Known unknowns: Uncertainty and its implication for antitrust policy and enforcement in the standard-setting context

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This article analyzes unilateral misconduct in standard-setting organizations, including in particular various forms of patent hold-up. The authors identify uncertainties facing agencies and courts reviewing such conduct and describe certain analytical frameworks that agencies can use to determine whether enforcement action is appropriate in a particular case. The article examines three key "unknowns": whether a standard-setting process was abused or misused in some way; whether such misconduct, if any, had a significant adverse effect on competition; and what remedy, if any, would cure such competitive harm. The authors argue that agencies and courts should protect the reasonable expectations of other participants in the standard-setting process, should adopt a practical approach (a "substantial contribution" test) to problems of causation raised by misconduct in the standard-setting arena, and should favor compulsory licensing as a presumptive remedy in standard-setting

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cases, reserving others (such as disgorgement) for unusual cases in which compulsory licensing fails adequately to deter or remedy anticompetitive misconduct.

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> *"[A]s we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns—the ones we don't know we don't know."*
>
> Secretary of Defense Donald H. Rumsfeld.[1]

I. INTRODUCTION

Private standard setting promises network efficiencies, efficient specialization, and the avoidance of redundancy on the one hand, while threatening anticompetitive collusion, patent hold-up, and the creation of market power on the other. The tension between these "good" and "bad" aspects of standard setting, which has been expressed and resolved in various ways at different times by courts, agencies, and commentators, has led to considerable confusion regarding the rules that apply to standard-setting activities and how those rules should be interpreted and applied in practice. This confusion creates significant costs that are ultimately borne by consumers.[2]

Arguably the most challenging antitrust issue associated with standard setting arises in the context of unilateral patent hold-up, as discussed in cases such as *Dell*, *Rambus*, *Unocal*, and *Broadcom v. Qualcomm*.[3] Other problems, of course, can arise during the standard-

[1] U.S. Department of Defense, News Transcript, *DoD News Briefing—Secretary Rumsfeld and Gen. Myers* (Feb. 12, 2002), *available at* http://www.defense.gov/transcripts/transcript.aspx?transcriptid=2636.

[2] *See, e.g., In re* Dell Computer Corp., 121 F.T.C. 616, 626 (1996) (noting potential for ill-advised enforcement action in the SSO context to "chill participation in the standard-setting process").

[3] *Dell*, 121 F.T.C. 616; Rambus Inc. v. FTC, 522 F.3d 456 (D.C. Cir. 2008); *In re* Union Oil Co. of Cal., Docket No. 9305, 2005 WL 2003365 (F.T.C. Aug. 2, 2005); Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 308–09 (3d Cir. 2007).

setting process: in particular, various forms of unlawful collusion can occur, ranging from collusive exclusion in the development of standards (*Radiant Burners* and *Allied Tube*[4]) to collusive extraction of favorable terms from suppliers of an input to the standard (*In re NCAA I-A Walk-On Football Players Litigation*[5]). This article focuses on the thorny challenges that face antitrust agencies addressing *unilateral*, not collusive, conduct in standard setting. Specifically, we consider the case of a firm that (1) participates in a standard-setting activity, (2) acquires market or monopoly power through the incorporation of its patent into a standard, and (3) subsequently asserts that patent over users of the standard once adoption of the standard creates switching costs that hinder the use of any alternative technologies.[6]

In analyzing such conduct under the antitrust laws, agencies (and courts) must grapple with serious uncertainties—known and unknown unknowns, in Secretary Rumsfeld's formulation—regarding the conduct and its effect on the standard-setting process. From the perspective of an antitrust agency considering whether to bring an enforcement action in connection with alleged patent hold-up, these uncertainties generally arise in three areas:

- First, did something go "wrong," in an antitrust sense, in the standard-setting process (i.e., was there improper anticompetitive, or "exclusionary," conduct)?

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[4] Radiant Burners, Inc. v. Peoples Gas Light & Coke Co., 364 U.S. 656 (1961); Allied Tube & Conduit Corp. v. Indian Head, Inc., 486 U.S. 492 (1988).

