both international agreements and European Union law. For a summary of these non-U.S. requirements, see JRC Report, *supra* note 8, at 43-46, 119-21.

18 JoAnne Yates & Craig N. Murphy, Engineering Rules: Global Standard Setting Since 1880 9, 194 (2019).

19 See JRC Report, *supra* note 8, at 119 (89 percent of surveyed stakeholders believed that "SDOs should ensure balance among different types of stakeholders when considering a significant new policy or policy change").

20 ASTM Intl., *Regulations Governing ASTM Technical Committees*, § 3.1.1 (2018) (defining "balance" as occurring "when the combined number of voting user, consumer, and general interest members equals or exceeds the number of voting producer members"); *id.* at § 3.2.1 (requiring that "Balance must be achieved before any standards are brought before a classified subcommittee or main committee for ballot"). See also Robert W. Hamilton, *The Role of Nongovernmental Standards in the Development of Mandatory Federal Standards Affecting Safety or Health*, 56 Tex. L. Rev. 1329, 1352-55 (1978) (observations of ASTM's mandatory balance rules in practice).

21 See JRC Report, *supra* note 8, at 121 (discussing balance in voting requirements at DVB Project and ETSI).

22 Hamilton, *supra* note 20, at 1355 ("One is left with the overall impression of extensive industrial participation in and domination of the process").

23 *Id.*

24 See JRC Report, *supra* note 8, at 121, 169-70 (reporting difficulty that some SDOs have experienced in convincing certain stakeholder groups, particularly consumers, to invest time and effort in SDO deliberations).

25 *Id.* at 1354-55 (given the impossibility or impracticability of applying mandatory balance rules to working groups, the putative balance protection at ASTM may, in fact, be illusory).

III. THE CODIFICATION OF BALANCE REQUIREMENTS UNDER OMB CIRCULAR A-119

During the negotiation of the Tokyo round of the General Agreement on Tariffs and Trade ("GATT") in the 1970s, officials in the Ford Administration, who were pressing to include a Standards Code in the GATT Agreement, decided that it would be expedient to have a formalized U.S. standardization policy that could be used as a model in international negotiations.[26] Accordingly, in 1976 the administration's Office of Management and Budget ("OMB") proposed a draft policy which was debated for the next four years.[27] The finalized policy was released as OMB Circular A-119 in January 1980.[28]

For purposes of the 1980 Circular, "voluntary standards bodies" were defined as "nongovernmental bodies which are broadly based, multi-member, domestic, and multinational organizations including, for example, non-profit organizations, industry associations, and professional technical societies which develop, establish, or coordinate voluntary standards." [29] Federal agencies were encouraged to participate in voluntary standards bodies.[30] Standards bodies in which federal agencies participated, however, were required to comply with certain minimum "due process" criteria.[31] These included, among other things, what appears to be an early "balance" requirement:

> Inviting representatives of a broadly-based group of persons likely to have an interest in the subject including, for example, consumers; small business concerns; manufacturers; labor; suppliers; distributors; industrial, institutional and other users; environmental and conservation groups; and State and local procurement and code officials.[32]

It is notable that this requirement places an emphasis on making the SDO open to all interested stakeholder groups, rather than enforcing any particular mix or numerical quota of representatives from different stakeholder categories. This approach is consistent with that of leading commentators of the period, who were of the view that "a good consensus process must allow review and approval by a balanced group in which no single interest is given disproportionate weight."[33]

In 1981, the President's Task Force on Regulatory Relief reviewed OMB Circular A-119 to determine whether it imposed unnecessary burdens on the public or private sectors. Following this review, a draft revision of the Circular was published in the Federal Register on April 20, 1982.[34] After a 60-day public comment period, during which 120 comments were received, a final revision was published on October 26, 1982.[35]

The 1982 revision made a number of substantive changes to the Circular. Most importantly, it expanded the scope of the Circular from federal procurement activity to both federal procurement and regulatory activity. In addition, it eliminated the specified "due process" requirements for federal participation in voluntary standards organizations. In response to public comments objecting to this removal, OMB responded that "the imposition of the mandatory procedures included in the previous editions of the Circular is inappropriate, burdensome and costly and … peripheral to the fundamental aims of the Circular."[36] The DOJ supported the elimination of the "rigid" 1980 due process requirements, but urged federal participants in standards-setting organizations to foster transparency and "open standards proceedings" to "mitigate the substantial anticompetitive potential inherent in private standards groups."[37]

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26 Yates & Murphy, *supra* note 18, at 194-95.

27 See, e.g. Hamilton, *supra* note 20; Admin. Conf. U.S., *Recommendation 78-4: Federal Agency Interaction with Private Standard-Setting Organizations in Health and Safety Regulation*, Recommendations and Reports 1978, 13 (1978). According to Professor Emily Bremer, the initial OMB Circular was the culmination of a long interagency effort to codify the procurement practices of individual federal agencies.

28 Off. Mgt. Budget, Federal Participation in the Development and Use of Voluntary Standards; Final Issuance, 45 Fed. Reg. 4326 (1980) [hereinafter OMB Circular A-119 (1980)].

29 *Id.* § 4.e.

30 *Id.* § 6.b.

31 *Id.* § 6.c. *See also* Hamilton, *supra* note 20, at 1346 (applying the term "due process" broadly to a set of procedural protections).

32 OMB Circular A-119 (1980), *supra* note 28, § 6.c.

33 Hamilton, *supra* note 20, at 1346.

34 47 Fed. Reg. 16,919 (1982).

35 47 Fed. Reg. 49,496 (1982).

36 *Id.*

37 Letter dated June 22, 1982 from Ronald G. Carr, Acting Asst. Atty. Gen., Antitrust Div., U.S. Dept. of Justice, to Donald E. Sowle, Admin. for Federal Procurement Policy, OMB (reproduced at 47 Fed. Reg. 49,496).

The U.S. Federal Trade Commission ("FTC") also appeared to approve of an approach to standards development based on openness, while at the same time casting doubt on the effectiveness of formal "classification schemes" intended to mandate balance (e.g. the quota requirements imposed by ASTM).[38] Echoing some of the concerns expressed in the 1970s,[39] the FTC noted that quota schemes are seldom imposed on the working groups that actually formulate technical standards documents, the classification of individuals into particular categories is often imperfect, and there are ample other ways to skew the standardization process even when such balance requirements are present.[40]

IV. THE LASTING IMPACT OF *ALLIED TUBE*

Around the time that the 1982 Circular was published, a case that drew significant attention to the principle of balance within SDOs began to work its way through the court system. The SDO in question was the National Fire Protection Association ("NFPA"), a large organization formed in 1896 to develop standards for fire safety equipment and systems. At the time, NFPA had approximately 30,000 members drawn from state and local governments, educational institutions, professional associations, manufacturers and users of fire-fighting equipment, and fire insurance companies.[41] In addition to fire codes, NFPA is also responsible for the National Electrical Code (the "NEC" or "Code"), which establishes requirements for the design and installation of electrical wiring systems, many of which are adopted into local building codes and regulations.[42] The facts of the controversy that ensued at NFPA, which are reproduced in detail below for illustrative purposes, are as follows:[43]

> Among the electrical products covered by the Code is electrical conduit, the hollow tubing used as a raceway to carry electrical wires through the walls and floors of buildings. Throughout the relevant period, the Code permitted using electrical conduit made of steel, and almost all conduit sold was in fact steel conduit. Starting in 1980, [Indian Head, Inc. (IHI)] began to offer plastic conduit made of polyvinyl chloride…
>
> [IHI] initiated a proposal to include polyvinyl chloride conduit as an approved type of electrical conduit in the 1981 edition of the Code. Following approval by one of the Association's professional panels, this proposal was scheduled for consideration at the 1980 annual meeting, where it could be adopted or rejected by a simple majority of the members present. Alarmed that, if approved, [IHI's] product might pose a competitive threat to steel conduit, [Allied Tube], the Nation's largest producer of steel conduit, met to plan strategy with, among others, members of the steel industry, other steel conduit manufacturers, and its independent sales agents. They collectively agreed to exclude [IHI's] product from the 1981 Code by packing the upcoming annual meeting with new Association members whose only function would be to vote against the polyvinyl chloride proposal.
>
> Combined, the steel interests recruited 230 persons to join the Association and to attend the annual meeting to vote against the proposal. [Allied Tube] alone recruited 155 persons -- including employees, executives, sales agents, the agents' employees, employees from two divisions that did not sell electrical products, and the wife of a national sales director. [Allied Tube] and the other steel interests also paid over $100,000 for the membership, registration, and attendance expenses of these voters. At the annual meeting, the steel group voters were instructed where to sit and how and when to vote by group leaders who used walkie-talkies and hand signals to facilitate communication. Few of the steel group voters had any of the technical documentation necessary to follow the meeting. None of them spoke at the meeting to give their reasons for opposing the proposal to approve polyvinyl chloride conduit. Nonetheless, with their solid vote in opposition, the proposal was rejected and returned to committee by a vote of 394 to 390.[44]

Shortly after this vote, IHI brought suit against Allied Tube and other steel conduit manufacturers alleging that they had violated Section 1 of the Sherman Act by unreasonably restraining trade in the electrical conduit market. After a jury trial, a verdict was entered against Allied

38 Fed. Trade Comm'n, *Standards and Certification – Final Staff Report* 159 (1983) ("for several reasons, classification schemes do not always achieve their intended effect.") [hereinafter FTC 1983 Report].

39 See *supra*, note 22, and accompanying text.

40 FTC 1983 Report, *supra* note 38, at 159-64.

41 Hamilton, *supra* note 20, at 1340 ("Manufacturers constitute about six and one-half percent and insurance companies eleven percent of NFPA's membership").

42 *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 495-96 (1988)

43 The facts underlying the famous *Allied Tube* case are but one of several controversies involving NFPA and its procedures during the 1980s. See FTC 1983 Report, *supra* note 38, at 162-63 (citing additional complaints that NFPA's "procedural rules governing standards development were exploited to thwart participation").

44 *Allied Tube*, 486 U.S. at 496-97.

Tube and its co-defendants.[45] But the verdict was nullified by the district court *n.o.v.* under the *Noerr-Pennington* doctrine,[46] and it was this issue that was eventually appealed to the Supreme Court in 1988 (IHI won on this point as well – the jury verdict against Allied Tube was reinstated).[47]

But it is not the *Noerr* issue for which the *Allied Tube* case is remembered today. Rather, it is the Court's dicta approving the jury's finding of antitrust liability against Allied Tube and the other steel conduit manufacturers. Specifically, the Court recognizes that the "hope of procompetitive benefits [from standard-setting] depends upon the existence of safeguards sufficient to prevent the standard-setting process from being biased by members with economic interests in restraining competition."[48] It goes on to observe that "[w]hat [SDO members] may not do (without exposing itself to possible antitrust liability for direct injuries) is bias the [standard-setting] process by, as in this case, stacking the private standard-setting body with decisionmakers sharing their economic interest in restraining competition."[49] Thus, the Court recognized that an SDO member's attempt to stack the deck to defeat a particular proposal or to gain some other economic advantage in standard-setting could be enough to result in a violation of the Sherman Act. It is not enforced or quota-based "balance" in standard-setting that the Court encourages, but an avoidance of deliberate imbalance.

In 1992, four years after the *Allied Tube* decision, OMB issued a new request for comments regarding Circular A-119. Several commenters suggested that the definitions in Circular A-119 were "ambiguous" and recommended changing them to reflect either the Court's approach in *Allied Tube* or the definitions in the GATT Standards Code. OMB declined to change the definitions in the Circular, noting that they "are not being misinterpreted and have served their purpose well."[50] A final revised version of the Circular was issued on October 26, 1993 with no change to the balance requirement.[51]

V. THE NTTAA AND THE 1998 REVISIONS TO OMB CIRCULAR A-119

In 1996, President Clinton signed the National Technology Transfer and Advancement Act of 1995 ("NTTAA").[52] Among other things, the NTTAA embodied in statutory language the OMB Circular A-119 requirement that federal agencies "use technical standards that are developed or adopted by voluntary consensus standards bodies."[53] Because the term "voluntary consensus standards body" was not expressly defined in the NTTAA, it was generally understood to refer to the definition contained in the Circular.

The enactment of the NTTAA led to another review of the Circular, and on December 27, 1996 OMB released a new draft version for public comment.[54] Public hearings were held on February 10, 1997 and comments were received from over 50 sources. OMB published the final revisions to the Circular on February 19, 1998.[55]

The 1998 revisions of the Circular constitute a complete overhaul of the structure and language of the Circular, converting it to a "plain English" question-and-answer format. It substantially altered the definition of "voluntary consensus standards body" from prior versions of the Circular. The new definition reads as follows:

45 *Id.* at 498.

46 *Eastern Railroad Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127 (1961); *United Mine Workers v. Pennington*, 381 U.S. 657 (1965).

47 *Allied Tube*, 486 U.S. at 509-10 ("we hold that, at least where, as here, an economically interested party exercises decisionmaking authority in formulating a product standard for a private association that comprises market participants, that party enjoys no *Noerr* immunity from any antitrust liability flowing from the effect the standard has of its own force in the marketplace.").

48 *Id.* at 509.

49 *Id.* at 511.

50 58 Fed. Reg. 57,643 (1993).

51 *Id.*

52 Pub. L. 104-113 (1996).

53 *Id.* at § 12(d)(1).

54 61 Fed. Reg. 68,312 (1996)

55 63 Fed. Reg. 8,546 (1998).

A voluntary consensus standards body is defined by the following attributes:

(i) Openness.
(ii) Balance of interest.
(iii) Due process.
(iv) An appeals process.
(v) Consensus, which is defined as general agreement, but not necessarily unanimity, and includes a process for attempting to resolve objections by interested parties …"[56]

This definition differs significantly from the definition of "voluntary standards body" contained in each prior version of Circular A-119. Whereas earlier definitions simply referred to organizations that "develop, establish, or coordinate voluntary standards," the 1998 definition imposes a new set of criteria defining such bodies, including openness, balance of interest, and due process. It is possible that the Supreme Court's decision in *Allied Tube* influenced OMB in developing this new set of criteria for SDOs, particularly a formal requirement of "balance" (which would conceivably prevent the type of deck-stacking attempted by Allied and its co-conspirators). But other than "consensus" none of the new terms (including "balance of interest") was defined.[57]

VI. THE STANDARDS DEVELOPMENT ORGANIZATION ADVANCEMENT ACT OF 2004

In the late 1990s and early 2000s, the standardization world witnessed a wave of litigation involving allegations of patent deception and ambush by Rambus, Inc.[58] Among other things, Rambus was subject to an investigation and action by the Federal Trade Commission, which accused it of violations of both the Sherman Act and the FTC Act. These antitrust actions caused SDOs around the world to revisit their intellectual property policies and to consider their potential liability in such disputes.[59] One of the outgrowths of this heightened awareness was the enactment in 2004 of the Standards Development Organization Advancement Act ("SDOAA"),[60] which was intended to offer SDOs protection against certain types of antitrust liability that could arise from the actions of their members.

Rather than craft a new legislative framework for this protection, Congress simply added SDOs to the types of entities already protected under the existing National Cooperative Research and Production Act of 1993 ("NCRPA"),[61] which itself was an outgrowth of the earlier National Cooperative Research Act of 1984 ("NCRA").[62] When enacted the NCRA was intended to encourage innovation and promote trade by facilitating the participation of U.S. industries in R&D joint ventures.[63] To achieve this goal, the NCRA offered two principal antitrust protections to qualifying "joint research and development ventures" – an immunity from treble damages under the antitrust laws[64] and a requirement that the conduct of joint R&D by such entities be evaluated under the antitrust rule of reason and not be subject to *per se* liability.[65] In 1993, given pressures on U.S. manufacturing industries, the protections of the NCRA were extended to joint production ventures.[66]

Under the NCRA, the "joint research and development ventures" protected under the Act are defined as "two or more persons" engaged in one of a variety of enumerated technical cooperation activities, and which did not engage in any of a list of prohibited anticompetitive activities.[67]

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56 63 Fed. Reg. 8,554, § 4.a(1).

57 Several commenters in 1997 requested that OMB clarify these definitions, but OMB declined to do so. 63 Fed. Reg. 8,548, Item 28.

58 See generally Renata B. Hesse & Frances Marshall, *U.S. Antitrust Aspects of FRAND Disputes* in The Cambridge Handbook Of Technical Standardization Law: Competition, Antitrust, And Patents 263, 272-74 (Jorge L. Contreras ed., 2018).

59 See JRC Report, *supra* note 8, at 140.

60 Standards Development Organization Advancement Act of 2004, Pub. L. 108–237 (2004), 15 U.S.C. §§ 4301-4306.

61 National Cooperative Production Amendments of 1993, Pub. L. 103–42 (Jun. 10, 1993), 15 U.S.C. §§ 4301 et seq.

62 Pub. L. 98-462 (Oct. 11, 1984), 15 U.S.C. §§ 4301 et seq.

63 *Id.*

64 *Id.* § 4.

65 *Id.* § 3.

66 NCRPA, *supra* note 61.

67 NCRA, *supra* note 62, § 2(6).

This definitional structure was preserved in the NCRPA.[68] Under the SDOAA, "standards development organizations" are added to the types of entities protected by the Act. It defines "standards development organization" as "a domestic or international organization that plans, develops, establishes, or coordinates voluntary consensus standards using procedures that incorporate the attributes of openness, balance of interests, due process, an appeals process, and consensus in a manner consistent with the Office of Management and Budget Circular Number A–119, as revised February 10, 1998."[69] Like the 1998 circular, the SDO balance requirement under the SDOAA is not defined.

