

**FROM PRIVATE ORDERING TO PUBLIC LAW:
THE LEGAL FRAMEWORKS GOVERNING
STANDARDS-ESSENTIAL PATENTS**

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I. INTRODUCTION

Technical interoperability standards such as Wi-Fi, Bluetooth, HTML, and 3G/4G enable smartphones, computers, game players, and other products manufactured by different vendors to communicate and operate within the modern networked infrastructure. The development of these standards, an activity conducted largely within industry associations populated by engineers and product designers, has recently become the subject of considerable legal controversy. In particular, disputes have emerged as private parties have accumulated and asserted patents covering standards against manufacturers of

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standardized products. This litigation has attracted the attention of antitrust and competition authorities worldwide, and efforts are under way to address perceived abuses of the standardization process through enforcement actions and new governmental regulations. But beneath the myriad doctrinal and economic issues raised by these efforts lies a more fundamental question regarding the appropriateness of governmental action to regulate what could be described as a private activity, though one with potentially significant effects on global product and service markets.

A deep conceptual gulf has emerged between the two camps in this debate. It highlights the basic question whether technical standard setting is best conceptualized as a private activity governed most efficiently by its own internal rules and procedures, or whether it is at root a public activity that should be regulated within the sphere of public law.¹ To a degree, this debate reflects the larger battle being waged today over the nature of patent law and the patent system itself, and whether these are most accurately described as private or public resources.²

This Article draws upon recent scholarship, judicial opinions, and agency guidance to frame the debate over the regulation of technical standard setting in terms of private ordering, private law, and public law. The remainder of this Article proceeds as follows: after a general introduction to private ordering structures in Part II, Parts III and IV describe how technical standard setting has evolved as a private sector activity. Part V analyzes the incorporation of standards bodies' rules and norms in private law adjudication among market participants. Part VI shifts the focus to the public benefits that standard setting affords and Part VII describes the recent debate regarding public interest considerations relevant to the issuance of injunctions to block the sale of standardized products. Parts VIII and IX look more broadly at the public character of technical standard setting and ask whether public law mechanisms such as antitrust and competition law should regulate this activity. This Article concludes by proposing a preferred legal

1. See John C.P. Goldberg, *Introduction: Pragmatism and Private Law*, 125 HARV. L. REV. 1640, 1640 (2012) (defining private law and public law).

2. See, e.g., John M. Golden, *Patent Privateers: Private Enforcement's Historical Survivors*, 26 HARV. J.L. & TECH. 545, 550 (2013) ("At heart, patents themselves are devices to harness private law enforcement to advance a public policy of promoting scientific and technological progress."); Megan M. La Belle, *Patent Law as Public Law*, 20 GEO. MASON L. REV. 41, 42–47 (2012) (arguing that patent litigation, in general, has a public character); Ted Sichelman, *Purging Patent Law of "Private Law" Remedies*, 92 TEX. L. REV. 517, 519 (2014) ("Patent law . . . is not designed to remedy private wrongs. Rather, its major aim is to promote innovation."). But see Hon. F. Scott Kieff, *Pragmatism, Perspectives, and Trade: AD/CVD, Patents, and Antitrust as Mostly Private Law*, 30 HARV. J.L. & TECH. (SPECIAL SYMPOSIUM) 97, 109–11 (2017) (presenting the case for a predominantly private law interpretation of patent law).

framework for addressing behavior and commitments within standard-setting bodies.

II. PRIVATE ORDERING

The term “private ordering” refers to the use of rules systems that private actors conceive, observe, and often enforce through extra-legal means.³ Since Professor Robert Ellickson’s landmark study of the unwritten codes that govern cattle ranching in rural California,⁴ a sizeable body of legal scholarship has emerged in this area.⁵ Commentators have analyzed the private ordering systems of Hassidic diamond wholesalers,⁶ Memphis cotton merchants,⁷ Japanese organized crime syndicates,⁸ the Internet domain name authority ICANN,⁹ the New York Stock Exchange,¹⁰ credit rating agencies,¹¹ and many others. While these groups vary dramatically in their composition, goals, and patterns of interaction, they all adhere to a code of internally developed and administered rules and enforcement mechanisms.

Professor Barak Richman has observed that private ordering systems arise under two general sets of conditions.¹² The first is when private rules and enforcement are required because state-sponsored mechanisms (e.g., courts) are unavailable to enforce commitments

3. See, e.g., ROBERT C. ELICKSON, *ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES* 123–27 (1991); Steven L. Schwarcz, *Private Ordering*, 97 NW. U. L. REV. 391, 324 (2002).

4. ELICKSON, *supra* note 3.

5. In addition to legal scholarship, which will be the focus of this Essay, private ordering systems and rulemaking have been the subject of significant study in fields including industrial organization, game theory, sociology, and anthropology. Among the leading theorists cutting across many of these fields was the late Nobel laureate Elinor Ostrom, who, with her husband Vincent Ostrom, pioneered the study of self-organizing social systems and property regimes. See, e.g., ELINOR OSTROM, *UNDERSTANDING INSTITUTIONAL DIVERSITY* 19 (2005).

6. Lisa Bernstein, *Opting out of the Legal System: Extralegal Contractual Relations in the Diamond Industry*, 21 J. LEGAL STUD. 115 (1992).

7. See generally Lisa Bernstein, *Private Commercial Law in the Cotton Industry: Creating Cooperation Through Rules, Norms, and Institutions*, 99 MICH. L. REV. 1724 (2001).

8. See generally Curtis J. Milhaupt & Mark D. West, *The Dark Side of Private Ordering: An Institutional and Empirical Analysis of Organized Crime*, 67 U. CHI. L. REV. 41 (2000).

9. See generally James Boyle, *Governance of the Internet: A Nondelegation Doctrine for the Digital Age?* 50 DUKE L.J. 5 (2000); Schwarcz, *Private Ordering*, *supra* note 3, at 344–46.

10. See generally Jonathan R. Macey, *Symposium: Public and Private Ordering and the Production of Legitimate and Illegitimate Legal Rules*, 82 CORNELL L. REV. 1123, 1135–36 (1997).

11. See generally Steven L. Schwarcz, *Private Ordering of Public Markets: The Rating Agency Paradox*, 2002 U. ILL. L. REV. 1 (2002) [hereinafter Schwarcz, *Rating Agencies*].

12. See Barak D. Richman, *Firms, Courts, and Reputation Mechanisms: Towards a Positive Theory of Private Ordering*, 104 COLUM. L. REV. 2328, 2335 (2004). Steven Schwarcz develops a slightly different taxonomy identifying not two but three categories of private ordering. See Schwarcz, *Private Ordering*, *supra* note 3, at 324.

among the actors.¹³ The second and more relevant scenario involves private ordering that arises when state-sponsored enforcement mechanisms may be available, but private rules and enforcement are preferable because of the nature of the parties, commitments, and other circumstances.¹⁴ For example, private actors generally develop and enforce the rules of professional sports leagues, including both the rules of the games themselves and the manner in which teams and players interact, subject only to challenge under criminal, antitrust, and other overarching legal regimes.¹⁵ This allocation of rulemaking to the private sector is sensible as there is often no extrinsic legal basis to decide how to reward achievements in a game (e.g., baskets, goals, touchdowns), how many players should constitute a team, or how many teams should be permitted to compete in the league. In the commercial context, governments often allocate pseudo-regulatory functions to private associations and organizations. Examples include the credit rating authority assigned to Standard & Poor's and Moody's and the establishment of public accounting standards by the Financial Accounting Standards Board ("FASB").¹⁶ Commentators have identified various systemic efficiencies that the allocation of such rulemaking functions to the private sector can achieve.¹⁷ To establish legitimacy, it is also important that private rule makers, as surrogates for state actors, observe certain minimum standards of due process and procedural fairness.¹⁸

III. PRIVATE ORDERING AND TECHNICAL STANDARDIZATION

One area in which private ordering structures are prominent is technical standard setting. While government agencies set some

13. See Richman, *supra* note 12, at 2335 (e.g., criminal networks (which the state will refuse to assist on grounds of illegality) and developing societies (in which adequate judicial and enforcement mechanisms may simply not exist)).