[5] 398 F. Supp. 2d 1144, 1146–51 (W.D. Wash. 2005).

[6] *See generally* M. Sean Royall, Amanda Tessar & Adam Di Vincenzo, *Deterring "Patent Ambush" in Standard Setting: Lessons from* Rambus *and* Qualcomm, ANTITRUST, Summer 2009, at 34 (noting that patent ambush can force an "entire industry [to] face exorbitant royalty demands"). For the most part, we use the language of monopolization in this article, but in our view, the analysis should not be materially different under the rule of reason framework of section 1. In most cases the defendant's participation in the standard-setting activity will confer some degree of monopoly or market power (we use the terms interchangeably), directing the focus of the antitrust analysis to the question of whether the conduct had the effect of improperly excluding competitors and therefore limiting competition (i.e., whether it was "exclusionary" under section 2, or whether it had an "anticompetitive effect" under section 1's rule of reason).

- Second, if so, did the wrongdoing matter (i.e., did the exclusionary conduct "cause" the anticompetitive outcome)?

and

- Third, if so, what is the appropriate remedy (i.e., can the agency or court craft a remedy that will address the harm caused by the anticompetitive conduct without imposing costs that exceed the remedy's benefits)?

In this article, we attempt to identify the most important "unknowns" in these areas—that is, to make as many as possible of the inquiry's "unknown unknowns" into "known unknowns"—and to suggest analytical frameworks through which they can be made known. We begin with some general observations about standard-setting activity and its analysis under the antitrust laws (part II). The remainder of the article tackles each "known unknown" in sequence. First, did something go wrong (part III)? If so, did it matter (part IV)? And if so, what remedy is appropriate (part V)? Concluding remarks follow (part VI).

II. SOME GENERAL OBSERVATIONS ABOUT STANDARD SETTING

We use the broad term "standard-setting activity" to mean any collective action among private persons—whether or not conducted through a formal standard-setting organization (SSO)—to develop parameters for the design, manufacture, distribution, or sale of products or services.[7] Such activity can be—and commonly is—analyzed under section 1 of the Sherman Act (because it generally involves collaboration and agreement among separate economic actors[8]), section 2 of the Sherman Act (when it leads to the acquisition, maintenance, or enhancement of monopoly power by a single entity,[9] or where it constitutes an attempt to achieve the same[10]), section 5 of

[7] Such activity, when *not* in good faith (i.e., when it is a mere "sham" concealing naked anticompetitive conduct) should be analyzed under the generally applicable principles of section 1, pursuant to which it may be per se illegal.

[8] *See, e.g., Allied Tube*, 486 U.S. at 497–98.

[9] *See, e.g.*, Rambus Inc. v. FTC, 522 F.3d 456 (D.C. Cir. 2008).

[10] *See, e.g.*, Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 317 (3d Cir. 2007).

the Federal Trade Commission (FTC) Act (as an unfair method of competition[11] or an unfair or deceptive act or practice[12]), and under the various state-law "little FTC Acts," which generally follow the contours of the federal legislation but which provide—as the FTC Act does not—for private rights of action against violators.[13]

It is elementary that standard-setting activity can be procompetitive.[14] Collective action allows competing firms to unlock efficiencies that would be otherwise unreachable and to direct their activities away from redundant or duplicative activity and toward vigorous competition in ways that make a greater contribution to consumer welfare.[15] As one former FTC official has commented, such activity can bring very real benefits:

> Standard setting benefits consumers in three fundamental ways. First, it can increase price competition, because standard technologies and products can be more readily compared and contrasted. Second, it can increase compatibility and interoperability, allowing new suppliers to compete in producing products and services related to the underlying standard technology. Finally, standard setting can increase the use of a particular technology, giving the installed base enhanced economic and functional value to the extent that it is compatible with a large network of applications.[16]

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11 *See*, *e.g.*, *In re* Dell Computer Corp., 121 F.T.C. 616, 618 (1996).

12 *See*, *e.g.*, *In re* Negotiated Data Solutions LLC (N-Data), Docket No. C-4234, 2008 WL 4407246, at *6 (F.T.C. Sept. 22, 2008).

