

STRIKING THE RIGHT BALANCE: FOLLOWING THE DOJ’S LEAD FOR INNOVATION IN STANDARDIZED TECHNOLOGY

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ABSTRACT

Today's technology standards are the result of an extraordinary amount of innovation, collaboration and competition. These concepts are interrelated, and each is enhanced or enabled by intellectual property. Where these three concepts come together in standards development, it is unsurprising that antitrust concerns are also present. Specifically, the interests of contributors, participants, and implementers must be fairly balanced to ensure that the appropriate types and levels of innovation, collaboration, and competition can occur—and that the public will benefit. It is important that antitrust enforcement involving standards development organizations and owners of standards essential patents recognize the careful balance of these three concepts. If antitrust enforcement elevates one goal—say competition—at the expense of collaboration and innovation, or if one set of actors in the standards development ecosystem—for example, implementers—is preferred over the other actors, there will likely be devastating effects on the standards development ecosystem.

The tension between innovation, collaboration, and competition in the standards development arena, as well as the divergent interests of contributors, participants, and implementers are not new. Between 2015 and 2019, however, the viewpoints of the FTC and DOJ diverged in how they handled the tension. This paper argues that we must look carefully at the underlying policies driving the agencies' behavior: both the outmoded viewpoints that the FTC is pressing as well as the innovation-positive perspective that has shaped the DOJ's actions in recent years. By amplifying the modern perspective and focusing on creating the right incentives for the right reasons, future imbalances that harm innovation, collaboration, and competition in the standards world can be avoided.

History has shown that time and market forces provide equilibrium in balancing interests, whether the new technology is a video recorder, a personal computer, or now the Net. – Steve Blank¹

I. INTRODUCTION

Technology standards are typically developed by standards development organizations (SDOs),² comprised of innovative companies working together to collaboratively solve technological problems, such as interoperability or interconnectivity.³ Some companies participating in an SDO may submit technology they developed to be considered for incorporation into the standard (contributors or innovators), while other companies participate by sharing their knowledge and being part of the problem-solving process (participants).⁴ After a standard is developed, companies that manufacture products or provide infrastructure for these products (implementers) use the technical specifications of the standard to ensure their goods and services will interoperate with other implementers' goods and services. Technology standards are the result of innovation, collaboration, and competition amongst these groups—contributors, participants, and implementers.

Innovation, collaboration, and competition do not happen in a vacuum. Not only are they interrelated concepts, but each is enhanced or enabled by intellectual property. Innovation is driven by intellectual property rights that provide an inventive company with exclusive rights

1. Steve Blank, *Why The Movie Industry Can't Innovate and the Result is SOPA*, STEVEBLANK.COM (January 4, 2012), <https://steveblank.com/2012/01/04/why-the-movie-industry-cant-innovate-and-the-result-is-sopa/> [<https://perma.cc/C6ZG-WMKK>].

2. Although the terms “standards setting organizations (SSOs)” and “standards development organizations (SDOs)” are often used interchangeably, I will use the term SDO in this paper to better connote the perspective that these companies are not just determining the technology standards, but are innovating and developing the very technology that forms the heart of technology standards. I appreciate Ron Katznelson's suggestion that SDO is a more apt term.

3. Koren W. Wong-Ervin & Joshua D. Wright, *Intellectual Property & Standard Setting*, 17 THE FEDERALIST SOCIETY REVIEW 52, 52 (2016) (describing SDOs as “private organizations that develop technical and other standards through a collaborative and consensus driven process that balances the varied interests of industry participants, which include both producers and potential users of technology”).

4. Lisa Kimmel, *Standards, Patent Policies, and Antitrust: A Critique of IEEE-II*, 29 ANTITRUST ABA 18, 18 (2015).

in its invention for a limited time.⁵ During this period of exclusive rights, the innovative company may be able to recoup some of its research and development costs, either by being the only company to sell the technology or by licensing the right to make, use, or sell that technology to other companies.⁶ Collaboration is made possible by intellectual property rights.⁷ Companies are more willing to work together to innovate and contribute their respective technology to a collaborative effort if they know their individual contributions are protected by intellectual property.⁸ Many of these collaborations include some sort of agreement between the companies regarding the ownership and use of the contributed, as well as jointly developed, technology.⁹ Competition stimulates innovation, and intellectual property rights ensure there will be dynamic competition amongst the various actors in a market.¹⁰ Standardization is one area where innovation, collaboration, and competition come together, supported often by intellectual property rights.¹¹

Because of the importance of innovation, collaboration, and competition in standards development, it is not surprising that antitrust concerns are also present.¹² Specifically, the interests of contributors, participants, and implementers must be fairly balanced to ensure appropriate types and levels of innovation, collaboration, and competition can occur. Moreover, standards development encompasses both a horizontal cooperative relationship between contributors and participants (to promote collaboration), as well as concomitant vertical agreements

5. David J. Kappos, *The Antitrust Assault on Intellectual Property*, 31 HARV. J. L. & TECH. 665, 666–67 (2018) (explaining how intellectual property rights “incentivize innovation on multiple levels”).

6. Clark D. Asay, *Patent Schisms*, 104 IOWA L. REV. 46, 67–68 (2018) (describing various ways companies can leverage their patent rights to recoup research and development investments).

7. Jay P. Kesan, *Economic Rationales for the Patent System in the Current Context*, 22 GEO. MASON L. REV. 897, 909–911 (“Armed with a patent as a transferable asset, inventors can more efficiently work with commercializers and collaborators.”).

8. *Id.* (“Similarly, patent protection allows technology firms to collaborate with one another through joint [research and development] by reducing the risk of misappropriation and minimizing the need for costly contracting.”).

9. Matthew Jennejohn, *The Private Order of Innovation Networks*, 68 STAN. L. REV. 281, 309–310 (2016).

10. Shubha Ghosh, *Intellectual Property Rights: The View from Competition Policy*, 103 NW. L. REV. 344, 346 (2009).

11. See Kesan, *supra* note 7, at 918–19 (describing standardization activities by SDOs as an effective collaboration to produce innovative solutions).

12. David M. Schneck, *Setting the Standard: Problems Presented to Patent Holders Participating in the Creation of Industry Uniformity Standards*, 20 HASTINGS COMM. & ENT. L.J. 641, 655 (1998).

between contributors and implementers. Outside of the standardization context, these contributors, participants, and implementers would often be considered competitors.¹³ As such, antitrust enforcement in the standards realm must carefully balance the goals of innovation, collaboration, and competition and should recognize that while there is often a sense of tension between these goals, heightened innovation can be a sign of and a benefit for fair competition.¹⁴ If instead, antitrust enforcement elevates one goal at the expense of the others or places the interests of one of the groups ahead of the others, there may be devastating impacts on the standards development ecosystem. Specifically, if antitrust enforcement places too high a premium on competition, or favors one of the parties, such as implementers, over the contributors and participants, standards development is likely to suffer.

While there is a particular tension between innovation, collaboration, and competition in the standards development arena, it is definitely not new. The two agencies charged with enforcing competition policy in the United States, the Federal Trade Commission (FTC) and the Department of Justice, Antitrust Division (DOJ), have long wrestled with promoting both innovation and competition, as well as understanding how collaboration can enhance these ideas.¹⁵ Although the policies regarding innovation, competition, and collaboration have historically bounced around, when considering standardized technology, both the FTC and DOJ have recently shifted the balance in favor of implementers and acted in ways that created impediments to innovation (and thus competition and collaboration) in the standards development area.¹⁶

In the last few years, however, the viewpoints of these two agencies have diverged on these topics. The FTC continues to rely on outdated perspectives and theories that have been called into question. In doing so, the FTC has favored implementers over contributors in ways that are harmful to innovation. Some examples of this include pursuing unsubstantiated antitrust claims and pressing outdated legal arguments against SDO innovators.¹⁷ On the other hand, the DOJ has recently recognized that its previously-held viewpoints are obsolete. In the last few years the DOJ has been actively seeking to reset the balance between competition and innovation, between innovator and implementer. Some

13. *Id.*

14. Gregory Day, *Innovative Antitrust and the Patent System*, 96 NEB. L. REV. 829, 831–33 (2018).

15. *Id.* at 840–43.

16. *See infra* II.

17. *See infra* III.b.

examples of this include the December 2019 Joint Policy Statement on Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments, issued in conjunction with the United States Patent and Trademark Office (PTO) and the National Institute of Standards and Technology (NIST), as well as a letter issued in September 2020 intended to correct misunderstandings that had arisen from an earlier DOJ letter.¹⁸

While it seems that the DOJ has restored the right level of balance to promote innovation, collaboration, and competition, particularly in the field of standardized technology, it is important that this movement in the right direction does not stop here. First, the importance of standards is only growing as technology becomes more interconnected with all aspects of our lives. Second, while the FTC's actions have generally been limited to hindering the innovative activities of just a few contributors, the scope of the claims they have alleged against these innovators could be extremely detrimental if applied broadly. Third, as is always the case, agency priorities are subject to change with different leadership and in the case of a new administration. Given the results of the recent presidential election, many shifts are occurring at the top of the DOJ and the FTC, which could lead to undoing all of the positive steps that have been taken by the DOJ. For these reasons, it is critical to look carefully at the underlying policies driving the agencies' behavior, both the outmoded viewpoints that the FTC is pressing as well as the innovation-positive perspective that has shaped the DOJ's actions in recent years. By amplifying the modern perspective and focusing on creating the right incentives for the right reasons, future imbalances that harm innovation, collaboration, and competition in the standards world can be avoided.

This paper will proceed as follows. Section I will explain the divergent interests of innovators and implementers in the SDO space, in part by describing the various roles these two different groups play in the world of standardized technology as well as the various costs and benefits each face. This section will also discuss the enhanced levels of innovation and competition that arise out of standardization and standardized technology and explain how, to achieve these advantages, the interests of innovators and implementers have been balanced. Finally, this section closes by looking at assertions that the system is currently out of whack or imbalanced. Section II will describe how the FTC and the DOJ participate in the SDO space and have impacted the balance between innovators and implementers. After looking at how these institutions have historically affected the SDO space, this section continues by detailing

18. *See infra III.a.*

both direct actions and indirect actions, taken by the FTC and the DOJ, that have been part of shifting the SDO space balance in favor of implementers. Finally, this section will explore the after-effects and impacts these actions have had on the SDO space and beyond. Section III explains why, for the sake of the desired innovation, collaboration, and competition, it is time to follow the DOJ's lead. Specifically, over the last few years, the DOJ has taken a number of steps that have the potential to put the SDO space back into balance. In contrast, the FTC persists in holding outdated ideas and continues to create, or at least protect, the imbalance between innovators and implementers. After illustrating these two different viewpoints, the paper concludes by explaining why now, in particular, is the right moment to focus on returning balance to the SDO space.

II. THE DELICATE BALANCE BETWEEN INNOVATORS AND IMPLEMENTERS

“Conflict and opposition are as necessary as cooperation and agreement, but the scale is off balance, with conflict and opposition overweighted.” – Deborah Tannen¹⁹

Although we may not recognize it, we are surrounded by standardized technology.²⁰ As we move from the information economy to the Internet of Things, the presence of standards becomes even more ubiquitous. But standards are not developed overnight. Instead, standards are the products of years of innovative, collaborative, and competitive activity.²¹ The best standards are generally those that were created by a robust and diverse group of contributors and participants, deciding amongst a wide selection of possible technologies. In the same vein, the most successful standards are those that are widely adopted and promoted by implementers.²² This requires a careful balancing of rights and

19. DEBORAH TANNEN, *THE ARGUMENT CULTURE: STOPPING AMERICA'S WAR OF WORDS* (1998).

20. Emily S. Bremer, *On the Cost of Private Standards in Public Law*, 63 KAN. L. REV. 279, 302 (2015) (aptly noting that “standards are everywhere”).

21. For just one example of the lengthy standardization process, the development of the 3G wireless communication standard, see Justus Baron & Kirti Gupta, *Unpacking 3GPP Standards*, 27 J. ECON. & MGMT. STRATEGY 433, 436–38 (January 2018) (describing the history of mobile network development from the 1980s to present).

22. Note by the United States, *Intellectual Property and Standard Setting*, OECD, Dec. 8, 2014 at 3, [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/WD\(2014\)116&doclanguage=en](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/WD(2014)116&doclanguage=en), at 3 [<https://perma.cc/XF4U-66TE>] (“[T]he most successful standards are often those that provide timely, widely adopted, and effective solutions to technical problems.”).

obligations between contributors, participants, and implementers. To grasp the positions of the FTC and DOJ with respect to the standards space, it is important to first have an understanding of the opposing interests of contributors and implementers and how innovation, collaboration, and competition have generally been protected by the balance. This section will explain the interests of the various parties involved in standard setting, as well as why these interests are naturally divergent. Next, this section will explore how these interests are typically balanced in the standards development space and why the efforts to do so are worth the candle. Finally, this section will examine assertions that, despite efforts to balance the interests of contributors and implementers, there is a significant imbalance that must be corrected and then will explain how these assertions have been widely questioned.

A. *Divergent Interests in the SDO Space*

To understand why contributors and implementers have divergent interests, it helps to know generally how standards are created and adopted, as well as the roles that each of the parties play in the standards development space. This section will briefly explain the standardization process, before detailing the interests of the innovators and implementers.

A standard is “any set of technical specifications which either does or is intended to provide a common design for a product or process” and is related to characteristics such as quality, safety, or interoperability.²³ While standards may be set by the government or by market choice, the technology standards relevant to this paper are those developed by SDOs. SDOs are “voluntary collectives in which representatives from multiple private companies, who are often competitors of each other, work together to establish technology standards.”²⁴ Standards developed by SDOs include many technologies we rely on and take for granted today, including Wi Fi, 4G, MPEG, and USB.

Although each SDO may have slightly different mechanisms, standards development generally proceeds as follows. SDOs are generally formed around a technical problem to be solved—for example, how can we best compress video for streaming or how can we best implement a wireless local area network. This large technical problem is then

23. Herbert Hovenkamp, Mark D. Janis, Mark A. Lemley, Christopher R. Leslie & Michael A. Carrier, 2 IP & ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW, 35-3, 35-4 (3d ed. 2020).

24. Jay P. Kesan & Carol M. Hayes, *FRANDS Forever: Standards, Patent Transfers, and Licensing Commitments*, 89 IND. L.J. 231, 237 (2014).

subdivided into various components and assigned to working groups. Each working group includes representatives from contributors (or innovators), as well as participants; these people are usually engineers or technical specialists. The working group debates and considers a myriad of sub-issues and desired functions related to their assigned component of the larger problem. Contributors submit technological proposals (known as contributions), consisting of technical specifications and details, related to any open issue or functionality being developed by the SDO.²⁵ The relevant working group will then review and evaluate the submitted contributions to try to solve each issue and implement each function.²⁶ It is common for hundreds of these contributions to be submitted and discussed in the process of developing a single feature of a much larger standard.²⁷ The working group, through a series of iterative and collaborative discussions, may accept, reject, or seek changes to the submitted technology proposals, in an effort to determine the optimal set of technologies to implement each of the relevant aspects or functions in its area.²⁸ After the working group has selected the optimal contributions to address each open issue and desired function, these are generally presented to a larger subgroup for that technical area of the standard, resulting in additional collaboration and iterative discussion.²⁹ This process often takes years, and, even after a standard is developed, improvements may continue to be proposed and discussed.