However, the preamble to the SDOAA elaborates on the due process requirements of OMB Circular A-119, noting in particular that the "balance" requirement provides for "balancing interests so that standards development activities are not dominated by any single group of interested persons."[70] This "non-domination" balance requirement, which must be read into the text of the SDOAA, is distinctly not a quota requirement. That is, the SDOAA does not mandate that SDOs ensure that all or every conceivable interest group be represented in SDO decision making, but only that SDO deliberations are not "dominated" by any single group. This requirement of non-domination echoes the cautionary language of the Supreme Court in *Allied Tube*, which warned against "stacking the private standard-setting body with decisionmakers sharing their economic interest in restraining competition."[71]

VII. THE 2016 REVISION OF OMB CIRCULAR A-119

In 2012, OMB again invited public commentary on Circular A-119.[72] After releasing a draft revision in 2014, OMB published the final revised version of Circular A-119 in January 2016.[73] It includes the following provision:

> Balance: The standards development process should be balanced. Specifically, there should be meaningful involvement from a broad range of parties, with no single interest dominating the decision-making.[74]

The 2016 version of the Circular encourages "meaningful involvement" not from all affected stakeholder groups, but from "a broad range" of parties. This requirement avoids formal quota language, as it does not specify that decision making bodies should be composed of particular proportions of different stakeholder groups. Rather, the balance to be attained appears more flexible.

In addition, the Circular echoes the "non-domination" language of the 2004 SDOAA. It prohibits any "single interest from dominating the decision-making." And, like the SDOAA and the 1998 Circular, this requirement harkens back to the Supreme Court's message in *Allied Tube* – when a group of economically-interested parties tilts the playing field to their own advantage, antitrust liability may arise. This does not mean, however, that an SDO must take affirmative steps to include particular groups, in particular proportions, within its decision-making processes.

68 NCRPA, *supra* note 61.

69 *Id.* § 103(1)(8). Interestingly, the SDOAA (both at the time of its enactment and today) expressly incorporates the 1998 version of OMB Circular A-119 into its definition of "standards development organization." Thus, it is not clear that definitions from subsequent versions of the Circular (e.g. the 2016 version, discussed below) are actually incorporated into the SDOAA.

70 *Id.* § 102(5)(C).

71 *Allied Tube*, 486 U.S. at 511,

72 77 Fed. Reg. 19,357 (2012).

73 81 Fed. Reg. 4,673 (2016), referencing Office of Management and Budget, OMB Circular A-119: Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities, Jan. 22, 2016.

74 *Id.* § 2(e)(ii).

VIII. BALANCE AND THE ANSI ESSENTIAL REQUIREMENTS

In considering SDO balance requirements, it is also informative to review the "due process" requirements established by the American National Standards Institute ("ANSI"), which serves as the accreditation body for developers of American National Standards. While ANSI accredits more than 200 individual SDOs, not all U.S.-based SDOs are ANSI-accredited (notable omissions including IETF and W3C), and virtually no foreign-based SDOs are accredited. Nevertheless, ANSI's "Due Process Requirements for American National Standards," better known as the *ANSI Essential Requirements*, are widely cited, and contain balance requirements that are useful to contrast with those of Circular A-119 and the SDOAA.[75]

At a high level, the ANSI Essential Requirements echo the "due process" requirements of OMB Circular A-119. Thus, they provide that a developer of American National Standards must operate according to principles of openness, lack of dominance, balance, consensus, and appeals.[76] In terms of balance, however, ANSI has adopted a semi-structured approach falling somewhere between the rigid quota requirements of ASTM and the unstructured requirement of Circular A-119 and the SDOAA.

Section 1.3 of the Essential Requirements, which establishes at the outset that "[t]he standards development process should have a balance of interests," imposes the following affirmative requirements on accredited SDOs:

> Participants from diverse interest categories shall be sought with the objective of achieving balance. If a consensus body lacks balance in accordance with the historical criteria for balance, and no specific alternative formulation of balance was approved by the ANSI Executive Standards Council, outreach to achieve balance shall be undertaken.

The "historical criteria" referred to above are set out in Section 2.3 which provides:

> Historically the criteria for balance are that a) no single interest category constitutes more than one-third of the membership of a consensus body dealing with safety-related standards or b) no single interest category constitutes a majority of the membership of a consensus body dealing with other than safety-related standards.

In defining an "interest category," ANSI notes that such categories may vary from case to case, being "a function of the nature of the standards being developed." Though not strictly required, three interest categories are suggested: producer, user,[77] and general interest. However, the door is left open "where appropriate" for the consideration of additional interest categories including consumer; directly affected public; distributor and retailer; industrial/commercial; insurance; labor; manufacturer; professional society; regulatory agency; testing laboratory; and trade association.[78]

In addition, ANSI includes a separate non-domination requirement in Section 1.2 of the Essential Requirements:

> The standards development process shall not be dominated by any single interest category, individual or organization. Dominance means a position or exercise of dominant authority, leadership, or influence by reason of superior leverage, strength, or representation to the exclusion of fair and equitable consideration of other viewpoints.

Putting these pieces together, the ANSI Essential Requirements impose an affirmative duty on accredited SDOs to seek participants from diverse interest categories, and that if balance does not exist, the SDO must undertake outreach to achieve that balance. Conversely, dominance by any single interest category must be avoided. These requirements, while falling short of formal quotas, go further, and impose more stringent affirmative requirements on SDOs than OMB Circular A-119 or the SDOAA.

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75 The ANSI Essential Requirements were first adopted in 2003, but draw from a variety of earlier policy documents. For example, ANSI's 1974 procedures manual includes the following requirement relating to balance: "A reasonable balance of membership among organizations, companies, and public interest shall be maintained." Am. Natl. Standards Inst., *Procedures Manual for Management and Coordination of American National Standards* § 1.4.2 (Dec. 5, 1974). The author is grateful to Emily Bremer for drawing my attention to this document.

76 Am. Natl. Standards Inst., *ANSI Essential Requirements: Due Process Requirements for American National Standards* 4 (2019).

77 Four different sub-categories of "user" are defined based on the type of standard being produced: consumer, industrial, government and labor.

78 Interestingly, despite several recent disputes involving allegations that Patent-Centric SDO members have been oppressed by Product-Centric members at ANSI-accredited SDOs, ANSI's non-exhaustive list of potential interest categories does not include Patent-Centric firms (at least as of its most recent iteration in 2019). Another omitted category, which was noted in the FTC 1983 Report, *supra* note 38, at 158, is foreign manufacturers.

IX. PRACTICAL BALANCE

Despite the potential benefit of qualifying as a "voluntary consensus standards body" under OMB Circular A-119 and the SDOAA, some SDOs have steadfastly refused to adopt *any* formal balance requirement in their rules and policies. The most notable of these holdouts is the Internet Engineering Task Force ("IETF"), which emphasizes its openness to all interested parties,[79] but which does not impose any formal requirements of balance on its deliberations.[80] The IETF explained in its 2012 comments to OMB its belief that a balance requirement "is largely duplicative of the "openness" and "due process" prongs of the definition [of voluntary consensus standards body]."[81] It further noted that IETF is widely acknowledged by both federal agencies and academic commentators to be an exceptionally open and democratic body.[82] As such, IETF contends that it achieves a high degree of balance through the mechanism of openness – what may be termed "practical balance." This approach, while not achieving the degree of numerical balancing that could be achieved under a quota system, has resulted in a long-standing, effective, and widely-admired standardization process.

Moreover, even without formal balance requirements, some SDOs have taken positive steps to encourage participation by diverse stakeholder groups including consumers and civil society.[83] IETF, through its parent organization the Internet Society, regularly funds the participation in IETF standardization activities of individuals from developing countries.[84]

X. A HIERARCHY OF BALANCE MECHANISMS

From the above discussion emerges a four-tier hierarchy among SDO balance mechanisms. First, the intentional unbalancing of SDO deliberations through tactics such as those alleged in *Allied Tube* – packing the room with unqualified individuals, paying for individuals to attend SDO meetings solely for the purpose of voting, and otherwise corrupting the legitimate deliberative process – smacks of the worst abuses of labor racketeering and should clearly be sanctionable under the antitrust laws. This is a baseline requirement for all SDOs.[85] Facilitating an abusive imbalance in SDO decision making processes is prohibited to all.

Beyond this baseline, however, degrees of stakeholder balance reflect the preferences of different SDOs. Both OMB Circular A-119 and the SDOAA prohibit domination of SDO deliberative processes by a single interest group. Certainly, some degree of single-group domination might give rise to antitrust liability. But not all instances of single-group domination are anticompetitive. SDOs that wish to take advantage of the liability safe harbors under the SDOAA or that wish to have their standards accepted by federal agencies in their procurement or regulatory functions must avoid such domination. But failing to do so, by itself, is not actionable under the antitrust laws.

And beyond the non-domination requirements imposed under the SDOAA and Circular A-119 are even more stringent balance requirements that can voluntarily be adopted by SDOs. Two approaches of increasing stringency include those adopted by ANSI, which imposes on its accredited SDOs an affirmative obligation to ensure some degree of balance among an unspecified mix of stakeholder groups, and by ASTM, which imposes a strict numerical quota requirement on its deliberative bodies. Again, these third and fourth-level balance requirements are not required by law; rather, they are policy design preferences expressed by SDOs.[86] In the case of ANSI, only SDOs that elect to seek ANSI accreditation must comply, and in the case of ASTM, such requirements are imposed purely by choice of the SDO's governing body as representative of its membership.

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79 See Letter dated Apr. 29, 2012 from Jorge L. Contreras, Russ Housley and Bernard Aboba to Office of Information and Regulatory Affairs, Office of Management and Budget, at 2 [hereinafter IETF Letter] ("The IETF is completely open to newcomers, and has no membership fee or other membership requirements.")

80 IETF has, by choice, never sought accreditation by ANSI.

81 IETF Letter, *supra* note 79, at 4.

82 *Id.*

83 See JRC Report, *supra* note 8, at 120.

84 See Jorge L. Contreras, *National Disparities and Standards-Essential Patents: Considerations for India* in Complications And Quandaries In The Ict Sector: Standard Essential Patents And Competition Issues (Ashish Bharadwaj, Vishwas H. Deviah & Indranath Gupta, eds., Springer: 2017).

85 I borrow this terminology from the JRC Report, *supra* note 8, at 139-40 (discussing "baseline" IPR policy terms that are largely dictated by legal and administrative requirements).

86 Using the terminology of the JRC Report, these would be "baseline-plus" policies. See JRC Report, *supra* note 8, at 145-46.

The hierarchy of balance mechanisms is summarized in Table 1 below.

Table 1

Hierarchy of SDO Balance Requirements

Tier	Nature of Balance Requirement	Source	Applies to
1	No abusive imbalance	Allied Tube	All SDOs
2	Non-domination	SDOAA, OMB Circular A-119	SDOs wishing to take advantage of statutory benefits under SDOAA and OMB Circular A-119
3	Obligation to seek balance	ANSI Essential Requirements	SDOs that wish to be accredited by ANSI
4	Numerical quotas	ASTM	SDOs that desire minimum representation by identified stakeholder categories

XI. CONCLUSION

At some level, balance in SDO decision making is an expected and important aspect of collaborative standardization. But beyond a baseline prohibition on abusive attempts to skew the process per Allied Tube, the imposition of balance requirements on SDOs is not legally mandated. SDOs may select, based on their different policy preferences, risk aversion, and stakeholder composition, what degree of balance they wish to enforce. In some SDOs, such as IETF, the SDO may desire to impose no such balance requirements, relying instead on openness and transparency to ensure a fair and legitimate process. SDOs that wish their standards to be adopted by federal agencies must comply with the non-domination balance requirements of OMB Circular A-119, and those that wish to benefit from the liability protections of the SDOAA must do the same. Those that wish to be accredited by ANSI, must adhere to the affirmative balancing obligations set forth in its Essential Requirements, and others, such as ASTM, may wish to impose strict numerical quotas on participation by different interest groups. The resulting diversity in SDO policy outcomes is a sign not of disagreement, but of a healthy organizational ecosystem in which policy experimentation and preference signaling are robust.[87]

In assessing the balance requirements of SDO policies, it is important to remember that an SDO's failure to abide by the more stringent balance requirements described in Tiers 2-4 above should not be confused with a violation of the law. Antitrust liability should be imposed only when the relatively high threshold for liability established by cases such as *Allied Tube* has been established. In all other cases, differences in SDO balance requirements should be viewed as expressing the policy preferences of SDOs and their members. This approach is consistent with both the regulatory history of SDO balance requirements in the U.S. as well as the Supreme Court's leading precedent in this area and, as such, itself exemplifies a balanced approach to the legal regulation of SDOs.

87 See JRC Report, *supra* note 8, at 79-80, 158-60 (describing experimental approach among SDOs in the development of IPR policies and resulting policy diversity).

THE IP GUIDELINES: LESSONS FROM HISTORY

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I. INTRODUCTION

The proper relationship between antitrust and intellectual property continues to be hotly debated.[2] Sometimes forgotten in these debates, however, are some of the hard-won underlying principles of the 1995 Antitrust Guidelines for the Licensing of Intellectual Property,[3] as reaffirmed by the 2017 re-issuance.[4] This may seem somewhat surprising, as there seems to be broad consensus that those Guidelines represent a sensible and balanced approach to the antitrust-intellectual property interface. It may be that the Guidelines have become so familiar that familiarity has bred, not contempt, but indifference. Or it may be that the history that preceded the Guidelines has faded so far into the past that the advances of the Guidelines over that history no longer resonates. Whatever the reason, re-examining the Guidelines in their historical context may cast some light on the principles that animated them as well as on the issues in today's debates.

II. NOMINALISM

For nearly a century,[5] the attitude of antitrust to intellectual property was characterized by what I have elsewhere called formalism,[6] but which might better be called nominalism. That is, the antitrust treatment of a patent-related practice was determined by the name given to the practice. The most notorious example of this habit was the infamous "Nine No-No's": a list of nine intellectual property licensing practices that, according to Bruce Wilson, an Antitrust Division official, "in virtually all cases are going to lead to antitrust trouble because of their adverse effect upon competition." Call something "tying," a "mandatory grantback," or a "mandatory package license," and the practice could be condemned straightaway. (Or, conversely, at the beginning of the 20th century, call something a "patent license" and it was essentially immune from the antitrust laws.[7])

This certainly simplified life for the agencies, but it had its costs for the world at large. Tying, the first of the No-No's, for example, was thought to be evil because it was an extension of the "patent monopoly" into an unpatented second market.[8] It took the Chicago generation of scholars — and the passage of quite a number of years — to force enforcers to confront the question, "Why would the patentee want to do that?" As the Chicago scholars pointed out, in general, there is only a single monopoly rent that the seller of a monopolized product could enjoy. A tying arrangement generally cannot increase the price a buyer is willing to pay for the second product without forgoing an equal amount of rent on the first product.[9]

More importantly, in the intellectual property area in particular, there were often strong justifications for the practice. There, fixed costs of invention are often extraordinarily high, while marginal costs can be virtually zero because it can be nearly costless to copy and use an innovation, once invented. If different users of the invention placed very different values on it — for example, because some customers used a patented

2 Compare, e.g. Renata B. Hesse, Principal Deputy Assistant Attorney General, *Antitrust: Helping Drive the Innovation Economy,* Remarks as Prepared for the Global Competition Review 5th Annual Antitrust Law Leaders Forum, at 9 (Feb. 05, 2016), https://www.justice.gov/opa/file/897741/download ("The competitive process suffers from . . . hold up . . . . [A]ntitrust enforcers and competition advocates are addressing this behavior where appropriate."), *with* Makan Delrahim, Assistant Attorney General, *"Don't Stop Thinking About Tomorrow": Promoting Innovation by Ensuring Market-Based Application of Antitrust to Intellectual Property*, Organisation for Economic Co-operation and Development "Licensing of IP Rights and Competition Law," at 7 (June 6, 2019), https://www.justice.gov/opa/speech/file/1170241/download ("In the view of the United States, violating a FRAND commitment, by itself, should not give rise to an antitrust claim."). See generally FTC Hearing #4: Innovation and Intellectual Property Policy, https://www.ftc.gov/news-events/events-calendar/2018/10/ftc-hearing-4-competition-consumer-protection-21st-century. Perhaps the clearest recent example of the hot debate is the United States' filing of a Statement Of Interest Concerning Qualcomm's Motion For Partial Stay Of Injunction Pending Appeal, doc. no. 25-1, in *FTC v. Qualcomm Inc.,* No. 19-16122 (9th Cir. July 16, 2019), https://www.justice.gov/atr/case-document/file/1183936/download. On August 23, 2019, the Ninth Circuit granted the stay. Order, doc. no. 74, *FTC v. Qualcomm Inc.,* No. 19-16122 (9th Cir. Aug. 23, 2019), http://cdn.ca9.uscourts.gov/datastore/opinions/2019/08/23/ 19-16122.pdf. Because the author is one of the counsels of record for Qualcomm in that matter, this article will not discuss that case.

3 U.S. Department of Justice & Federal Trade Commission, Antitrust Guidelines for the Licensing of Intellectual Property (1995), http://ftc.gov/bc/0558.pdf. Given the historical focus of this paper, all quotations and citations will be to the 1995 version unless otherwise stated.

4 U.S. Department of Justice and Federal Trade Commission, Antitrust Guidelines for the Licensing of Intellectual Property (2017), https://www.ftc.gov/public-statements/2017/01/antitrust-guidelines-statement-antitrust-enforcement-policy-us-department.