13 *See*, *e.g.*, Dissenting Statement of Commissioner William E. Kovacic at 2, *N-Data*, Docket No. C-4234.

14 *See*, *e.g.*, Allied Tube & Conduit Corp. v. Indian Head, Inc., 486 U.S. 492, 501 (1988); *Broadcom Corp.*, 501 F.3d at 308–09; *see also* Rambus Inc. v. Infineon Tech. AG, 330 F. Supp. 2d 679, 696 (E.D. Va. 2004) ("[F]ar from being anticompetitive or merely benign, SSOs generally have beneficial effects on competition.").

15 *See*, *e.g.*, David Evans & Richard Schmalensee, PAYING WITH PLASTIC: THE DIGITAL REVOLUTION IN BUYING AND BORROWING, 159–84 (discussing "co-opetition" and the efficiency benefits of certain kinds of cooperation among competitors).

16 David A. Balto, *Standard Setting in a Network Economy*, Speech at Cutting Edge Antitrust Law Seminars International (Feb. 17, 2000), *available at* http://www.ftc.gov/speeches/other/standardsetting.shtm.

Generally speaking, antitrust courts and agencies recognize the competitive benefits of standard setting by according deference to good-faith standard-setting activities. This deference manifests itself in several ways: near-universal use of the rule of reason, rather than the per se condemnation generally applied to competitors' agreements on product features[17]; reluctance to condemn the good-faith determinations of SSOs as "exclusionary" or "anticompetitive"[18]; and the reluctance of many courts to deem cooperative standard setting, without more, as participation in an "agreement" for the purposes of section 1.[19] In these and other ways, antitrust courts and agencies attempt to encourage and facilitate such beneficial cooperation.

On the other hand, standard setting "can be rife with opportunities for anticompetitive activity."[20] One court has suggested that "[a] standard, by definition, eliminates alternative technologies."[21] That is not quite right: other technologies are not eliminated (unless the standard is incorporated into law[22]), but technologies and products out-

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17 *See, e.g.*, *Allied Tube*, 486 U.S. at 501. *See also* Standards Development Organization Advancement Act of 2004, 118 Stat. 661, codified at 15 U.S.C. §§ 4301–05.

18 Schachar v. Am. Acad. of Ophthalmology, Inc., 870 F.2d 397, 399–400 (7th Cir. 1989); Consol. Metal Prods., Inc. v. Am. Petroleum Inst., 846 F.2d 284, 297 (5th Cir. 1988). As noted above, this deference generally evaporates if a court detects the taint of a "sham" or improper motive behind the standard setting process. *See, e.g.*, Radiant Burners, Inc. v. Peoples Gas Light & Coke Co., 364 U.S. 656, 660 (1961) (applying per se rule).

19 *See, e.g.*, Golden Bridge Tech., Inc. v. Motorola, Inc., 547 F.3d 266, 272–73 (5th Cir. 2008); AD/SAT v. Associated Press, 181 F.3d 216, 234 (2d Cir. 1999); *Consol. Metal Prods.*, 846 F.2d at 293–94.

20 Am. Soc'y of Mech. Eng'rs, Inc. v. Hydrolevel Corp., 456 U.S. 556, 571 (1982).

21 Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 314 (3d Cir. 2007) (citing *Hydrolevel Corp.*, 456 U.S. at 559).

22 *See, e.g.*, Allied Tube & Conduit Corp. v. Indian Head, Inc., 486 U.S. 492, 495 (1988) ("A substantial number of state and local governments routinely adopt the [National Fire Protection Association's] Code into law with little or no change."); *Hydrolevel Corp.*, 456 U.S. at 556 ("[Petitioner's] codes, while only advisory, have a powerful influence: federal regulations have incorporated many of them by reference, as have the laws of most States, the ordinances of major cities, and the laws of all the Provinces of Canada.") (citation omitted).

side the standard can face significant barriers to success in a marketplace that has embraced an alternative technology, even if the excluded technology is somehow "superior." In this sense, at least, a standard may create or reinforce market power. Alternatively, the SSO may be nothing more than a cover for anticompetitive collusion.[23]