The result of this lengthy process, ideally, is a technology standard that provides numerous benefits to contributors, participants, and implementers, as well as to consumers who use and enjoy products based on standardized technology.³⁰ Contributors and participants benefit from their active involvement in the SDO process that allows them to influence the direction and outcome of standard development.³¹ Contributors and participants may also be able to more quickly ramp-up for the design and manufacture of standards-compliant products or receive other training or

25. Kirti Gupta, *Technology Standards and Competition in the Mobile Wireless Industry*, 22 GEO. MASON L. REV. 865, 878 (2015).

26. *Id.*

27. Baron & Gupta, *supra* note 21.

28. *See* Gupta, *supra* note 25, at 866.

29. *Id.*

30. The benefits listed here are the most relevant to this paper; however, other benefits accrue to contributors, participants, implementers, and the public. *See* Kristen Jakobsen Osenga, *Ignorance Over Innovation: Why Misunderstanding Standard Setting Organizations Will Hinder Technological Progress*, 56 U. LOUISVILLE L. REV. 159, 166–170 (2018).

31. Andrew Updegrave, *The Essential Guide to Standards*, CONSORTIUMINFO.ORG § 1.2, <http://www.consortiuminfo.org/essentialguide/participating1.php> [<https://perma.cc/X5CB-MMPA>].

certification in the standard from the SDO.³² If a contributor's technology is selected for incorporation into the standard, the company may realize a potential income stream from licensing that technology to implementers. Implementers, which may include SDO contributors and participants, are able to realize a marketable product more quickly, at a lower cost, and via a more simplified design process because the specifications and technical data for the product are already provided by the standard.³³ Moreover, implementers face less risk that their product will be rejected by the public than if they had developed and introduced a product independently.³⁴ Finally, consumers benefit particularly from interoperability and interconnectivity made possible by standardization.³⁵

The benefits described above are necessary to offset the costs and risks associated with SDO participation. These costs are largely borne by SDO contributors and participants and are comprised of monetary and time costs.³⁶ Membership in an SDO typically costs \$10,000 to \$60,000, although a few SDOs have dues ranging upwards from \$200,000 to \$1 million.³⁷ Additional costs of participation include person-hours necessary to prepare for and attend SDO meetings.³⁸ Contributors face additional costs associated with the research and development (R&D) required to invent and document technology to submit to an SDO for consideration.³⁹ This R&D expenditure by a contributor is spent at considerable risk to the innovative company. By design, contributors compete within the SDO for their technology to be selected; this is a feature of SDOs, allowing the "best" solution to be selected from a range of possible technologies. However, it means that not all technology is selected and thus, contributors may have invested in a developing technology that will never be commercialized. Contributors are also

32. *Id.*; Robert L. Stoll, *What You Should Know About US Standard-Essential Patents*, LAW360 (Sept. 25, 2013, 6:27 PM), <https://www.law360.com/articles/472229/what-you-should-know-about-us-standard-essential-patents> [<https://perma.cc/8NF8-A5XF>]

33. Joshua D. Wright, *SSOs, FRAND, and Antitrust: Lessons from the Economics of Incomplete Contracts*, 21 GEO. MASON L. REV. 791, 793 (2014).

34. James C. De Vellis, *Patenting Industry Standards: Balancing the Rights of Patent Holders with the Need for Industry-Wide Standards*, 31 AIPLA Q. J. 301, 305 (2003).

35. *See* Wright, *supra* note 33, at 805–06.

36. *See* Osenga, *supra* note 30, at 170–71 (describing additional disadvantages of standardization).

37. *See* Updegrove, *supra* note 31, at § 4.2.1.

38. *Id.*

39. Jonathan M. Barnett, *Antitrust Overreach: Undoing Cooperative Standardization in the Digital Economy*, 25 MICH. TECH. L. REV. 163 (2019) (explaining that an SDO contributor "incurs substantial R&D costs starting several years prior to finalization of the standard-setting process, under substantial uncertainty concerning which standard will ultimately be selected or the commercial applications of the selected standard").

making a choice between participating in the standardization process and retaining their market exclusivity through proprietary behavior. Although the ability to license patents covering the standardized technology may offset some of these costs, the risks are substantial.⁴⁰

Given the expenses faced by the contributor in developing technology to contribute to the SDO, as well as the costs of participation itself, it is natural for a contributor to want to license its technology to implementers on terms that allow the contributor to recoup some of these expenditures. Of course, the contributor would also like widespread adoption of the standard that incorporates its technology, again to maximize its ability to recapture some of its investments but also as a matter of technical reputation, so the contributor faces constraints on these licensing terms to ensure extensive use. On the other hand, the implementer—a company making and selling products and networks based on standardized technology—would prefer to pay as little as possible to license that technology to maximize its profits. Neither of these interests are wrong; in fact, they are completely natural and likely within the realm of any particular company's duties.⁴¹ However, the interests of the contributor and implementer are clearly at odds.

B. The How and the Why of Balancing These Interests

In some respects, given the opposing views of the contributor and implementer, it would seem simpler to forego standardization altogether—or at least, let it play out—in which case the difficulties would seem likely to quash standards development naturally. The efforts to balance the interests of contributors and implementers impose costs of their own. However, there are very good reasons to work to balance these interests—involving innovation, collaboration, and competition. This section will discuss how SDOs have attempted to balance the divergent interests of contributors and implementers to facilitate standardization, before exploring the benefits attributed to standardization that make these efforts worthwhile.

1. Provisions to Balance Innovators and Implementers Interests

Because standardization is an expensive, lengthy, and uncertain process, contributors often rely on intellectual property rights to protect

40. *Id.*

41. Gregory J. Werden & Luke M. Froeb, *Why Patent Hold-Up Does Not Violate Antitrust Law*, 27 TEX. INTELL. PROP. L.J. 1, 3 (2019). In fact, both innovators and implementers “likely have fiduciary obligations” to seek their preferred royalty scheme; *id.*

the technology they develop and submit to the SDO. Both within and outside the standardization process, from an economic standpoint, patents provide an exclusive right to “address the public goods nature of inventions that are expensive to produce but easy to appropriate.”⁴² Patents that cover and are required to practice standardized technology are known as standard essential patents, or SEPs.⁴³ While patent rights facilitate innovation, collaboration, and competition, and thus may incentivize SDO contributors and participants to engage in standards development, the exclusive rights associated with patent ownership are seemingly at odds with the goal of widespread adoption of any technology standard.⁴⁴ This is where SDO intellectual property rights (IPR) policies step in to help make possible a balance between the divergent interests of contributors and implementers.⁴⁵ Two common IPR policies include requiring disclosure of patents covering technology that is under consideration for incorporation into a standard and requiring contributors to make FRAND commitments for incorporated technology.⁴⁶ These policies promote a balance of rights and responsibilities between contributors and implementers that achieves both the robust SDO participation necessary to develop solid technological standards and the widespread adoption that is indicative of a successful standard.

Most SDOs have some form of disclosure requirement as part of their IPR policies.⁴⁷ Specifically, contributors are required to disclose whether they hold patents (or have pending patent applications) that cover the

42. Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1580 (2003). Other scholars have provided additional justifications for patents, including moral rights. See, e.g., Eric R. Claeys, *Takings, Regulations, and Natural Property Rights*, 88 CORNELL L. REV. 1549, 1559 (2003).

43. SEPs are “technologically essential patents” or patents that cover technology required to practice the standard as a technical, not a commercial matter. See Kesan & Hayes, *supra* note 24, at 240 (citing ETSI definition of “essential”).

44. See, e.g., Robert P. Feldman, Maura L. Rees, Wilson Sonsini Goodrich & Rosati Brent Townshend, *The Effect of Industry Standard Setting on Patent Licensing and Enforcement*, IEEE COMM. MAG., July 2000, at 112 (“The ideal of open, widely promulgated standards is at odds with a patent owner’s right to exclude others from making, using, or selling the patented invention . . . [because this right] would serve to undermine rapid and widespread adoption of the standard, resulting in reduced value of the standard.”).

45. See, e.g., George S. Cary, Larry C. Work-Dembowski & Paul S. Hayes, *Antitrust Implications of Abuse of Standard-Setting*, 15 GEO. MASON L. REV. 1241, 1258 (2008) (“[IPR] policies strike a balance between allowing patent holders to be paid for their innovations and protecting the implementers of standards from abuse of standardization’s exclusionary power.”).

46. *Id.*

47. RUDI BEKKERS & ANDREW UPDEGROVE, A STUDY OF IPR POLICIES AND PRACTICES OF A REPRESENTATIVE GROUP OF STANDARDS-SETTING ORGANIZATIONS WORLDWIDE 48 (2013).

technology they are submitting for consideration.⁴⁸ The particulars of each SDO's disclosure policy may differ, whether in their definition of "essential," whether patents that are optional for practicing the standard must be disclosed, and at what point in the process these disclosures must be made.⁴⁹ Regardless of the exact requirement, disclosure policies ensure that SDO members are aware of proprietary technologies when selecting amongst the technological alternatives.⁵⁰ This gives SDOs the opportunity to select non-proprietary technology alternatives if desired, allowing for an optimal balancing between contributors and implementers. Moreover, the disclosure policies help SDOs in implementing the FRAND commitments that serve as a second piece of this balancing act.

Many SDOs also require contributors to agree to FRAND licensing of any proprietary technology selected for inclusion in the standard.⁵¹ FRAND licensing commitments are intended to ensure that implementers are able to use proprietary technology incorporated into a standard on fair, reasonable, and non-discriminatory terms.⁵² While FRAND commitments have numerous issues,⁵³ the purpose is to "curb possible attempts [by the contributor] to exploit the increased market power that comes with owning a patent that is used in a standard."⁵⁴ FRAND commitments attempt to level the negotiation field by, first, providing that licensing terms are commensurate with the types of competitive terms that would have been applied *ex ante*, before the technology was incorporated into the standard,⁵⁵ and second, guaranteeing that implementers cannot be outright denied a license to the technology necessary to practice a standard.⁵⁶ Working in tandem with the disclosure policies, FRAND

48. Anne Layne-Farrar, *Antitrust and Intellectual Property Rights: Assessing the Link Between Standards and Market Power*, 21 ANTITRUST 42, 42 (2007) (noting that contributors "often propose their own proprietary IP for cooperative standards and patented inventions are frequently implicated. As a result, the vast majority of formal SSOs . . . request that their members report their patents or other IP that might be interpreted as 'essential' for a standard.").

49. See Bekkers & Updegrove, *supra* note 47.

50. Daryl Lim, *Misconduct in Standard Setting: The Case for Patent Misuse*, 51 IDEA 559, 567–68 (2011).

51. Kesan & Hayes, *supra* note 24, at 244. In the alternative, some SDOs require royalty-free or no-cost licensing of patented technology incorporated in a standard.

52. *Id.* at 233.

53. *Id.* at 234 (listing five common problems with FRAND).

54. *Id.* at 238 (citing Anne Layne-Farrar, A. Jorge Padilla & Richard Schmalensee, *Pricing Patents for Licensing in Standard-Setting Organizations: Making Sense of FRAND Commitments*, 74 ANTITRUST L.J. 671, 672 (2007)).

55. George S. Cary, Larry C. Work-Dembowski, & Paul S. Hayes, *Antitrust Implications of Abuse of Standard-Setting*, 15 GEO. MASON L. REV. 1241, 1259–60 (2008).

56. *Id.* at 1260.

commitments also help to balance the interests of contributors and implementers to the benefit of standards development and adoption.

2. Advantages of Standardization

The process of standardization, as described above, plays a fundamental role in innovation and standardized technology as both evidence of and a source of additional technological advancement. But standards also raise concerns, particularly where the technology is covered by patents. While the IPR policies of disclosure and FRAND commitments help to ameliorate some concerns, these policies also impose their own costs on SDO contributors. To understand why the costs associated with standardization, as well as the additional costs imposed by IPR policies, are worthwhile, it is helpful to understand, in the grand scheme, some advantages that are made possible through standardization. This section will cover three standards-specific advantages: robust collaborative and competitive innovation; interoperability and implementer innovation; and follow-on innovation made possible by standardized technology.

First, SDOs serve as a particular type of joint venture, allowing the financial resources and intellectual capital of multiple, competitive, innovative firms to essentially “pool” their resources while they solve a technological problem. Beyond that, the SDO selects technology from among this pooled set of resources through a set of iterative, challenging discussions, intended to hone the technology to an optimal level. Standards development is a particular type of joint venture.⁵⁷ In general, joint ventures are understood to enhance innovation by reducing the risks of investments in research and development, achieving economies of scale, and allowing access to complementary resources.⁵⁸ Technology standards reflect the best of this. Contributors are able to pool their own investments in research and development with those of their innovative peers.⁵⁹ The process of standardization having access to this extraordinary level of technological innovation, then further enhances innovation because the SDO activity serves as “the proving ground,” where the “best engineers in the world” determine the future of various technologies.⁶⁰ As

57. Herbert Hovenkamp, *FRAND and Antitrust*, 105 CORNELL L. REV. 1683, 1695 (2020)

58. Sean P. Gates, *Standards, Innovation, and Antitrust: Integrating Innovation Concerns into the Analysis of Collaborative Standard Setting*, 47 EMORY L.J. 583, 591 (1998).

59. Comments of Laurie Self, Qualcomm, in *Meeting the Challenges to America's Economic Future: Charting the Course in U.S. Intellectual Property and Innovation Policy*, 67 CATH. U. L. REV. 605, 641 (2018).

60. *Id.*

one court noted, “One consequence of the standard-setting process is that SDOs may more readily make an objective comparison between competing technologies, patent positions, and licensing terms before an industry becomes locked into a standard.”⁶¹ Moreover, there is competition amongst SDOs in certain technology areas; here, there is even greater innovation made possible as each SDO uses the available resources to try to solve the technological problem first or arrive at a better solution.

Second, SDOs supercharge innovation through the development of interoperability and performance standards, incentivizing implementers to not just adopt these standards, but also create follow-on, complementary, or competing products that utilize and integrate with the standardized technology. SDOs develop and set interoperability and performance standards using new technologies, and further support and facilitate the adoption of these standards by implementers and ultimately consumers.⁶² Interoperability encourages incremental innovation, allowing implementers and even consumers to leverage existing innovative technology.⁶³ Barriers to innovation tend to be lowered because innovations “can take advantage of existing infrastructure and customer bases.”⁶⁴ Further, interoperability promotes widespread access to the technology,⁶⁵ allowing more innovators access to the underlying technology and infrastructure, especially true in the field of standardization. Lastly, based on the idea of interoperability, there is competition and innovation within the standard as implementers strive to make the most cost-effective, standards-compliant products.⁶⁶ Standardization encourages horizontal competition amongst implementers, allowing consumers to purchase similar products from multiple manufacturers at different price points or with varying features or services.⁶⁷

61. *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 309 (3d Cir. 2007).

62. *See* Wright, *supra* note 33, at 792.

63. Aaron K. Perzanowski, *Rethinking Anticircumvention's Interoperability Policy*, 42 U.C. DAVIS L. REV. 1549, 1558 (2009) (“Interoperability encourages certain types of innovation, but can reduce incentives for others. ... Because incremental innovation leverages prior innovative activity, it typically requires less investment, spurring contributions from a wider variety and greater number of developers. Not surprisingly, these incremental advances account for the lion’s share of innovation.”)