14. See *id.* at 2335–36 (citing examples from the literature of diamond merchants, cotton dealers, fish wholesalers and other mercantile communities). See also Schwarcz, *Private Ordering*, *supra* note 3, at 320–21 (private ordering as a delegation of policy making authority to the private sector and a measure for reducing the public cost of regulation).

15. See, e.g., *O'Bannon v. Nat'l Collegiate Athletic Ass'n*, 802 F.3d 1049 (9th Cir. 2015) (antitrust class action by former NCAA football players challenging league rule prohibiting compensation of players for use of their images and likenesses).

16. See Schwarcz, *Private Ordering*, *supra* note 3, at 320, 326; Schwarcz, *Rating Agencies*, *supra* note 11, at 6–9.

17. These efficiencies can include reducing the cost of regulation and the allocation of regulatory functions to bodies with greater expertise and competence. See Lisa Bernstein, *Private Commercial Law*, in 3 THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 108 (Peter Newman ed., 1998); Richman, *supra* note 12, at 2341–45 (discussing Bernstein's analysis); Schwarcz, *Private Ordering*, *supra* note 3, at 320–21.

18. See Schwarcz, *Private Ordering*, *supra* note 3, at 321 ("Traditional private ordering derives legitimacy from costly procedural safeguards — essentially the same as those protecting the legitimacy of administrative agency rulemaking — designed to ensure fair process and reasoned decisionmaking by the private actor.").

standards promoting health and public safety, market participants develop the majority of technical interoperability standards in voluntary associations known as standards-development organizations (“SDOs”).¹⁹ In the United States, the delegation of standards-development activity to the private sector represents a conscious national policy.²⁰ The requirement that federal agencies adopt, whenever possible, standards developed by private sector “voluntary consensus standards bodies” has since 1980 been embodied in OMB Circular A-119²¹ and reflects Congressional direction under the National Technology Transfer and Advancement Act of 1995²² (“NTTAA”). While standardization activity outside the U.S. is not so explicitly delegated to the private sector, private sector actors, by default, lead much standardization activity throughout the developed world, even in SDOs that have more formal governmental ties.²³ Thus, by and large, the rules that govern technical standardization are the subject of private ordering among market participants.

These rules comprise formal written policies as well as informal norms, understandings, and practices. As discussed below, informal norms serve both to inform how to understand and interpret an SDO’s formal rules and to shape the interactions and relationships of SDO participants in areas that formal rules do not address.²⁴

19. While many SDOs are independent non-profit associations, some large SDOs, particularly in Europe and Asia, are governmental or semi-governmental entities (e.g., the European Telecommunications Standards Institute (“ETSI”) (a European Union body), and the International Telecommunications Union (“ITU”) (a branch of the United Nations)). See generally Brad Biddle et al., *The Expanding Role and Importance of Standards in the Information and Communications Technology Industry*, 52 JURIMETRICS 177 (2012) (describing the standards-development “ecosystem”).

20. See, e.g., Emily S. Bremer, *American and European Perspectives on Private Standards in Public Law*, 91 TULANE L. REV. (forthcoming 2016); Dieter Ernst, *America’s Voluntary Standards System — A Best Practice Model for Innovation Policy?* (East-West Center Working Paper No. 128, 2012); TIM BÜTHE & WALTER MATTLI, *THE NEW GLOBAL RULERS: THE PRIVATIZATION OF REGULATION IN THE WORLD ECONOMY* 148–51 (2011).

21. Office Mgt. Budget, Executive Office of the President, Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities, 81 Fed. Reg. 4673 (Jan. 27, 2016) [hereinafter OMB A-119], https://www.whitehouse.gov/sites/default/files/omb/inforeg/revise/circular_a-119_as_of_1_22.pdf [<https://perma.cc/M9T6-BTBV>]; see also *infra* notes 71–72 and accompanying text.

22. Pub. Law No. 104–113 (1996).

23. See BJÖRN LUNDQVIST, *STANDARDIZATION UNDER EU COMPETITION RULES AND US ANTITRUST LAWS* 116–32 (2014) (discussing standardization institutions outside the United States, particularly in Europe); BÜTHE & MATTLI, *supra* note 20, at 151–59 (contrasting US and EU systems).

24. The sometimes idiosyncratic norms of SDOs have attracted attention from scholars and other external observers. Perhaps the best-known example is the Internet Engineering Task Force (“IETF”), the principal body for Internet standards, which operates under a complex, unwritten code of behavior. See Paul Hoffman, *The Tao of IETF: A Novice’s Guide to the Internet Engineering Task Force*, IETF (2012), <http://www.ietf.org/tao.html> [<https://perma.cc/Q2MG-MH5Z>]. For scholarly commentary regarding IETF and its processes, see, for example, Jorge L. Contreras, *A Tale of Two Networks: Patents, Standards and the Internet*, 93 U. DENVER L. REV. (forthcoming 2016) and Michael Froomkin,

IV. SDO DUE PROCESS AND PATENTS

To the extent that SDOs have adopted formal rules, they often relate to the standardization process itself (i.e. the mechanics of proposing, debating, and approving new standards). Many SDOs began to implement such rules in response to high-profile U.S. antitrust lawsuits that exposed blatantly anticompetitive conduct by SDO participants.²⁵ In the wake of these cases, many SDOs began to impose “due process” requirements on their proceedings. Today both OMB Circular A-119²⁶ and the accreditation requirements of the American National Standards Institute (“ANSI”)²⁷ establish due process requirements for SDOs. These requirements generally ensure that SDO standard-setting processes are open, balanced, transparent, consensus-based, and subject to appeal.²⁸

In recent years, one of the most contentious areas of SDO rule-making has concerned intellectual property, particularly with regard to patents that are deemed to be “essential” for a product to comply with a standard (so-called “standards-essential patents” or “SEPs”). There is a large and varied theoretical literature concerning the potential effects that SEPs may have on markets for standards-compliant products.²⁹ One of the principal areas of debate concerns whether SEP owners can and do “hold-up” the market by demanding excessive royalty rates after a standard has been widely adopted and manufacturers have made substantial capital investments in the standardized

Habermas@Discourse.Net: Toward a Critical Theory of Cyberspace, 116 HARV. L. REV. 749 (2003).

25. See *Allied Tube & Conduit v. Indian Head*, 486 U.S. 492 (1988) (group establishing standards for electrical conduit improperly stacked the vote against manufacturers of PVC products); *Am. Soc’y Mechanical Engineers v. Hydrolevel Corp.*, 456 U.S. 556 (1982) (chair of a certifying body improperly influenced group to deny certification to his competitor’s boiler safety valves). See generally Herbert Hovenkamp, *Standards Ownership and Competition Policy*, 48 B.C. L. REV. 87, 91–95 (2007) (providing an overview of early- to mid-twentieth century antitrust enforcement in standard setting: “One explanation for antitrust’s traditional hostility toward joint standard setting is that many of the early cases involved obvious, often ham-handed, attempts at price fixing”).