Moreover, "even if the SSO itself is not corrupt, the subversion of an SSO by a single industry player or by a limited subset of SSO members can result in anticompetitive outcomes . . . . Simply put, by hijacking or capturing an SSO, a single industry player can magnify its power and effectuate anticompetitive effects on the market in question."[24] "Patent hold-up" or "patent ambush" is a special case of this scenario, in which the standard-setting process magnifies the market power of the patent holder. In practice, it is common for a participant in a standard-setting process to contemplate—and even suggest—the incorporation of its own intellectual property into the standard. Licensing royalties flowing from such incorporation can be very profitable if the standard is widely adopted, and the maximum royalty that can profitably be charged by the group of participating rights holders—or, under certain circumstances, by an individual intellectual property owner—can be inflated by the costs involved in switching away from the entire standard, as opposed to merely the particular technology component of that standard on which the licensing fees are sought.[25] A firm seeking to obtain or enhance market power could very well choose to do so through its participation in a standard-setting process. The antitrust question is when, and how, such conduct violates the antitrust laws.

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[23] *Allied Tube*, 486 U.S. at 500.

[24] Rambus Inc. v. Infineon Techs. AG, 330 F. Supp. 2d 679, 696–97 (E.D. Va. 2004).

[25] This concern is neither novel nor unique to standard setting. Anticompetitive hijacking of government regulations, whereby competitors are excluded and market power created through government fiat rather than competitive merit, has long been recognized as a source of consumer harm. *See, e.g.*, City of Columbia v. Omni Outdoor Advertising, Inc., 499 U.S. 365, 383 (describing "lawmaking that has been infected by selfishly motivated agreement with private interests"). Standard setting, in fact, can overlap with this situation. *See, e.g.*, *In re* Union Oil Co. of Cal., Docket No. 9305, 2005 WL 2003365 (F.T.C. Aug. 2, 2005); *Allied Tube*, 486 U.S. 492. However, the same form of harm can occur without the extra insulation afforded by government regulation, although that harm may be less durable.

III. DID SOMETHING GO WRONG?

Imagine a typical morning at the FTC. The phone rings on the desk of the Assistant Director in charge of the FTC's Anticompetitive Practices Division. The call is from a law firm representing a large consumer products company. The lawyer on the line claims that his client—Manufacturer *X*—has unexpectedly received a demand that it sign a costly license agreement for a patent covering a technology embodied in a standard employed in almost all of Manufacturer *X*'s products. The standard has been well established for several years, is used in ninety-five percent of the products in the market, and no prior licensing demands have been made for the patent in question. The cost of the license is substantial enough to potentially result in a noticeable increase in the final consumer price of the finished product (the lawyer calls it "outrageous" and "wildly disproportionate" to the value the technology contributes to the product). The lawyer claims that no one had any idea the patent was infringed by the standard. He explains that there is no reasonable and nondiscriminatory (RAND) licensing commitment in place, and the patent holder is threatening injunctions against any manufacturers who do not accede to its demands.

Over the next week, the FTC's preliminary inquiries seem to confirm the information provided on the call, at least in broad outline: the standard appears to be ubiquitous and necessary; the products at issue are household names; and the Internet is buzzing about the sudden emergence of the patent holder and its licensing demands (including message board chatter by its investors gleefully anticipating a huge payday). The FTC concludes that an investigation—and possible enforcement action—is appropriate.

But the investigation soon runs into difficulty. The relevant standard-setting process mostly occurred more than ten years ago, and the current standard has evolved from the one at issue then and includes later technologies (although those technologies are based on the ones adopted when the supposed misconduct occurred). The SSO's rules are broad and vague, and were adopted by a vast assembly of stakeholders from all levels of the supply chain. Most of the participants were technical experts, and the documents are densely written and hard to follow without specialist know-how. Meeting

minutes are perfunctory and sometimes missing altogether, and while formal events are documented, the recollections of the participants—those who can even be found, as many have retired or moved to other companies in other locations—often differ from the official record (and from one another). The patent holder, for its part, asserts that its conduct was fully compliant with the "rules," such as they were; that others have done exactly what it did, and that its technology was so superior to alternatives that it would have been adopted even if the patent holder had specifically declared its intention to charge the "very reasonable" royalty that it now seeks to extract from users of the patented technology.