64. *Id.*

65. *Id.* at 1559.

66. Christopher R. Leslie, *The DOJ's Defense of Deception: Antitrust Law's Role in Protecting the Standard-Setting Process*, 98 OR. L. REV. 379, 392 (2020).

67. Benjamin M. Miller, *FRAND-Encumbered SEPs and Injunctions: Why Section 5 of the FTC Act is an Inappropriate Remedy*, 16 COLUM. SCI. & TECH. L. REV. 452, 460–61 (2015).

Third, the inventive technologies that arise from SDOs themselves can spur further innovation by enabling new ideas. For example, consider ridesharing business models like Uber and Lyft; without the emergence of 4G technology, these innovations could not occur.⁶⁸ Moreover, the widespread availability of standardized technology, as noted above, allows a large number of potential innovators the access necessary to create these previously impossible inventions. To be fair, some argue that standardization decreases follow-on innovation due to supracompetitive pricing serving as a tax,⁶⁹ however, the notion of supracompetitive pricing has its own issues, as described below.

For all of these reasons, standards development is an activity that essentially elevates inherently valuable research and development done by innovative firms and takes it to the next level. We recognize the societal value in inventive and innovative activities in part through the reward of a patent. Antitrust law, in appreciating that innovation is one of the axes of competition, has generally made peace with the lesser-appealing (from a competition standpoint) aspects of patent law, namely the right to exclude. Because the innovation that potentially could stem from standards development activities is even greater, it would seem that antitrust law could also be reconciled with possible anticompetitive aspects associated with standardization. Unfortunately, that isn't the case.⁷⁰

C. *Assertions of Imbalance—Is the System Out of Whack?*

Not everyone believes that IPR policies implemented by SDOs are sufficient to strike the necessary balance. Despite disclosure and FRAND commitment policies, implementers and many commentators argue that contributors are unfairly exploiting the intellectual property rights secured in their SEPs by engaging in patent holdup and royalty stacking, defeating the procompetitive benefits of standardization.⁷¹ To counteract these alleged bad behaviors, implementers and commentators have asked for contributors' patent rights in SEPs to be diminished. Relevant to this paper, the FTC and the DOJ have seemed to embrace, and at times

68. See Self comments, *supra* note 59, at 641.

69. A. Douglas Melamed & Carl Shapiro, *How Antitrust Law Can Make FRAND Commitments More Effective*, 127 *YALE L.J.* 2110, 2116 (2018).

70. In some respects, the FTC and the DOJ do "generally approve" of standards development activities. See, e.g., Richard Schmalensee, *Standard-Setting, Innovation Specialists, and Competition Policy*, at 2 (2009), <http://ssrn.com/abstract=1219784> [<https://perma.cc/6AXC-PMZJ>].

71. Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 *TEX. L. REV.* 1991, 2010–2017 (2007).

promoted, these allegations as well. But taken to a logical conclusion, the abrogation of patent rights for technology submitted to SDOs would discourage the best innovators from participating in standards development, thus impeding innovation, collaboration, and competition that standardization facilitates.

Despite the pervasiveness of allegations of patent holdup and royalty stacking, their actual existence and effects seems to have been greatly overstated. That the FTC and DOJ have acted to “alleviate” patent holdup and royalty stacking, when these very ideas may not be a real problem, should cause concern. This section will first explain the theories of patent holdup and royalty stacking, particularly within the standards development arena, before reviewing recent work that calls into question the extent, and in fact, the very existence, of these behaviors.

1. Patent Holdup and Royalty Stacking

Patent holdup is the theory that using the possibility of injunctive relief, a patent owner could force a party wishing to license their patented technology to pay an exorbitant, or at least unfairly high, royalty rate.⁷² Royalty stacking is the idea that, since products sold to consumers incorporate a large number of patented inventions from a variety of firms, a company wishing to make and sell these products will be forced to pay an excessive aggregated amount, or “stack,” in order to license all of the necessary technology.⁷³ Royalty stacking assumes that each of the many patent holders will act non-competitively and set linear prices, charging more for the bundle of inputs than a single patent holder because each of the many patent holders is acting solely in their own self-interest.⁷⁴

While patent holdup and royalty stacking could happen in any industry, they are of particular concern when the patents in questions are SEPs. This is because SEPs are, by their nature, difficult to design around.⁷⁵ With respect to patent holdup, implementers argue that SEP owners can seek unfairly high royalty rates for an implementer to practice

72. See Alexander Galetovic & Stephen H. Haber, *The Fallacies of Patent Holdup Theory*, HOOVER IP2 WORKING PAPER No. 16009 (Jan. 24, 2017), <http://hooverip2.org/working-paper/wp16009> [<https://perma.cc/DX5A-XH69>]; J. Gregory Sidak, *Holdup, Royalty Stacking, and the Presumption of Injunctive Relief for Patent Infringement: A Reply to Lemley & Shapiro*, 82 MINN. L. REV. 714, 714 (2008).

73. See Sidak, *supra* note 7372, at 714.

74. Alexander Galetovic & Kirti Gupta, *Royalty Stacking and Standard Essential Patents: Theory and Evidence from the World Mobile Wireless Industry*, HOOVER IP2 WORKING PAPER (June 2016), at 2, <http://hooverip2.org/working-paper/wp15012> [<https://perma.cc/Z3BB-XUK6>].

75. Bowman Heiden & Nicolas Pettit, *Patent “Trespass” and the Royalty Gap: Exploring the Nature and Impact of Patent Holdout*, 34 SANTA CLARA HIGH TECH L.J. 179, 181 (2017).

the standard because, if the implementer does not pay the requested rate, the SEP owner can then seek to enjoin the implementer who would then not be able to sell their standards-compliant goods or services.⁷⁶ Of course, patent holdup is equally possible outside of the standardized technology context; whenever a property owner has a good that others want, but for which there is no perfect substitute, the property owner may seek purportedly unfairly high rates for using or obtaining that good.⁷⁷ Royalty stacking is also, allegedly, facilitated in the arena of standardized technology because many standards-compliant products incorporate technology from hundreds, if not thousands, of SEPs owned by many different patent owners.⁷⁸ In theory, these SEP owners could seek unfairly high royalty rates that are stacked upon each other and result in an unsustainably high aggregate amount to practice a technology standard.⁷⁹

The allegations of both patent holdup and royalty stacking, made by the implementers, assert that the balance has shifted too far in the contributor's favor. Even putting aside the theoretical and evidentiary problems with these doctrines, discussed below, there is also a question about what must be balanced to enable standardization to occur and succeed. While implementers contend they are simply trying to restore a level of balance between themselves and the contributors by pushing back on licensing by innovative companies under the guise of anticompetitiveness, there is no recognition of the other aspects of equilibria in this system. Specifically, there must be some balance of the costs, risks, and advantages associated with standardization. In part, this balance is provided by the patent system. In eating away at the rights the patent system provides to competitors, implementers are decreasing the incentives that make possible the innovation, collaboration, and competition of the standards ecosystem. In fact, although it may seem like a slippery slope argument, there is actual evidence to support that when implementers argue patent holdup and royalty stacking to alter the balance of rights and obligations in the SDO ecosystem, innovation slows and stops.⁸⁰

76. See Sidak, *supra* note 72, at 714.

77. Christopher B. Seaman, *Reconsidering the Georgia-Pacific Standard for Reasonable Royalty Patent Damages*, 2010 BYU L. REV. 1661, 1711 (2010) (discussing how non-infringing substitutes or lack thereof should factor into calculation of royalty rates for patent infringement damages).

78. See, e.g., Schmalensee, *supra* note 70, at 2–3 (citing the MPEG-2 standard as exemplary, involving 425 patents held by 28 patent owners).

79. See Galetovic & Gupta, *supra* note 74, at 2.

80. See *infra* II.D.

2. The Extent and Existence of Patent Holdup and Royalty Stacking

While it is hypothetically possible that patent holdup and royalty stacking could be particularly problematic when SEPs are involved, both theoretical and empirical counterpoints that demonstrate these phenomena do not actually pose the significant concerns that implementers and commentators assert. This section will explain the disconnect between the theory and the reality surrounding these doctrines.

First, the premise of patent holdup, and indeed its origins, are based on incomplete grounds. The underpinning of patent holdup has been traced generally to four primary papers authored, or co-authored, by Professor Carl Shapiro.⁸¹ From these papers, a veritable Gorgon's head of academic and mainstream works has arisen. Yet the foundational papers miss some important points that render the entire enterprise problematic. The foundational papers by Professor Shapiro ignore the critical point that patents specifically give the patent owner the right to exclude.⁸² By ignoring this point, a primary incentive point for patents is taken away and, moreover, it allows Professor Shapiro to argue that a patent owner's efforts to avoid trespass of that right is bad behavior while failing to consider there may be legitimate reasons for the patent owner to deny access.⁸³ Finally, in Professor Shapiro's configuration of patent holdup, there may not have been an attempt by the implementer to transact with the patent holder; the very existence of a patent is sufficient to claim bad behavior on the part of the patent owner.⁸⁴ Despite being based on these flawed premises, the doctrine of patent holdup has flourished.

Second, if patent holdup were as common as one would believe from the pervasiveness of its assertion, there would be certain outcomes that we would expect to see. For example, we would expect the SEP holders to have extraordinary market power, allowing them to charge supra-competitive prices for use of the technology. In turn, we would expect the retail prices for products using the technology to be skyrocketing (or else the supply to be dwindling) and we would expect innovation to stagnate. The evidence, however, does not bear this out, even in a very SEP-intensive space, like wireless communications.

81. Heiden & Pettit, *supra* note 75, at 192. These four papers include a 2001 informal policy paper, a 2006 formal economics working paper later published in the *American Law & Economics Review*, a 2007 paper co-authored with Mark Lemley and published in the *Texas Law Review*, and a 2007 paper co-authored with Joseph Farrell and two economics consultants. *See id.*

82. *Id.* at 196–98.

83. *Id.*

84. *Id.*

For example, implementers have argued that the royalty burden to implement the 3G GSM standard ranges from 10–40% of the end product price and for 4G LTE, the burden is about 15% of the end product price.⁸⁵ Others have estimated that the royalty stack on smartphone devices is, absent cross-licensing, about 30% of the end product price.⁸⁶ However, there has never been any analysis of whether these numbers are actually unfairly high or excessive. It could be that the aggregate royalty burden reflects the accumulation of necessary SEPs, but that no single rate is unfair, and neither is the sum. So long as the inputs for multi-component products are priced according to the value of the patented contribution to the end product, no SEP holder can be faulted either for patent holdup or royalty stacking.⁸⁷ However, to reach that assessment requires a far deeper inquiry than simply adding up the license fees—and that assessment is rarely done.

In the absence of doing the hard work of valuing the multiple inputs and their contribution to the end product, at the very least there should be an inquiry about the state of the technology. If, in fact, the royalty rates are “unreasonably high,” there should be evidence that innovation is being impeded or that fewer products are being manufactured due to the input costs. However, this absence is clearly missing in the mobile communication technology space. For example, if royalty stacking were present, one would expect the sale of smartphones to decline or stagnate and that the prices for smartphones would increase dramatically. Yet, between 1994 and 2013, sales of mobile communication devices experienced a 62-fold increase.⁸⁸ Over the same time period, the average price of mobile devices fell between -11.4% and -24.8% per year.⁸⁹ Richard Epstein has pointed out that the “notion that implementers . . . are

85. Erik Stasik, *Royalty Rates and Licensing Strategies for Essential Patents on LTE (4G) Telecommunications Standards*, LES NOUVELLES, Sept. 2010 at 114.

86. Ann Armstrong, Joseph J. Mueller, & Timothy D. Syrett, *The Smartphone Royalty Stack: Surveying Royalty Demands for the Components within Modern Smart Phones*, http://www.wilmerhale.com/uploadedFiles/Shared_Content/Editorial/Publications/Documents/The-Smartphone-Royalty-Stack-Armstrong-Mueller-Syrett.pdf [https://perma.cc/H9EG-FTYA] (unpublished manuscript, 2014). This study has been challenged by Keith Mallinson and Anne Layne-Farrar. Keith Mallinson, *Smartphone Revolution: Technology Patenting and Licensing Fosters Innovation, Market Entry, and Exceptional Growth*, IEEE CONSUMER ELECS. MAG. Apr. 2015, at 60; see also Anne Layne-Farrar, *Patent Holdup and Royalty Stacking Theory and Evidence: Where Do We Stand After 15 Years of History?*, ORG. FOR ECON. CO-OPERATION AND DEV. (Dec. 17–18, 2014) <http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/WD%282014%2984&doclanguage=en> [https://perma.cc/T9RS-3KCH].

87. *Id.*

88. See Galetovic & Gupta, *supra* note 88, at 5. In 1994, there was one manufacturer that sold 29 million phones; by 2013, there were 43 manufacturers that sold 1,810 million phones. *Id.*

89. *Id.*

being suffocated by an insurmountable patent royalty stack has turned out to be nothing more than horror fiction” and supported this claim by pointing to multiple large companies that have recently entered the mobile communication device space.⁹⁰

Looking at the issue of patent holdup and royalty stacking from another perspective, it would be expected that implementers would see very low-profit margins as a result of innovators' opportunistic behavior. Yet, this too is not borne out by the data. Profit margins of mobile telephone manufacturers (an area rife with standardized technology and SEPs) typically range from twenty to forty percent.⁹¹ Further, despite claims that royalty stacking could cause rates to accumulate to greater than twenty percent of a device's price, empirical evidence demonstrates that royalty rates are instead in the three to five percent range.⁹²

Third, patent holdup and royalty stacking are not, as has been argued, a natural and inevitable byproduct of standardization. Patent holdup requires both opportunity and action by the patent holder.⁹³ With respect to opportunity, having an SEP does not automatically confer on the patent holder the ability to obtain unfairly high royalty rates. This is, in part, because not all patents are created equally; similarly, not all standards are equally successful.⁹⁴ Automatically assuming that an SEP designation makes a patent valuable and confers an ability to leverage the market ignores these two important facts. This is similar to the assumption that patents, more generally, create market power. Yet even when there are no substitutes, there is no guarantee that a technology will succeed in the markets.

Beyond that, it is rarely in an SEP owner's self-interest to seek excessive royalty rates. Standardization is often a repeat-player game; if a patent holder acts in an unfair manner, it is unlikely that other firms will be willing to urge the adoption of that patent holder's technology in future

90. Richard A. Epstein & Kayvan B. Noroozi, *Why Incentives for "Patent Holdup" Threaten to Dismantle FRAND, and Why It Matters*, HOOVER IP2 WORKING PAPERS 1, 27 (2017), <http://hooverip2.org/working-paper/wp17006> [<https://perma.cc/BJ3B-95WW>].

91. Kirti Gupta, *The Patent Policy Debate in the High-Tech World*, 9 J. COMPETITION L. & ECON. 827, 845 (2013).

92. Alexander Galetovic, Stephen Haber & Lew Zaretski, *An Estimate of the Average Cumulative Royalty Yield in the World Mobile Phone Industry: Theory, Measurement, and Results*, 42 Telecomm. Pol'y 263, 271 (2018), <https://www.sciencedirect.com/science/article/pii/S0308596117302240?via%3Dihub> [<https://perma.cc/Q76L-EBEE>].