26. OMB A-119, *supra* note 21.

27. AM. NAT’L STANDARDS INST., ANSI ESSENTIAL REQUIREMENTS: DUE PROCESS REQUIREMENTS FOR AMERICAN NATIONAL STANDARDS (2016). All SDOs that wish to be accredited as developers of American National Standards must comply with ANSI’s Essential Requirements.

28. See OMB A-119, *supra* note 21, at 16 (defining a “voluntary consensus standards body” as one that embodies openness, balance, due process, an appeals process and consensus decision making).

29. See, e.g., Jorge L. Contreras, *Patents, Technical Standards and Standard-Setting Organizations: A Survey of the Empirical, Legal and Economics Literature* in RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY LAW, VOL. II—ANALYTICAL METHODS (Peter S. Menell & David Schwartz, eds. (forthcoming 2017)) [hereinafter Contreras, *Literature Review*].

technology (thus becoming “locked-in”).³⁰ Another potential issue is “royalty stacking,” which can become a threat, as the Court of Appeals for the Federal Circuit explained, “when a standard implicates numerous patents, perhaps hundreds, if not thousands,” each of which bears a royalty that must be paid by product manufacturers and which “may become excessive in the aggregate.”³¹

Many SDOs have adopted policies designed to mitigate the threats of patent hold-up and stacking. These policies fall into two general categories: disclosure policies and licensing policies.³² Disclosure policies require SDO participants to reveal SEPs that they hold, generally prior to the approval of a relevant standard. Licensing policies require SEP holders to grant manufacturers of standardized products licenses on terms that are either royalty-free or “fair, reasonable and nondiscriminatory” (“FRAND”).³³

Initially, these policies were relatively brief and abstract, requiring, for example, only that “[s]tandards should not include items whose production is covered by patents unless the patent holder agrees to and does make available to any interested and qualified party a license on *reasonable terms*”³⁴ These loosely specified policies remained in effect through the 1990s, when they began to attract greater scrutiny from litigants and courts. The situation came to a head in 2003, when semiconductor designer Rambus, Inc. avoided liability for failing to disclose patents essential to an SDO’s standards because, the court held, the SDO’s patent policy suffered from “a staggering lack of defining details.”³⁵

30. See, e.g., Joseph Farrell, et al., *Standard Setting, Patents, and Hold-Up*, 74 ANTITRUST L.J. 603, 616 (2007); Mark Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991 (2007); U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 34–35 (2007) [<https://perma.cc/8L9R-SVHX>].

31. *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1229 (Fed. Cir. 2014).

32. See AM. BAR ASS’N, STANDARDS DEVELOPMENT PATENT POLICY MANUAL 31–85 (Jorge L. Contreras ed., 2007) [hereinafter ABA Patent Policy Manual] (detailed catalog of SDO policy terms); Justus Barron & Daniel F. Spulber, *The Searle Center Database of Technology Standards and Standard-Setting Organizations* (2015) (survey of SDO IPR policy terms); RUDI BEKKERS & ANDREW UPDEGROVE, A STUDY OF IPR POLICIES AND PRACTICES OF A REPRESENTATIVE GROUP OF STANDARDS SETTING ORGANIZATIONS WORLDWIDE (2012), http://sites.nationalacademies.org/cs/groups/pgasite/documents/webpage/pga_072197.pdf [<https://perma.cc/Q583-865U>] (describing policy elements found in ten major SDOs studied); Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CALIF. L. REV. 1889 (2002) (survey of SDO policy provisions).

33. See ABA Patent Policy Manual, *supra* note 32, at 56–67.

34. AM. STANDARDS ASSN., PROCEDURES OF AMERICAN STANDARDS ASSOCIATION, Sec. 11 (1959).

35. *Rambus, Inc. v. Infineon Techs. AG*, 318 F.3d 1081, 1102 (Fed. Cir. 2003) (further discussed at *infra* notes 45–47, and accompanying text). The 2003 *Rambus* decision was the impetus for an ABA effort led by the author to define common terminology appearing in SDO patent policies. See ABA Patent Policy Manual, *supra* note 32. For further discussion of the *Rambus* litigation, see notes 45–47, *infra*, and accompanying text.

Critiques such as this, together with increasing litigation among participants in SDOs, led to an industry-wide revamping of SDO patent policies in the early- and mid-2000s.³⁶ Some of the amendments adopted by SDOs were controversial. For example, in 2006 the VMEBus Standards Association (“VITA”) amended its patent policy to require advance (ex ante) disclosure of patent licensing terms and royalty rates, a requirement that generated significant opposition.³⁷ SDOs have continued to experiment with policy changes, the most notable recent example of which is the IEEE’s 2014 clarification of certain aspects of its FRAND licensing commitment.³⁸

V. FROM PRIVATE ORDERING TO PRIVATE LAW

As discussed in Part II, private ordering mechanisms can structure activities that the law does not expressly circumscribe. By and large, private organizations administer and enforce these rules without recourse to external legal institutions. However, there are numerous instances in which an organization’s internal rules, norms, and customs may become relevant in the adjudication of legal disputes. This reliance on private rules by courts and other state agencies has a long history. For example, since at least the sixteenth century, courts have adopted the norms and customs of merchants in shaping the *lex mercatoria* of commercial law,³⁹ and countless students of property law are familiar with the nineteenth century case *Ghen v. Rich*, in which a federal court looked to the traditional practices of the Nantucket whaling industry to resolve a dispute over the oil extracted from a whale’s beached carcass.⁴⁰

Professor Mark Lemley observes that judicial processes may employ private rules in two general contexts.⁴¹ First, private rules, customs, and course of dealing may establish rights and responsibilities of transacting parties under legal frameworks such as the Uniform

36. For quantitative analyses of these policy changes, see Joanna Tsai & Joshua D. Wright, *Standard Setting, Intellectual Property Rights, and the Role of Antitrust in Regulating Incomplete Contracts*, 80 ANTITRUST L.J. 157, 159–60 (2015) and Anne Layne-Farrar, *Proactive or Reactive? An Empirical Assessment of IPR Policy Revisions in the Wake of Antitrust Actions*, 59 ANTITRUST BULLETIN 373 (2014).

37. See Jorge L. Contreras, *Technical Standards and Ex Ante Disclosure: Results and Analysis of an Empirical Study*, 53 JURIMETRICS 163, 172–75 (2013) (describing the VITA policy amendments and assessing their impact on standardization at VITA).

38. See Michael A. Lindsay & Konstantinos Karachalios, *Updating a Patent Policy: The IEEE Experience*, CPI ANTITRUST CHRONICLE, Mar. 2015.

39. See Louis L. Jaffe, *Law Making by Private Groups*, 51 HARV. L. REV. 201, 213 (1937).

40. *Ghen v. Rich*, 8 F. 159 (D. Mass. 1881).