The first task for the agency considering this muddled set of facts is to determine whether something has gone "wrong" with the standard-setting process. The inquiry has two components: first, the factual question of what actually happened; and second, the legal question of whether that conduct—considered apart from any effect-in-fact—is of a type that merits antitrust scrutiny.

Obviously, sorting through the factual record to determine what happened can present serious difficulties. However, this inquiry is not different in kind from the complex factual inquiry that must be conducted in any investigation or litigation. The more daunting unknown that faces an antitrust agency at this stage of the inquiry is not what the facts are, but which facts matter. This is particularly challenging because the crucial question is not whether something happened that allowed the patent holder to extract the licensing terms that it now demands. Antitrust law does not condemn conduct merely because it results in increased prices, and acquiring and wielding market power absent exclusionary conduct is generally lawful.[26]

[26] In this context, by "antitrust law" we mean sections 1 and 2 of the Sherman Act, section 5 of the FTC Act, and similar state laws. *See* Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398, 407 (2004) (monopoly prices not unlawful); *In re* Flash Memory Antitrust Litig., 643 F. Supp. 2d 1133, 1145–46 (N.D. Cal. 2009) (price increases, without more, do not indicate a violation of section 1); E.I. du Pont de Nemours & Co. v. F.T.C., 729 F.2d 128, 139 (2d Cir. 1984) (declining to "condemn any . . . price increase or moves, however independent" under section 5, even in an oligopolistic market).

Rather, under section 2, it is whether the patent holder behaved improperly in acquiring, expanding, or protecting market power, engaged in the wrong "kind" of conduct (i.e., exclusionary conduct that is subject to antitrust condemnation).

There are, of course, many ways in which a patent holder could be *lawfully* endowed with monopoly power by incorporation of its patent into a standard. For example, if a patent holder had nothing to do with a standard-setting process, but simply discovered that its patent applied to a standard after that standard had been widely adopted, antitrust law would not, simply for that reason, preclude a price increase by the lucky patent holder.[27] Similarly, a standard-setting organization might rationally choose, ex ante, to eschew any form of patent disclosure, notice, or RAND requirements, in effect, deliberately running the risk of patent ambush in exchange, perhaps, for wider participation or a quicker, less costly, and more efficient standards development process. This could be an output-maximizing strategy in some markets.[28] In such a case, the fact that a participant in the process subsequently unveiled and employed a crucial patent would not raise antitrust issues merely because of the presence of the standard. Although in both cases the patent holder's conduct would raise price and reduce output, in neither situation would the antitrust laws likely condemn the conduct.

So how are we to tell what conduct is to be tolerated? As a matter of antitrust doctrine, the analytical location of the impropriety test is a function of the applicable legal standard. Section 2 of the Sherman Act provides the most obvious statutory framework, because it speaks to unilateral conduct that results in the acquisition or maintenance of monopoly power. We address the monopoly power question below; here, the section 2 question is whether the patent holder engaged in "exclusionary" conduct or acts that do not constitute "competition on the merits," in order to have its technology adopted

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[27] A possible narrow and controversial exception might apply to a monopolist of an "essential facility," but the Supreme Court has pointedly refused to comment on this theory. *See Trinko*, 540 U.S. at 410–11.

[28] *See In re* Dell Computer Corp., 121 F.T.C. 616 (1996) (commenting that burdensome disclosure rules might chill participating in standard-setting activities).

in the standard.[29] Section 5 of the FTC Act presents a similar question: Did the patent holder engage in *unfair* competition or unfair or deceptive conduct in order to insert its technology into the standard?[30]

Applying section 1 of the Sherman Act in the context of patent ambush is more challenging. If the patent holder participated and voted in the standard-development process, the adoption of the standard could be an agreement "in restraint of trade" subject to scrutiny under the rule of reason. In that case, the legal question would be whether the agreement's effects were, on balance, pro- or anticompetitive, an inquiry that would raise issues similar if not identical to those raised under section 2.[31] But what if the patent holder participated but did not vote, or quit the organization before a final vote, or did not participate at all? In those cases, the standard itself may not be an "agreement" involving the patent holder.[32] The patent holder's

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[29] *See, e.g.*, Taylor Publ'g Co. v. Jostens, Inc., 216 F.3d 465, 475–76 (5th Cir. 2000) (contrasting "competition on the merits" with "exclusionary" conduct or "monopolization").