93. Anne Layne-Farrar & Koren Wong-Ervin, *Methodologies for Calculating FRAND Damages: Part I*, LAW360 (Oct. 8, 2014, 10:26 AM) [hereinafter *Methodologies, Part I*].

94. Jean O. Lanjouw, Ariel Pakesj & Jonathan Putnam, *How to Count Patents and Value Intellectual Property: The Uses of Patent Renewal and Application Data*, 46 J. INDUS. ECON. 405, 406 (1998) ("The importance of innovations protected by individual patents varies widely.")

standards development proceedings.⁹⁵ Additionally, there are risks for patent holders in engaging in unfair negotiations with implementers. For example, implementers may also own SEPs that the patent holder may need to cross-license or implementers may be important firms for commercializing the patent holder's technology.⁹⁶ Additionally, concerns about enforcement actions by regulatory agencies, such as the FTC or DOJ, will generally deter innovators from engaging in truly unfair practices. For these reasons, patent holdup and royalty stacking do not simply occur without other conditions being present.

Patent holdup and royalty stacking present several testable hypotheses, including the presence of lower investment in innovation, higher quality-adjusted prices, and lower innovation rates.⁹⁷ Although these hypotheses could be tested, however, the data does not support the theory. For example, one study found that not only were quality-adjusted prices not higher for an important sector of standardized technology products, but that quality-adjusted prices decreased more rapidly than other, non-standardized goods.⁹⁸ This same study found that rates of technological progress and innovation in standards-intensive industries were faster than rates of innovation in most other industries.⁹⁹ This finding was reinforced by a different study, in the mobile communications field, that found significant and ongoing technological improvements in a space dominated by standardized technology.¹⁰⁰

Much scholarly work supports these arguments and findings that patent holdup and royalty stacking is not a significant problem, if it even exists.¹⁰¹ For example, Jonathan Barnett, in a number of articles, has argued that the empirical evidence does not bear out the existence of

95. Joshua D. Wright, *SSOs, FRAND, and Antitrust: Lessons from the Economics of Incomplete Contracts*, 21 GEO. MASON L. REV. 791, 804 (2014) (discussing the repeat-player nature of standards development).

96. J. Gregory Sidak, *The Meaning of Frand, Part I: Royalties*, 9 J. COMPETITION L. & ECON. 931 (2013) (explaining the value of cross-licensing to owners of SEPs).

97. Dirk Auer & Julian Morris, *Governing the Patent Commons*, 38 CARDOZO ARTS & ENT. L.J. 291, 311 (2020).

98. Alexander Galetovic, Stephen Haber, & Ross Levine, *An Empirical Examination of Patent Holdup*, 11 J. COMPETITION L. & ECON. 549, 551 (2015), <https://www.semanticscholar.org/paper/An-Empirical-Examination-of-Patent-Hold-Up-Galetovic-Haber/5faa11d344887c9df68d4e2cc468049c9f17e100> [<https://perma.cc/9PXS-Z85P>].

99. *Id.* at 565.

100. Keith Mallinson, *Don't Fix What Isn't Broken: The Extraordinary Record of Innovation & Success in the Cellular Industry Under Existing Licensing Practices*, 23 GEO. MASON L. REV. 967, 969 (2016).

101. Galetovic & Haber, *supra* note 72.

patent holdup and royalty stacking.¹⁰² Specifically, Barnett argues that prices for smartphones, a heavily SEP-dependent product, have fallen; that implementers in the same industry are not burdened by double-digit royalty rates; and that there is exceptional growth, adoption, and entry in the market, none of which would be expected in the presence of patent holdup and royalty stacking.¹⁰³ Alexander Galetovic and Stephen Haber have also authored numerous pieces that call the existence and extent of patent holdup and royalty stacking into question. They have identified a series of nested claims which have given rise to patent holdup theory, and then have debunked each of the claims¹⁰⁴ and have empirically studied the phenomenon of patent holdup in SEP-reliant industries.¹⁰⁵ Similarly, Daniel Spulber has argued that patent holdup is a fallacy and explains the lack of evidence for its existence.¹⁰⁶ In a literature review, Gregory Sidak identified via a study of twenty-one articles that “more than two dozen economists and lawyers have disproved or disputed patent holdup and royalty stacking.”¹⁰⁷ These, and other academic studies, align with the evidence, or lack thereof, of patent holdup and royalty stacking being of significant concern in the standards arena.

102. Jonathan M. Barnett, *Antitrust Overreach: Undoing Cooperative Standardization in the Digital Economy*, 25 MICH. TECH. L. REV. 163 (2019); Jonathan M. Barnett, *Has the Academy Led Patent Law Astray?*, 32 BERKELEY TECH. L.J. 1313 (2017).

103. *Id.*

104. Alexander Galetovic & Stephen Haber, *The Fallacies of Patent Holdup Theory*, 13 J. COMP. LAW & ECON. 1 (2017).

105. Alexander Galetovic & Stephen Haber, *An Empirical Examination of Patent Holdup*, 11 J. COMP. LAW & ECON. 549 (2015).

106. Daniel F. Spulber, *Licensing Standard Essential Patents with FRAND Commitments: Preparing for 5G Mobile Telecommunications*, 18 COLO. TECH. L.J. 79, 132–135 (2020).

107. See, e.g., J. Gregory Sidak, *The Antitrust Division's Devaluation of Standard-Essential Patents*, 104 GEO. L.J. ONLINE 48, 61 n.49 (2015) (listing 21 articles which demonstrate that “more than two dozen economists and lawyers had disproved or disputed the numerous assumptions and predictions of the patent-holdup and royalty-stacking conjectures.”); see also Bronwyn H. Hall & Rosemarie Ham Ziedonis, *An Empirical Analysis of Patent Litigation in the Semiconductor Industry*, 15, 17 (Am. Econ. Ass'n Ann. Meeting, Working Paper, 2007) (in an analysis not limited to SEPs, finding that patent enforcement rates have remained stable since the 1970s despite general strengthening of IPRs, and noting that firms exiting an industry may account for a significant degree of patent litigation).

III. HOW THE FTC AND THE DOJ HAVE IMPACTED THE BALANCE

*There is certainly a role for regulation, but regulation should always take into account the impact that it has on the markets, a balance that must be constantly weighed. – Jerome Powell*¹⁰⁸

Despite there being legitimate questions about the existence and extent of patent holdup and royalty stacking, implementers and others have pled for changes that devalue SEPs in the name of warding off these ills. Specifically, arguments have been made that injunctive relief should not be available for infringement of SEPs and that government agencies or SDOs should have the ability to interfere with licensing agreements between private parties as related to SEPs.¹⁰⁹ While many of these proposals have been aimed at courts, there have also been assertions of patent holdup and royalty stacking made to the two agencies charged with enforcing and promoting competition in the United States—the FTC and the DOJ. The reactions of these agencies are the focus of this Article.

The FTC and the DOJ have long been interested in the space at the intersection of innovation and competition. While much of these agencies' earlier animus with respect to innovation, and to patents generally, has fallen away, the specter of anticompetitive concern about SDOs and the behavior of contributors have been prevalent for the last decade or so. Specifically, the competition authorities have used these notions of patent holdup and royalty stacking to justify intervening in various ways to favor implementers over contributors in the standards development space. In some cases, the agencies have affected a contributor's rights directly, such as by bringing a lawsuit against a company alleging anticompetitive behavior grounded in patent holdup. In other cases, the agencies have influenced the rights of contributors indirectly, by making statements in public fora or by approving, at least implicitly (and sometimes explicitly), policies that adversely affect contributors. This section will first discuss the historical stances of both agencies with respect to their view of intellectual property, as well as how the historical stances began to shift

108. Jerome Powell, Governor, Treasury Markets and the TMPG, Speech before the Board of Governors of the Federal Reserve System (Oct. 5, 2017), <https://www.federalreserve.gov/newsevents/speech/powell20171005a.htm> [<https://perma.cc/5QJU-GP5Y>].

109. See Norman V. Siebrasse & Thomas F. Cotter, *The Value of the Standard*, 101 MINN. L. REV. 1159 (2017); Jorge L. Contreras & Richard J. Gilbert, *A Unified Framework for RAND and Other Reasonable Royalties*, 30 BERKELEY TECH. L.J. 1451 (2015); Daryl Lim, *Standard Essential Patents, Trolls, and the Smartphone Wars: Triangulating the End Game*, 119 PENN. ST. L. REV. 1 (2014); Colleen V. Chien, *Holding Up and Holding Out*, 21 MICH. TELECOMM. L. REV. 1 (2014).

in the 1980s. Next, this section will describe direct actions, many taken by the FTC, that favor implementers over contributors. Next, this section will examine indirect actions, mostly by the DOJ, that have harmed contributors. Finally, this section will consider how the myriad actions, both direct and indirect, have had lasting negative, chilling effects on innovation, collaboration, and competition these agencies are supposed to protect.

A. *Historical Views Affecting the SDO Space*

The DOJ Antitrust division was established in 1933 and has the power to enforce antitrust laws such as the Sherman Act and the Clayton Act.¹¹⁰ The FTC was established in 1914 and is charged with policing “unfair methods of competition,” including, but not limited, to antitrust.¹¹¹ With respect to intellectual property and antitrust issues, the two agencies have often cooperated. For example, over the years, the DOJ and FTC have produced joint guidelines describing the relationship between IP and antitrust, as well as guidelines for licensing IP within the antitrust system.¹¹² Other forays by the agencies, particularly with regard to SEPs, have been individual agency efforts.

Since the beginning, the relationship between competition, as set forth in antitrust law and policy, and innovation, manifest in the patent system, has been somewhat fraught.¹¹³ Although the long and storied history of patents and antitrust is interesting, it is largely outside the scope of this Article. Whatever tension there is, however, is somewhat relieved in understanding the integrated nature of innovation, collaboration, and competition, as described above. That said, however, it is helpful to take a quick look at previous era when the competition authorities, and specifically the DOJ, preferred competition over innovation, holding a number of activities related to patent ownership to be anticompetitive.

In 1970, at the “high point of patent aggressiveness,” the Antitrust Division of the DOJ set forth a list of “nine no-nos,” or a list of activities

110. See generally, Gregory J. Werden, *Establishment of the Antitrust Division of the U.S. Department of Justice*, 92 ST. JOHN'S L. REV. 419 (2018).

111. Steven S. Nam, *Our Country, Right or Wrong: The FTC Act's Influence on National Silos in Antitrust Enforcement*, 20 U. PA. J. BUS. L. 210, 218 (2018).

112. U.S. Dep't of Justice & Fed. Trade Comm'n, *Antitrust Guidelines for the Licensing of Intellectual Property* (1995) [<https://perma.cc/KRD8-S58M>] [hereinafter *1995 Guidelines*]; U.S. Dep't of Justice & Fed. Trade Comm'n, *Antitrust Guidelines for the Licensing of Intellectual Property* (2017), <https://www.justice.gov/atr/IPguidelines/download> [<https://perma.cc/WZ7K-DEKU>].

113. Herbert Hovenkamp, *Antitrust & the Patent System: A Reexamination*, 76 OHIO ST. L.J. 467, 468 (2015).

related to patents that were certain to raise antitrust issues.¹¹⁴ The “nine no-nos” included:

1. Tying the purchase of unpatented materials as a condition of a license;
2. Requiring the licensee to assign back subsequent patents;
3. Restricting the resale right of a product’s purchases;
4. Restricting a licensee’s ability to deal in products outside the scope of the patent;
5. Prohibiting a licensor from granting further licenses;
6. Requiring mandatory package licensing;
7. Requiring, as a condition of the license, royalties not reasonably related to the licensee’s sale of products covered by the patent;
8. Restricting a licensee’s use of a product made by a patented process; and
9. Setting minimum resale price provisions for licensed products.¹¹⁵

After a few cases where the DOJ pursued patentees for allegedly anticompetitive behavior under this rigid framework that specifically preferred competition over innovation, the agency took a step back and adopted policies that instead were pro-patent. This was based in part on the recognition that patents play a positive role in encouraging innovation, which is itself pro-competitive. In 1981, the DOJ announced, via a speech by then Deputy Assistant Attorney General Lipsky, that the “nine no-nos” were no longer policy.¹¹⁶ Today, none of these activities are illegal per se.¹¹⁷

Through the rest of the 1980s and into the 1990s, the DOJ and FTC generally approved of patent licensing, manifest in the 1995 issuance of the joint DOJ-FTC Antitrust Guidelines for the Licensing of Intellectual Property Guidelines.¹¹⁸ Important considerations of the 1995 Guidelines

114. *Id.* at 469.

115. *Id.* at 470 (citing Bruce B. Wilson, *Patent and Know-How License Agreements: Field of Use, Territorial, Price and Quantity Restrictions*, in ANTITRUST PRIMER: PATENTS, FRANCHISING, TREBLE DAMAGE SUITS 11, 11–21 (Sara-Ann Sanders ed. 1970)).

116. Abbott B. Lipsky, Jr., *Current Antitrust Division Views on Patent Licensing Practices*, 50 ANTITRUST L.J. 515, 515 (1981).

117. See Hovenkamp, *supra* note 113, at 471.

118. *1995 Guidelines*, *supra* note 112. See also Alden Abbott, *US Government Antitrust Intervention in Standard-Setting Activities and the Competitive Process*, 18 VAND. J. ENT. & TECH. L. 225, 230 (2016).

include 1) for the purposes of antitrust law, intellectual property should be regarded as comparable to other property; 2) there is no presumption that intellectual property creates market power; and 3) IP licensing, because it allows firms to combine complementary factors of production, is generally pro-competitive.¹¹⁹ In 2007, the agencies again joined forces to issue a report on antitrust enforcement and intellectual property rights that generally tracked the concepts of the 1995 Guidelines.¹²⁰ And then, everything changed.

B. Direct Actions Favoring Implementers

In modern times, the FTC has taken a leading role in bringing direct enforcement actions against innovative companies that participate in SDOs and subsequently, at least according to the FTC, behave in an anticompetitive manner. The FTC has brought several significant enforcement actions against contributors over the past two decades.¹²¹ For example, the FTC has brought actions against Dell, Rambus, Unocal, and NData, among others, for allegedly anticompetitive activities involving SEPs.¹²² To be fair, however, at times FTC has brought unfair competition actions against SDO contributors for failure to disclose SEP holdings.¹²³ These cases, for failure to adhere to an IPR disclosure policy, are different because the disclosure policy is specifically intended to balance the playing field between contributor and implementer; claims of patent holdup, on the other hand, are based on specious, non-evidence-based assertions of bad behavior. On the other hand, the agency has also brought actions based on licensing activity by contributors, either explicitly or implicitly based in patent holdup and royalty stacking. In contrast, the DOJ has never brought an action on holdup grounds.¹²⁴

Looking closely at some of these FTC cases, it is clear that some are based on patent holdup, even where it was not specifically alleged. For example, in the *Bosch* case, the FTC asserted that a SEP holder's pursuit

119. See 1995 Guidelines, *supra* note 112 at 2.

120. See Abbott, *supra* note 116, at 230–31.

121. Federal Trade Comm'n, Statement of Commissioner Terrell McSweeney, *Holding the Line on Patent Holdup: Why Antitrust Enforcement Matters* (Mar. 21, 2018), n. 21 (referencing enforcement actions against Dell, Rambus, Inc., Union Oil of California, Negotiated Data Solutions, LLC, Bosch, Motorola Mobility and Qualcomm).