41. Mark A. Lemley, *The Law and Economics of Internet Norms*, 73 CHICAGO-KENT L. REV. 1257, 1263–64 (1998).

Commercial Code and medical standards of care.⁴² In these cases, formal legal regimes expressly call for interpretation and application of private norms. Second, privately developed rules may supersede existing legal frameworks. Examples include both tort law (in which written disclaimers may excuse certain forms of negligence and other liability) and contract law (in which negotiated terms may supersede common law doctrines such as the measure of damages).⁴³

The tendency of courts to rely upon privately developed norms and practices extends to standards as well. As Professors Tim Büthe and Walter Mattli observe, “judges frequently resort to privately developed product standards, disclosure rules, etc. to give meaning to general concepts in the law, such as ‘duty of care’, ‘negligence,’ or ‘fairness.’”⁴⁴ For example, in *Rambus, Inc. v. Infineon Techs. AG*,⁴⁵ chip designer Rambus was accused, among other things, of committing fraud based on its alleged concealment of patents that were essential to the implementation of a semiconductor memory standard developed at the Joint Electron Device Engineering Council (“JEDEC”). The district court found, based on a literal reading of JEDEC’s policy, that no such duty of disclosure was imposed on JEDEC members. But the court also found, based on the testimony of various JEDEC participants, that even without a formal disclosure requirement, SDO participants shared a common understanding that they *should* disclose patents necessary to practice JEDEC standards.⁴⁶ As such, the court recognized a legal duty to disclose arising from the internal norms of JEDEC.⁴⁷

The internal rules and practices of SDOs have also figured in private litigation concerning patent holders’ commitments to license their SEPs to others on FRAND terms. In a recent line of cases including *Apple, Inc. v. Motorola Mobility Inc.*,⁴⁸ *Microsoft Corp. v. Motorola, Inc.*,⁴⁹ *In re Innovatio IP Ventures, LLC Patent Litigation*,⁵⁰ *Ericsson v. D-Link*,⁵¹ and *Commonwealth Sci. and Industrial Research Org. (CSIRO) v. Cisco*,⁵² courts have been called upon to interpret the scope and nature of a patent holder’s commitment to

42. *Id.*

43. *See id.*

44. BÜTHE & MATTLI, *supra* note 20, at 205.

45. *Rambus, Inc. v. Infineon Techs. AG*, 318 F.3d 1081 (Fed. Cir. 2003).

46. *Id.* at 1098.

47. Notwithstanding the existence of such a duty, Rambus was found not to have violated its obligation to disclose patent applications to JEDEC. *Id.* at 1105. *See also* *Qualcomm Inc. v. Broadcom Corp.*, 548 F.3d 1004 (Fed. Cir. 2008) (finding similar duty to disclose patents based on informal norms and expectations of SDO participants).

48. 2012 WL 5416931 (W.D. Wis., Nov. 2, 2012).

49. 795 F.3d 1024 (9th Cir. 2015).

50. 956 F.Supp.2d 925 (N.D. Ill. 2013).

51. 773 F.3d 1201 (Fed. Cir. 2014).

52. 809 F.3d 1295 (Fed. Cir. 2015).

license its SEPs to product manufacturers, and the rates at which such licenses should be considered “fair and reasonable.”⁵³ Not surprisingly, practice and usage within the SDOs in which these commitments are made inform courts’ analyses of such commitments, including the royalty rates that should qualify as “fair” and “reasonable.” For example, in *Microsoft v. Motorola*, the trial court considered numerous aspects of the patent policies of the relevant SDOs (IEEE and ITU), as well as customary usage and expectations in SDO settings, in determining whether Motorola complied with its commitment to offer Microsoft a license on terms that were, in fact, reasonable.⁵⁴

VI. THE PUBLIC CHARACTER OF STANDARD SETTING

A. Historical Roots

Part V above addresses situations in which privately ordered rules, norms, and practices have informed the adjudication of private disputes. This Part moves from private disputes to public policy and considers situations in which privately ordered rules have systemic implications beyond the immediate transacting parties. To a degree, standards have enjoyed a public character for much of their history. In particular, standards underlying fire, electrical, and building codes; automobile safety features; food processing and storage facilities; and worker safety precautions have always been imbued with a public character.⁵⁵ The same can be said for professional accreditation standards in fields such as medicine, accounting, education, and even law.⁵⁶ These standards exist primarily to protect the public from unqualified practitioners in fields in which laypersons cannot easily assess quality and competency.

The case for public welfare enhancement through interoperability standards is illustrated by the tragic story of the 1904 Baltimore fire. At the outbreak of the fire, which portended to be large, fire crews were called in from as far away as Washington, D.C. But when they arrived, the crews discovered that their fire hoses could not be cou-

53. These cases have spawned a cottage industry of legal and economics scholarship. For recent catalogs of this literature, see Thomas Cotter & Norman Siebrasse, *FRAND Royalties in THE CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW*, VOL. I (Jorge L. Contreras, ed., (forthcoming 2017)); Contreras, *Literature Review*, *supra* note 29.

54. 864 F. Supp. 2d 1023, 1033 (in ascertaining the parties’ intent, the court may consider extrinsic evidence including usages of trade and course of dealing).

55. *See, e.g.*, CATHERINE E. RUDDER, A. LEE FRITSCHLER & YON JUNG CHOI, *PUBLIC POLICYMAKING BY PRIVATE ORGANIZATIONS*, Ch. 5 (2016) (private governance in food safety); LAWRENCE BUSCH, *STANDARDS: RECIPES FOR REALITY*, 104–06 (2011) (agricultural standards); STEPHEN BREYER, *REGULATION AND ITS REFORM*, Ch. 5 (1982) (automobile safety standards).

56. *See, e.g.*, RUDDER, FRITSCHLER & CHOI, *supra* note 55, at Ch. 6 (private governance in the professions).

pled to the fire hydrants in Baltimore due to differences in shape, diameter and thread count. As a result, the fire fighters stood by helplessly as more than seventy city blocks were devastated.⁵⁷

A decade later, during World War I, the Federal government identified the need to standardize thousands of mechanical components for vehicles, munitions, and other defense-related articles.⁵⁸ Such standardization was needed to enable the rapid replacement of parts and components on the battlefield without the need for customized tooling, and thereby avoid the consequences of incompatibility exemplified by the Baltimore tragedy. The result of this initiative was a centralized federal standardization board having the authority to impose rules relating to the specifications and interoperability of military parts and components.⁵⁹

In addition to public safety and national defense, standardization has been employed to support purely commercial ends. An early champion of industrial standardization was automotive pioneer Henry Ford, who made standardized parts the cornerstone of his mass-produced automobile empire.⁶⁰ During the early twentieth century, standardization began to influence all segments of the industrial economy, from manufacturing to transportation to communications. AT&T, in particular, carried standardization to extreme lengths during the height of its telephone monopoly.⁶¹ As historian Andrew Russell has noted, AT&T standardized many aspects of the U.S. telephone system to ensure that it could obtain a consistent and reliable supply of components from subcontracted manufacturers and to enable local exchanges to connect to its long-haul lines without competing in the market for long distance service.⁶²

Unlike health and safety standards, or even interoperability standards for fire hoses and other public safety equipment, interoperability standards like AT&T's were developed primarily to achieve commercial goals. Government officials, including Herbert Hoover, Secretary of Commerce in the Harding administration, advocated aggressive

57. See, e.g., U.S. CONGRESS, OFFICE OF TECHNOLOGY ASSESSMENT, GLOBAL STANDARDS: BUILDING BLOCKS FOR THE FUTURE, TCT-512 at 43 (1992) [hereinafter OTA 1992 Report]; Emily S. Bremer, *On the Cost of Private Standards in Public Law*, 63 KAN. L. REV. 279, 300–01 (2015) [hereinafter Bremer, *Private Standards*]. Fortunately, fire hydrant couplings are standardized today by the National Fire Protection Association (NFPA 1963: STANDARD FOR FIRE HOSE CONNECTIONS).