[30] *See, e.g.*, *Dell*, 121 F.T.C. at 618.

[31] The questions under section 1 would not simply be whether the patent holder's licenses cost more because of the standard or whether the total price of standardized products rose because of the presence of the patent. That would transform section 1 into price regulation. Rather, the question would be whether the standard-setting process, including whatever conduct resulted in the incorporation of the patented technology, was on balance output-enhancing, notwithstanding any simple short-run price effects. For example, a standard-setting body with no disclosure rules, deliberately risking hold-up, might do so because that results in more participation in standard development and the faster adoption of standards incorporating superior technologies. In such cases, although the welfare result might appear nonoptimal compared to a counterfactual of the same standard with the same technology at a lower price, the proper counterfactuals to consider would be a different standard, adopted more slowly, with worse technology or a market with no standard at all. This inquiry would raise essentially the same questions as those raised under section 2: in particular, did the patent holder's conduct undermine that choice such that the result in the instant case and similar cases in the future is reduced output?

[32] Unless the patent holder acted with another person that knew about the failure to disclose, it is likely that a court would not find an agreement under the Sherman Act, because there would be no commitment by two or more persons to a common scheme. Monsanto v. SprayRite Serv. Corp., 465 U.S. 752, 764 (1984).

subsequent licenses would constitute agreements under section 1, but the anticompetitive effect (if any) may well not arise from the licensing terms of those later agreements.

Whatever the statutory rubric, the fundamental question that an agency must answer in determining whether something went wrong in the standard-setting process is whether the patent holder engaged in some form of exclusionary—or anticompetitive, or unfair, or deceptive—conduct in order to secure incorporation of the patent into the standard. For an agency (or court) attempting to resolve this question, we suggest one simplifying assumption: that the rules chosen (or lack thereof) by the standard-setting body ex ante (including the extent to which the participants expected compliance) be assumed to have been output-enhancing, and the patent holder's conduct should be judged against those rules and expectations.[33] More specifically, the patent holder should be bound by the objective, reasonable reliance of the other participants in the standard-setting process.[34]

Standard-setting bodies can adopt any of an almost unlimited set of rules. No particular rule is necessarily output-enhancing or output-limiting, and selecting the applicable rules involves complex tradeoffs that antitrust agencies are poorly situated to second-guess.[35] As we

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[33] *See generally* M. Sean Royall, *The Role of Antitrust in Policing Unilateral Abuses of Standard-Setting Processes*, Antitrust, Spring 2004, at 44, 47 (discussing conduct that "subverts the rules or purposes of the standards organization").

[34] This is not intended to be a test for actual, subjective reliance by particular participants in the SSO, nor is it intended to make antitrust liability dependent on, or coextensive with, common-law claims those participants might or might not have, such as for fraud or breach of contract. Indeed, as a general matter the potential availability (or unavailability) of such claims should neither discourage agency intervention nor influence the design of a remedy. Potential plaintiffs may have interests and incentives different from those of consumers. Their claims may also be subject to defenses—such as estoppel or unclean hands—that would have no role in limiting claims brought in the public interest. *But see* Royall, Tessar & DiVincenzo, *supra* note 6, at 37 (arguing that advances in private remedies "may reduce the need for government antitrust enforcement against the 'classic' form of SSO patent ambush conduct").