5 See generally Willard Tom & Joshua Newberg, *Antitrust and Intellectual Property: From Separate Spheres to Unified Field*, 66 Antitrust L.J. 167 (1997).

6 Willard K. Tom, *Delrahim restores balance to antitrust treatment of SEPs*, Competition Policy International (June 7, 2018), https://www.competitionpolicyinternational.com/delrahim-restores-balance-to-antitrust-treatment-of-seps/.

7 See Tom & Newberg, *supra* note 5, at 168-70.

8 See *International Salt Co. v. United States*, 332 U.S. 392, 395-96 (1947); see also *United States v. Loew's, Inc.*, 371 U.S. 38, 49 (1962).

9 See, e.g. Ward S. Bowman, Jr., *Tying Arrangements and the Leverage Problem*, 67 Yale L.J. 19 (1957); Robert H. Bork, The Antitrust Paradox 365–81 (1993 ed.); Richard A. Posner & Frank H. Easterbrook, Antitrust: Cases, Economic Notes, and Other Materials 777–856 (2d ed. 1981). There are many exceptions, but none warranting the general condemnation of tying in the intellectual property context.

machine very intensively and others used it rarely, and the patentees were forced to set a single monopoly price for the patented product, some potential customers could be priced out of the market entirely and the inventor would surely make less money (and thus have less incentive to do the R&D in the first place) than if it could price-discriminate. Tying the right to use the machine to the purchase of a complementary consumable used with the machine could be a way of accomplishing such price discrimination, thus increasing output, making the invention available to more consumers, and increasing R&D incentives, all at the same time.[10]

Similarly, there seemed little recognition in the No-No's world of the degree to which mandatory grantbacks could encourage licensing by controlling the risk of opportunism by the licensee. Undoubtedly, the hostility towards grantbacks discouraged some licensing in the first place, because the patentee could not be certain that the potential licensee's improvements, though built on the patentee's basic inventions, would end up making the patentee's products obsolete, thereby locking those products out of the market.

Package licensing is another of the No-no's in which the efficiency justifications are both obvious and large. A single product may practice tens of thousands of patented inventions. The Federal Circuit has noted that package licensing "reduces transaction costs by eliminating the need for multiple contracts and reducing licensors' administrative and monitoring costs."[11] As the court observed in Texas Instruments, Inc. v. Hyundai Electronics Industries,[12] "it is almost impossible on a patent-by-patent, country-by-country, product-by-product basis to determine whether someone is using a company's patents in a given country and provide protection for patents not yet issued."

One could go through the whole remaining list of No-No's — post-sale restrictions on resale, tie-outs, vetoes over further licensing, royalties not reasonably related to patented products, restrictions on sales of products made with a patented process, and resale price maintenance — and think of the circumstances in which such restrictions could control opportunism and further the goals of the patent system and of licensing. But the nominalist mindset condemned with broad strokes.

III. THE REPUDIATION OF NOMINALISM

While this mindset was reaching its apotheosis at the enforcement agencies in the form of the Nine No-No's, scholars such as Ward Bowman and Bill Baxter[13] were moving in quite a different direction. They were focused instead on how particular conduct in particular market circumstances would actually affect consumer welfare. In Bowman's words, "Both antitrust law and patent law have a common central economic goal: to maximize wealth by producing what consumers want at the lowest cost."[14] When Baxter became the head of the Antitrust Division of Justice, his deputy Tad Lipsky made a speech denouncing the Nine No-No's.[15] These ideas were carried forward into the 1988 International Operations Guidelines[16] and formalized and developed further in the 1995 Guidelines, commissioned by Anne Bingaman, President Clinton's first head of the Antitrust Division, on January 10, 1994.[17]

10 See, e.g. Tom & Newberg, *supra* note 5, at 210-12.

11 *U.S. Philips Corp. v. ITC*, 424 F.3d 1179, 1192 (Fed. Cir. 2005).

12 49 F. Supp. 2d 893, 901 (1999).

13 See Ward S. Bowman, Jr., Patent & Antitrust Law: A Legal & Economic Appraisal (1973); William F. Baxter, *Legal Restrictions on Exploitation of the Patent Monopoly: An Economic Analysis*, 76 Yale L.J. 267 (1966).

14 Bowman, *supra* note 13, at 1.

15 See Abbott B. Lipsky, Jr., *Current Antitrust Division Views on Patent Licensing Practices*, Remarks before the ABA Antitrust Section National Institute on Critical Issues in International Antitrust and Unfair Competition Law (Nov. 5, 1981), https://ipmall.law.unh.edu/sites/default/files/BAYHDOLE/bremmerPDF/Lipsky_Speech_ Attacking_Nine_No-No%27s._11-26-1981.pdf.

16 Antitrust Division, U.S. Department of Justice, Antitrust Enforcement Guidelines for International Operations §3.6 (1988), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,109.

17 Anne K. Bingaman, Assistant Attorney General, Antitrust Division, U.S. Department of Justice, *Antitrust and Innovation in a High Technology Society* (Jan. 10, 1994), https://www.justice.gov/atr/file/519466/download.

IV. KEY PRINCIPLES OF THE 1995 GUIDELINES

The 1995 Guidelines state a number of broad principles, both in the section labeled "General principles"[18] and elsewhere, but three in particular have always struck me as most important and perhaps least understood:

1. The banal-seeming statement in Section 3.4 that "[i]n the vast majority of cases, restraints in intellectual property licensing arrangements are evaluated under the rule of reason."

2. The discussion of how to distinguish horizontal from vertical relationships in Section 3.3.

3. The statement in Section 2.0 that "the Agencies recognize that intellectual property licensing allows firms to combine complementary factors of production and is generally procompetitive."

V. THE RULE OF REASON

First, the emphasis on the rule of reason in Section 3.4 is a decisive rejection of the nominalism mentioned earlier. The Guidelines recognized that the very same practice can have procompetitive or anticompetitive effects in different markets and at different times, depending on a wide variety of circumstances.

One particularly stark example of the Guidelines moving decisively away from the nominalism of an earlier era was in its treatment of tying. More than a decade before the Supreme Court overturned the doctrine that market power could be presumed from ownership of a patent,[19] a doctrine of particular salience in tying cases, the Guidelines declared in Section 2.2 that "[t]he Agencies will not presume that a patent, copyright, or trade secret necessarily confers market power upon its owner." And in Section 5.3, the Guidelines took a step that the Supreme Court still has not yet fully taken to this day: declare that because tying arrangements can "result in significant efficiencies and procompetitive benefits," "[i]n the exercise of their prosecutorial discretion, the Agencies will consider both the anticompetitive effects and the efficiencies attributable to a tie-in" — i.e. they would apply the rule of reason. This was a decisive move away from the simple-minded notion in cases such as International Salt that any contractual restriction affecting a product outside the patent was necessarily an antitrust violation because "it is unreasonable, per se, to foreclose competitors from any substantial market."[20]

The circumstances affecting whether a practice has procompetitive or anticompetitive effects are quite broad — the market power of the party engaging in the practice; the ability and incentive of counterparties to engage in opportunism, against which the practice might guard; the difficulty of valuing the contribution of the patent, especially at the time of contracting; and so on. Practices to reduce the risk of opportunism may be especially pervasive in the context of intellectual property, for at least three reasons: (1) as already mentioned, fixed costs are large (and sunk early in the inventive process) and marginal costs are low; (2) being intangible, intellectual property may be difficult to secure and easy to misappropriate; and (3) because the prevention of misappropriation often requires resort to legal systems — with attendant cost, uncertainty, and risk — many practices that may appear odd or unusual may simply be measures to reduce such cost, uncertainty, and risk. Similarly, the need for licensing contracts to take into account the difficulty of valuing the contribution of the patent can be accentuated by (1) the strong complementarities with other factors of production, (2) the fact that the patent may have applications in different markets and may make vastly different contributions in each, and (3) the fact that contracting may take place far in advance of the actual utilization of the patent.

The law has often recognized the need to account for some of these valuation issues, for example in its lenient treatment of field-of-use restrictions,[21] which are necessitated by the fact that the value of a particular set of patents (as well as the identity of the most efficient complementors) can vary greatly among its applications in different markets. The agencies, have, in turn, extended the logic of those cases by recognizing how a particular practice might help overcome the difficulty of valuing the contribution of the patent. A good example of this came a

18 "§**2.0** These Guidelines embody three general principles: (a) for the purpose of antitrust analysis, the Agencies regard intellectual property as being essentially comparable to any other form of property; (b) the Agencies do not presume that intellectual property creates market power in the antitrust context; and (c) the Agencies recognize that intellectual property licensing allows firms to combine complementary factors of production and is generally procompetitive."

19 *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 45-46 (2006).

20 332 U.S. at 396.

21 See, e.g. *General Talking Pictures Corp. v. Western Electric Co.*, 304 U.S. 175, 181 (1938).

dozen years after the Guidelines, in the 2007 IP Report.[22] There, the FTC and DOJ considered the implications of "reach-through licensing agreements" — i.e. agreements that "grant the owner of a patent on an upstream research tool the right to receive consideration based on sales or usage of a subsequent downstream product created with that tool."[23] The Report observed that, according to panelists, "reach-through licensing agreements can create efficiencies . . . by, for example, creating a way to value the research tool or establish a reasonable royalty."[24] It noted the testimony of participants that such arrangements help capture the value created by intellectual property and allow for a broader dissemination of the technology, and that they provide an expedient way of measuring the value of the technology.[25] The Report also noted the observation of one panelist that "reach-through royalties can be a mechanism for metering,[26] which antitrust law has generally treated favorably."[27]

The discussion of reach-through royalties in the 2007 Report is particularly interesting to revisit in light of the intense debate over whether it is appropriate to use a royalty base larger than the smallest saleable patent-practicing unit ("SSPPU"). Although the use of the SSPPU has been adopted by the Institute of Electrical and Electronics Engineers, Inc. ("IEEE") as a "recommended factor" in royalty calculation, and the U.S. DOJ signified "no current intention to challenge" that adoption (in a Business Review Letter issued on February 2, 2015) — in large part because that factor was not mandatory[28] — the positions of the U.S. agencies in 2007, and of the European Commission more recently,[29] strongly indicate that there is no antitrust principle requiring such a royalty base.

The rule-of-reason treatment of IP licensing arrangements has ramifications for remedies as well as for liability. Banning a particular practice long into the future would make no sense if its anticompetitive or procompetitive nature depends on market power and other circumstances that could evolve over time. Similarly, an excessively broad order divorced from the particular circumstances in which a practice was found to be anticompetitive could be affirmatively harmful. As discussed below, for example, a licensing restriction affecting a horizontal relationship could have very different effects when applied to vertical relationships.

VI. HORIZONTAL AND VERTICAL RELATIONSHIPS

The heart of the Guidelines is the identification of whether the relationship between two parties is a competitive one ("horizontal" in the parlance of antitrust) or a complementary one ("vertical"). Section 3.3 of the Guidelines state: "[T]he Agencies ordinarily will treat a relationship between a licensor and its licensees, or between licensees, as having a horizontal component when they would have been actual or potential competitors in a relevant market in the absence of the license . . ." In other words, if two companies could not compete without one or both companies infringing patents of the other, they are not competitors.

The horizontal/vertical distinction comes up over and over again in the Guidelines as a critical determinant of the procompetitive or anticompetitive nature of a practice. In Section 3.1, describing at the outset the "Nature of the concerns," the Guidelines note that "a licensing arrangement could include restraints that adversely affect competition in goods markets by dividing the markets among firms that would have competed using different technologies" (emphasis added) and that "antitrust concerns may arise when a licensing arrangement harms competition among entities that would have been actual or likely potential competitors in a relevant market in the absence of the license." It mentions the concept again in Example 2 of Section 3.2.2., explaining when harm can occur in technology markets, specifying that "Alpha and Beta independently develop different patented process technologies to manufacture the same off-patent drug." (Emphasis added.) The concept arises again in Example 4 of Section 3.2.3., explaining when harm can occur in innovation markets. In Section 3.4, "Framework for evaluating licensing restraints," it begins the analysis of Example 7, a price-fixing example, by specifying that the parties "are in a horizontal relationship." And all of

22 U.S. Dep't of Justice & Fed. Trade Comm'n, *Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition* (2007), https://www.ftc.gov/reports/antitrust-enforcement-intellectual-property-rights-promoting-innovation-competition-report.

23 2007 IP Report, at 93.

24 *Id.* at 94.

25 *Id.* at 94 n. 62, 64.

26 "Metering" generally refers to collecting compensation for one good or service by charging for a different — usually tied — good or service that more accurately reflects the value of the first good or service. Such a practice aligns pricing more closely with value, which tends to be efficient.

27 *Id.* at 97.

28 Letter from Renata B. Hesse, Acting Assistant Attorney General, Antitrust Division, U.S. Department of Justice, to Michael A. Lindsay, Esq., Dorsey & Whitney, L.L.P., at 12 (Feb. 2, 2015), https://www.justice.gov/sites/default/files/atr/legacy/2015/02/02/311470.pdf.

29 See *Guidelines on the Application of Article 101 of the Treaty on the Functioning of the European Union to Technology Transfer Agreements*, ¶ 184 (2014/C 89/03), https://eur-lex.europa.eu/legal-content/EN/TXT/PDF /?uri=CELEX:52014XC0328(01)&from=EN ("it is as a general rule not restrictive of competition that royalties are calculated on the basis of the price of the final product, provided that it incorporates the licensed technology").

this is before the Guidelines analyze specific restraints in Section 5, where the concept plays a key role in evaluating price fixing, market allocation, output restraints, exclusive dealing, cross-licensing, and pooling.

A contemporary setting in which one might expect the horizontal/vertical distinction to play a role is the conduct of participants in standards development organizations. A typical SDO has many members that implement standards adopted by the SDO and far fewer members that contribute significant amounts of technology. Clearly, many of the implementers are horizontal competitors: they make physical goods that compete with each other, and if a new standard is not adopted they would compete with each other using the old standard. It is far less clear that the innovators are horizontal competitors. Once the standard is adopted, the owners of standard-essential patents ("SEPs") clearly are not: by definition, if their patents are essential, then they stand in a complementary (vertical) relationship. Thus, they are only competitors in an *ex ante* sense, and only if they own closely substitutable technology that competes to be included in the standard. If one technology is clearly superior, then any competition is, at best, highly attenuated, if it exists at all. One would expect, therefore, that the antitrust agencies would be highly attuned to the risks of monopsony in connection with SDOs, and would at least probe with a skeptical and inquisitive mind claims of monopoly in that context. And in fact, that does indeed appear to be the orientation of the current Antitrust Division of DOJ.[30]

VII. PROCOMPETITIVE BENEFITS OF LICENSING

In discussing the procompetitive benefits of licensing, Section 2.3 of the Guidelines states:

> Intellectual property typically is one component among many in a production process and derives value from its combination with complementary factors. . . . The owner of intellectual property has to arrange for its combination with other necessary factors to realize its commercial value. . . . Often, the owner finds it most efficient to contract with others for these factors, . . . rather than supplying these complementary factors itself.
>
> Licensing . . . can facilitate integration of the licensed property with complementary factors of production. This integration can lead to more efficient exploitation of the intellectual property, benefiting consumers through the reduction of costs and the introduction of new products. Such arrangements increase the value of intellectual property to consumers and to the developers of the technology. By potentially increasing the expected returns from intellectual property, licensing also can increase the incentive for its creation and thus promote greater investment in research and development.

In other words, licensing increases overall social welfare through specialization.

The flip side of this observation is that making licensing more difficult, costly, or risky will lead to the diversion of investment into less socially productive ends. Put to a choice of investing in innovations that will increase social welfare tremendously but faces such costs and risks before they can be monetized, and investing in innovations that are less socially productive but can be monetized directly by the innovator without the involvement or cooperation of complementors, the scale will be tipped toward the latter. Investments will be directed toward prettier casings for products rather than fundamental innovations that transform entire industries. One way to impose such costs and risks, of course, is misguided antitrust enforcement. Ill-informed antitrust policy is thus a tax on innovation.

VIII. CONCLUSION

It has been said that that "[t]hose who cannot remember the past are condemned to repeat it."[31] In that spirit, it is worth recalling some of the misguided antitrust enforcement that preceded the 1995 Guidelines, the principles that those Guidelines were meant to establish, and the harm that can flow from forgetting the lessons of history.

30 See, e.g. Makan Delrahim, Assistant Attorney General, Antitrust Division, U.S. Department of Justice, *The "New Madison" Approach to Antitrust and Intellectual Property Law* at 5, 10-12 (Mar. 16, 2018), https://www.justice.gov/opa/speech/ file/1044316/download.

31 George Santayana, The Life of Reason: Reason in Common Sense at 284 (Scribner's 1905).

STEALTH COMMODITIZATION: THE MISUSE OF SMARTPHONE ANTITRUST

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I. INTRODUCTION

Like any body of law, antitrust law is susceptible to being misused by private interests for purposes that are not compatible with the law's publicly interested objectives. This concern is especially salient in antitrust law since it can easily be used by laggards against leaders that are outperforming in the market due to legitimate business reasons. Antitrust law deploys a panoply of evidentiary and other screening devices to protect against this type of opportunism, including the underlying principle that plaintiffs must show harm to competition in general, rather than merely harm to a particular competitor.