58. OTA 1992 Report, *supra* note 57, at 43–44.

59. *Id.*

60. *Id.* at 42.

61. ANDREW L. RUSSELL, OPEN STANDARDS AND THE DIGITAL AGE: HISTORY, IDEOLOGY, AND NETWORKS 97 (2014); TIM WU, THE MASTER SWITCH: THE RISE AND FALL OF INFORMATION EMPIRES 51 (2010).

62. Russell, *supra* note 61, at Ch.4, 121 (“[AT&T] engineers used the industry standards process to leverage their status and power and extend their technical jurisdiction beyond the boundaries of the monopoly Bell System”).

industrial policies in support of commercial interoperability goals.⁶³ But this governmental “standards crusade” peaked in the 1920s. And, by 1933, Congress had slashed the budget of the National Bureau of Standards to almost nothing.⁶⁴ For the remainder of the twentieth century, technical standardization in the U.S. remained predominantly a private sector activity, largely disregarded by the government.⁶⁵

B. Network Effects and Benefits

Beginning in the 1980s, economists including Joseph Farrell and Carl Shapiro began to study market efficiencies that could arise from networks of interconnected devices.⁶⁶ They observed that when standards are widely adopted and enable a range of products offered by different vendors to interoperate, they can give rise to positive externalities known as network effects that benefit not only the manufacturers of those products but also consumers, competitors, and innovators.⁶⁷

The publication of these insights roughly coincided with two important policy developments. The first has been termed the economic turn in antitrust law: the marked shift in U.S. antitrust analysis that followed the release of former Solicitor General Robert Bork’s influential book *The Antitrust Paradox*.⁶⁸ Bork’s approach, which came to dominate antitrust policy in the United States,⁶⁹ relied heavily on the economic analysis of competition. Its ascendance led to an influx of prominent academic economists to the U.S. Department of Justice Antitrust Division (“DOJ”) and the Federal Trade Commission (“FTC”). Several of these economists, including Shapiro and Farrell,

63. OTA 1992 Report, *supra* note 57, at 44; *see also* BUSCH, *supra* note 55, at 115–17 (discussing Hoover’s role in promoting U.S. standardization).

64. OTA 1992 Report, *supra* note 57, at 44, 47.

65. *Id.*

66. *See, e.g.*, Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424 (1985); Joseph Farrell & G. Saloner, *Standardization, Compatibility and Innovation*, 16 RAND J. ECON. 70 (1985).

67. *See* Katz & Shapiro, *supra* note 66, at 424–25 (noting that “[t]here are many products for which the utility that a user derives from consumption of the good increases with the number of other agents consuming the good”); CARL SHAPIRO & HAL R. VARIAN, *INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY* 45–46 (1999).

68. ROBERT H. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* (1978). Bohannon and Hovenkamp offer several other milestones as possible triggers for the beginning of contemporary antitrust “reform.” *See* Christina Bohannon & Herbert Hovenkamp, *IP and Antitrust: Reformation and Harm*, 51 B.C. L. Rev. 905, 911–12 (2010).

69. Few academic works have had as large an impact on an entire field of law as Bork’s did on the field of antitrust law. Its influence continues to this day, though it is not without its critics. *See, e.g.*, Jonathan B. Baker, *Taking the Error out of Error Cost Analysis: What’s Wrong with Antitrust’s Right?*, 80 ANTITRUST L.J. 1 (2015); William E. Kovacic, *Out of Control? Robert Bork’s Portrayal of the U.S. Antitrust System in the 1970s*, 79 ANTITRUST L.J. 855 (2014) (analyzing Bork’s critique).

were leaders in the emerging economics of networks and interoperability.⁷⁰

A second, but more obscure, event affected the way that U.S. federal administrative agencies develop and utilize standards. In 1980, after a multi-year period of development and public commentary, the Office of Management and Budget issued a memorandum to all federal agencies instructing them to adopt private sector standards whenever possible, unless a pressing need existed to develop a standard within the government.⁷¹ This shift at the federal level mirrored the longstanding practice of incorporating private building, electrical and other safety codes into regulations at the state and local levels.⁷² Thus, by 1980, private sector standardization became the principal means for the development of standards adopted by all levels of government in the United States.

The convergence of these policy trends and the computing revolution of the 1980s made technical interoperability more important than ever. As a result, the U.S. antitrust agencies turned their attention toward potential abuse of the standardization system. As noted above,⁷³ several significant antitrust cases were brought against SDOs in the 1980s. The 1990s were, in turn, dominated by the massive government antitrust suits against Microsoft both in the United States and Europe, significant portions of which addressed issues of interoperability, control of product interfaces and Microsoft's alleged monopolization of operating system and Internet browser standards.⁷⁴

Additional antitrust investigations were initiated during the 1990s and early 2000s against firms such as Dell Computer,⁷⁵ Negotiated Data Solutions (N-Data),⁷⁶ and Rambus.⁷⁷ In these cases, governmental agencies began to articulate systemic public welfare considerations surrounding interoperability standards. Given the market-wide bene-

70. U.S. DEPT. OF JUSTICE & FED. TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 38 (2007) [hereinafter ANTITRUST AND IP REPORT].

71. OMB A-119, *supra* note 21. Prior to the issuance of OMB's Circular in 1980, other agencies, particularly the Department of Defense, encouraged the use of private standards for government procurement purposes. See Mary McKiel, *Circular Reasoning*, DEFENSE STANDARDIZATION PROG. J., Oct/Dec. 2012, 9, 10.

72. See, e.g., Robert W. Hamilton, *The Role of Nongovernmental Standards in the Development of Mandatory Federal Standards Affecting Safety or Health*, 56 TEX. L. REV. 1329, 1331–32 (1978).

73. See note 25, *supra*, and accompanying text.

74. See, e.g., JAE HUN PARK, PATENTS AND INDUSTRY STANDARDS 69–77 (2010) (discussing European *Microsoft* cases); KENNETH L. PORT, ET AL., LICENSING INTELLECTUAL PROPERTY IN THE INFORMATION AGE 555–56 (2d ed. 2005) (discussing the implications of the U.S. *Microsoft* antitrust cases in terms of standards and standardization).

75. *In re Dell Computer Corp.*, 121 F.T.C. 616 (1996).

76. *Negotiated Data Solutions LLC*, No. C-4234, 2008 WL 4407246 (F.T.C. Sept. 22, 2008).

77. *In re Rambus, Inc.*, No. 9302, 2006 WL 2330117 (F.T.C., Aug. 2, 2006), *rev'd*, 522 F.3d 456 (D.C. Cir. 2008).

fits perceived to flow from broad product interoperability, and the harms that could arise from abuse of the standard-setting process, the agencies, and many in the private sector, began to view private standard setting as an inherently *public* function as to which the public interest must not only be considered, but which might even override private considerations.

C. Today: Standards as Public Goods?

Organizational theorists view private groups as affecting a broader public interest when their rules “apply to or touch on many more people than those who make them and the sectors they represent.”⁷⁸ This definition is readily applicable to technical standards, which Professor Keith Maskus observes, “exist to achieve numerous public policy objectives such as component interoperability, network reliability, public health, environmental protection, and consumer safety.”⁷⁹

Over the past decade, the “public” character of technical standard setting has received increasing attention from courts, federal agencies and commentators.⁸⁰ An influential 2007 report by the DOJ and FTC praised the role of industry standards, referring to them as “one of the engines of the modern economy.”⁸¹ The DOJ and the U.S. Patent and Trademark Office, in a joint 2013 statement, further elaborated on the public interests advanced by interoperability standards, explaining that they “have paved the way for moving many important innovations into the marketplace, including the complex communications networks and sophisticated mobile computing devices that are hallmarks of the modern age.”⁸²

Recognizing these benefits, the Federal Circuit in *Apple Inc. v. Motorola Inc.* observed that “the public has an interest in encouraging

78. RUDDER, FRITSCHLER & CHOI, *supra* note 55, at 14.

79. KEITH E. MASKUS, PRIVATE RIGHTS AND PUBLIC PROBLEMS: THE GLOBAL ECONOMICS OF INTELLECTUAL PROPERTY IN THE 21ST CENTURY 158 (2012).