122. Bruce H. Kobayashi, *Federalism, Substantive Preemption, and Limits on Antitrust: An Application to Patent Holdup*, 5 J. COMPETITION L. & ECON. 469 (2009).

123. See, e.g., *Rambus Inc. v. FTC*, 522 F.3d 456 (D.C. Cir. 2008); see also *Dell Computer Corporation*, 121 FTC 616 (1996).

124. See Federal Trade Comm'n, Statement of Commissioner Terrell McSweeney *supra* note 121.

of injunctive relief was an unfair method of competition.¹²⁵ In the *Motorola* case, the FTC claimed that Motorola “breached its FRAND obligations by seeking to enjoin and exclude implementers of its SEPs” and that “Motorola filed, and [parent company] Google prosecuted, patent infringement claims before the United States International Trade Commission.”¹²⁶ These cases led some commentators to observe the FTC’s actions “logically and necessarily depend on the presumption that protecting a valid SEP against infringement by obtaining injunctive relief is itself anticompetitive.”¹²⁷ Denial of injunctive relief, and going so far as to assert that SEP owners are never entitled to injunctive relief, is an explicit response to alleged patent holdup.

In other cases, the FTC has been more explicit about patent holdup driving its position. For example, in 2012, in a statement of public interest submitted in “Certain Wireless Communication Devices, Portable Music and Data Processing Devices, Computers, and Components Thereof”, the FTC claimed that the issuance of an exclusion order might facilitate patent holdup.¹²⁸ In making this argument, the FTC asserted that even the mere threat of patent holdup could harm consumers by deterring innovation and reducing the value of standardized technology.¹²⁹ Of course, the mere threat of patent holdup was all that existed in this case; evidence of actual patent holdup did not exist.

Most recently, in 2017, the FTC filed a lawsuit against Qualcomm, an innovator active in the wireless technology space and a significant contributor to the 3G, 4G, and 5G SDOs, asserting their licensing program for their patents was anticompetitive.¹³⁰ In 2019, Judge Lucy Koh agreed with the FTC, concluding that Qualcomm’s unfair licensing practices had enabled the company to charge “unreasonably high royalty rates” for its CDMA and LTE chips.¹³¹ This claim of “high royalty rates” also sounds in patent holdup and royalty stacking. This case is further discussed below, as evidence of the FTC’s continued pursuit of cases based on patent holdup and royalty stacking.

125. Complaint, *In re Robert Bosch GmbH*, ¶ 20, Dkt. No. C-4377, 2012 WL 5944820 (Nov. 21, 2012).

126. Complaint, *In re Motorola Mobility LLC*, ¶¶ 26–26, Dkt. No. C-4410, 2013 WL 3944149 (July 23, 2013).

127. Joshua D. Wright & Douglas H. Ginsburg, *Whither Symmetry? Antitrust Analysis of Intellectual Property Rights at the FTC and DOJ*, 9 COMP. POL’Y INT’L 41 (2013).

128. Third Party U.S. Fed. Trade Comm’n Statement on Public Interest, Inv. No. 337-TA-745, Dkt. No. 482234 (May 9, 2012).

129. *Id.* at 3.

130. *FTC v. Qualcomm Inc.*, 411 F. Supp.3d 658 (N.D. Cal. 2019), <https://www.justice.gov/atr/case-document/file/1236026/download> [<https://perma.cc/6RX7-XZUL>].

131. *Id.* at 698–812.

C. Indirect Actions Favoring Implementers

Although better known for its direct actions in favor of implementers, as described above, the FTC has also influenced the SDO ecosystem in other less-direct ways, such as through its 2011 report entitled “The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition.”¹³² The proposal in this report, while not conferring any direct power on the FTC to set license terms, would have allowed the FTC to bring actions against innovators for allegedly anticompetitive pricing. Additionally, in discussing injunctive relief in the standards arena, the report notes that “Hold-up in the standard setting context can be particularly acute” and that the “infringer may face significant hardship” if an injunction is granted.¹³³ Moreover, in conjunction with the DOJ, the FTC has also influenced policy with respect to patent holdup. For example, in the 2007 joint guidelines on antitrust and IP, the DOJ and the FTC noted that patent holdup could cause competitive harm.¹³⁴

On its own, however, the DOJ has had significant impact on intellectual property policy and SDOs through its published and printed remarks. One DOJ representative public stated that patent holdup was “at the forefront of many of the Antitrust Division’s intellectual property (IP) related enforcement and advocacy efforts.”¹³⁵ The ultimate turn came in 2012, when a head of the Antitrust Division of the DOJ urged SDOs to alter their intellectual property rights policies “to seize the opportunity to eliminate some of the ambiguity that requires difficult ex post deciphering of the scope of a F/RAND commitment.”¹³⁶ These remarks, and others made around the same time, set into motion what would end up as the 2015 IEEE Amendments to the SDO’s IPR policies. Additionally, the DOJ through its business review letter process has had the opportunity to

132. Suzanne Michel, William Cohen, William Adkinson, Erika Meyers, Suzanne Drennon Munck, Joel Schrag, Karen Goldman, Christopher Bryan & Christopher Falcone, *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition*, U.S. FED. TRADE COMM’N (2011), <http://www.ftc.gov/os/2011/03/110307patentreport.pdf> [<https://perma.cc/U88C-VSWQ>].

133. *Id.* at 234.

134. U.S. DEP’T OF JUST. & FED. TRADE COMM’N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION, 42 (2007).

135. See Fiona M. Scott-Morton, Deputy Assistant Att’y Gen. for Econ. Analysis, Antitrust Div., U.S. Dep’t of Justice, *The Role of Standards in the Current Patent Wars*, presented at the Charles River Associates Annual Brussels Conference: Economic Developments in European Competition Policy (Dec. 5, 2012).

136. Renata Hesse, Deputy Assistant Att’y Gen., Antitrust Div., U.S. Dep’t of Justice, Six “Small” Proposals for SDOs Before Lunch (October 12, 2012).

consider various policies and procedures that SDOs have implemented.¹³⁷ This section will first describe in detail the policy campaign waged by the DOJ, before turning to the how the statement of the DOJ official was manifest in the 2015 IEEE Amendments, followed by the Business Review Letter issued by the DOJ that essentially approved the amendments and went even further.

1. The DOJ Against “Patent Holdup”

In October 2012, during a Patent Roundtable convened by ITU-T in Geneva Switzerland, then DOJ Deputy Assistant Attorney General Renata Hesse gave a lunchtime presentation calling for change in FRAND policies of SDOs, entitled “Six ‘Small’ Proposals for SSOs Before Lunch.”¹³⁸ Among other things, Hesse argued that innovators bound by a FRAND commitment should be limited in their ability to seek injunction and that SDOs should explore guidelines for what constitutes FRAND rates.¹³⁹ In her remarks, she highlights concerns about patent holdup as a risk to innovation and competition.¹⁴⁰ To avoid patent holdup, she notes “Standards bodies whose members choose to take [the above-mentioned steps] will help the market for the standardized product to work efficiently by lowering costs, increasing transparency, and reducing uncertainty, all of which benefit innovation and competition.”¹⁴¹ Among Ms. Hesse’s “six small proposals” was a suggestion that the ability to seek injunctive relief should be limited if the patent holder had made a FRAND commitment and a proposal to lower the transaction costs of FRAND by setting guidelines for what would be a FRAND rate, among others.¹⁴²

While this speech by Ms. Hesse is usually credited for pushing the IEEE to action, there were multiple times when DOJ officials made similar statements. For example, in May 2012, Ms. Scott-Morton delivered a presentation entitled “Antitrust Issues regarding Standard Essential Patents” at a semi-annual meeting of the American National Standards Institute (ANSI) Intellectual Property Rights Policy Committee (IPRPC). During her remarks, she stated that injunctive relief should not be available for SEP owners: By participating in SSO and agreeing to

137. Jorge Contreras, *Taking It to the Limit: Shifting U.S. Antitrust Policy Towards Standards Development*, 103 MINN. L. REV. HEADNOTES 66, 69 tbl.1 (2018) (listing nine DOJ Standards-Related Business Review Letters).

138. See Hesse, *supra* note 136.

139. *Id.* at 9–10.

140. *Id.* at 4–5.

141. *Id.* at 10.

142. *Id.* at 9–10.

FRAND, the patent owner restricts its ability to price and exclude.” Additionally, she noted that the DOJ was urging SDOs to make changes to their IPR policies, stating that “the Division will continue to . . . encourage improvements by SSOs” and “SSOs have been slow to change rules in response to conflict and litigation.”¹⁴³ Ms. Hesse, in addressing the same body in November 2012 reiterated that SDOs should change their IPR policies.¹⁴⁴

In December 2012, Ms. Scott-Morton delivered a speech entitled “The Role of Standards in the Current Patent Wars,” in which she said, “One of the actions [the DOJ has] taken is to advocate for changes at the SSO level to address the inability of the current FRAND commitment to *protect licensees from holdup*,” specifically by limiting the availability of injunctive relief for SEP owners.¹⁴⁵ That same month, Ms. Scott-Morton gave a speech entitled “Antitrust Enforcement in High-Technology Industries: Protecting Innovation and Competition” at the 2012 NYSBA Annual Antitrust Forum, where she concluded by noting that the DOJ is “actively engaged with both firms and [SDOs] to encourage behavior that benefits competition.”¹⁴⁶

In November 2013, Ms. Hesse gave a speech entitled “The Art of Persuasion: Competition Advocacy at the Intersection of Antitrust and Intellectual Property,” where she praised court decisions that preferred implementers over innovators and explained that part of the DOJ’s advocacy was aimed at encouraging SDOs to make IPR policies more procompetitive, without any explanation about what was anticompetitive in the existing policies.¹⁴⁷

At no time during any of the DOJ speeches were the statements about patent holdup or decreased competition and innovation supported by any evidence; rather, the agency promoted this policy based on a blanket assumption that contributors, and their SEP rights, were bad for competition.

143. Although this speech by Ms. Scott-Morton does not seem to be available on the Department of Justice website, Ms. Hesse references Ms. Scott-Morton’s speech during her own November 2012 speech to ANSI IPRPC. *See* Renata Hesse, Deputy Assistant Att’y Gen., Antitrust Div., U.S. Dep’t of Justice, The Antitrust Division and SSOs: Continuing the Dialogue (Nov. 8, 2012).

144. *Id.*

145. *See* Scott-Morton, *supra* note 135.

146. Renata Hesse, Deputy Assistant Att’y Gen., Antitrust Div., U.S. Dep’t of Justice, Antitrust Enforcement in High-Technology Industries: Protecting Innovation and Competition, 19 (Dec. 7, 2012).

147. *See* Renata Hesse, Deputy Assistant Att’y Gen., Antitrust Div., U.S. Dep’t of Justice, The Art of Persuasion: Competition Advocacy at the Intersection of Antitrust and Intellectual Property (Nov. 8, 2013) <https://www.justice.gov/atr/file/518356/download> [<https://perma.cc/4W7Q-8F5Y>].

2. The 2015 IEEE Amendments

The IEEE took the remarks from the two DOJ officials described above to heart. In a late added agenda item to the March 2013 IEEE-SA Standards Board Patent Committee (PatCom) meeting, Phil Wennblom from Intel suggested the committee take up “Challenges Set by the DoJ.”¹⁴⁸ The minutes from that meeting reflect that “Phil Wennblom noted that the DoJ had set out ‘Six ‘small’ proposals for SSOs Before Lunch’ during the ITU-T Patent Roundtable in October 2012 as a challenge to SDOs to consider actions they could take to *help promote competition among implementers* of a standard.”¹⁴⁹ An ad hoc committee was then formed to “discuss the DOJ challenges and provide recommendations to PatCom” at its next meeting.¹⁵⁰ According to the minutes of the June PatCom meeting, “meeting attendees were given an opportunity to offer comments on each of the six US DOJ suggestions [from Ms. Hesse’s speech]. There was much good discussion.”¹⁵¹

In February 2015, IEEE announced that its board of directors had approved amendments to its IPR policies stating: “The policy must balance several concerns, including respect for the rights of patent-holders and assurance that licenses to standards-essential patents are available on reasonable and nondiscriminatory terms to all implementers.”¹⁵² While the sentiment sounds balanced, the substance of the 2015 IEEE Amendments was very much implementer-focused. In fact, as one commentator noted at the time, the changes “are expressly aimed at driving down compensation” innovators will receive for licensing patents to implementers.¹⁵³

Although the scope of the amendments is broad, there are two primary areas altered by the amendments: first, how to define a “reasonable rate” as part of a FRAND commitment, and second, prohibiting a contributor who has made a FRAND commitment from

148. See IEEE-SA Standards Board Patent Committee, U.S. Dep’t of Justice, <https://standards.ieee.org/content/dam/ieee-standards/standards/web/governance/patcom/0313mins.pdf> [<https://perma.cc/287X-KB5B>].

149. *Id.* at 3.

150. *Id.*

151. IEEE-SA PatCom Minutes, 3 (June 12, 2013) <https://standards.ieee.org/content/dam/ieee-standards/standards/web/governance/patcom/0613mins.pdf> [<https://perma.cc/4F8P-9Z7Q>].

152. Press Release, IEEE, IEEE Statement Regarding Updating of its Standards-Related Patent Policy (Feb. 8, 2015) [<https://perma.cc/TV9H-V6RK>].

153. Ray E. Hoffinger, *The 2015 DOJ IEEE Business Review Letter: The Triumph of Industrial Policy Preferences Over Law and Evidence*, CPI ANTITRUST CHRONICLE, Mar. 2015, at 2.

seeking injunctive relief against an infringing implementer.¹⁵⁴ Both of these areas of change shift the balance very squarely to favor the implementers, especially the prohibition on injunctive relief. Patent holders have a right to seek injunctive relief and the Supreme Court has held that there are no categorical exceptions to this right.¹⁵⁵ By removing the threat of injunction, implementers are discouraged from negotiating in good faith and accepting a license; after all, the worst that could happen is that they would be required to pay court-ordered royalty damages that, in many cases, are less than a negotiated-for license. Thus, the 2015 IEEE Amendments perversely encourage implementers to not take licenses and instead infringe.¹⁵⁶

3. The DOJ's BRL Letter in Response

In addition to its public comments about patent holdup and royalty stacking, the DOJ has more concretely affected policies regarding SDOs and SEPs through its issuance of non-binding business review letters, or BRL. BRL are intended to set forth the Antitrust Division's current enforcement intentions,¹⁵⁷ in these cases with respect to changes to IPR policies as proposed by SDOs. Many SDOs have sought, and received, business review letters.¹⁵⁸

Oddly, in the case of the IEEE, the DOJ did not just acknowledge as non-problematic the 2015 IEEE Amendments, but instead applauded the changes. While the policy was being developed, commentators noted that the revised IEEE policy could invoke antitrust concerns. For example, Gregory Sidak opined that the proposed changes could facilitate collusion amongst implementers and result in a suppression of royalty rates paid for use of SEPs.¹⁵⁹ Similarly, a representative from Ericsson stated that the proposed amendments to the policy "constitute[d] the collective establishment of mandatory, uniform license terms ... akin to a buyer's

154. Draft IEEE Standard Board Bylaws, Institute of Electrical and Electronics Engineers (2014) https://grouper.ieee.org/groups/pp-dialog/drafts_comments/SBBylaws_100614_redline_current.pdf [<https://perma.cc/9RJJ-MYF6>].