For more than a decade, competition regulators around the world (with the exception of the U.S. Department of Justice's Antitrust Division since November 2017)[2] have adopted policies and pursued actions that seek to limit the enforcement and licensing capacities of the owners of "standard-essential" patents ("SEPs") in the smartphone and related technology markets. Regulators' actions have rested on the view that lead innovators in these markets widely engage in "patent holdup" that constrains market growth, inflates consumer prices, impedes entry, and holds back innovation. Yet this assertion is not supported by over two decades of real-world market performance. Given the mismatch between theory and fact, regulators' actions do not plausibly target harm to competition; rather, they target costs borne by a particular group of competitors. Specifically, regulators' efforts promote the private interests of downstream producers in securing lower input costs by commoditizing the IP portfolios of upstream innovators that undertake the bulk of the R&D that ultimately drives the smartphone market. It is difficult to reconcile this one-sided policy with the public interest in a dynamically efficient innovation ecosystem that preserves investment incentives throughout the technology supply chain.

The following discussion is organized as follows. First, I present a brief overview of the key constituencies in the smartphone ecosystem and the role each constituency plays in the technology supply chain. Second, I describe how regulatory actions and judicial decisions in competition and patent law have devalued SEPs and advanced the interests of producer-firms and producer-jurisdictions over those of innovator-firms and innovator-jurisdictions. Third, I show how this implicit renegotiation of licensing arrangements between innovators and implementers endangers the legal infrastructure of reliable intellectual property ("IP") rights and contract enforcement that has supported robust innovation and rapid growth in the wireless communications market.

II. CONSTITUENCIES AND INTERESTS IN THE SMARTPHONE ECOSYSTEM

A. Constituencies

In the most general terms, the smartphone market consists of three broadly defined constituencies, as shown in the Table below.

Table 1: Constituencies in the Smartphone Ecosystem

Constituency	Primary Areas of Specialization	Net Technology Producer or User?	R&D Intensity[3]	Representative firms
Innovators	R&D, product development	Producer	18-25 percent	Ericsson, Nokia, Qualcomm
Implementers	Device assembly, production, distribution	User	4-8 percent	Apple, LG, Samsung
Consumers	N/A	User	N/A	N/A

2 U.S. Dept. of Justice, News, *Assistant Attorney General Delrahim Delivers Remarks at the USC Gould School of Law's Center for Transnational Law and Business Conference* (Nov. 10, 2017), https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-remarks-usc-gould-school-laws-center.

3 R&D intensity refers to a firm's annual R&D expenditures as a percentage of the firm's total annual revenues. The ranges indicated above reflect R&D intensities for the representative firms, based on information disclosed in the 2018 annual report for each firm. For more extensive data on the R&D intensities of firms active in the smartphone market, see Barnett, *Antitrust Overreach, supra* note 1, at 42 Tbl. 4.

A handful of firms have made the most substantial inventive contributions behind the remarkable technological advances from the 2G/GSM standard launched in the 1990s, which mostly handled person-to-person audio communications, through the emergent 5G standard, which will be able to handle a broad range of person-to-person and machine-to-machine communications of audio, video, and other data. While the precise makeup of a list of lead innovators can be reasonably debated, it would include at a minimum Ericsson, Motorola (with respect to the GSM standard), Nokia, and Qualcomm. By contrast, there are hundreds of producers around the world that have made use of the technology developed by these firms. The production segment of the wireless device market has exhibited vigorous entry rates,[4] which likely reflects the fact that upstream R&D-specialists have licensed their patented technology to all downstream producers willing to pay the negotiated licensing fee, which substantially lowers the technology bar to entry. The largest constituency by sheer numbers are individual consumers, who number in the billions around the world, reflecting the fact that wireless communications devices have achieved exceptionally high levels of adoption and at a rate that may be the most rapid in technology history.[5]

B. Division of Labor

The global supply chain in the smartphone market reflects a division of labor in which innovation tasks have been largely divorced from production and distribution tasks. This is reflected in the stark differences in R&D intensity between innovators and implementers in the smartphone ecosystem (see Table 1 above). Whereas an R&D-specialist such as Qualcomm expends 25 percent of its total annual revenues on R&D, production, and distribution specialists such as Apple and Samsung each expend, respectively, 5 percent and 7.7 percent of total annual revenues on R&D.[6] This division of labor rests substantially on upstream innovators' expectations that commensurate returns on R&D investments can be earned through vertical licensing arrangements with downstream implementers. During much of the life of the smartphone industry, those expectations have been met. Innovators have widely licensed the R&D inputs required to produce and assemble a smartphone, for which implementers have paid royalties as agreed upon in governing licenses. While litigations between lead innovators and implementers capture headlines, these are exceptions among the much larger number of licensing transactions that structure technology flows between upstream and downstream segments in the smartphone supply chain. Contrary to theoretical models that predict, and largely anecdotal assertions that claim, that downstream firms are burdened with astronomical royalty rate burdens that threaten to put smartphones out of most consumers' reach,[7] multiple empirical studies estimate that producers on average bear a total royalty burden in the tolerable range of single to mid-digit percentages of the handset price.[8] These royalty rate ranges are consistent with vigorous entry rates in the handset production market, constantly expanding output, and quality-adjusted price declines throughout the life of the industry.[9]

C. Fragile Equilibrium

The mostly well-functioning equilibrium in the smartphone industry is, however, fragile. This is due to two potential contingencies. Only the first has received significant attention from the competition law community.

1. Contingency I: Patent Holdup

It is possible that the holders of critical patented technologies could act opportunistically and withhold those technologies from implementers, subject to an upward adjustment in royalty rates that would exceed the value reasonably attributable to those technologies. This contingency

4 Keith Mallinson, *Don't Fix What Isn't Broken: The Extraordinary Record of Innovation and Success in the Cellular Industry Under Existing Licensing Practices,* 23 Geo. Mason L. Rev. 967, 978-89 (2016); Kirti Gupta, *Technology Standards and Competition in the Mobile Wireless Industry,* 22 Geo. Mason L. Rev. 865, 893-94 (2015).

5 Michael DeGusta, *Are Smart Phones Spreading Faster Than Any Technology in Human History?* MIT Tech. Rev. (May 9, 2012).

6 All values based on information disclosed in each firm's most recent Form 10-K, as filed with the Securities & Exchange Commission.

7 See, e.g. Ann Armstrong, Joseph J. Mueller & Timothy D. Syrett, *The smartphone royalty stack: Surveying royalty demands for the components within modern smartphones,* WilmerHale Working Paper, at 68-69 (May 29, 2014), https://www.wilmerhale.com/en/insights/publications/the-smartphone-royalty-stack; Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking,* 85 Tex. L. Rev. 1991, 2026-27 (2007). In both cases, royalty estimates do not adequately reflect cross-licensing offsets that can reduce rates substantially. For detailed analysis, see Barnett, *Has the Academy, supra* note 1, at 1345-51.

8 Alexander Galetovic, Stephen Haber & Lew Zaretzki, *An estimate of the average cumulative royalty yield in the world mobile phone industry: Theory, measurement and results*, 42 Telecommunications Policy 263, 266 (2018); Alexander Galetovic, Stephen Haber & Lew Zaretzki, *Is There an Anticommons Tragedy in the World Smartphone Industry*? 32 BERK. TECH. L. J. 1527, 1527, 1532-33 (2017); Mallinson, *supra* note 4; J. Gregory Sidak, *What Aggregate Royalty Do Electronic Manufacturers of Mobile Phones Pay to License Standard-Essential Patents?* 1 Criterion J. on Innovation 701 (2016).

9 On entry rates, see *supra* note 4; on output, see Jason Dedrick & Kenneth L. Kraemer, *Intangible assets and value capture in global value chains: the smartphone industry*, WIPO Economic Research Working Paper No. 41, at 3-4 (Nov. 2017) (citing IDC Worldwide Mobile Phone Tracker (2017)); on price declines, see Alexander Galetovic, Stephen Haber & Ross Levine, *An Empirical Examination of Patent Holdup*, 11 J. Competition L. & Econ. 549 (2015).

corresponds to the "patent holdup" scenario that has been emphasized in much of the scholarly literature[10] and has been referenced in policy interventions by competition regulators. Stylized theoretical models can identify certain circumstances in which patent holdup maximizes single-period payoffs for an upstream patent holder. However, the constancy and relatively modest estimates of the aggregate royalty paid by handset producers are not consistent with the holdup hypothesis. That inconsistency suggests that upstream IP holders are repeat-players that operate under a multi-period payoff-maximization model in which the risk that implementers will decline to make the necessary investments to adopt, for example, 5G technology in the future renders patent holdup an economically irrational strategy with respect to implementers that have adopted, for example, 4G technology in the present. By the logic of backward induction, the prospect of future punishment disciplines present behavior. Contrary to conventional wisdom, this anticipates that patent holdup is a low-probability risk to which it is imprudent to allocate significant regulatory resources.

2. Contingency II: Patent Holdout

It is possible that producers could act opportunistically and withhold payment of licensing fees from innovators, subject to a downward adjustment in royalty rates that would fall short of the value reasonably attributable to those technologies. This "patent holdout" strategy is a rational option in an environment in which (i) a patent owner's technology can be substantially replicated and implemented by sophisticated third parties, and (ii) patent owners have no credible threat of seeking injunctive relief against infringing users. If those conditions are satisfied, then a sufficiently well-resourced implementer may engage in what is now sometimes called "efficient infringement": that is, the implementer elects to use an innovator's technology without entering into a license (or continuing to use an innovator's technology while suspending payments under an existing license) given that the worst-case scenario consists of having to pay legal fees plus reasonable royalty damages as determined in litigation. So long as there is a sufficiently low likelihood of an injunction or supercompensatory damages for willful infringement, the implementer can defer payment of royalties to the licensor while paying legal fees in exchange for the opportunity to invalidate the licensor's patents or secure a reduced royalty in the litigation process. This strategy is likely to be most attractive for the largest implementers that can sustain extended litigation and represent a large portion of an innovator's revenues, in which case the costs and uncertainty attendant to litigation may induce the innovator to offer a reduced royalty rate.

III. COMMODITIZATION BY REGULATION

A. Conventional Wisdom: SEP Royalties are "Too High"

Any firm rationally seeks to maximize revenues and minimize costs, resulting in the highest possible net gain for its shareholders. Applied to the smartphone market, this elementary principle implies that upstream innovators will seek to maximize fees paid for the technology inputs they supply to downstream producers, while the latter will seek to minimize those fees. As in tangible goods markets, the market forces of supply and demand would be expected to set the price of those IP assets, reflecting the value those assets contribute to the relevant device in the target consumer market. Implementers, and many regulators and commentators, take the view that arm's-length negotiations will not set a "reasonable" price for SEP owners' IP assets. This line of argument rests on the same theoretical and empirically unsubstantiated assertions concerning the allegedly high risk of "patent holdup," which imply that innovators are predisposed to exploit what is assumed to be their inherent bargaining advantage over implementers that have made substantial investments in adopting the relevant technology.[11] As a result, scholarly and policy discussion has focused on the danger that royalty rates will be set "too high," resulting in a disproportionate share of the market surplus being appropriated by patentee-innovators. Note that this concern is somewhat difficult to reconcile with the fact that, as of 2017, all IP licensors were estimated to capture in total approximately 5 percent of the retail price of each "iPhone 7" sold, as compared to 42 percent for Apple, a lead downstream producer.[12]

10 For the leading source of this assertion, see Lemley & Shapiro, *supra* note 7. For a critical review of this literature, see Barnett, *Has the Academy, supra* note 1, at 1344-45.

11 For examples of these statements in the scholarly literature, see *supra* note 10; for examples of such statements by regulators, see U.S. Dept. of Justice & U.S. Patent & Trademark Office, *Policy Statement on Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments* 4, 6, n.13 (2013); Fed. Trade Cmm'n, *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition* 28, 191 n.61, 234-35 (2011).

12 Jason Dedrick & Kenneth L. Kraemer, *Intangible assets and value capture in global value chains: the smartphone industry* 16-17 (WIPO, Economic Research Working Paper No. 41 (2017).

IV. REDISTRIBUTION BY FRAND

Regulatory interventions to "protect" implementers against the threat of innovator opportunism have piggybacked on existing private-sector efforts to address this risk through the standard-setting organizations ("SSOs") that promote interoperability in the smartphone and other technology markets. Since the launch of the GSM standard in the 1990s, SSOs have typically conditioned inclusion of a firm's technology in the relevant standard on the firm's commitment to license any patents covering that technology on a "fair, reasonable and non-discriminatory" (or "FRAND") basis. In most cases, SSOs have not assigned any precise meaning to the FRAND commitment. As a result, its substantive content has been reflected through the cumulative effect of market negotiations between innovators and implementers. As I have argued elsewhere, FRAND can be analogized to a "good faith" clause in a long-term relationship in which contractual terms cannot be fully specified up-front and must be periodically negotiated subject to a mutual agreement to refrain from opportunism that takes advantage of each party's relationship-specific investments.[13] It is often overlooked that the FRAND principle is necessarily a *two*-sided commitment. While implementers make investments in adopting a SEP owners' technology that cannot easily be redeployed to other uses, and are therefore subject to the risk of patentee opportunism, SEP owners make substantially larger R&D investments that are principally monetized through licensing relationships, and are therefore subject to the risk of licensee opportunism.

Since at least the mid-2000s, implementers have sought to "pin down" the meaning of FRAND by converting what is arguably a question of contract interpretation into a question of antitrust law, with an exclusive focus on the risk of patentee opportunism. Implementers have been active advocates before regulators and courts in connection with enforcement actions and litigations that impact the interpretation of the FRAND commitment.[14] These advocacy investments have achieved substantial returns by effectively instituting something akin to a compulsory licensing regime for SEP owners in the global smartphone market. In particular, implementers have secured a legal understanding that the otherwise undefined FRAND commitment implies that the patent owner has forfeited its right to seek injunctive relief and can even incur some combination of fee-shifting awards or antitrust liability for even doing so.[15] While the Court of Appeals for the Federal Circuit and recent decisions in European and UK courts have attenuated this principle,[16] SEP owners in smartphone markets cannot typically make a credible "shutdown" threat against an infringing user who has the resources and capacities to replicate the SEP owner's technology and support an extended litigation process. Relatedly, implementers have sought to secure a legal understanding that SEP royalties should be determined at the component, rather than the device, level, contrary to nearly universal industry practice.[17]

13 Barnett, *Antitrust Overreach, supra* note 1, at 202-04. Following standard usage in the institutional economics literature, a "relationship-specific" investment is an investment that has no or lesser value in any use outside the relationship.

14 *Id.* at 230; Barnett, *Has the Academy, supra* note 1, at 1374-75 Tbl. 4.

15 For court decisions, see *Microsoft v. Motorola,* 795 F.3d 1024, 1049 (9th Cir. 2015) (holding that seeking injunctive relief breaches the patentee's contractual RAND obligation and upholding the award of attorneys' fees to the infringer in light of such breach); *Apple, Inc. v. Motorola, Inc.*, 869 F.Supp. 2d 901, 913 (N.D. Ill. 2012), modified on other grounds, 757 F.3d 1286 (Fed. Cir. 2014) (holding that, except in limited circumstances, a SEP owner is not entitled to injunctive relief and shifting attorneys' fees to the SEP owner for seeking an injunction). On regulatory statements concerning antitrust liability for seeking injunctive relief to enforce SEPs, see Maureen K. Ohlhausen, *The Elusive Role of Competition in the Standard-Setting Antitrust Debate,* 20 Stan. Tech. L. Rev. 93, 118-19 (2017).

16 *Apple, Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1332 (Fed. Cir. 2014) (rejecting a "no-injunction" rule for SEPs but limiting injunctive relief to circumstances in which the infringer is unwilling to enter into a "FRAND-compliant" license); *Unwired Planet International Ltd. v. Huawei Technologies Co. Ltd. et al.* [2017] EWHC 711 (Pat.) (SEP owner entitled to injunctive relief only if the prospective licensee declines a FRAND-compliant license offer); *Huawei Technologies Co. Ltd. v. ZTE Deutschland GmbH,* Case C-170/13 (Court of Justice of the European Union, Nov. 20, 2014), at §§ 61-67 (same).

17 For a description of these efforts, see Barnett, *Antitrust Overreach, supra* note 1, at 64-67; David Kappos & Paul Michel, *The Smallest Saleable Patent-Practicing Unit: Observations on its Origins, Developments and Future,* 32 Berk. Tech. L. J. 1433, 1466-47 (2018).

V. AN UNCONVENTIONAL THOUGHT: ARE SEP ROYALTIES "TOO LOW"?

If the patent holdup scenario has not been systematically realized in practice, then it follows that (i) as a factual matter, there is no sound economic case for competitive harm and (ii) as a normative matter, regulatory interventions to limit SEP owners' enforcement and licensing capacities are prone to distort the prices negotiated for the IP assets that are necessary to produce and assemble a smartphone. This raises the largely overlooked risk that the royalty rates for SEPs have been artificially re-set at levels that are "too low," rather than "too high," through a regulatory campaign that has been advocated by firms that self-evidently benefit from any downward movement in royalty rates.[18] (Keep in mind that the primary objective of antitrust law is *not* to minimize prices; rather, it is to maximize consumer welfare by preserving the conditions under which markets can set *efficient* prices.) Remarkably, much of the evidence relied upon by the Northern District of California in ruling in May 2019 for the FTC in its antitrust lawsuit against Qualcomm[19] consisted of inherently conflicted testimony from the defendant's licensees in the device market or horizontal competitors in the chip market. That litigation, and other enforcement actions by competition regulators against purportedly "excessive" SEP licensing rates, inherently raise a concern that regulatory interventions have merely advanced the interests of implementers who are net IP consumers at the expense of innovators who are net IP producers. Absent evidence that these regulatory actions have operated to the benefit of the public interest in preserving competitive market conditions, this amounts to a misapplication of the competition law apparatus for the purpose of redistributing economic surplus from the "sell-side" to the "buy-side" of the smartphone supply chain.