80. For recent commentary on the public character of standards-setting and supporting patent pledges, see, e.g., Konstantinos Karachalios & Karen McCabe, *Dual Use of Standardization Strategies: Promoting Regional Integration and/or Global Markets*, Mega-Regionalism: New Challenges for Trade and Innovation/(MCTI) Workshop Series (Jan. 2016); Jorge L. Contreras, *A Market Reliance Theory for FRAND Commitments and Other Patent Pledges*, 2015 UTAH L. REV. 479, 486–90 (2015) [hereinafter Contreras, *Market Reliance*] (social welfare character of patent pledges made to markets at large); Richard S. Whitt, *A Deference to Protocol: Fashioning a Three-Dimensional Public Policy Framework for the Internet Age*, 31 CARDOZO ARTS & ENT. L.J. 689, 722 (2013) (“[T]he technical standards and protocols . . . that define how the Internet and World Wide Web function — all constitute exclusively public goods, free for everyone to use without access restrictions”); Ernst, *supra* note 20, at 29–30 (standards as public goods); Hovenkamp, *supra* note 25, at 89–91 (describing various social welfare benefits provided by standards).

81. ANTITRUST AND IP REPORT, *supra* note 70, at 6–7.

82. U.S. DEP’T OF JUSTICE & U.S. PATENT & TRADEMARK OFFICE, POLICY STATEMENT ON REMEDIES FOR STANDARDS-ESSENTIAL PATENTS SUBJECT TO VOLUNTARY FRAND COMMITMENTS 3 (2013) [<https://perma.cc/4HKW-FC34>].

participation in standard-setting organizations.”⁸³ And as to SDO participants’ licensing commitments, the Ninth Circuit Court of Appeals in *Microsoft Corp. v. Motorola Inc.* confirmed that “a RAND commitment must be construed in the public interest because it is crafted for the public interest.”⁸⁴ Thus, unlike most patent transactions, which are private arrangements among private parties, the licensing of standards-essential patents has taken on a public character. It must be conducted and reviewed with public benefits in mind.⁸⁵

VII. THE PUBLIC INTEREST AND INJUNCTIVE RELIEF

The clash between the private and public character of technical standards, and the enforcement of patents covering those standards, has arisen on numerous fronts. Perhaps the most visible of these clashes concerns the ability of a SEP holder who has made a FRAND licensing commitment to seek injunctive relief against an unlicensed manufacturer of a standardized product.⁸⁶ That is, whether a SEP holder’s commitment to offer licenses on FRAND terms necessarily precludes it from seeking to block an infringer (i.e. a potential licensee) from practicing the infringed SEP.

The question of injunctive relief in patent cases necessarily implicates questions of the public interest. The Supreme Court’s four-part test for evaluating injunctive relief under *eBay Inc. v. MercExchange, L.L.C.* expressly requires courts to consider, among other things, whether “the public interest would . . . be disserved by a permanent injunction.”⁸⁷

The Federal Circuit considered the ability of a SEP holder to seek an injunction in *Apple, Inc. v. Motorola, Inc.*⁸⁸ after Motorola sought to block Apple’s sale of products that infringed Motorola’s SEPs. The

83. 757 F.3d 1286, 1332 (Fed. Cir. 2014).

84. 795 F.3d 1024, 1052 n.22. (9th Cir. 2015).

85. *See, e.g.,* VALERIO TORTI, INTELLECTUAL PROPERTY RIGHTS AND COMPETITION IN STANDARD SETTING 1 (2016) (describing the “clash between the private character of IPRs and the public nature of standards”).

86. Though the subject of an extensive literature (*see, e.g.,* LUNDQVIST, *supra* note 23, at 319–43 (reviewing U.S. and European Union law and literature)), the debate over injunctive relief and SEPs is not, by any measure, the only controversy pitting private and public law conceptions of standardization against one another. Others include the potential issuance of compulsory licenses for SEPs under variants of the so-called “essential facilities” doctrine (*see* Contreras, *Market Reliance*, *supra* note 80, at 527–28), and the debate concerning public access to copies of standards that are incorporated by reference into governmental regulations (*see* Bremer, *Private Standards*, *supra* note 57).

87. 547 U.S. 388, 393–94 (2006). The four “eBay” factors that a plaintiff must establish in order to obtain an injunction are: (1) that it has suffered an irreparable injury; (2) that remedies available at law are inadequate to compensate for that injury; (3) that considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction. *Id.*

88. 757 F.3d 1286 (Fed. Cir. 2014).

trial court denied Motorola's request, reasoning that a SEP holder making a [F]RAND commitment, by definition, has acknowledged that a monetary royalty would adequately compensate it for the use of its patents. The court reasoned that "a compulsory license with ongoing royalty is likely to be a superior remedy in a case like this because of the frequent disproportion between harm to the patentee from infringement and harm to the infringer *and to the public*."⁸⁹ In affirming this ruling, the Federal Circuit deferred to the district court's ability to weigh the competing public interests involved when deciding whether an injunction was appropriate.⁹⁰

The U.S. International Trade Commission ("ITC") must also consider the public interest when determining whether to issue an exclusion order prohibiting the importation of standardized products into the United States.⁹¹ In a 2012 ITC case brought by Motorola against Microsoft, the FTC submitted a third-party Public Interest Statement arguing that allowing SEP holders to seek exclusion orders against manufacturers of standardized products would give them undue leverage in licensing negotiations and thus "the potential to cause substantial harm to U.S. competition, consumers and innovation."⁹² Accordingly, as a matter of public policy, the FTC urged the ITC to consider the potential impact of exclusion orders on a SEP holder's ability to engage in hold-up and the potential negative effect on innovation and consumer prices.⁹³

Observe the shift in the debate. What was once a matter of discerning privately ordered rules and practices in private litigation has become a debate over competition policy, innovation incentives, and

89. *Apple, Inc. v. Motorola, Inc.*, 869 F. Supp. 2d 901, 918 (N.D. Ill. 2012), *aff'd in part*, 757 F.3d 1286 (Fed. Cir. 2014).

90. 757 F.3d at 1332 ("[T]he public has an interest in encouraging participation in standard-setting organizations but also in ensuring that SEPs are not overvalued. While these are important concerns, the district courts are more than capable of considering these factual issues when deciding whether to issue an injunction under the principles in *eBay*.").

91. 19 U.S.C. § 1337 (2015). Unlike Article III courts, the ITC, an executive agency, has no authority to grant awards of monetary damages, and may only issue exclusion orders to prevent the importation of infringing articles into the U.S. The ITC's public interest analysis must consider "(1) the public health and welfare; (2) competitive conditions in the United States economy; (3) the production of like or directly competitive articles in the United States; and (4) United States consumers." *Id.* § 1337(d)(1).