155. *eBay v. MercExchange, LLC*, 547 U.S. 388, 393–94 (2006) (denying categorical exceptions to a party's ability to seek and obtain injunctive relief for patent infringement).

156. David J. Teece & Edward F. Sherry, *The IEEE's New IPR Policy: Did the IEEE Shoot Itself in the Foot and Harm Innovation?* 6 (Tusher Center for the Management of Intellectual Capital, Working Paper Series No. 13, 2016) <https://businessinnovation.berkeley.edu/wp-content/uploads/2014/07/Tusher-Center-Working-Paper-No.-13.pdf> [<https://perma.cc/L5P2-3TKP>].

157. See Antitrust Division Business Review Procedure, 28 C.F.R. 50.6 (2020).

158. See Contreras, *supra* note 137, at tbl.1.

159. Letter from J. Gregory Sidak, Chairman, Criterion Economics, L.L.C., to Hon. Renata Hesse, Deputy Assistant Att'y Gen., U.S. Dep't of Justice (Jan. 28, 2015).

side cartel.”¹⁶⁰ Because of these and other concerns, the IEEE requested a Business Review Letter (BRL) to address “vague of specific antitrust concerns” including that adding definitions to the term “reasonable rate” . . . could amount to “buyer-side price fixing.”¹⁶¹

On February 2, 2015, the DOJ responded with a BRL stating it did not intend to take enforcement action against the IEEE with respect to the proposed amendments to the IEEE IPR policy.¹⁶² The letter, written by Ms. Hesse, is perhaps unsurprising in its approval of the amendments, given that IEEE was inspired to amend their IPR policy based on Ms. Hesse’s 2012 remarks. What is surprising is that the letter “says little or nothing about the policies reflected in patent law” and ignores “decades of settled antitrust law.”¹⁶³ To be fair, some consider the DOJ’s decision “not to interfere with the inner workings of” a particular SDO to be the best policy, approving of the BRL from a policy standpoint at least.¹⁶⁴

The 2015 BRL represented a departure from previous FTC and DOJ policy, where the agencies stated that they do “not advocate that SDOs adopt any specific disclosure or licensing policy, and the Agencies do not suggest that any specific disclosure or licensing policy is required.”¹⁶⁵ This flexible policy was desirable because, as SDOs are unique in size, organization, and scope, the SDOs might “need to cater to different needs of their members.”¹⁶⁶ The BRL also skips over concerns the DOJ has previously raised when an SDO forayed into this mode of selecting implementers over innovators. For example, in 2007, Hill Wellford, Counsel to the Assistant Attorney General, Antitrust Division, stated “SDO buyer-cartel behavior has the real potential to damage innovation incentives, and therefore is properly the subject of antitrust scrutiny.”¹⁶⁷

160. IEEE-SA Standards Board Patent Committee, *IEEE-SA Patent Policy, Draft Comments ID No. 38*, 16 (comments of Dina Kallay, Director for IP and Competition, Ericsson), https://grouper.ieee.org/groups/pp-dialog/drafts_comments/PatCom_sort_by_commentID_040314.pdf [<https://perma.cc/EL66-GYQ2>].

161. Letter from Michael A. Lindsay, Esq., Dorsey & Whitney LLP, to Hon. William J. Baer, Assistant Att’y Gen., U.S. Dep’t of Justice 18–19 (Sept. 30, 2014), <https://www.justice.gov/sites/default/files/atr/legacy/2015/02/17/311483.pdf> [<https://perma.cc/8JCD-6N6G>].

162. Business Review Letter from Hon. Renata B. Hesse, Acting Assistant Att’y Gen., U.S. Dept. of Justice, to Michael A. Lindsey, Esq., Dorsey & Whitney, L.L.P. (Feb. 2, 2015), <http://www.justice.gov/atr/public/busreview/311470.htm> [<https://perma.cc/THU5-Q35Y>].

163. See Hoffinger, *supra* note **Error! Bookmark not defined.**, at 2.

164. See Auer & Morris, *supra* note 97, at 340–41.

165. U.S. DEP’T OF JUST. & FED. TRADE COMM’N, *supra* note 134, at 48.

166. *Id.* at 33 n.5.

167. Hill B. Wellford, Counsel, to the Assistant Att’y Gen., Antitrust Issues in Standard Setting 15 (Mar. 29, 2007), <http://www.justice.gov/atr/public/speeches/222236.pdf> [<https://perma.cc/8VBA-44CG>].

Similarly, on at least three prior occasions, the DOJ has declined to provide a blanket endorsement of policies that allowed implementers to jointly set or negotiate fees.¹⁶⁸ Despite this history, the 2015 BRL issued to IEEE says nothing about these risks, nothing about the likelihood that coordinated efforts by implementers would depress licenses paid for use of SEPs, and, sadly, did not include any consideration of competitive issues for innovators at all.¹⁶⁹

The only pro-competitive justifications offered in the BRL are questionable. First, the DOJ cites mitigation of patent holdup as a justification for not enforcing antitrust laws, but as noted above, patent holdup is a theoretical concern that has not been proven to exist generally, let alone regarding IEEE standards.¹⁷⁰ Second, the DOJ justifies the BRL on the basis of addressing the “broad problem of uncertainty” with respect to FRAND. This uncertainty is lacking in evidence and, even if it were a demonstrable problem, the 2015 IEEE Amendments do little to cure it.¹⁷¹ Finally, the DOJ focused on patent holdup without considering reverse holdup (or holdout) by implementers, who seek to use standardized technology without paying fair consideration for it and without acknowledging that the 2015 IEEE Amendments would drastically reduce royalties being paid by implementers to innovators without any evidence that patent holders had been previously systematically overpaid.¹⁷²

The BRL also “went well beyond [the DOJ’s] mission” by endorsing a policy choice, rather than simply announcing enforcement intent.¹⁷³ Another commentator noted the BRL is “an expression of the industrial policy preference of [the 2015] DOJ for potential short-term price reductions at the expense of providing long-term incentives to engage in R&D for technologies useful in standards,” or basically preferencing implementer over innovator.¹⁷⁴ This perspective was reinforced, after the BRL, by statements by the DOJ’s Renata Hesse: “Our [Business Review] letter helped the IEEE clarify the scope of licensing commitments made by participants in its standard setting process, which in turn will facilitate licensing negotiations and mitigate the risk of hold-up *giving*

168. See Hoffinger, *supra* note 153, at 5.

169. *Id.* at 6.

170. *Id.* at 17–19.

171. *Id.* at 20.

172. The IEEE’s New IPR Policy, *supra* note 154, at 2; J. Gregory Sidak, *The Antitrust Division’s Devaluation of Standard Essential Patents*, 104 GEO. L.J. ONLINE 48, 49 (2015), <https://www.criterioneconomics.com/docs/antitrust-divisions-devaluation-of-standard-essential-patents.pdf> [<https://perma.cc/Q3TD-3CGG>].

173. See Wong-Ervin & Wright, *supra* note 3, at 52–53.

174. See Hoffinger, *supra* note 153.

implementers greater confidence in using the IEEE's standards for developing new products."¹⁷⁵

D. After-Effects and Impact on SDO Space

The direct and indirect actions of the FTC and the DOJ have had a negative impact on innovation, collaboration, and competition in the SDO space. Although these actions were premised on the ideas of correcting a perceived imbalance between contributors and implementers created by patent holdup and royalty stacking, the fact that patent holdup and royalty stacking are not actually present in the SDO ecosystem means that the corrections imposed by the FTC and the DOJ have instead tipped the balance in favor of implementers in ways that have harmed contributors and SDO participation more broadly. As commentators have expressed, specifically in reference to the 2015 IEEE Amendments, the "delicate balance of interests in favor of implementers of standards and against the interests of patent holders who have contributed their technology for use in standards" has been irrevocably upset.¹⁷⁶ This section explains the fallout to innovation that has followed the various agency actions.

1. Reaction Within SDOs

The actions of the DOJ and the FTC have had clear effects on SDOs. Some of the effects include contributors deciding to curtail or even cease their participation in SDOs. Other effects include slowed innovation within the SDOs due to these issues. Moreover, these effects have had a cascading impact on SDOs in terms of legitimacy of the standards.

Perhaps the clearest example of contributor reaction to agency action is seen within the IEEE itself. A number of industry participants, including some of the most prodigious contributors, have stated they will not comply with all, or at least certain aspects, of the new IPR policies.¹⁷⁷ For example, Nokia wrote in a letter to IEEE in November 2014 that, if the amendments were passed, "Nokia will not make its patents available for licensing."¹⁷⁸ Ericsson expressed a larger concern: "Given that

175. Renata B. Hesse, *Antitrust: Helping Drive the Innovation Economy* (Feb. 5, 2016), U.S. DEP'T OF JUST., <https://www.justice.gov/opa/speech/principal-deputy-assistant-attorney-general-renata-b-hesse-delivers-remarks-global> [<https://perma.cc/Q647-F4SS>] (emphasis added).

176. See Teece & Sherry, *supra* note 156, at 5.

177. *Id.* at 12.

178. Ron D. Katznelson, Presentation, Will New IEEE Standards Incorporate Patented Technologies Under the Proposed Patent Policy? (Dec. 2014), at 12, <https://slidelegend.com/will-new-ieee-standards-incorporate-patented-technologies-under-the->

Ericsson will not be able to provide [Letters of Assurance] under the new policy, design around Ericsson's technology would be necessary, but may not be practically feasible and is likely to result in significant loss in system performance or reliability. Depriving further IEEE standards of such superior solutions may cause future Wi Fi standard releases to fail to meet market requirements."¹⁷⁹ Qualcomm and Interdigital also announced early that they did not intend to comply.¹⁸⁰ Huawei, previously a significant contributor to the Wi Fi standard, went over four years without submitting any patent assurance forms, reducing the clarity of patent coverage surrounding IEEE-SA standards.¹⁸¹

As far as changing working conditions within the SDO itself, engineers working on IEEE's Wi Fi standard have described the effects of the 2015 IEEE Amendments as "delay and chaos," causing "a loss of momentum" and resulting in a "broken process."¹⁸² Scholars studying the impact of the amendments are finding similar negative effects. For example, Ron Katznelson has looked at how submissions of letters of assurance are being affected, finding that there is a 90% decline in letters of assurance and the standardization process is being delayed due to this.¹⁸³ Kirti Gupta and Georgios Effraimidis have studied how the policy

¹⁷⁹ec11691723dd57baa94267.html [https://perma.cc/6JFM-P44L] (quoting Nokia letter to IEEE of November 18, 2014).

¹⁷⁹. *Id.*

¹⁸⁰. Teece & Sherry, *supra* note 156, at 11; *see also*, Letter from Lawrence F. Shay, Exec. Vice President of Intellectual Prop., Interdigital, Inc., to David Law, Patent Comm. Chair, IEEE-SA Standards Board (Mar. 24, 2015), <http://wpuploads.interdigital.com.s3.amazonaws.com/uploads/2015/03/Letter-to-IEEE-SA-PatCom.pdf> [https://perma.cc/2GHQ-TCLX]; Letter from Gustav Brismark, Vice President, Strategy & Portfolio Mgmt., Ericsson AAB, to Eileen M. Lach, Gen. Counsel & Chief Compliance Officer, IEEE (Oct. 21, 2014), *cited in* Wong-Ervin & Wright, *supra* note 3, at 53 n.8.

¹⁸¹. Richard Lloyd, *Huawei joins IEEE patent refuseniks four years since controversial policy change*, INTELL. ASSET MGMT. (May 17, 2019), <https://www.iam-media.com/frandseps/huawei-joins-ieee-patent-refuseniks-four-years-controversial-policy-change> [https://perma.cc/46DU-MWV6].

¹⁸². *See* MINUTES (UNCONFIRMED) IEEE802 LMSC EXECUTIVE COMMITTEE MEETING (Jan. 22, 2016), http://www.ieee802.org/minutes/2016_01/2016-01-22-minutes-v1.pdf [https://perma.cc/9VGL-FXNJ].

¹⁸³. *See* Ronald Katznelson, *Symposium on Antitrust, Standard Essential Patents, and the Fallacy of the Anticommons Tragedy*, Berkeley, CA, *The 2015 IEEE Policy on Standard Essential Patents – The Empirical Record* (2016) <http://bit.ly/IEEE-LOAs> [https://perma.cc/R6JC-UE6Z]. This work has been questioned by IPlytics, which claims more letters of assurance were submitted and new standardization work has commenced since implementation of the 2015 IEEE Amendments). *See Empirical Studies on patenting and standardization activities at IEEE*, IPLYTICS GMBH, https://www.iplytics.com/wp-content/uploads/2018/01/IPlytics_2017_Patenting-and-standardization-activities-at-IEEE.pdf [https://perma.cc/V64G-TZ7T] (2016).

changes have impacted other aspects of standards development.¹⁸⁴ Focusing on patent-intensive standards, IEEE 802 LM SC, Gupta and Effraimidis found that positive letters of assurance (where the patent owner agrees to license its SEPs under the required terms) had dropped by 91% and negative letters of assurance, where the patent owner specifically declines to give assurances regarding licensing, were increasingly submitted, with more negative letters being submitted than positive letters during their study period.¹⁸⁵ They also determined that the working groups in this area were taking longer to complete the standardization process.¹⁸⁶

It is more difficult to pinpoint, precisely, how the FTC's direct actions against individual SDO contributors has negatively impacted SDOs more generally: other than the obvious perspective that these targeted contributors are likely to be cautious about reengaging in the same behavior. However, Professors Epstein, Kieff, and Spulber have assessed the negative effects that would be caused if the FTC were to act on the proposals in its report entitled "The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition."¹⁸⁷ Given that the background of this report is to address patent holdup, including in the SDO setting, the professors' assessment provides a valuable perspective on how the FTC's actions in the SDO space will have a negative impact. In particular, the professors explain how SDOs have long balanced the interests of both contributors and implementers, and that the interventions proposed by the FTC would interfere with this balance.¹⁸⁸ More troublesome is the professors' conclusion that the FTC's proposal would create SDOs that do not work for any party.¹⁸⁹

Finally, it is important to note that the negative impacts within an SDO can have cascading effects beyond just slowing work and causing contributors to opt out of participation. For example, given the concerns about letters of assurance at the IEEE, the American National Standards Institute (ANSI) has declined to approve two recent Wi-Fi standards from

184. Kirti Gupta & Georgios Effraimidis, *IEEE Patent Policy Revisions: An Empirical Examination of Impact* (March 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3173799 [<https://perma.cc/BB3Z-R3KV>].

185. *Id.* at 6–8.

186. *Id.* at 8.

187. Richard A. Epstein, F. Scott Kieff, & Daniel F. Spulber, *The FTC, IP, and SSOs: Government Hold-up Replacing Private Coordination*, 8 J. COMP. L. & ECON. 1 (2012).

188. *Id.* at 8.