VI. REGULATORY MERCANTILISM

I have argued that implementer firms have sought to extract a greater portion of the total economic surplus in the smartphone market by advocating that regulators act to preclude "patent holdup" and restrain licensors' ability to enforce their patent rights against actual and potential licensees. As I show in detail elsewhere,[20] the same strategic logic can be extrapolated from the level of the firm to the level of an entire jurisdiction. That is: just as individual firms that are net technology users have an interest in minimizing input costs by commoditizing IP assets through the competition and patent law apparatus, so too jurisdictions that are net technology users have an interest in doing so. This is most clearly illustrated in the case of Chinese regulators' actions against Qualcomm, which was alleged to have set "excessive" royalty rates under "abuse of dominance" principles.[21] The result: in addition to a $975 million fine, Qualcomm agreed in 2015 to lower the royalty rate paid by local device producers.[22] Setting aside the legal basis for this enforcement action (as to which I express no view), it serves the regulatory jurisdiction's interest in minimizing input costs for its local producers and, as I show elsewhere with respect specifically to China, is part of a broader strategy to ameliorate the country's negative "IP balance of trade" by developing technology standards based on indigenous IP portfolios.[23]

VII. MINIMIZING PRODUCERS' INPUT COSTS DOES NOT MAXIMIZE CONSUMER WELFARE IN INNOVATION MARKETS

The commoditization of IP assets through the competition law apparatus has starkly different effects for each constituency in the smartphone ecosystem. While a weak-IP regime benefits implementers in the form of reduced input costs, and *may* benefit consumers in the short term in the form of lower retail prices (if implementers pass on some portion of their cost-savings), it hurts innovators, who suffer from reduced license fees and a lower return on R&D investment. Hence, as a policy matter, the critical question is whether consumers are better or worse off from a longer-term dynamic efficiency perspective under a regulatory regime that prioritizes producers' input costs over innovators' returns on R&D. There are two possible approaches to this question. Both approaches suggest that the commoditization strategy advocated by implementers and pursued by regulators is likely to harm consumer welfare in the medium to long term.

18 For a contribution that has recognized this risk, see J. Gregory Sidak, *Patent Holdup and Oligopsonistic Collusion in Standard-Setting Organizations,* 5 J. Competition L & Econ. 123 (2009). On potentially excessively low royalties in the patent pool context, see Jonathan M. Barnett, *From Patent Thickets to Patent Networks: The Legal Infrastructure of the Digital Economy,* 55 Jurimetrics J. 34-35, 46-47 (2014).

19 Findings of Fact and Conclusions of Law, *Federal Trade Commission v. Qualcomm, Inc.*, No. 17-CV-00220-LHK (N.D. Cal., May 21, 2019).

20 Barnett, *Antitrust Overreach, supra* note 1, 230-35.

21 Allen & Overy, *Antitrust in China: NDRC v. Qualcomm* (Feb. 12, 2015).

22 Qualcomm, Form 8-K (filed Feb. 9, 2015).

23 Barnett, *Antitrust Overreach, supra* note 1, at 234-35.

A. Dynamic > Static Efficiencies

We can attempt to weigh the short-term static efficiency gains, possibly enjoyed immediately by consumers in the form of lower retail prices, against the long-term dynamic efficiency losses, possibly suffered in the longer-term by consumers in the form of reduced innovation (based on the reasonable expectation that reduced royalty fees would divert investment capital away from wireless R&D). While this exercise cannot be carried out with certainty, there are two reasons to believe that deferred losses are likely to outweigh immediate gains. First, it is not clear that the static efficiency gains would be especially significant. If total royalty rates represent a relatively modest percentage of the total device price, then even a dramatic reduction in those rates would not substantially reduce the handset price paid by the individual consumer. Second, even if we counterfactually assume that handset prices would fall significantly, the resulting welfare gains would almost certainly be exceeded by the welfare losses from a reduction in R&D investment and technological innovation. The reasoning is intuitive: the increase in social well-being from reducing the price of kerosene lamps by even a large fraction is obviously exceeded by the increase in social well-being from replacing kerosene lamps with electric lighting. As Judge Frank Easterbrook once suggested, the error costs from "false positive" antitrust interventions are magnified when they suppress a "new method of making and distributing a product."[24]

VIII. STRUCTURAL DISTORTIONS

It might be objected that a weak-IP regime would not necessarily divert investment capital away from supporting R&D in wireless communications. Rather, capital may flow to firms that can monetize R&D investment through non-IP-dependent business models that embed technology in hardware and software bundles that cannot be easily replicated or have a unique brand profile in the consumer market. Apple's acquisition of Intel's 5G patent portfolio in July 2019 is consistent with an explicitly stated strategy to create a largely integrated end-to-end smartphone supply chain.[25] The relevant policy question then becomes: would consumer welfare be harmed by a shift from licensing-based to vertically integrated models for monetizing R&D? There are two reasons to believe that the answer is positive. First, any bias in the market's organizational choices inherently yields potential efficiency losses given our lack of information concerning the most efficient mix of organizational structures in any particular market at any particular time.[26] Second, from a competition policy perspective, licensing-based structures are likely to outperform vertically integrated structures insofar as the former tend to promote broad dissemination of the underlying pool of technology assets, whereas the latter tend to confine those assets to a single firm. Qualcomm has an incentive to license its IP portfolio as widely as possible among producer firms, creating a broad royalty base from which it can extract licensing fees during the portfolio's finite commercial life. Apple has an incentive *not* to license its IP portfolio so that it can internalize the gains from R&D within its largely closed technology environment. This has been its historical practice with respect to the Mac operating system in the personal computer market, iOS in the mobile computing market, and, subject to any residual FRAND commitments, presumably will be its practice with respect to the 5G patent portfolio acquired from Intel. Counterintuitively, commoditizing IP assets could raise entry barriers and reduce competitive intensity by undermining the vertical licensing arrangements that have enabled any producer to access the technology inputs required to enter, and compete vigorously in, the handset market.

IX. FINAL THOUGHTS

In its ongoing litigation against Qualcomm (currently on appeal to the Court of Appeals for the Ninth Circuit), the FTC has expressed the view that it is protecting consumers' interests by relieving the smartphone market from the "tax" purportedly imposed by the market's lead innovator.[27] In its opinion in that litigation, the federal district court adopted roughly the same view.[28] Tellingly, the court's opinion is virtually bereft of any objective evidence of competitive harm. The FTC's litigation and the court's opinion are the latest steps in a misguided regulatory campaign that has sought to provide a solution to a problem for which no credible evidence exists. Over two decades of experience have shown how a robust IP rights and licensing infrastructure has supported precisely the type of efficient market promoted by competition policy: expanding output, declining quality-adjusted prices, robust entry and continuous innovation. Fixing a market that is not broken has a price. The continued commoditization of IP rights through the guise of competition law may advance implementers' private interests in reduced input costs but is incompatible with the public interest in a dynamically efficient innovation ecosystem.

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24 Frank H. Easterbrook, *The Limits of Antitrust,* 63 Tex. L. Rev. 1, 5 (1984). For related discussion, see Geoffrey A. Manne & Joshua D. Wright, *Innovation and the Limits of Antitrust,* 6 J. Competition L. & Econ. 153, 168, 170-71 (2010).

25 Shara Tibken, *Why Apple Wants Intel's modem business,* cnet.com (July 25, 2019).

26 For further discussion, see Jonathan M. Barnett, *Intellectual Property as a Law of Organization,* 84 S. Cal. L. Rev. 785 (2011).

27 Federal Trade Commission, Press Release, *FTC Charges Qualcomm with Monopolizing Key Semiconductor Device Used in Cell Phones* (Jan. 17, 2017).

28 Findings of Fact, *supra* note 19.

ANTITRUST AND BALANCE OF INTERESTS IN STANDARDS DEVELOPMENT – LESSONS FROM *NSS LABS. v. SYMANTEC*

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I. INTRODUCTION

On August 13, 2019, in *NSS Labs. v. Symantec*, the District Court of the Northern District of California dismissed antitrust claims by the security software testing company NSS Labs against the Anti-Malware Testing Standards Organization, Inc. ("AMTSO"), as well as two of its members, security software vendors Symantec and ESET.[2] The case had gained prominence thanks to an intervention by the U.S. Department of Justice's ("DOJ") antitrust division on June 26, 2019,[3] wherein the DOJ recalled the need for Standard Development Organizations ("SDOs") to abide by certain procedural principles – in particular the "balance of interests" – in order to benefit from the relief against antitrust liability provided by the Standard Development Organization Advancement Act ("SDOAA").[4] In an apparent setback for the DOJ, the court refrained from ruling on the DOJ arguments, and proceeded to grant AMTSO's motion to dismiss the claims on other grounds.

In this contribution, we argue that the DOJ was correct to insist that SDOs must respect the "balance of interests" principle in order to qualify for SDOAA relief.[5] The SDOAA defines an SDO as an organization that "plans, develops, establishes, or coordinates voluntary consensus standards using procedures that incorporate the attributes of openness, balance of interests, due process, an appeals process, and consensus." The Act exemplifies a "procedural approach" to private standardization, whereby policy makers express a large degree of deference to SDOs and their procedures, provided that they abide by certain procedural principles.[6]

Nevertheless, we find that the DOJ put forward an overly narrow interpretation of the balance principle. There is limited precedent on the interpretation of the procedural principles found in the SDOAA. The SDOAA itself specifically refers to OMB Circular A-119.[7] Neither the Act nor the Circular introduced this set of procedural principles for SDO decision-making. Rather, they adopted an informal but well-established policy approach of the US government and courts towards existing SDOs, an approach which itself rested on an historically rooted and deeply entrenched SDO institutional culture.

In our view, three considerations are material in analyzing whether an SDO qualifies for the relief from antitrust liability provided by the SDOAA. First of all, the SDOAA is not meant to apply to any and all SDOs: its scope is limited to SDOs whose activities meet a number of procedural criteria, including the balance of interests. In this contribution, we will refer to the subset of SDOs that fall under the scope of the SDOAA as "Protected SDOs." Extending the relief from antitrust liability provided by the SDOAA to organizations that do not meet these procedural criteria is unwarranted, and could invite abuses of standardization processes for anti-competitive ends. Secondly, the principle of balance of interests is relevant to antitrust law and must be construed in the light thereof: it requires SDOs to actively promote balanced representation of appropriately defined categories of interests. It is distinct from other antitrust considerations, which require standards organizations to provide safeguards against dominance and manipulation of standardization processes by SDO members. Third, there are many different viable strategies for SDOs seeking to uphold that principle. Whether individual SDO processes are appropriate should be assessed with reference to the full set of SDO procedural criteria, rather than any individual criterion taken in isolation.

2 *NSS Labs, Inc v. Symantec Corporation*, No. 18-cv-05711 (ND Cal, filed Aug. 13, 2019).

3 *NSS Labs, Inc v. Symantec Corporation*, No. 18-cv-05711, Statement of Interest of the United States (ND Cal, June 26, 2019).

4 Standards Development Organization Advancement Act, Pub. L. No. 108-237 (2004), codified at 15 USC § 4301 et seq. Among other things, the SDOAA provides that standard development activity is to be assessed under a rule of reason standard (15 USC § 4302) and that, for SDOs that notified the DOJ and FTC, private damages are not trebled (15 USC § 4303).

5 At the procedural level, we leave aside whether Protected SDOs need to allege and prove their compliance with the procedural requirements of the SDOAA or whether the complainant should have the burden of disproving such compliance. The DOJ seemed to favor the former position, but there are also good reasons why the latter solution should be preferred.

6 Anton & Yao (1995) first observed the existence of such a procedural approach to standards development in US antitrust law. James J. Anton; Dennis A. Yao, Standard-Setting Consortia, Antitrust, and High-Technology Industries, 64 ANTITRUST L.J. 247, 266 (1995), p. 257. In a study of SDOs' processes for making decisions on Intellectual Property Rights, we observed that the procedural approach is characteristic of public policy towards SDOs in various countries and different subject matters, and has generally served the system well. Justus Baron, Jorge Contreras, Martin Husovec & Pierre Larouche, "Making the Rules: The Governance of Standard Development Organizations and their Policies on Intellectual Property Rights", JRC Science for Policy Report, European Commission, March 2019.

7 Off. Mgt. Budget, Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities, 81 Fed. Reg. 4673 (2016). As will be apparent in the text, earlier versions of the Circular are also relevant, especially the 1998 version to which the SDOAA referred at the time it was enacted.

II. BALANCE OF INTERESTS, OMB CIRCULAR A-119 AND THE SDOAA

As mentioned above, the SDOAA merely lists procedural principles – including balance of interests – which SDOs are required to incorporate to qualify under the Act, and thereafter refers to OMB Circular A-119, in its 1998 version, for further details. OMB Circular A-119 did not introduce these principles out of a vacuum, however. It built on a long-standing tradition in the history of standardization.

Ever since the beginning of standardization in the 19th century, SDOs have sought a balanced representation of different interests in their activities.[8] Early on, engineering societies – where the standardization movement originated – realized that standard development and adoption was hampered by potential conflicts between different interest groups, such as the producers and users of a standardized good.[9] As a result, when the International Association for Testing Materials ("IATM") – the first international association created solely for setting voluntary industry standards – was created in 1898, it established a policy "that its Technical Committees should be nearly equally divided between producers and consumers." These policies created a widely observed precedent.[10]

To this day, a large number of SDOs worldwide seek a balance of interests in their standard development processes. The International Organization for Standardization ("ISO") expects the 163 national standards bodies making up its membership to "provide for balanced representation of interest categories such as producers, buyers, consumers, etc."[11] ISO member organizations are generally the best established and most representative standards organization in their respective countries, and often implement ISO requirements domestically.

In the U.S., unlike other countries, there is no single focal national standards body. The American National Standards Institute ("ANSI") is the U.S. member of ISO. ANSI acts as the accreditation body for U.S.-based SDOs to become American Standards Developers ("ASD"), with 286 accredited ASDs currently. ASDs must comply with ANSI Essential Requirements ("ER") for the development of American National Standards, including a requirement of balance between participants from diverse interest categories.[12]

Up to the second half of the 1980s, the institutional norms of SDOs were well-understood and widely shared.[13] As noted by an observer in 1982, in spite of institutional heterogeneity, balance of interests was a "fundamental concept."[14]

Since the 1980s, however, alternative models for standardization have emerged next to – or even in reaction to – the more established tradition exemplified by the ISO and its membership. As far as their stance on the principle of "balance of interests" is concerned, they can be grouped under two categories. On the one hand, consortia arose, because many firms viewed existing SDOs and their processes as inadequate for the complex interoperability needs of the new information and communication technologies.[15] Consortia may offer a simpler, yet unbalanced, alternative.[16]

On the other hand, organizations such as the Internet Engineering Task Force ("IETF") introduced a new type of standards organizations with its own institutional norms; emphasizing the values of the widest possible openness and individual participation over attempts to create a

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8 JoAnne Yates & Craig Murphy, "Engineering Rules – Global Standard Setting Since 1880," John Hopkins University Press, 2019; p. 9.

9 For example, the development of standards for rails was hampered by conflicts between railway companies, strongly represented in the American Society of Civil Engineers (ASCE), and steelmakers dominating the American Institute for Mining Engineers (AIME). Over time, the organizations developed processes for taking into account both groups in order to produce successful standards. According to Yates & Murphy, "this focus on the needs of producer and consumer would become a hallmark of private standard setting." *Ibid.* p. 34. Similarly, the American Institute of Electrical Engineers (AIEE), formed in 1884, recognized that "there are three sides to the question, […], the manufacturer, the purchaser and the consulting engineer, and leaving out any of them you do not necessarily produce any better result"; and appointed a Committee on Standardization composed of men from all three of the constituencies. *Ibid.* p. 39.

10 *Ibid.* p. 45.

11 ISO/IEC Guide 59 ("Code of good practice for standardization"), Article 6.5.

12 ANSI, *ANSI Essential Requirements: Due process requirements for American National Standards* (January 2019), available at www.ansi.org, at p. 4., heading 1.3.

13 Robert W Hamilton, "Prospects for the Nongovernmental Development of Regulatory Standards," Am. UL Rev., 1982, p. 461.

14 *Ibid.* p. 462.