[35] This suggests a concern with the European Commission's approach to the antitrust analysis of standard setting conduct, which encourages certain rules over others despite the lack of evidence or rigorously tested theory supporting the assumption that those rules are more likely than others to lead

discuss in more detail below, conduct that violates or subverts rules governing an SSO are likely to be output-reducing regardless of what the rules themselves are.[36] As a result, an inquiry into the output effects of the rules themselves would be both burdensome and unproductive. The inquiry should focus on the conduct of the patent holder in the development of the standard after the ground rules (written or unwritten) were established for participation in the process. These ground rules, however, should be understood in light of the participants' actual reasonable expectations: Where it can be shown that the SSO's participants, in general, expected one another to behave in a way that, although reasonable, is at odds with the formal, written rules of the organization, the expected rule should govern in place of the written one.

Why should a patent holder's violation of an SSO's rules as reasonably understood by the participants be considered exclusionary (as opposed to other forms of conduct by the patent holder that might also result in the incorporation of its technology into the standard)?[37] The answer is that conduct that violates the rules of an SSO is likely, in general, to reduce output by deterring participation in or raising the cost of standard-setting activities[38]; and violating rules, although it may permit the violator to extract rents from other parties, does not enhance competitive efficiency.[39] As a result, this form of conduct

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to maximization of output. *See* European Comm'n, Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-Operation Agreements, 2011 O.J. (C 11) ¶ 7.

[36] In very simple terms, it is one thing to refuse to play because the rules are bad; it is another to agree to play according to the rules and then cheat.

[37] Again, it is analytically important to separate the question of whether the conduct was exclusionary from the question of whether it resulted in the acquisition of market power. Otherwise, antitrust law would become a simple prohibition on acquiring market power, but the Supreme Court has long taught that acquiring market power is not, itself, unlawful, because (among other things) the quest for market power can enhance dynamic competition.

[38] *See, e.g.*, *N-Data*, Statement of the FTC at 1, Docket No. C-4234, 2008 WL 4407246, at *6 (F.T.C. Sept. 22, 2008).

[39] *See generally* Timothy J. Muris, *Opportunistic Behavior and the Law of Contracts*, 65 MINN. L. REV. 521 (1981).

should be considered exclusionary or anticompetitive under any of the statutory frameworks described above.

Moreover, antitrust law is concerned with economic substance rather than procedural formality; although violations of the SSO's written rules would likely present the clearest case of exclusionary conduct, breaking a formal rule is neither absolutely necessary nor absolutely sufficient. A rule may have become impractical and be routinely violated: in such a case, the participants would not expect compliance. Similarly, petty or technical violations would not likely run afoul of those expectations, much less result in a meaningful output reduction of any kind. Conversely, mere compliance with the literal text of rules does not provide a safe harbor. No set of rules can anticipate all circumstances, literal compliance can be creatively twisted to produce unanticipated results, and all sets of rules occur within a larger context of the expectations and behavior of the participating parties. Literal compliance may provide strong evidence that no exclusionary conduct occurred; but when the facts convincingly demonstrate that the conduct flouted the common and reasonable understanding and expectations of the participants, it may still be exclusionary.

We apply this test to several fact patterns typically considered in assessing standard setting.

A. Affirmative deception

In the simplest case, a patent holder, in order to ensure that its patented technology is selected over competing alternatives, affirmatively deceives the participants in an SSO concerning either the existence or applicability of its patents or the terms on which it would license.[40]

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[40] Some commentators and courts have suggested that fraudulent and deceptive conduct cannot, ipso facto, be "exclusionary" under the antitrust laws because, for example, such conduct might create a "new market" for "corrective" speech. This is erroneous for a number of reasons, including that, in legal terms, fraud and deception are not "competition on the merits," e.g., Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 223 (1993) (contrasting merits competition with exclusion), and, in economic terms, fraudulent and deceptive conduct is not efficiency-enhancing, and the costs it imposes on victims, including costs incurred to avoid or mitigate false or deceptive representations, constitute economic waste that also do not

Affirmative deception—whether by misrepresentation or a misleading partial disclosure—is a simple case because in almost all cases affirmatively misleading conduct would be reasonably expected by the participants in an SSO to violate the organization's rules, would impose costs on the participants and deter participation, and would not enhance competitive efficiency.[41] In such a case the conduct, by contributing to the patent holder's acquisition of monopoly power through means other than competition on the merits, can safely be condemned under the antitrust laws.