189. *Id.* at 13–15.

the IEEE.¹⁹⁰ ANSI is a private, non-profit organization that coordinates US voluntary standardization efforts and provides “a framework for fair standards development and quality conformity assessment systems and continually works to safeguard their integrity.”¹⁹¹ ANSI’s refusal to approve signifies that the quality and reputation of the Wi Fi standards have been harmed by the 2015 IEEE Amendments.¹⁹²

2. Far Reaching Effects

The effects of the FTC and DOJ actions based on patent holdup have extended beyond responses by the SDOs, contributors, and implementers. Courts in this country have relied on the 2015 IEEE Amendments, applauded by the DOJ, in crafting their opinions. For example, the judge deciding *HTC Corp. v. Telefonaktiebolaget LM Ericsson* pointed to the IEEE bylaws (where the IPR policies are included) to define a “reasonable rate.”¹⁹³ Implementers have also regularly used the 2015 IEEE Amendments, the policy statements of the DOJ, and the FTC lawsuits in arguing their positions before the courts. For example, at a panel discussion held in 2020, a number of implementers reiterated the notion that a contributor’s ownership of an SEP bound the innovator to a “duty to deal” with any and all comers, parroting the FTC’s position in its lawsuit against Qualcomm, and in effect turning the FRAND commitment into a compulsory license.¹⁹⁴

Foreign competition enforcement agencies and courts have also relied on these direct and indirect actions of the FTC and DOJ to make changes to or guide their own analysis of anticompetitive behavior. For example, the FTC reached consent agreements with both Bosch and Motorola Mobility/Google that tipped the balance in favor of implementers.¹⁹⁵ The Bosch agreement prohibits the company from

190. Leah Nylén, *Electrical Engineer Institutes New Wifi Measures Won't Get American National Standard Designation*, MLEX MARKET INSIGHT (Mar. 11, 2019, 12:00 AM), <https://mlexmarketinsight.com/insights-center/editors-picks/antitrust/cross-jurisdiction/electrical-engineer-institutes-new-wifi-measures-wont-get-american-national-standard-designation> [<https://perma.cc/WQ8K-KCXX>].

191. ANSI, *About ANSI Overview*, <https://www.ansi.org/about/introduction> [<https://perma.cc/UG9U-RXF9>].

192. See Nylén, *supra* note 190.

193. *HTC Corp. v. Telefonaktiebolaget LM Ericsson*, 2018 U.S. Dist. LEXIS 212292 (E.D. Tex. 2018).

194. James Edwards, *Do Innovators Give Up Their IP Rights? Implementer Panel Says Yes*, CONSERVATIVES FOR PROPERTY RIGHTS (Jan. 31, 2020), www.property-rts.org/post/do-innovators-give-up-their-ip-rights-antipatent-panel-says-yes [<https://perma.cc/TV3U-QKL8>].

195. Wong-Ervin & Wright, *supra* note 3, at 53.

seeking or enforcing injunctive relief for its SEPs.¹⁹⁶ The Motorola agreement prohibits the company from seeking or enforcing injunctive relief anywhere in the world.¹⁹⁷ After these consent agreements were reached, a number of antitrust or competition authorities around the globe adopted similar approaches.¹⁹⁸ Similarly, the DOJ's actions have had international reach. Just days after the DOJ issued the 2015 BRL, Chinese enforcers remarked that letter validated its own decisions to disfavor innovative companies and preference implementers.¹⁹⁹

Of course, this is not just a case of foreign countries looking towards the United States' competition enforcement; the IEEE affirmatively engaged in advocacy abroad with respect to the 2015 IEEE Amendments, relying heavily on the BRL in their pitch.²⁰⁰ For example, in meeting with China's National Development and Reform Commission (NRDC), IEEE officials explained that the United States government had approved the policy and encouraged NRDC officials to launch investigations into various SEP owners, including Qualcomm, Interdigital, Dolby, Nokia, HDMI, and Ericsson.²⁰¹ Because the United States is rather unique in its reliance on administrative agencies, other countries often view things like the BRL as "an authoritative interpretation of [United States'] antitrust law legalizing buyer cartel behavior towards" innovators.²⁰²

IV. FOLLOWING THE DOJ'S LEAD TO STRIKE THE RIGHT BALANCE

"There is a fine balance between honoring the past and losing yourself in it." – Eckhart Tolle²⁰³

196. *Id.*

197. *Id.*

198. *Id.* Wong-Ervin and Wright specifically point to Canada, China, Korea, and Japan. *See also* Alden Abbot, *US Government Antitrust Intervention in Standard-Setting Activities & the Competitive Process*, 18 VAND. J. ENT. & TECH. L. 225, 246 (2016) (noting that countries such as China and Korea take cues from enforcement actions in the United States).

199. Koren W. Wong-Ervin, *Responses to Questions Submitted for the Record from Subcommittee Chairman Marino, Before the U.S. House of Representatives*, at 2 (August 17, 2017).

200. David L. Cohen, *The IEEE 2015 Patent Policy – A Natural Experiment in Devaluing Technology*, KIDON IP BLOG (Aug. 12, 2019), <https://www.kidonip.com/standard-essential-patents/the-ieee-2015-patent-policy-a-natural-experiment-in-devaluing-technology/> [<https://perma.cc/HW9W-GZHC>].

201. *Id.* These investigations are well-known tools to allow Chinese companies to use western technology at cheap or near-free rates.

202. *See* Hoffinger, *supra* note 151, at 3.

203. Eckhart Tolle, *On the Beauty of Today*, OPRAH.COM, <https://www.oprah.com/spirit/Eckhart-Tolle-Writes-About-the-Beauty-of-Today-for-Os-Anniversary> [<https://perma.cc/WUX4-2GW7>].

While the above discussion highlights actions the DOJ and the FTC have taken that have negatively impacted the balance between contributors and implementers, there has been a significant change in the last few years. Specifically, the FTC and the DOJ have taken quite divergent positions on antitrust policy when it comes to patents and, more specifically, SEPs. The FTC continues to impede innovation, collaboration, and competition in the standards development space, while the DOJ has reversed course and has begun to once again promote innovation and collaboration as an important part of competition. After considering these opposite perspectives, this section explains why it is critical for the DOJ to continue this path and for the FTC to seek balance and adopt a modern approach. Importantly, as the United States moves forward under a different administration with new priorities, it is key to understand why the current DOJ approach is the proper one for achieving the proper balance between contributors and implementers to foster innovation, collaboration, and competition.

A. *How the DOJ Has Changed Its Course*

Despite its historic role in disrupting the balance between contributor and implementer, the DOJ has recently been walking back from previous agency policy and remarks regarding patent holdup and royalty stacking.²⁰⁴ In November 2017, for example, DOJ Antitrust head Makan Delrahim expressed skepticism regarding the existence of the “so-called holdup problem” and noted its “shaky empirical foundations.”²⁰⁵ Mr. Delrahim skewered previous efforts of the DOJ and the FTC aimed at addressing patent holdup as “anathema to the policies underlying the intellectual property system” and a “serious threat to the innovative process.”²⁰⁶

Given the divergence in perspectives from the FTC and DOJ, it is helpful to think about innovation as being cultivated when both contributors and implementers are able to invest in and benefit from technology. The DOJ, it seems, is moving in this direction. For example,

204. Sonia Kuester Pfaffenroth, Peter J. Levitas & Dylan S. Young, *DOJ Changing Its Antitrust Approach to FRAND and SEPs*, INTELLECTUAL PROP. & TECH. L.J. (Apr. 2019), <https://www.arnoldporter.com/-/media/files/perspectives/publications/2019/04/doj-changing-its-antitrust-approach-to-frand.pdf> [<https://perma.cc/F4FF-47F4>].

205. Makan Delrahim, Assistant Att’y Gen., U.S. Dep’t of Justice, *Take it to the Limit: Respecting Innovation Incentives in the Application of Antitrust Law* at 4 (Nov. 10, 2017), <https://www.justice.gov/opa/speech/file/1010746/download> [<https://perma.cc/BWH7-6FSP>].

206. *Id.* at 5–7.

in January 2018, Assistant Attorney General for Antitrust, Andrew Finch, announced that the DOJ Antitrust Division had “begun scrutinizing what may appear to be buyer’s cartel or seller’s cartel behavior that’s designed to artificially shift bargaining leverage from [contributors] to [implementers] or vice versa. In particular, the Division is focused on rules of SDOs that purport to clarify the meaning of ‘reasonable and nondiscriminatory’ but that may instead serve to skew the bargain clearly in the direction of implementers.”²⁰⁷ These statements, and others of their type, go a long way towards reversing the DOJ’s course of harming contributors in the name of alleged patent holdup and royalty stacking.

Further, the DOJ’s efforts to restore the balance between contributors and implementers goes beyond just words. In December 2019, the DOJ, in conjunction with the United States Patent & Trademark Office (PTO) and the National Institute of Standards and Technology (NIST) issued a “Joint Policy Statement on Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments (2019 Joint Policy Statement).”²⁰⁸ This document fills a void left when, in December 2018, Mr. Delrahim withdrew assent from a 2013 Joint Policy Statement between the DOJ and PTO that advised that injunctions may not be appropriate with respect to patent infringement of SEPs.²⁰⁹ In addition to formally withdrawing the 2013 Joint Policy Statement, the 2019 Joint Policy Statement makes clear that “a patent owner’s F/RAND commitment is a relevant factor in determining appropriate remedies, but need not act as a bar to any particular remedy.”²¹⁰ The new Joint Policy Statement also points out this approach, which rejects a categorical exclusion of injunctive relief, is consistent with court precedent, including *eBay*.²¹¹

Perhaps the most explicit action that illustrates how the DOJ is walking back from its previous viewpoint about patent holdup and royalty stacking is the issuance of a new Business Review Letter in 2020. In September 2020, Assistant Attorney General Makan Delrahim issued a letter “intended to supplement, update, and append” the 2015 Business

207. See Cohen, *supra* note 200.

208. *Joint Policy Statement on Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments*, U.S. PAT. & TRADEMARK OFF., U.S. DEP’T OF JUST. & NAT’L. INS. STANDARDS AND TECH., Dec. 19, 2019, <https://www.justice.gov/atr/page/file/1228016/download> [<https://perma.cc/A9UE-9HLR>].

209. Makan Delrahim, Remarks at the 19th Annual Berkeley Stanford Advanced Patent Law Institute, Dec. 7, 2018, <https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-remarks-19th-annual-berkeley-stanford> [<https://perma.cc/NLG9-3LSA>].

210. See Joint Policy Statement, *supra* note 208.

211. *Id.*

Review Letter that had been issued by the Antitrust Division of the US Department of Justice (DOJ) to the IEEE.²¹² In part, the 2020 letter was issued because the 2015 letter was “cited, frequently and incorrectly, as an endorsement of the IEEE policy” and also to explain how US law and policy has “evolved in important ways over the last five years” in relation to SEPs.²¹³ Beyond chastising the IEEE for its mischaracterization of the 2015 DOJ letter, the 2020 DOJ letter explains a variety of legal and policy developments that have come to the fore over the past five years that render portions of the 2015 DOJ letter “inaccurate.”²¹⁴

As the DOJ notes in the 2020 letter, the 2015 letter had been misconstrued—and worse, purposefully misapplied—by the IEEE and others who have tried to harm innovation. Specifically, the IEEE and others have contended that the 2015 letter was an endorsement of the 2015 IEEE Amendments; rather, the 2015 DOJ letter was simply to announce that the DOJ would not challenge the proposed 2015 IEEE Amendments.²¹⁵ The DOJ notes further that this misapprehension about the 2015 DOJ letter has been used by foreign competition authorities in setting policies around the world, in part based on the IEEE’s advocacy and characterization of the 2015 DOJ letter.²¹⁶

The overarching approach the DOJ has taken in rebalancing the relationship between contributors and implementers, between competition and innovation, is what has been named the “New Madison” approach to the intersection of antitrust and patent law.²¹⁷ The DOJ’s “New Madison” approach includes four principles to ensure innovation, collaboration, and competition are balanced in standard setting. First, antitrust law should not be used as a tool to police FRAND commitments; these are contract issues better remedied in contract.²¹⁸ Second SDOs should not become vehicles for collusive action by implementers (which would reduce

212. Letter from Makan Delrahim Assistant Att’y Gen., U.S. Dep’t of Justice, to Sophia A. Muirhead, Gen. Counsel and Chief Compliance Officer, Inst. of Electrical and Electronics Eng’rs, Inc., at 1 (Sept. 10, 2020), <https://www.justice.gov/atr/page/file/1315291/download> [<https://perma.cc/7J2M-PHHC>] [hereinafter “2020 DOJ Letter”].

213. *Id.*

214. *Id.* at 3.

215. *Id.* at 2

216. *Id.* at 3.

217. *Division Update Spring 2018*, U.S. DEP’T OF JUST., <https://www.justice.gov/atr/division-operations/division-update-spring-2018/antitrust-division-embraces-new-madison-antitrust-and-intellectual-property-project> [<https://perma.cc/ZV59-379F>].

218. *Assistant Attorney General Makan Delrahim Delivers Keynote Address at University of Pennsylvania Law School*, U.S. DEP’T OF JUST. (Mar. 16, 2018), <https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-keynote-address-university> [<https://perma.cc/Z7ZG-ZEB6>].

incentives to innovate and encourage patent holdout).²¹⁹ Mr. Delrahim has warned against the “collective exertion of monopsony power” by implementers, allowing for collective holdout.²²⁰ This is especially problematic because SDO contributors have invested in the research and development, as well as patenting, even before the standard developments process has begun, whereas the implementers have little to no sunk cost.²²¹ Third, because patent rights include the right to exclude, SDOs and courts should surpass a high burden before adopting rules that restrict that right or amount to compulsory licensing.²²² Without this principle, implementers are encouraged to engage in efficient infringement; at worst, they will be on the hook for the reasonable royalties they should have paid from the get-go. Fourth, along with this right to exclude, unilateral and unconditional refusals to license a patent are per se legal under antitrust.²²³ While contract law may require an SEP-holder to deal with any willing licensee, the Sherman Act should not turn FRAND commitments into a compulsory licensing scheme.

It is heartening to see the DOJ attempt to restore balance between contributors and implementers, specifically by rejecting patent holdup and royalty stacking where there is no evidence of such. More than this, much of the rest of the world is taking the same position that the existence and extent of patent holdup and royalty stacking have been exaggerated. For example, a number of major SDOs have categorically denied that patent holdup is an issue for their organizations.²²⁴ Further, although the United States has been slow to question the existence and extent of patent holdup and royalty stacking, courts in the European Union have been bolder in their dismantling of these theories. In 2015, the European Court of Justice

219. *Id.*

220. *Assistant Attorney General Makan Delrahim Delivers Remarks at the 19th Annual Berkeley-Stanford Advanced Patent Law Institute*, U.S. DEP’T OF JUST. (Dec. 7, 2018), <https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-remarks-19th-annual-berkeley-stanford> [<https://perma.cc/ATF6-K3F5>].

221. *Id.*

222. *See* Delrahim Keynote, *supra* note 215.