15 Martin Weiss & Carl Cargill, '"Consortia in the standards development process'," Journal of the American Society for Information Science, Volume 43, Issue 8; September 1992; pp. 559-565. "SDOs are, by their nature, inclusive groups. […] As the preferences of the group members becomes more diverse, it becomes more difficult to reach consensus." P. 563

16 "These must be small groups with a relatively uniform preference structure in order to be effective. Almost by definition, these must be exclusive groups." *Ibid.* p. 563.

balance between identified commercial interest groups.[17] In line therewith, the IETF and the Worldwide Web Consortium ("W3C") have not sought to be accredited by ANSI; in practice, however, they do adhere to a notion of balance.[18]

The reference to SDO procedural principles in OMB Circular A-119 must be understood in this historical context.[19] OMB Circular A-119 was – and still is – concerned with the use of voluntary, privately-developed standards by the federal government and the participation of federal agencies in SDOs. When OMB Circular A-119 was first introduced in 1980, it codified existing practices of federal agencies to use voluntary industry standards and participate in SDO processes. The fact that most SDOs at that time shared established institutional norms, including the requirement of balancing different interests, was an essential factor legitimizing these practices.[20] The Circular issued in 1980, formulated certain procedural requirements that SDOs should meet – including a form of balance requirement[21] – before federal agencies can *participate* in their work. The Circular however permitted the *use* of standards originating from non-compliant SDOs in federal procurement, even if federal participation in such non-compliant SDOs was not permissible.[22] With its 1982 revision,[23] OMB Circular A-119 continued to follow the same principles. Even though the detailed procedural requirements were removed from the Circular, the attached DOJ letter made it clear that, when they participate in the work of SDOs, federal agencies are expected to encourage SDOs to comply with antitrust law and trade law[24] through "consideration of all relevant viewpoints and interests, including those of consumers, and potential or existing industry participants."[25] These provisions were not significantly changed with the 1993 revision to OMC Circular A-119.[26]

In 1998, OMB Circular A-119 was thoroughly redrafted; it is that version that was in force when the SDOAA was enacted. The redrafting primarily aimed to align the Circular with the National Technology Transfer and Advancement Act of 1995 ("NTTAA").[27] While federal agencies and departments were, as before, expected to *participate* only in the work of SDOs that comply with procedural requirements,[28] the NTTAA henceforth also directed federal agencies to *use*, as a rule, standards developed by voluntary consensus standards bodies.[29] OMB Circular A-119 was revised to follow the provisions of the NTTAA on these points.[30]

17 Andrew L. Russell, "Open Standards and the Digital Age: History, Ideology, and Networks," Cambridge Studies in the Emergence of Global Enterprise, 2014.

18 IETF and W3C are among the inaugural signatories of the OpenStand Joint Statement of Affirmation, which stipulates five fundamental principles of standards development, including the principle of Balance, defined as follows: "Standards activities are not exclusively dominated by any particular person, company or interest group."

19 Off. Mgt. Budget, Federal Participation in the Development and Use of Voluntary Consensus Standards, 45 Fed. Reg. 4326 (1980).

20 According to Hamilton, federal agencies such as the Occupational Safety and Health Administration ("OSHA") had initially encountered problems in the use of voluntary standards, because they "uncritically" adopted standards developed before the solidification of the relevant institutional norms: "The procedures described above that are currently in effect have evolved only gradually. Twenty years ago the process was much more secretive and closed, and there was less emphasis on, and concern with, 'balance' and due process." *Ibid*. p.Hamilton, *supra* note 13 at 465.

21 OMB Circular A-119 (1980), *supra* note 19, §6c.(1).

22 *Ibid*. §6a.(1).

23 Off. Mgt. Budget, Federal Participation in the Development and Use of Voluntary Consensus Standards, 47 Fed. Reg. 49496 (1982).

24 Following the adoption of the TBT Agreement in the Tokyo Round in 1979.

25 OMB Circular A-119 (1982), *supra*, note 23, at 49499.

26 Off. Mgt. Budget, Federal Participation in the Development and Use of Voluntary Consensus Standards, 58 Fed. Reg. 57643 (1993).

27 National Technology Transfer and Advancement Act of 1995, Pub. L. 104-113.

28 NTTAA, s. 12(d)(2).

29 *Ibid*. s. 12(d)(1). It is true that the NTTAA still allowed federal agencies to use privately developed standards originating from SDOs that do not comply with procedural requirements: *Ibid*. s. 12(a)(3), codified at 15 USC § 272(b)(3). Nevertheless, the emphasis was clearly on the use of standards developed by SDOs that complied with procedural requirements, as a rule.

30 OMB Circular A-119, pt 6.a. and g., pp. 8554-8555.

The Circular was also expanded to include five procedural attributes in its definition of a "voluntary consensus standards body," including balance of interests.[31] In addition, the Circular added a separate category of privately-developed standards.[32] The Circular therefore made it clear that its policy on use and participation applied only to a subset of SDOs, those of the traditional type with their established institutional norms. In practice, indeed, while federal regulations incorporate standards issued by a large number of non-governmental organizations, these standards still very predominantly originate from ANSI-accredited ASDs, formal international SDOs, and other well-established organizations.[33]

The SDOAA extends the policy set out in the NTTAA and OMB Circular A-119 by adding an antitrust dimension. The SDOAA is explicitly intended to provide protection from antitrust liability to SDOs impacted by government use of their standards pursuant to the NTTAA and OMB Circular A-119.[34] The institutional attributes widely shared by Protected SDOs – as listed in OMB Circular A-119 – significantly attenuate potential antitrust concerns.[35] The SDOAA explicitly recognizes that standardization need not follow the procedural attributes set out in the Circular, and accordingly it expressly provides that it does not benefit non-Protected forms of standard development.[36]

In *NSS Labs*, the DOJ was thus correct to insist that an SDO must qualify as a Protected SDO, i.e. it must present the institutional attributes referred to in the SDOAA, in order to benefit from the liability protections awarded by the SDOAA. The court however held that it did not need to rule on the SDOAA, as there are plausible pro-competitive justifications for the standards, and NSS Labs has failed to prove that the standard effectively cut them off from a relevant market. The court found that the potential pro-competitive benefits and voluntary nature of AMTSO's standard warrants a rule-of-reason approach, regardless of whether AMTSO is a protected SDO.

III. THE PROPER INTERPRETATION OF BALANCE OF INTERESTS IN THE LIGHT OF ANTITRUST LAW

The reasoning of the court in *NSS Labs* points to the broader context in which the SDOAA operates, and illustrates our second point, namely that the institutional attributes of SDOs, including balance of interests, are relevant not only for the applicability of the SDOAA, but for the antitrust approach to SDOs more generally.

The Supreme Court clearly recognized that standardization could potentially have anti-competitive effects, such that it warrants antitrust scrutiny.[37] While acknowledging the pro-competitive effects of standardization, the Supreme Court underlined the responsibility of SDOs themselves to take on procedural attributes – among which the balance of interests – that mitigate the potential for anticompetitive outcomes.[38] Once they do so, a rule-of-reason approach is warranted.[39] The SDOAA therefore did not create, but merely codified a rule-of-reason approach to

31 *Ibid.* pt. 4.a.(1), p. 8554.

32 *Ibid.* pt. 4.b.(1), p. 8554. This category includes items such as '"non-consensus standards'," '"industry standards'," '"company 'standards" and '"*de facto* standards'."

33 We analyzed 22,800 standards incorporated by reference into federal regulation by 2016, retrieved from the National Institute of Standards and Technology website. After excluding standards issued by single companies, governmental authorities, international or foreign formal SDOs, and standards for which the database lists a publishing company as source, we are left with 14,365 standards. At least 11,276 of these standards were issued by an organization currently accredited by ANSI as an ASD. The remaining 3,089 standards originate from a large number of different organizations. We researched the history of the 25 organizations with the largest number of standards; accounting for 2,686 or 87 percent of these remaining standards. On average, these 25 organizations are over 100 years old. We did not find IETF, W3C, or any other organization with "consortium" in the name among the sources of any standard incorporated by reference into federal code.

34 House of Representatives Report 108-125, report by Mr. Sensenbrenner from the Committee on the Judiciary accompanying H.R. 1086, May 22, 2003; at p. 9. See also the Congressional findings in the SDOAA itself.

35 *Ibid.* p. 4.

36 "This legislation shall not be construed to alter or modify the antitrust treatment under existing law of (1) parties participating in standards development activity of standards development organizations within the scope of this Act, (2) other organizations and parties engaged in standard-setting processes not within the scope of this legislation." *Ibid.* pp. 27-28.

37 *American Soc'y of Mech. Eng'rs v. Hydrolevel*, 456 U.S. 556 at 571 (1982), and *Allied Tube v. Indian Head, Inc.*, 486 U.S. 492 at 500 (1988). The OMB was also well aware of the potential antitrust implications of standardization, as the 1980 version of OMB Circular A-119 already evidences: *supra*, note 19 at pt 6, p. 4326. By the time of the 1982 revision of OMB Circular A-119, the Supreme Court had decided *ASME v. Hydrolevel*, and the OMB made sure that the antitrust implications were fully taken into account by attaching a letter from the DOJ to its Circular: *supra*, note 23 at 49499.

38 "Only ASME can take systematic steps to make improper conduct on the part of all its agents unlikely, and the possibility of civil liability will inevitably be a powerful incentive for ASME to take those steps. Thus, a rule that imposes liability on the standard-setting organization – which is best situated to prevent antitrust violations through the abuse of its reputation – is most faithful to the congressional intent that the private right of action deter antitrust violations." *American Soc'y of Mech. Eng'rsASME v. Hydrolevel*, ibid. at 573.

39 *Allied Tube v. Indian Head, Inc.*, *supra*, note 37 at 501.

SDOs, and re-emphasized the importance of the traditional institutional attributes of SDOs formalized by OMB Circular A-119.[40]

Nevertheless, neither the SDOAA itself nor OMB Circular A-119 in its 1998 version provided a definition of "balance of interests." In order to gain a better understanding of that principle, it is necessary and useful to look at the broader antitrust picture.

In his analysis of the balance requirements applicable to SDOs, Prof. Contreras argues that SDOs wishing to benefit from the SDOAA should avoid domination of standardization processes, whereas general antitrust law merely requires an absence of abusive imbalance.[41] As for the newest version of OMB Circular A-119, it bundles balance of interests and lack of dominance together, when it defines balance as follows: "The standards development process should be balanced. Specifically, there should be meaningful involvement from a broad range of parties, with no single interest dominating the decision-making."[42] Similarly, the OpenStand standardization principles state that a standardization process is balanced if it is not "exclusively dominated by any particular person, company or interest group."

By contrast, we argue that the balance of interests requirement must be understood to protect qualified interest *categories* from being injured[43] in the standardization process by another interest category. Hence, it is distinct from, and goes beyond, a mere requirement to avoid "dominance" by a single entity or a group of colluding entities.[44] Both requirements are grounded in antitrust law. In the following paragraphs, we explore the "lack of dominance" requirement first, and then the "balance of interests" requirement.

Allegations that standardization processes are biased or stacked in favor of certain outcomes or interests are common reasons for antitrust complaints.[45] In these cases, SDO participants were frustrated with a particular standardization decision; and argued that the standardization process was biased against a rival solution that they favored. Such was the case in *Allied Tube*,[46] where the Supreme Court stated that "[w]hat petitioner may not do (without exposing itself to possible antitrust liability for direct injuries) is bias the process by, as in this case, stacking the private standard-setting body with decisionmakers sharing their economic interest in restraining competition."

While standardization processes should allow for an unbiased review of different technical solutions, it would be illogical and unfeasible to define any group of companies with vested interests in a certain technology as an "interest category" that SDOs would need to protect through a balancing process. SDOs exist precisely so that such technological choices can be made. Requiring SDOs to balance standardization processes between, for instance, makers of plastic and steel conduits in *Allied Tube*, would very often make it impossible for SDOs to make such decisions. The problem with these cases was not that the SDO decided against the interests of certain stakeholders, but rather that the SDO reached this decision through allegedly improper processes, which were "dominated" or manipulated by a single firm or group of colluding firms.

Requirements of balance of interests in SDO processes are not intended to balance the influence of proponents of rival solutions for a technical standard, who stand in a horizontal competitive relationship to one another. Rather, as the historical review above indicated, these requirements emerged very early in the history of SDOs to balance the interests of stakeholder groups that are vertically related to each other. Very often, these groups are producers and users of a standardized good or service, respectively. Among each stakeholder group, there is a shared interest in using standardization to soften competition within the group, whereas between the two groups, the vertical relationship can be rivalrous: the softening of competition will be at the expense of the other group. Hence the need for these interests to be balanced. ANSI's Essential Requirements stipulate, for example, that "In defining the interest categories appropriate to a standards activity, consideration shall be given to at least the following: a) producer; b) user; c) general interest." ISO's code of good practice for standardization, as we have seen,

40 "Antitrust challenges to standard-setting activities are currently evaluated under the "rule of reason" […] The rationale for this antitrust standard is that SDOs, as non-profits serving a cross-section of an industry, are unlikely to engage in anti-competitive con duct creating market dominance. Potential anti-competitive conduct is also mitigated by the manner in which voluntary consensus standards are developed and implemented. In order to be used by Federal agencies, the process of developing voluntary standards must adhere to principles of openness, voluntariness, balance, cooperation, transparency, consensus, and due process. These requirements were most recently articulated in OMB Circular A–119 (February 19, 1998)." House of Representatives Report 108-125 supra note 34 at 3-4.

41 Jorge L. Contreras, "Understanding "Balance" Requirements for Standards-Development Organizations," CPI Antitrust Chronicle, September 2019.

42 *Supra*, note 7 at pt 2.e.(ii).

43 In the antitrust sense of "antitrust injury": *Brunswick Corp. v. Pueblo Bowl-O-Mat Inc.* 429 US 477 (1977).

44 The use of "dominance" in this context is not felicitous, suggesting as it does that s. 2 of the Sherman Act (15 USC § 2) is involved, whereas the antitrust analysis made here is based on s. 1 of the Act (15 USC § 1).

45 TruePosition complained, for example, that Ericsson and other ETSI members subverted the standardization process, notably through a biased exercise of the chair function in the working group, to exclude TruePosition's contributions from the standard. In 2016, an employee of SR Technologies complained that members of a Special Interest Group called DensiFi had concerted their voting behavior in IEEE-SA standards development, thus effectively stacking the process against other IEEE-SA participants' contributions.

46 *Allied Tube v. Indian Head, Inc. supra*, note 37.

calls for "balanced representation of interest categories such as producers, buyers, consumers, etc." SDOs whose standards affect a variety of inter-related industries may define more elaborate and/or more specific categories of interest. The Digital Video Broadcasting ("DVB") project, for example, seeks to ensure "balanced representation of views from broadcasters, operators, manufacturers and administrations."[47]

The balancing of interests is essential not only to the SDO's external legitimacy and acceptability under international trade law and a variety of national regulations,[48] but also for antitrust law. A requirement to preserve a balance of interests between interest groups, and in particular users and producers of the standardized good or service, serves two well-recognized antitrust goals. Firstly, a traditional antitrust concern with standard development is the potential for producers to use standards to foreclose the market to a competing technology.[49] This potential for foreclosure can be resolved by guaranteeing sufficient representation of the users of the standardized goods or services, who have no interest in foreclosing a more efficient technology. Secondly, an equally important concern is the potential to use standard-setting as a vehicle for collusion in order to influence the terms of trade to the detriment of one level in the vertical chain, e.g. to force sellers (producers) to offer their goods or services on certain terms or lose access to the entire market, potentially harming consumer welfare. Such concerns over collusion among prospective buyers of the standardized good or service are attenuated by SDO processes that allow for sufficient representation of the prospective sellers.[50] SDO processes that provide for a balanced representation of different interests thus provide safeguards against anticompetitive effects.

The requirement of balance of interests, properly understood as in the above paragraphs, is thus distinct from, and additional to, the concept of "lack of dominance." Balance of interests focuses on the vertical relationship between interest categories or groups, whereas lack of dominance touches on the horizontal relationship between competing technology providers. *NSS Labs Inc.* itself illustrates the difference well. The complainant NSS Labs frames the case as a balance of interests problem: using AMTSO as a vehicle, security software vendors ('Non-Testers' in AMTSO parlance) would have conspired to formulate a testing standard that mandated advance disclosure of testing plans by testing firms ('Testers') such as NSS Labs, thereby leaving out testing done with unannounced testing protocols and changing the market terms for testing firms.[51] According to the complaint, this anti-competitive outcome resulted from the failure of AMTSO to strike an appropriate balance between its Tester and Non-Tester members.[52] The DOJ in its Statement of Interest espoused NSS Labs' framing.[53] In their motion to dismiss, however, AMTSO and the security software vendors present the case rather as an unmeritorious dominance claim: NSS is dissatisfied with the outcome of the standardization process, where it was on the losing end of a technical debate which divided both vendors and testers.[54] In its judgment, the court appeared to side with AMTSO's perspective on the case.[55]

The need to distinguish these two cases carefully is emphasized by ANSI in its guidance on balance: "Balance and a lack of dominance are two distinct considerations. The existence of a balanced consensus body does not preclude the exercise of dominance. Similarly, the existence of a less than perfectly balanced consensus body does not necessarily reflect a process in which dominance automatically occurs."[56]

47 See https://www.dvb.org/resources/public/documents_site/dvb_mou.pdf.

48 Olia Kanevskaia, Governance of ICT Standardization: Due process in technocratic Decision-making, North Carolina Journal of International Law, Volume 45 (2020).

49 Steven C. Salop & David T. Scheffman, Raising Rivals' Costs, The American Economic Review Vol. 73, No. 2, Papers and Proceedings of the Ninety-Fifth Annual Meeting of the American Economic Association (May, 1983), pp. 267-271; Anton & Yao (1995), see *supra*, note 6.

50 The accusations against IEEE-SA of imbalance in the process of revising its patent policy reflect this concern. In its business review letter of the IEEE-SA patent policy, the DOJ (under the previous administration) approvingly analyzed the process through which the policy was adopted, and emphasized that processes that fail to strike an adequate balance between sets of interests would raise antitrust concerns.

51 *NSS Labs, Inc v. Symantec Corporation*, No. 18-cv-05711, Complaint (ND Cal, September 18, 2018).