92. Fed. Trade Comm'n, Third Party U.S. Federal Trade Commission's Statement of the Public Interest on *In re Certain Wireless Communication Devices, Portable Music & Data Processing Devices, Computers and Components Thereof*, Inv. No. 337-TA-745 at 5 (Jun. 6, 2012) [hereinafter FCT 337-TA-752], https://www.ftc.gov/sites/default/files/documents/advocacy_documents/ftc-comment-united-states-international-trade-commission-concerning-certain-wireless-communication/1206ftcwirelesscom.pdf [https://perma.cc/WZF4-7RB6]. See also *In re Certain Gaming and Entertainment Consoles, and Related Software, and Components Thereof*, Intl. Trade Comm'n Inv. No. 337-TA-752, https://www.usitc.gov/secretary/fed_reg_notices/337/337_752_notice06292012sgl_1.pdf [https://perma.cc/K77T-92DF].

93. FTC 337-TA-745, *supra* note 92, at 2.

market-wide economic impact.⁹⁴ While this transformation may be a recent development in the field of standardization law, it is by no means the first time that private arrangements have been found to have public implications. As long ago as 1876, the Supreme Court held in *Munn v. Illinois*⁹⁵ that the government can control private commercial enterprises, such as grain elevators, to serve the public interest if the private commercial enterprises are “affected with a public interest.”⁹⁶ While the *Munn* doctrine has rarely been invoked,⁹⁷ legal scholars in recent years have sought to identify broader systemic (i.e. public) implications of traditionally private law systems such as contract, tort, and property. In this regard, it has often been said that “all law is public law.”⁹⁸

VIII. THE PUBLIC-PRIVATE DIVIDE AND ENFORCEMENT OF SDO COMMITMENTS

There is a sharp intellectual divide today over the most appropriate legal mechanisms for enforcing the commitments made by participants in SDOs. On one hand, if standard setting is a public activity, it may warrant traditional “public law” regulation, as Part VI discusses above. On the other hand, if standard setting is viewed as an inherently private activity, standardization may be more aptly regulated through self-policing and private law mechanisms.⁹⁹

Federal regulators, including the FTC, have supported the application of antitrust law to police private breaches of commitments made within SDOs. As the FTC recently noted, “[w]hile not every breach of a FRAND licensing obligation will give rise to [antitrust] concerns, when such a breach tends to undermine the standard-setting

94. See also Letter from Michael B. G. Froman, U.S. Trade Representative, to Irving A. Williamson, Chairman, U.S. Int’l Trade Comm’n 2–3 (Aug. 3, 2013), https://ustr.gov/sites/default/files/08032013%20Letter_1.PDF [<https://perma.cc/ZW26-X3ZM>] (disapproving ITC’s entry of an exclusion order against Apple products that infringed three Samsung SEPs, largely on public policy grounds relating to the serious market consequences that could follow from SDO participants’ failure to honor their commitments to grant FRAND licenses).

95. 94 U.S. 113 (1876).

96. *Id.* at 125–26 (internal quotations omitted).

97. See, e.g., Rudolph J. Peritz, *The “Rule of Reason” in Antitrust Law: Property Logic in Restraint of Competition*, 40 HASTINGS L.J. 308–09 (1989); W. Frederick Foster, *The Doctrine of the United States Supreme Court of Property Affected by a Public Interest, and Its Tendencies*, 5 YALE L.J. 49 (1895).

98. Goldberg, *supra* note 1, at 1641 (discussing this well-worn adage).

99. This debate encompasses a wide range of doctrinal, economic and consequential arguments that are beyond the scope of this paper. For a more detailed analysis of the arguments for and against the application of antitrust laws to standard setting, see, e.g., Thomas F. Cotter, *Comparative Law and Economics of Standard-Essential Patents and FRAND Royalties*, 22 TEX. INTELL. PROP. L.J. 311 (2014); Contreras, *Market Reliance*, *supra* note 80.

process and risks harming American consumers, the public interest demands action rather than inaction.”¹⁰⁰

On the other side of this debate, scholars including Professor Henry Smith have argued that private property-based systems can address opportunistic behavior through a combination of “boundary placement and interface rules.”¹⁰¹ Former FTC Commissioner Joshua Wright¹⁰² and Professor Bruce Kobayashi also maintain that private legal remedies (contract and tort) should suffice to redress most issues arising in standard setting, and that a resort to public law remedies (antitrust) is both unnecessary and counterproductive.¹⁰³ This point is reiterated in Wright’s later work with Judge Douglas Ginsburg and Ginsburg’s law clerk, Taylor Owings, which argues that antitrust law should not serve as a mechanism to limit the availability of injunctive relief for holders of standards-essential patents, both because private “contractual” theories of liability should constrain abuse by SEP holders and because over-deterrence of patent enforcement could have adverse effects on patent holders’ incentives to innovate and engage in standard setting.¹⁰⁴

Professor (then Commissioner) Wright further elaborated these points in a 2014 speech arguing that “an antitrust claim based upon the use of one’s IPR is no more suspect than a claim arising from the use of any other form of property.”¹⁰⁵ In this respect, Wright equates patents arising from standard-setting activities with other forms of property that are typically governed through private law mechanisms, suggesting again that there is no special public character associated with standard setting that makes it particularly suited to being addressed through antitrust law.¹⁰⁶

Returning to private ordering, Wright and his former economic advisor, Joanna Tsai marshal evidence suggesting that SDOs are re-

100. Fed. Trade Comm’n, Statement of the Federal Trade Commission on *In the Matter of Robert Bosch GmbH*, FTC File Number 121-0081 (Nov. 26, 2012).

101. Henry E. Smith, *Property as Platform: Coordinating Standards for Technological Innovation*, 9 J. COMPETITION L. & ECON. 1057, 1059 (2013).

102. Wright served as a commissioner of the FTC from 2013 to 2015.

103. See Bruce H. Kobayashi & Joshua D. Wright, *Federalism, Substantive Preemption, and Limits on Antitrust: An Application to Patent Holdup*, 5 J. COMPETITION L. & ECON. 469, 506–16 (2009) (discussing the comparative advantage of tort and contract law in regulating breaches of FRAND commitments); see also Herbert Hovenkamp, *Antitrust and the Patent System: A Reexamination*, 76 OHIO ST. L.J. 467, 555 (2015) (“Fundamentally, these are problems best addressed through the patent system rather than by antitrust law”).

104. Douglas H. Ginsburg, Taylor M. Owings & Joshua D. Wright, *Enjoining Injunctions: The Case Against Antitrust Liability for Standard Essential Patent Holders Who Seek Injunctions*, ANTITRUST SOURCE, Oct. 2014.

105. Joshua D. Wright, *Does the FTC Have a New IPR Agenda?*, Speech delivered at the 2014 Milton Handler Lecture, in New York, N.Y., Mar. 11, 2014, at 5.

106. Herbert Hovenkamp has also argued, on doctrinal grounds, that antitrust law is inferior as a general solution to issues of standards hold-up than private law mechanisms arising under contract and patent law. See Hovenkamp, *supra* note 25, at 105.

sponsive to external legal stimuli, such as the threat of patent hold-up, and amend their internal policies both to address these stimuli and to compete for members.¹⁰⁷ Professor Herbert Hovenkamp also points to “institutional design” solutions as optimal means for addressing potential opportunism within the standard-setting context.¹⁰⁸ These commentators argue that SDOs, as private organizations, can and should continue to regulate themselves through private ordering mechanisms, without public law intervention, whether in the guise of antitrust regulation or otherwise.