223. *Id.*

224. Danielle Coffey & Brian Scarpelli, *Telecomm. Indus. Ass’n (TIA)*, Re: Federal Trade Commission Request for Comments and Announcement of Workshop on Standard-Setting Issues (Patent Standards Workshop, Project No. P11-1204) at 4 (June 14, 2011); Thomas E. Goode, Gen. Counsel, *Alliance for Telecomm. Indus. Solutions*, Request for Comments and Announcement of Workshop on Standard Setting Issues, Project No. P11-1204 at 1 (June 14, 2011); Patricia Griffin, Vice President and Gen. Counsel, *American National Standards Institute*, Re: Patent Standards Workshop, Project No. P11-1204 at 12 (June 21, 2011) (included in Comments of Am. Nat’l Standards Inst., June 10, 2011, Fed. Trade Comm’n Request for Comments and Announcement of Workshop on Standard-Setting Issues, Project No. P11-1204).

issued a landmark decision in *Huawei v. ZTE*.²²⁵ In this case, the ECJ clarified the obligations of parties with respect to FRAND negotiations, noting that if an implementer refused to take a license after an SEP owner had followed an appropriate set of steps to attempt to license its technology, the SEP owner was permitted to sue for patent infringement with the same rights and obligations as any other patent holder.²²⁶ In 2020, a variety of European courts applied the *Huawei* decision in allowing SEP owners to hold infringers liable. For example, in *Sisvel v. Haier*, the German Federal Court of Justice found that Haier did not act as a willing licensee and that a FRAND license did not mean simply the lowest price at which the technology had been offered.²²⁷ In *Unwired Planet*, the UK Supreme Court held that SEP owners are entitled to an injunction to prohibit infringement of SEPs that are found valid and infringed and that damages are an insufficient remedy.

B. How the FTC Is Persisting in Outdated Ways

While the DOJ has stepped away from blindly accepting that patent holdup and royalty stacking exist and has altered its treatment of SDOs and contributors accordingly, the FTC has explicitly held firm in its views—even as these views are being questioned. For example, in March 2018, Commissioner Terrell McSweeney of the FTC came out against the DOJ's shift in his statements "Holding the Line on Patent Holdup: Why Antitrust Enforcement Matters."²²⁸ In these remarks, he claimed that over 15 years of scholarship and bipartisan study supported the presumed risks of patent holdup and that "it would be unfortunate" for the FTC and DOJ specifically to "question their longstanding support for combatting holdup."²²⁹ Commissioner McSweeney supports his position that there is "ample evidence that patent holdup exists" by pointing to "panelists" who reported experiencing holdup as well as courts that have found "patent holders demanding far more than that to which they were entitled."²³⁰ He

225. *Huawei Techs. Co. Ltd. v. ZTE Corp.* (C-170/13) (CJEU 2015), <https://caselaw.4ipcouncil.com/cjeu-decisions/huawei-v-zte> [<https://perma.cc/BZB3-GDQE>].

226. *Id.*

227. Dr. Henrik Holzapfel & Christian Dolling, *Landmark Judgment for German Frand Law Published: Sisvel v. Haier*, MWE BLOG (July 10, 2020), <https://www.mwe.com/insights/landmark-judgment-for-german-frand-law-published-sisvel-v-haier/> [<https://perma.cc/2ZBG-GPFK>].

228. Statement of Commissioner Terrell McSweeney, Federal Trade Comm'n, *Holding the Line on Patent Holdup: Why Antitrust Enforcement Matters* (Mar. 21, 2018), https://www.ftc.gov/system/files/documents/public_statements/1350033/mcsweeney_-_the_reality_of_patent_hold-up_3-21-18.pdf [<https://perma.cc/AA6D-SZUT>].

229. *Id.*

230. *Id.*

claims that these findings are “consistent with holdup.”²³¹ Yet, while Commissioner McSweeney relies on many years of scholarship in support of patent holdup and royalty stacking, he ignores the persuasive, and often empirically tested, scholarship on the other side. Professor Jonathan Barnett pointedly addresses this disconnect in his article, “Has the Academy Led Patent Law Astray?”, questioning the academic narrative on which Commissioner McSweeney puts his confidence in.²³²

Another clear example of the FTC’s failure to come around to the modern way of thinking is illustrated by the schism between the FTC and the DOJ regarding the *FTC v. Qualcomm* case. The FTC’s role in this pursuing this case is described above; what is interesting is that the DOJ intervened in this case on Qualcomm’s behalf, favoring innovation over the outdated positions that the FTC was pressing. On May 2, 2019, the Antitrust Division of the DOJ took the unusual (unprecedented) step of submitting a Statement of Interest in the case to take a position contrary to its sister antitrust enforcement agency.²³³ The DOJ argued that, if the district court were to issue an “overly broad remedy,” it “could result in reduced innovation, with the potential to harm American consumers.”²³⁴ The FTC, not surprisingly, disagreed with the DOJ’s assessment: and, at the end of the day, the court agreed with the FTC and issued injunctive relief against Qualcomm. The DOJ, along with the Departments of Defense and Energy, stepped in again—in Qualcomm’s favor—when the case was appealed before the Ninth Circuit.²³⁵ Commentators have remarked that the FTC’s vigorous pursuit of this case is odd.²³⁶ In particular, one of the primary arguments that the FTC made against Qualcomm’s licensing program, the duty to deal with one’s competitors, had been essentially abrogated by the Supreme Court except in certain circumstances not present here.²³⁷

Not only is the FTC pressing a seriously outdated understanding of antitrust and patent law, the agency is doing so despite repeated indications that it is wrong. While the FTC prevailed in front of Judge

231. *Id.*

232. *See* Barnett, *supra* note 102.

233. FTC Statement, *supra* note 128.

234. *Id.*

235. Brief of the United States of America as Amicus Curiae in Support of Appellant and Vacatur, *Fed. Trade Comm’n v. Qualcomm Inc.*, (C.A.9 2019), <https://www.justice.gov/atr/case-document/file/1199191/download> [<https://perma.cc/U39J-UVBU>].

236. Geoffrey Manne & Ben Sperry, *Why the FTC Had to Abandon the Duty to Deal Argument Against Qualcomm*, TRUTH ON THE MARKET BLOG (Jan. 16, 2020), <https://truthonthemarket.com/2020/01/16/why-the-ftc-had-to-abandon-the-duty-to-deal-argument-against-qualcomm/> [<https://perma.cc/9HK4-V9H5>].

237. *Id.* (noting the FTC had to disclaim this argument on appeal).

Koh at the district court, this win was nearly immediately called into question by a panel of the Ninth Circuit that suspected the legitimacy of Judge Koh's opinion in staying the injunction.²³⁸ A separate panel of the Ninth Circuit ruled 3-0 against the FTC.²³⁹ In the midst of these hearings, the Department of Justice and other administrative agencies weighed in, all siding with Qualcomm and against the positions taken by the FTC. The errors of the FTC's position seem so clear to so many, and yet the agency persists—even to the point of filing an unsuccessful petition for en banc review at the Ninth Circuit.²⁴⁰

C. *Why Now is the Moment to Get the Balance Right*

Both the FTC and DOJ are responsible for enforcing antitrust laws in the United States. While at first blush the conflicted relationship between antitrust and patent law makes perfect sense, these two areas of law actually have a common goal: increased innovation. Patents provide a limited monopoly in exchange for innovation; antitrust incentivizes innovation as one of the axes of competition in which companies can compete for consumers. Although each of these areas of law may approach the encouragement of innovation in a different way, they both have innovation as an end goal. In looking at both the FTC and DOJ's recent behavior, particularly in the SDO ecosystem where much innovation is occurring, it is important that the DOJ's lead be followed.

Before explaining why the DOJ's viewpoint should prevail, it is important to consider whether the agencies' differing perspectives might, in fact, be advantageous. As FTC Chairman Joseph Simon noted, in September 2018, "Consistency across the two federal enforcement agencies is . . . beneficial," but that there may be room for "potential inconsistency" between the FTC and DOJ. Specifically, Simons held on to the older view: "[W]e also believe that hold-up raises potential antitrust issues, as well." Although Simons committed to "economically grounded and fact-based enforcement of the antitrust laws in this area," the FTC has continued to vigorously pursue losing, and unsupported, claims. It would be beneficial for these agencies to have divergent viewpoints, if it would be possible for the agencies to learn from each other about what works and what does not. However, for this learning to occur, the facts would necessarily need to support, at least in some respects, both viewpoints. Rather, here, the FTC's position is based on theory and flies in the face of

238. *FTC v. Qualcomm*, 935 F.3d 752 (9th Cir. 2019).

239. *FTC v. Qualcomm*, 969 F.3d 974 (9th Cir. 2020).

240. *FTC v. Qualcomm*, Case 19-16122, D.C. No. 5:17-cv-00220-LHK (9th Cir. Oct. 28, 2020).

factual evidence and modern law. For that reason, this is not a situation where differing opinions may allow for growth and advancement. The side that is supported by evidence must prevail.

There are at least three primary reasons why now is the time to take the DOJ's perspective when considering innovation, collaboration, and competition in the SDO area. First, as we move forward into the information economy and pursue the interoperability and interconnectivity required to support a world based on the Internet of Things, the importance and utter ubiquity of standardized technology will continue to grow. Second, the FTC's erroneous views have thus far had limited impact outside of the individual cases where it has pursued them; however, their arguments and perspectives are broad enough that, if applied more broadly, could have a serious impact beyond these cases and even beyond standardization generally. Third, given the change in administration and the fact that new priorities will be driving agency actions, it is time to clearly consider the reasoning behind the DOJ's and the FTC's divergent viewpoints to settle on a set of priorities that align with the agencies' authority over innovation, collaboration, and competition.

Standards and the SDO activities that support and develop them are becoming, and will continue to become, more important as the world shifts further into the technological future and the Internet of Things becomes dominant. Called the "Fourth Industrial Revolution," or Industry 4.0, the presence of artificial intelligence, connected machines, smart factories, and more continues to grow and is disrupting nearly every industry and area of life.²⁴¹ The Internet of Things (IoT) has been defined as "the interconnection via the Internet of computing devices embedded in everyday objects, enabling them to send and receive data."²⁴² Some of these devices include smart watches that track your every activity as well as your sleep, phone add-ons that serve as breathalyzers or glucose monitors, smart balls to track your sports performance, connected ovens and refrigerators, and more.²⁴³ Due to advances in technology and decreases in pricing of devices, the size of the IoT is growing

241. Klaus Schwab, *The Fourth Industrial Revolution: What it Means, How to Respond*, WORLD ECON. FORUM (Jan. 14, 2016), <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/> [<https://perma.cc/58C2-PNAR>].

242. *Internet of Things*, THE NEW OXFORD AM. DICTIONARY (Angus Stevenson & Christine A. Lindberg, eds., 3d ed. 2010).

243. Scott R. Peppett, *Regulating the Internet of Things: First Steps Toward Managing Discrimination, Privacy, Security, and Consent*, 93 TEX. L.REV. 85, 88 (2014) (providing a list of exemplary devices that form part of the IoT).

exponentially.²⁴⁴ Not surprising, given the very nature of IoT, interconnectivity and interoperability are key features. For this reason, and its reliance on the internet (which is, itself, standards-based), the list of standards related to IoT is extensive.²⁴⁵ Thus, standardization needs to be supported by recognizing the limitations of the theories of patent holdup and royalty stacking and seeking to balance the rights of contributors and implementers in a way that reflects this importance.

The FTC's current perspective threatens to exceed the limited cases the agency has brought and may impact standardization, not to mention innovation more broadly. The FTC fails to recognize there are both competitive and innovative benefits inherent in SDO participation and standardized technology. Licensing patents, whether SEP or not, is an important input to further innovation. In pitting antitrust law against patent law and accepting (and preferencing) the implementer perspective over the innovator perspective, the FTC ignores the importance of innovation as both evidence of and an integral part of competition. As Professor David Teece sharply noted "Silicon Valley should shudder because, with the FTC's approach to market definition, almost all innovative firms can be accused of monopoly power and have their business models overturned by the government."²⁴⁶ He continues, "[The FTC] will also damage the global technology market by replacing negotiation with court determined price regulation not guided in any way by consideration of the business model and financial returns needed to draw forth the investment to keep this industry competitive."²⁴⁷ Similarly, the remedies sought by the FTC, and granted by the district court before being overturned by the Ninth Circuit, were incredibly broad and far reaching. As Jonathan Barnett noted, the district court's remedy "would effectively tear up hundreds of contracts and endanger a patent-based licensing model that has supported innovation across several generations of wireless communications technology."²⁴⁸ Rather than promoting

244. Arpan Pal, Hemant Kumar Rath, Samar Shailendra & Abhijan Bhattacharyya, *IoT Standardization: The Road Ahead*, INTECHOPEN (Mar. 29, 2018), <https://www.intechopen.com/books/internet-of-things-technology-applications-and-standardization/iot-standardization-the-road-ahead> [<https://perma.cc/3BSD-74KS>].

245. *Id.*; *Internet of Things Related Standards*, IEEE-SA, <https://standards.ieee.org/initiatives/iot/stds.html> [<https://perma.cc/QD3G-67BF>].

246. David Teece, *The 'Naked Tax' in FTC v. Qualcomm is Patently Absurd*, LAW360 (Feb. 1, 2019, 2:29 PM) <https://www.law360.com/articles/1124762/the-naked-tax-in-ftc-v-qualcomm-is-patently-absurd> [<https://perma.cc/3G9X-8WKR>].

247. *Id.*

248. Jonathan Barnett, *Qualcomm ruling a case of antitrust gone wrong*, THE HILL (May 28, 2019, 4:00 PM), <https://thehill.com/opinion/finance/445777-qualcomm-ruling-a-case-of-antitrust-gone-wrong> [<https://perma.cc/LT3E-V8XB>].

innovation, collaboration, and competition, the remedy pursued by the FTC is “prone to drive firms to construct ‘walled garden’ ecosystems that mostly keep their intellectual property to themselves.”²⁴⁹ Even were 5G and IoT not the wave of the future, the FTC’s persistent hounding of contributors who are simply exercising their legitimately granted patent rights would cause these contributors to scale back their participation in standards development activities. Because of the necessity of interoperability and interconnectivity for our future, this unjustified harassment of contributors will prove devastating.

As a new administration comes into power, the leadership of both the FTC and the DOJ will change and, not surprisingly, the policies and priorities of these agencies will also change.²⁵⁰ As the new leaders of these agencies take office, it would serve innovation, collaboration, and competition well for their policies and priorities to be based on facts and evidence, rather than a popular narrative that is at odds with both. Recognizing the immense benefits that have arisen from standardized technology, including enhanced innovation and competition, should be a primary focus for these new agency heads. While the DOJ may have reached this point first, under Mr. Delrahim’s leadership, it is not too late. This is the best time for both agencies to recommit to evidence-based actions that actually support standards development.

V. CONCLUSION

The technology of the present, and the future, is reliant on standardization. Not only does standardization allow the most innovative technologies from a variety of contributors to be considered when solving a problem, the process of standards development allows these technologies to be challenged and honed to make them even better. Moreover, standardization allows for easier entrance into many of these technology markets, as implementers can rely on the technological specifications of the standards when developing their products and services. The standards development arena is thus a hotbed of innovation, collaboration, and competition—all of which are desirable. For this reason, the FTC and the DOJ should be encouraging, or at the very least not impeding, standardization activities. The recent DOJ has recognized this and has taken steps to walk back some of the harm it inflicted on

249. *Id.*

250. Caroline Cecot, *Deregulatory Cost-Benefit Analysis and Regulatory Stability*, 68 DUKE L.J. 1593, 1618 (2019) (“Whenever a new administration gains control of the White House, changes in regulatory priorities are expected and often desirable.”).

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contributors and SDOs, but the FTC seems to have doubled down and continues to pursue contributors, alleging anticompetitive behavior, in ways that are and will continue to harm standardization efforts. At this moment, given the change in administration and the ever-increasing need for standardization in today's (and tomorrow's technology), it is time to follow the DOJ's lead with respect to standards development. Now is the time to strike the right balance between contributors and implementers.