52 AMTSO's bylaws provide for two types of membership (Testers and Non-testers), and acknowledges the need to establish a balance between the two: https://www.amtso.org/wp-content/uploads/2019/06/AMTSO-Bylaws-Amendment-3-22-May-2019.pdf.

53 *Supra*, note 3.

54 *NSS Labs, Inc v. Symantec Corporation*, No. 18-cv-05711, AMTSO Motion to Dismiss (ND Cal, February 7, 2019).

55 *Supra*, note 2.

56 See ANSI, "Guidance on 'Balance' and Outreach within the American National Standards (ANS) process, ExSC 042_2016 (June 8, 2016), available at www.ansi.org.

IV. ASSESSING COMPLIANCE WITH THE BALANCE OF INTERESTS REQUIREMENT APPLICABLE TO SDOS

As set out above, we argue that the DOJ was correct in stating that SDOs should meet the balance of interests requirement in order to benefit from SDOAA protection. Furthermore, this balance requirement goes beyond preventing dominance and requires SDOs to take active steps to balance the interests of different groups, such as software vendors and software testers, in the case of AMTSO. Nevertheless, by focusing exclusively on whether the composition of AMTSO membership is balanced between these two groups, the DOJ put forward an excessively narrow approach to assessing balance of interests.[57]

Many SDOs explicitly rely on membership (or committee) composition as an indicator of balance.[58] Nevertheless, balanced composition is often recognized as an *objective* that cannot be attained without encroaching on other procedural requirements,[59] such as openness and voluntary participation. SDOs are not able to close or coerce participation in standardization, thus leaving them with limited means to control their membership composition.

SDOs may take active steps to *attempt* to achieve balance in its membership, e.g. through active outreach.[60] Additional measures may include a fee structure that encourages participation by underrepresented groups, an appropriate choice of meeting venues, and measures to facilitate participation by stakeholders with limited standardization experience. In *NSS Labs*, it seems that none of these steps would have remedied the imbalance in AMTSO's membership. AMTSO claims that software vendors outnumber testers in AMTSO's membership and the industry. If that is true, AMTSO could only have achieved a balanced membership composition by denying access to certain vendors, thereby falling short on the attribute of openness required by the SDOAA.

On a proper view, there is more to balance of interests than membership composition. As seen above, the balance of interests requirement protects interest categories from anti-competitive injury at the hand of another interest category. Many SDOs achieve such balance through a combination of openness and consensus decision making.

First, SDOs need to be *open*, i.e. to offer interest categories meaningful opportunities to participate at every step of the process. AMTSO argued that its processes respected this requirement, as representatives of both Testers and Non-Testers participated in the working group that developed the standard, the entire membership of AMTSO (including Testers) provided feedback throughout the development process, and a Tester performed the public pilot test of the standard.[61] Taken as true, these statements suggest that the process was adequately open to testers.

Second, SDOs must make decisions by *consensus*. The DOJ in its statement of U.S. interests suggests that consensus decision making by an SDO with unbalanced membership may fail to produce a balance of interests.[62] Nevertheless, the DOJ here uses a limitative definition of consensus. Even if many SDOs have processes requiring a certain majority threshold to "demonstrate" consensus, consensus is distinct from majority or supermajority voting, and not defined by a percentage of votes. While definitions of consensus differ from one SDO to the other, most definitions include a notion of absence of qualified opposition.[63] Consensus does not mean unanimity; an SDO may thus reach a decision by

57 DOJ Statement of Interest, supra, note 3.

58 For example, ANSI's Essential Requirements stipulate: "Historically the criteria for balance are that a) no single interest category constitutes more than one-third of the membership of a consensus body dealing with safety-related standards or b) no single interest category constitutes a majority of the membership of a consensus body dealing with other than safety-related standards."

59 For example, ANSI, in its guide on balance, *supra*, note 56: "Balance is a goal for all ASDs in relation to a consensus body and outreach to achieve balance in accordance with a developer's accredited procedures is a requirement."

60 An early FTC staff notice on the topic emphasizes the importance of *notice* to different stakeholder groups. Federal Trade Commissionn, Standards and Certification – Final Staff Report 159 (1983), pp. 161-162.

61 *NSS Labs, Inc v. Symantec Corporation*, No. 18-cv-05711, AMTSO Motion to dismiss (February 7, 2019) at 5-6.

62 "As an example, an SDO's consensus requirements (i.e. 70 percent of votes) may be overcome when one group holds overwhelming voting power, even though no actual consensus among interest groups was reached." DOJ Statement of Interest, *supra* note 3 at 3.

63 OMB Circular A-119 defines consensus as "general agreement, but not necessarily unanimity, and includes a process for attempting to resolve objections by interested parties" ISO/IEC define consensus as "General agreement, characterized by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process that involves seeking to take into account the views of all parties concerned and to reconcile any conflicting arguments." (ISO/IEC Guide 2:2004). The IEEE-SA Standards Board bylaws define consensus as "substantial agreement by directly and materially affected interest categories." "Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution."

consensus against the opposition of some parties. Nevertheless, consensus requires that all relevant interests are taken into account, and that legitimate and well-founded objections are resolved. An SDO that is sufficiently open to allow all relevant interest groups to participate in the process and provides for a robust consensus decision-making process would thus usually be immune to standards being imposed by one interest group against the legitimate objections of another.

AMTSO's bylaws provide for decision-making by a qualified majority, and do not mention consensus. Nevertheless, the bylaws provide for yet another means of achieving balance of interests. In particular, the bylaws provide for a process of balancing interests of software testers and vendors by requiring a majority of approvals and sufficient quorum within each of these interest categories to approve any test-related standard.[64] Such a provision is not exclusive to AMTSO (e.g. DVB has a similar policy for achieving balance between its different constituencies); and is in principle adequate to ensure a balance of interests.

Ultimately, the motion to dismiss was granted not on SDOAA-related grounds, but because the basic elements of an antitrust claim (conspiracy, antitrust injury) had not been proven. Indeed, SDOs that do not evidence the institutional attributes of the SDOAA do not necessarily breach antitrust law when they develop standards. Unbalanced standards consortia can often offer more expedient fora for standardization than Protected SDOs. They may also complement Protected SDOs, e.g. by facilitating research and development ("R&D") coordination among SDO members.[65] An essential reason why SDOs falling outside the SDOAA would not breach antitrust law lies in the voluntary character of the standard. If compliance with the standard is strictly voluntary, then presumably competitive processes will discipline SDOs that would provide cover for anti-competitive conduct. In *NSS Labs*, the court emphasized the voluntary nature of AMTSO standards when dismissing claims of per-se violations. Nevertheless, the court might have been too lenient: while industry standards are generally voluntary, they can often acquire significant binding force through the actions of firms[66] and public authorities.[67] The Supreme Court has made it clear that it is the effective power of standards to bind industry participants, rather than their formal voluntary character, that should guide a court's assessment of their competitive effects.[68] When a formally voluntary standard effectively has the potential to bind industry members, rigorous procedural safeguards are essential to preserve the presumption of pro-competitive benefits of standardization.

V. CONCLUSION

The case discussed here raises important questions regarding the institutional attributes that are required from SDOs to benefit from the antitrust protection of the SDOAA and, more generally, from a traditionally lenient antitrust approach to standardization. We argued that the DOJ was correct in emphasizing the significance of the balance of interests requirement, under the SDOAA and also for antitrust law in general. We explained why and how the balance of interests requirement is distinct from other antitrust considerations, such as lack of dominance. That requirement aims to prevent that different interest categories – usually in a vertical relationship with one another - could use the standardization process to inflict anti-competitive injury upon one another. Nevertheless, narrowing balance of interests to SDO membership composition only would be overly restrictive, and lead to conflict with other important SDO procedural requirements. SDOs may adequately provide for a balance of interests through a robust consensus process, and/or appropriately defined qualified majority voting thresholds.

By ruling that the stated pro-competitive intent and formally voluntary nature of AMTSO's standards was sufficient to dismiss the antitrust complaints, the court however implied that the procedural quality of the standard development process could be immaterial to its acceptability under antitrust law. Such an approach seems difficult to square with the well-understood anti-competitive risks of standardization, which have been mostly kept at bay in the last decades through emphasis on procedural requirements. While curtailing variation in SDO procedures would be contrary to the interests of the users of the standardization system, antitrust oversight still has an important role to play in encouraging SDOs to comply, in their respective ways, with basic procedural requirements.

64 See https://www.amtso.org/wp-content/uploads/2019/06/AMTSO-Bylaws-Amendment-3-22-May-2019.pdf.

65 Baron, Justus, Yann Meniere & Tim Pohlmann. "Standards, consortia, and innovation." International Journal of Industrial Organization 36 (2014): 22-35.; Delcamp, Henry & Aija Leiponen. "Innovating standards through informal consortia: The case of wireless telecommunications." International Journal of Industrial Organization 36 (2014): 36-47.

66 For example, the International Telecommunications Union ("ITU-T") states: "ITU-T Recommendations are non-binding, however they are generally complied with due to their high quality and because they guarantee the interconnectivity of networks and enable telecommunication services to be provided on a worldwide scale." See http://www.itu.int/en/ITUT/publications/Pages/default.aspx.

67 Clearly, a voluntary industry standard ceases to be voluntary when it is incorporated by reference into binding regulation; further underscoring the necessary relationship between the antitrust approach to SDOs and OMB Circular A-119. Outside the U.S., the Horizontal Guidelines of the European Commission explicitly place greater emphasis on the procedural guarantees of those SDOs whose standards are not entirely voluntary, e.g. because they lack competition: "In the absence of market power, a standardisation agreement is not capable of producing restrictive effects on competition. Therefore, restrictive effects are most unlikely in a situation where there is effective competition between a number of voluntary standards." For other standard-setting agreements, which are capable of creating market power, the guidelines describe institutional attributes of SDOs attenuating competition concerns, such as openness, transparency, and an Intellectual Property Rights policy.

68 *ASME v. Hydrolevel*, supra, note 37 at 571.

A NEW ERA OF LICENSING WITH CHINA

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I. INTRODUCTION

This is a tale of two trends. The first trend is the positive developments in China that are reducing regulatory burdens on inbound technology transfer including the elimination of certain discriminatory provisions imposed on foreign licensors. The second set of trends are the continuing difficulties that foreign licensors encounter in getting deals done with Chinese licensees, including U.S. government pressure to curtail technology transfer to China, and continued domestic-leaning IP-enforcement practice and policy in China. These positive and negative developments are attributable to both developments arising from the U.S.-China trade war and China's own "techno-nationalist" drive to innovate.

II. CHINA DEVELOPS A MORE WELCOMING REGIME FOR FOREIGN TECHNOLOGY TRANSFER

Despite the focus on "forced technology transfer" ("FTT") and "IP Theft" of the current U.S.-China trade war, there have been many recent positive developments in foreign technology transfer to China. Most of these developments have failed to capture the attention of the media. Among these reforms, China now provides increased flexibility for foreign licensors negotiating technology transfer transactions with China. China has also sought to mitigate foreign complaints about FTT in the context of investment decisions through legislative changes prohibiting such coercion. China's Foreign Investment Law ("FIL") and Administrative Licensing Law ("ALL") now mandate that technology transfer cannot be made a condition of foreign investment approval and that trade secrets should be not be disclosed as part of the investment review process. Amendments to the joint venture ("JV") regulations have also abrogated provisions that required ownership by Chinese joint ventures of technology licensed to the JV by a foreigner after a 10-year period had elapsed. China has also opened up sectors of the Chinese economy to majority or exclusive foreign investment.

Among the important recent changes in licensing which have a direct link to China's antitrust regime, are the elimination of the prior non-negotiable requirements of China's Administration of Technology Import-Export Regulations ("TIER") (eff. 2002). The TIER required that: foreign technology transferors indemnify Chinese recipients against third party infringement and other risks; the Chinese licensees have a non-negotiable right to improvements they create to any transferred technology; and that Chinese licensees should have reasonable access to foreign markets. Failure to comply with these provisions arguably constituted "monopolization of technology" under China's Contract Law (Article 329), whether or not there was any demonstrable harm to competition and regardless of whether transaction was itself profit-oriented.

Although violation of the TIER provisions could result in a foreign party being accused of monopolization of technology under China's Contract Law, there were several important distinctions between the TIER and China's AML. First, the relevant TIER provisions only applied to foreigners licensing to China. Second, it established *per se* rules that were otherwise non-negotiable. Third, it applied to profit and non-profit motivated technology transfer. Fourth, enforcement mechanisms were unclear. Fifth, there were no implementing regulations and very limited case law to guide market actors in structuring their transactions to minimize its impact. Sixth, the broad, vague language and structure of the TIER, including its relationship with the Contract Law, may also have unnecessarily impeded China's acquisition of leading-edge technology from foreign sources.

While the TIER should no longer apply to newly negotiated licenses, its retroactive impact remains uncertain. The amended TIER has no provisions with respect to retroactivity. China's Law on Legislation generally provides that laws do not have retroactive force, except where a special provision is made in the law to better protect rights (this provision of the Law on Legislation has been applied in the intellectual property context to restrictive retroactive application of progressively more restrictive patent examination guidelines for pharmaceuticals). In addition, certain other laws and regulations which implemented the TIER or overlapped with the TIER need to address the retroactivity issue, notably a 2004 judicial interpretation on technology transfer contracts and provisions on China's contract law regarding monopolization of technology (Article 329). In addition, neither the Patent Law, AML, or guidance issued by the antimonopoly agencies on IP-related antitrust doctrines, have been amended during this time period or specifically disavowed application of the TIER to foreign-related technology transfer.

Nonetheless, China's accomplishments in amending the TIER should be acknowledged. Although the U.S. continues to threaten escalating tariffs and other sanctions in the trade war, those sanctions are now effectively delinked from FTT claims regarding the TIER and JV law. Those claims of FTT were advanced in the original USTR report into China's technology transfer practices in March 2018 and became the subject of a WTO dispute filed at about the same time. The United States has *de facto* acknowledged that delinkage by suspending this WTO case in 2019.

In the absence of other factors, these legislative amendments taken in response to aggressive pressure from the United States, along with China's own advantages such as a growing economy, enormous talent pool, and its commitment to developing an innovative economy should serve to encourage more foreign technology transfer to China. As Dan Prud'homme & Taolue Zhang have noted in their discussion of the TIER amendments in their recent book *China's Intellectual Property Regime for Innovation* (2019), "[t]hese changes should, at a minimum, reduce

some arguably unnecessary transaction costs" and "make foreign firms somewhat more likely to conduct more advanced forms of innovation in China." In addition, the amendments to the joint venture regulations may also "have a[n] impact on innovation activities… similar to… the TIER."[2] Prud'homme & Zhang have also described changes in the FIL and ALL as "helping, at least somewhat, deter and provide recourse against some FTT policies."[3]

III. LICENSING TO UNRELATED PARTIES APPEARS TO DOMINATE

Prior to the changes to the TIER, recent trends in licensing to China were positive. U.S. exports to China of technology were $5.7 billion in 2017, including both "industrial processes" and "software." While this is a small fraction of bilateral trade, China's purchases of U.S. technology had grown about 23 times from 2004 to 2017. Equally significant, according to U.S. census data, the nature of the Chinese licensee had changed. Until 2016, the vast majority of U.S. licenses of technology to China had historically been to related parties (parent to subsidiary). Today, the majority of Chinese licensees of American technology are unrelated parties. Although it is too early to tell how long this change in licensee will persist, the change to unrelated party or "merchant" licensing may suggest that China's licensing markets, including its legal system, have improved in recent years.

The turning point in 2016 preceded the Trump Administration's arrival in Washington, DC. It may have been due to a number of factors such as an improvement in the litigation environment with increased damages, a long-awaited new national appellate IP court similar to the U.S. Court of Appeals for the Federal Circuit, the widespread availability of injunctive relief without an "eBay" doctrine, a recognition of the importance of outbound licensing to Chinese companies, a more relaxed approach to SEP assertions, increased Chinese participation in patent pools and standards setting bodies, and increasing reliance by foreign merchant licensors on the Chinese market for revenue. In fact, the importance of licensing was recognized by some Chinese authorities as early as 2016, when the Ministry of Commerce had publicly expressed an interest in amending the TIER to European officials and to domestic Chinese lawyers.

Nonetheless, the low volume of U.S. licensing revenue might be contrasted with China's high-tech manufacturing prowess for technologies that likely required acquisition of patents or other licenses from the U.S. or other countries. One rough benchmark that I had used while serving at the USPTO was to compare the percentage of China's share of high-tech or information technology exports as compiled by international organizations such as the World Bank or WTO[4] to the percentage of China's share of U.S. licensing revenue. In recent years the gap has narrowed, although it still appears to suggest that there is a large percentage of unlicensed exports. In 2016 China exported 22 percent of the world's high-tech products, but only purchased 6.3 percent of U.S. technology a multiple of 3.5 times, which is a reduction from 27 and 4.1 percent in 2013, a 6.6 multiple. This data is useful in establishing trends, although it cannot be used with 100 percent assurance as an indicator of unlicensed manufacturing.

There are also qualitative signs of an improving environment. Several U.S. law firms and companies have begun to explore possibilities of forming patent pools with Chinese companies, licensing to or from Chinese entities or using the Chinese court system to enforce their rights. In addition, several companies and law firms have brought SEP litigation in China. As Chinese judicial databases do not track settled cases, it is difficult to determine how many of these cases have been brought against Chinese entities or other foreign entities. Often information on licensed transactions will appear in the securities filings of companies listed outside of China.