IX. ANOTHER VIEW OF PUBLIC LAW FOR STANDARDS-ESSENTIAL PATENTS

In prior work, I have discussed the public character of the standard-setting process, as well as the patent licensing and enforcement commitments (“patent pledges”) made by firms within and outside of SDOs.¹⁰⁹ In formulating an effective and generally applicable legal theory by which to make such commitments binding, it is essential that they be viewed as promises made not to individual SDOs or SDO members (as some courts have recently proposed), but to the entire marketplace in which the relevant technology is deployed.¹¹⁰ As such, these commitments have an inherently public character.

Nevertheless, antitrust law is not necessarily the best public law framework for enforcing and regulating these pledges across the board.¹¹¹ Antitrust law is finicky, and, as the DC Circuit’s 2008 reversal of the FTC’s decision in *Rambus, Inc. v. FTC* demonstrates, the elements of an antitrust claim do not always align with intuitions regarding anticompetitive behavior.¹¹² Thus, while antitrust and competition law may be useful for addressing deception and other forms of abusive conduct,¹¹³ it is not the only means by which the actions of SDO participants can or should be regulated.

107. See Tsai & Wright, *supra* note 36, at 159–60 (heterogeneity of policy provisions suggests that SDOs “respond and adapt to changes in the competitive environment and to the specific needs of each [SDO] to design, incorporate, and attract the IPRs that yield the best standard for the organization”); see also Smith, *supra* note 101, at 1074 (“Because SSOs can solve many of their problems *ex ante* and they are typically sophisticated parties, SSOs are not good candidates for mandatory rules.”).

108. Hovenkamp, *supra* note 25, at 106.

109. See Contreras, *Market Reliance*, *supra* note 80, at 486–92.

110. *Id.* at 482.

111. *Id.* at 523–34.

112. *Rambus, Inc.*, No. 9302, 2006 WL 2330117, at *18 (F.T.C. Aug. 2, 2006), *rev’d sub nom.* *Rambus Inc. v. FTC*, 522 F.3d 456 (D.C. Cir. 2008) (reversing FTC’s finding of antitrust law violation on the ground that the FTC failed to prove that Rambus’s conduct caused actionable antitrust harm).

113. These forms of conduct may include, for example, abuse of market power, deception, collusive exclusion of rivals, and discriminatory treatment (when prohibited, for example, by FRAND commitments). See Contreras, *Market Reliance*, *supra* note 80, at 523–28.

Beyond antitrust claims, the FTC has prosecuted alleged abuses within the standard-setting process under Section 5 of the FTC Act, which prohibits “unfair methods of competition” and “unfair or deceptive acts or practices.”¹¹⁴ The FTC’s actions against N-Data,¹¹⁵ Rambus,¹¹⁶ Robert Bosch,¹¹⁷ and Motorola Mobility (now Google)¹¹⁸ all included claims brought under Section 5.¹¹⁹ As interpreted by the FTC and several commentators, Section 5 offers a mechanism for prosecuting conduct harmful to competition that does not necessarily meet the standards for antitrust liability.¹²⁰ As such, it could serve as a legal mechanism for safeguarding the public interest in standards-related cases. However, this expansive interpretation of Section 5 is not held universally, even within the FTC.¹²¹ Moreover, Section 5 affords no private cause of action and can be enforced only by the FTC itself. Thus, the use of Section 5 depends solely on the enforcement priorities and resources of the FTC, making it less desirable as a general means for protecting the public interest.¹²²

Despite the public nature of standards development, the most efficient and equitable way to resolve disputes regarding the conduct of participants in the standardization process may be to focus on the scope and nature of the parties’ privately ordered arrangements. If these arrangements fail to yield expected benefits or become susceptible to manipulation by opportunistic actors, SDOs can address these issues through the adoption of alternative rule structures and the invocation of internal enforcement mechanisms.¹²³

114. 15 U.S.C. § 45(a)(1) (2012).

115. Negotiated Data Solutions LLC, No. C-4234, 2008 WL 4407246, at *1–5 (F.T.C. Sept. 22, 2008).

116. Rambus, Inc., No. 9302, 2006 WL 2330117, at *18 (F.T.C. Aug. 2, 2006), *rev’d sub nom.* Rambus Inc. v. FTC, 522 F.3d 456 (D.C. Cir. 2008).

117. Robert Bosch GmbH, 155 F.T.C. 713 (2013).

118. Motorola Mobility, L.L.C., No. 121-0120 (F.T.C. July 24, 2013).

119. For a summary of these actions, see Contreras, *Market Reliance*, *supra* note 80, at 529–32.

120. See, e.g., William E. Kovacic & Marc Winerman, *Competition Policy and the Application of Section 5 of the Federal Trade Commission Act*, 76 ANTITRUST L.J. 929, 930–32, 934–37 (2010) (“Congress intended Section 5 to be a mechanism for upgrading the U.S. system of competition law by permitting the FTC to reach behavior not necessarily proscribed by the other U.S. competition statutes”).

121. See Joshua D. Wright, Proposed Policy Statement Regarding Unfair Methods of Competition Under Section 5 of the Federal Trade Commission Act 2–5 (June 19, 2013), <http://www.ftc.gov/public-statements/2013/06/statement-commissioner-joshua-d-wright> [<https://perma.cc/LA9V-K7Y7>] (supporting a relatively narrow interpretation of “unfair methods of competition”). See also Richard Dagen, Rambus, *Innovation Efficiency, and Section 5 of the FTC Act*, 90 B.U. L. REV. 1479, 1503 (2010) (“Many believe that the interpretation of Section 5 as broader than the Sherman Act is a remnant of a bygone era.”); Kobayashi & Wright, *supra* note 103, at 495 (warning that a broad expansion of Section 5 liability would be “unsound antitrust policy”).

122. See Contreras, *Market Reliance*, *supra* note 80, at 532–33.

123. See *supra* notes 36–38, and accompanying text.

Thus, just as privately ordered norms and practices inform legal disputes concerning a broad range of civil and commercial liabilities,¹²⁴ the internal logic of SDO arrangements should, in the first instance, be called upon to define the rights and obligations of parties engaged in standards development. Such logic may, of course, be extrapolated to inform the analysis of areas not expressly addressed by SDO rules, as was done in cases such as *Rambus v. Infineon*.¹²⁵ Today, such extrapolation may be warranted in assessing whether SDO participants, by agreeing to license their SEPs on FRAND terms, have effectively foregone their right to seek injunctive relief against potential licensees. But these are simply interpretive exercises based on privately developed rules, not additional legal duties created through the application of competition and antitrust law.

X. CONCLUSION

Technical standard setting, though conducted largely through private organizations, possesses many attributes of a public function. By and large, SDO policies operate effectively to enable competitors to collaborate to develop standards that produce network effects and yield significant social welfare gains. At times, however, internal policing and enforcement mechanisms may not be sufficient to curb abusive behavior by SDO participants, particularly behavior that tends to diminish the value of patent-related commitments made by participants. In these cases, the intervention of public law principles may be appropriate. But while public law regimes such as antitrust and competition law may offer effective means for addressing the most egregious abuses of these commitments, it may be preferable for public agencies to promote legal measures assuring the enforceability of these private commitments on their own terms. Legal support for the enforcement such commitments, and the avoidance of new legal duties, should result in more adaptable and predictable mechanisms for ensuring the continued effective operation of private standardization systems, while the public character of standard setting should continue to be recognized when applicable legal rules call for consideration of the public interest.

124. See *supra* Part V.

125. See *supra* note 47 and accompanying text.