Chinese companies are also acquiring technology from unrelated foreign licensors. China's high-tech sector is increasingly acquiring technology from U.S. licensors. China's technology transfer regime has become increasingly flexible for foreign licensors in general as well as foreign licensors engaged in investment in China. Quantitative and qualitative data suggest there has been increased licensing activity. However, the current trade war interjects additional uncertainty into these positive trends.

2 P. 76.

3 P. 82.

4 https://data.worldbank.org/indicator/TX.VAL.TECH.CD; https://www.wto.org/english/res_e/publications_e/ita20years2017_e.htm.

IV. A NEW WORLD FOR SEP LITIGATION

The legal relationship between IP and antitrust, and especially between standards and antitrust has been characterized as "overly ambiguous" and "create[ing] legal uncertainty which can inhibit innovation investments."[5] Perhaps the most concerning provision for SEP licensors has been China's adoption of the "essential facilities" doctrine in its SEP policies which may require a SEP holder to license its patents on FRAND terms if it holds a dominant position and lacks reasonable justification for refusing to license.[6] Chinese policies makers have also called for use of compulsory licenses in appropriate circumstances, such as when a patent is incorporated into a compulsory national standard. There has recently been some momentum for change from these implementor-friendly licensing provisions.

An important aspect of a newly changed environment for SEP licensing is the Trial Adjudication Guidance for Standard Essential Patent Dispute Cases (the "Guangdong Guidance" or "Guidance") issued by the Guangdong High Court on April 26, 2018. The Guidance is intended to govern telecommunications related cases. However, it can also be applied by analogy to non-telecommunication SEP cases. The Guidance's impact has been diminished by the Guangdong High Court ceding intermediate appellate jurisdiction over appeals of SEP cases to the newly established national appellate IP Tribunal at the Supreme People's Court. However, the Guidance should continue to govern first instance court decisions and serve as a summary of practical approaches to resolving SEP disputes based on the experience of a leading jurisdiction in China.

The Chinese approach towards SEPs had been undergoing considerable change prior to the Guangdong Guidance. This Guidance adheres to the basic framework of Beijing Higher Court's ("BHC") Guidance for Patent Infringement Determination 2017 which itself appeared quite similar to the basic framework set forth by Court of Justice of the European Union ("CJEU") in its decision for *Huawei v. ZTE*, as well as in the recent decisions of *Iwncomm v. Sony* in Beijing, and *Huawei v. Samsung* in Shenzhen.[7] Taken together, these approaches of the Chinese courts embody a "fault-based" conduct-evaluation framework.

The Guidance also specifically affords the possibility that Guangdong Courts can establish global licensing rates upon the agreement of the parties (Section 16), and that violation of its terms can form the basis of an antitrust complaint (Chapter IV). The Guangdong Guidance mandates licensors of patents encumbered by obligations imposed by standards organizations to license on Fair, Reasonable, and Non-Discriminatory ("FRAND") terms or similar, and to provide a notice to the implementer listing the scope of the patent right in accordance with "commercial practices and trading habits." The licensor must not delay or make an "obviously unreasonable" licensing fee offer.

In practical terms the Guidance not only sets forth standards for adjudication, but establishes normative rules for conducting negotiations where there is a risk of litigation in China. A prospective licensing party must now develop an approach that documents the "reasonableness" of its negotiating behavior. Foreign licensors, for example, might now consider notarization in China of appropriate documents in both English and Chinese. They might also consider providing prompt written summaries of matters in contention, and make sure significant evidentiary matters are not bound by confidentiality agreements or protective orders. Identifying "reasonableness" of a licensing offer, given the historically low royalty rates that Chinese courts and global licensing standards, may also prove difficult. The Guangdong Guidance may also be used strategically to a licensor's favor by helping it to build an evidentiary case that its conduct is reasonable because the licensee's counter offer is unreasonable by industry standards.

Regarding valuation of patents, the Guidance looks to the value of the SEP in the market, including comparable license rates using a "top-down" approach (Article 18 et seq.). Among the factors used to determine a SEP licensing fee are: reference to a comparable licensing agreement; analysis of the market value of the patents for the standards involved; reference to the license information in the comparable patent pool; and other methods. A license agreement for a SEP may be comparable (Article 20) based on factors such as: the subject of the license transaction; the relationship with the license target; the nature of the contracting party for the license fee; and the good faith conduct of the license negotiation. In my estimation, these factors could be read to authorize discretion by a Chinese judge to establish a lower "Chinese price" for technology based on size of the Chinese market or the state of its economic development. Among the factors to be relied upon to determine market value of the SEP (Article 24) are: the contribution of the SEP to product sales and profits, which does not include the impact of the patent being included in the standard; the contribution of the SEP to the standard; the advantages of this patented technology over other alternative technologies prior to standard setting; and license fees paid using SEPs that are related to the case; and other relevant factors.

5 *Id.* at 77.

6 See SAIC Provisions on the Prohibition of the Abuse of IPR to Eliminate or Restrain Competition (2015). SAIC has since been merged into a new agency, the State Administration for Market Regulation or "SAMR."

7 Cui Yabing, *Across the Fault Lines*, Chinaipr.com (June 5, 2018), https://chinaipr.com/2018/06/05/across-the-fault-lines-chinese-judicial-approaches-to-injunctions-and-seps/.

If a party has evidence to suggest that the other party holds critical information on SEP license fees, the Court may order the other party to provide such information. The Guidance is consistent with other legislative efforts to facilitate limited discovery related to damages in Chinese IP litigation. Considering that China remains primarily an implementor of SEPs. that it is the dominant supplier of the many high-tech products that implement the standards, and that damages in court cases are increasing but remain low, valuations are also likely to remain low for foreign SEPs.

Chapter IV of the Guidance sets forth various standards for evaluating whether licensing activities involving an SEP may constitute an abuse of dominance. The Guidance provides that whether an entity has a dominant position in the relevant market should be determined in a case-by-case fashion. Market share, conditions of competition, and FRAND commitments should also be considered. Importantly, the breach of the FRAND commitments does not necessarily constitute an abuse of the dominant market position. In addition, an SEP owner's petition for injunctive relief to cease infringement does not necessarily constitute an abuse of the dominant market position. Courts should look into other factors such as whether the parties acted in good faith, and the fairness of the licensing terms in determining whether there is an abuse of dominance that restricts competition (Section 29). A similar factor-based approach attaches to portfolio licensing (Section 30).

In general, the Chinese courts appear to be moving closer to the Beijing court's decision in *Iwncomm v. Sony* in making injunctive relief available against recalcitrant licensees. Nonetheless, the *Iwncomm* case does not mandate in practice that injunctions will be freely available to foreign licensors against Chinese licensees in the future. Many observers have noted that *Iwncomm* involved a Chinese State-Owned Enterprise seeking an injunction against a foreign enterprise in China, which makes the case somewhat difficult to compare with prior cases and policy documents which benefitted from a background of the discriminatory technology transfer regime of the TIER, and took more restrictive views towards granting of injunctive relief with respect to FRAND-encumbered patents. Hopefully, foreign access to injunctive relief against Chinese parties will be clarified in forthcoming court cases and other guidance.

Attorneys that are advising their client/licensors regarding how to license patents in China should also carefully consider how the courts consider concepts of licensor "delay" in light of the rapid growth in China's telecom sector and short product cycles including a short statute of limitations for patent litigation in China. Short product cycles and condensed court procedures for patent cases may make a "reasonable" period of time may be much shorter in China than elsewhere. The Guangdong Guidance does not extend these periods of time if a litigant is a foreigner and is thereby inconsistent with the letter and spirit of China's civil procedure rules and practice that permits courts to delay making decisions on foreign-related cases, while limiting domestic cases to six months duration.[8] Foreign companies now face the dilemma of being compelled to hurry up when they license to a Chinese entity or risk being accused of lack of good faith and thereby losing the ability to enforce their rights. At the same time, they may be forced to slow down by the Civil Procedure Law when they actually litigate.

Some observers contend that there are additional delays now being imposed by Chinese courts when cases implicate issues raised in the current trade war, which may include SEP assertions. However, other observers note that the pressure being put on judges to dispose of cases in China's busy dockets afford an additional basis for courts to withhold final adjudication of complex foreign SEP assertions which are not similarly time-bound. I am unaware of any publicly available policy document or hard data at this time to support either of these two contentions, although it remains reasonable to expect that foreign companies may expect delays in adjudicating their cases and/or that Chinese litigants may seek to sequence their global litigation strategies to maximize the high speed of Chinese court cases and minimize the impact of an adverse foreign decision including, for example, an anti-suit injunction from a foreign court.

From a Chinese "rule of law" approach, the enactment of the Guangdong Guidance is problematic as it appears legislative in nature, and does not simply provide guidance on the "specific application of law" that is permitted of the courts in enacting guidance of this type.[9] Moreover, it also references administrative guidelines such as NDRC guidelines on determination of the relevant market, when these non-binding guidelines are not intended to guide the courts and are not considered a source of legislation for judicial adjudication of cases. Finally, the Guangdong Guidance looks to establish normative procedures for negotiation of global SEP licenses with foreigners, yet it does not appear to have not been prepared in consultation with foreign companies.

8 See Mark Cohen, *China IP and the NY Minute*, Chinaipr.com (November 21, 2012), https://chinaipr.com/2012/11/21/china-ip-time-and-the-new-york-minute/.

9 See the Law on Legislation of the PRC (Section 104).

V. COURT DOCKETS MAY POSE AN ADDITIONAL CHALLENGE

China's rapidly growing and highly litigious IP environment may also pose challenges for SEP litigants. According to the recent report "Intellectual Property Protection by Chinese Courts in 2018" prepared by China's Supreme People's Court, Chinese courts heard 334,951 civil, administrative, and criminal IP cases in 2018. This was an increase of 41.19 percent over 2017. Civil patent cases of first instance increased to 21,699 or by 35.53 percent. Technology contract cases increased at a less rapid rate, by 27.74 percent to 2,680 cases.

As in prior years, there appear to have been wide differences in docket growth in different parts of China. With the advent of new private IPR-related databases, litigants and their counsel may wish to carefully plan their litigation strategy to ensure that they will be heard in courts with favorable procedures, local policies and experience in SEP cases. Counsel should consult with the various databases now available to look at such issues as how busy the courts may be, their experience in technologies and legal issues being claimed, and the manner in which judges may have disposed of similar cases in the past. As judicial databases do not report on settled cases and a significant cohort of cases may not be reported due to confidentiality or other concerns, it may also be critical to consult with experienced counsel that may also have knowledge of the unreported decisions, trends and predispositions of the judges.

In litigating any technology contract dispute it is also important to recognize that Chinese courts also remain relatively inexperienced in handling foreign-related licensing disputes. Generally speaking technical contract disputes have been much smaller in number than other IP disputes, mainly filed by domestic entities, and not concentrated in a particular industry. Patent-related disputes cases are typically heard in intermediate courts where foreign IP cases may be heard, while technology contract cases are heard in basic level "grass-roots" courts which may not hear any foreign IP disputes.

VI. THE TRADE WAR FURTHER DISRUPTS OPPORTUNITIES TO LICENSE

The trade war has had other important immediate impacts on licensing practices. The U.S. government has sought to expand its export control regime to capture as yet undefined "emerging" and "foundational" technologies as well as to restrict Chinese investment in the United States. In addition, efforts by the United States to ban Huawei from the U.S. and other markets are forcing Huawei to reconsider how it needs to monetize its rich FRAND encumbered patent portfolio, including bringing infringement claims against network operators such as Verizon. The United States has also sought to ban Huawei from global 5G standards practices as part of export control sanctions against it. If that ban is fully implemented, it may further disrupt Huawei's ability to cross-license or participate in standards setting and thereby accelerate a global technology decoupling.

Increasingly, these changes may be forcing Huawei to become a unique type of patent assertion entity in certain markets – which I have tentatively labeled an overseas patent assertion entity ("OPE"). Such OPE's may be very rich in patents in a market, but with restricted market access. OPEs create unique challenges to those who believe that companies that do not practice patents should be denied injunctive relief. OPEs may be denied market share through no overt act of their own. They may have a rich product portfolio which they have been adopted by standards. Their products might otherwise be available to satisfy local market demand. They may also have patents that read on critical infrastructure such as telecommunications which may also make granting injunctions difficult. Courts, seeking to impose global licensing rates, may be challenged by the fact that the local market in which the OPE is a party to the litigation may generate little revenue, such as in *Conversant v. Huawei* in the UK. In terms of defensive strategies, an OPE may be reluctant to defend itself in markets where it is already facing governmental and political barriers and may try to leverage its home court advantages to the maximum extent possible. OPE's might consider vigorously ignoring antisuit injunctions, judgments, discovery, etc. In appropriate circumstances, OPE's may also claim that foreign governments' sanctioning of their licensing or marketing activities violate national treatment obligations under the TRIPS Agreement, and are not exempted by existing national security exceptions (TRIPS Agreement, Articles 3, 73).

If the current trade war and its trends towards "decoupling" in 5G and other areas continue, such OPEs may regrettably become more common. Proposed legislation by Senators Rubio and Cornyn that would further restrict Huawei's ability to assert its patents further accelerate this trend. Additionally, the U.S. government continues to place companies on the denied party "entity list" for purposes of U.S. export control laws. The proponents of many of licensing-related sanctions may not fully understand the advantages to having all relevant technological players to participate as a standards-setting process, where they will need to disclose their technologies and ensure that patents are bound by FRAND commitments. Moreover, excluding Chinese companies from foreign markets could result in reciprocal sanctions on foreign companies by China.

VII. CONCLUSION: PROCEED OPTIMISTICALLY, BUT WITH CAUTION

Companies seeking to license to China or litigate in China would also be well advised to carefully study the Guangdong Guidance and negotiate consistent with its mandates. The current moment offers increased Chinese flexibility on license terms and market access for technology transfer contracts with China, while at the same time subjecting them to increased legal and political uncertainty.

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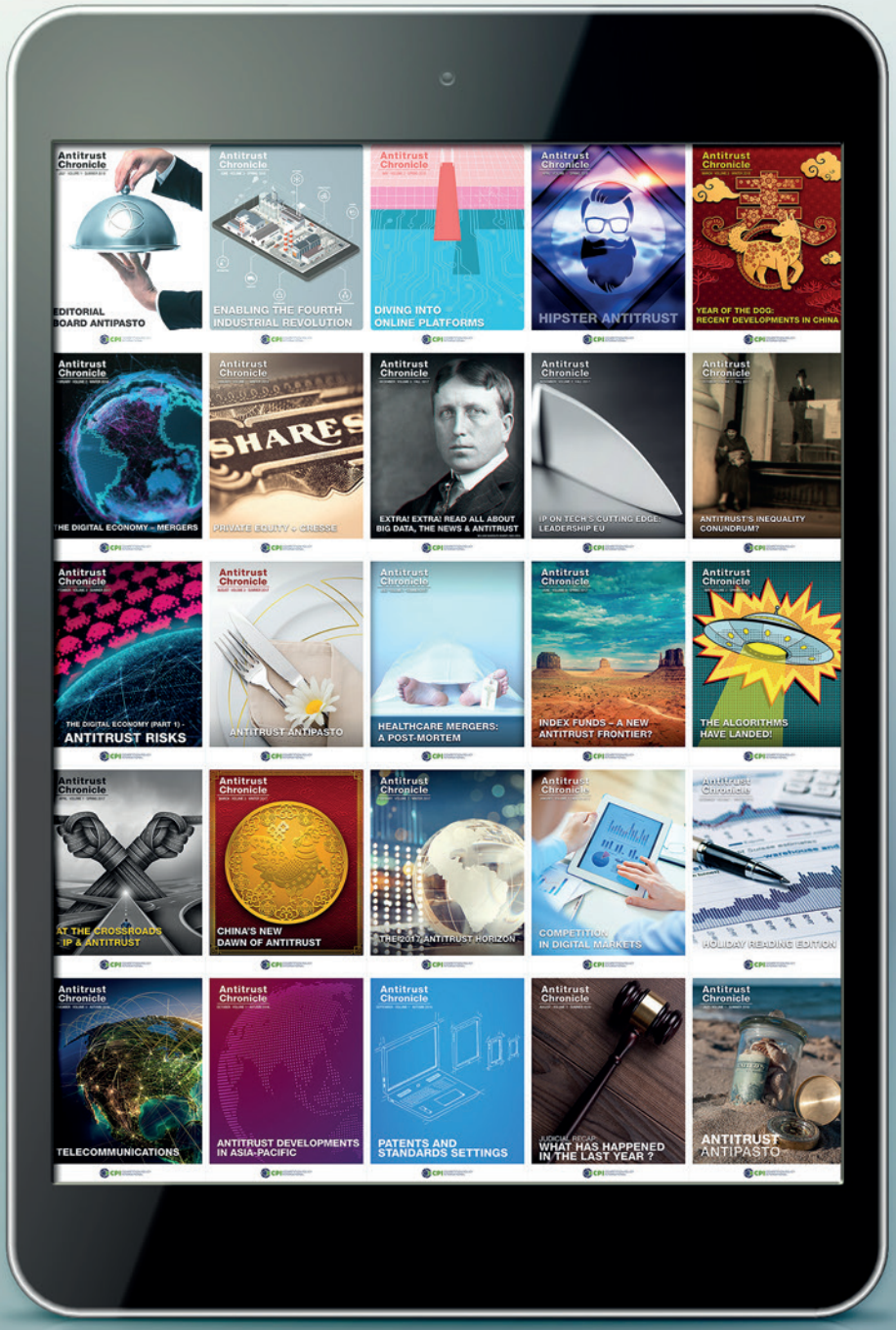

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