B. Corruption

Similarly, corrupting the standard-setting process by bribing or coercing participants to secure their unwilling votes or through con-

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advance efficiency. Muris, *supra* note 39, at 575–80 (discussing "cheating" in the context of franchising arrangements). Others have suggested tests that treat deception and fraud differently from other forms of exclusionary conduct, typically multiprong screens that blur the distinction between the conduct and its effects. *See, e.g.*, 3B PHILLIP AREEDA & DONALD TURNER, ANTITRUST LAW ¶ 782b, at 327 (describing multipart test for overcoming presumption that misrepresentation was harmless); Rambus Inc. v. FTC, 522 F.3d 456, 464 (D.C. Cir. 2008) ("Cases that recognize deception as exclusionary hinge . . . on whether the conduct impaired rivals in a manner tending to bring about or protect a defendant's monopoly power."). This confuses the analysis. Whether the conduct is competition on the merits is, generally, a separate question from whether it is successful in conferring or maintaining market power, and conflating those two questions can render the analysis circular. For example, consider the *Rambus* court's statement that deception can be exclusionary if it impairs rivals "in a manner tending to bring about or protect a defendant's monopoly power." But if the conduct did not impair rivals, it would fail the causation test without regard to whether it was exclusionary. Moreover, even if it did impair rivals, it might still not be exclusionary, because competition on the merits can impair rivals "in a manner tending to bring about or protect a defendant's monopoly power."

[41] For the same reason, in such cases it should not be necessary to parse the SSO's rules or other evidence of the participants' expectations to establish an affirmative case of exclusionary conduct. A patent holder who deliberately deceived a standard-setting organization may be able to show that the other participants expected to be deceived, such as by rules that specifically authorized lying or by a general and widespread pattern of lying, but this would likely be a challenging defense to establish. A mere absence of disclosure obligations would not suffice, as that would not suggest that participants expect to be lied to.

duct such as vote packing should normally be deemed exclusionary. This fact pattern is exemplified by a trio of Supreme Court cases: *Radiant Burners*, *Allied Tube*, and *Hydrolevel*.[42] In each case, the conduct—the use of an SSO by a competitor or group of competitors to exclude a competitive threat by refusing to certify its products for sale—was effectuated by an abuse of the standard-setting body rather than through the application of its rules and procedures consistent with the reasonable expectations of its members. These cases often involve collusion among competitors, but—as *Hydrolevel* illustrates—need not.[43]

C. Failure to disclose

Failure to disclose a patent's existence, applicability, or cost (such as licensing terms), when the patent holder has made no statements at all, is a more challenging case. SSOs often impose no general duty to disclose patents or licensing terms on their members (or do so under various conditions or subject to various limitations that might not be met), and a decision to limit disclosure obligations can yield efficiency benefits.[44] Thus, failure to disclose will violate our criterion only when the rules of the SSO as reasonably understood, enforced, and generally complied with by the participants would have required the disclosure that was not made.

But what about an inadvertent failure to disclose? SSO participants are not likely to reasonably expect participants to be omniscient even concerning their own patent holdings. However, SSOs will likely have an expectation concerning the scope and methodology of the inquiry that participants should conduct in honoring their disclosure obligations. Thus, determining whether an inadvertent failure to disclose was exclusionary should be grounded in the patent holder's compliance with the SSO's expected duty to search.

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[42] Allied Tube & Conduit Corp. v. Indian Head, Inc., 486 U.S. 492 (1988); Am. Soc'y of Mech. Eng'rs, Inc. v. Hydrolevel Corp., 456 U.S. 556 (1982); Radiant Burners, Inc. v. Peoples Gas Light & Coke Co., 364 U.S. 656 (1961).

[43] *Hydrolevel* involved only one competitor excluding a rival, but the exclusion involved the competitor acting as an agent for the standard-setting body under apparent authority.

[44] *See supra* note 28 and accompanying text.

D. *Reneging on a commitment*

In this situation, a patent holder makes a commitment in good faith that results in its technology being adopted, such as an agreement to license on particular terms, and then later reneges. (We are not concerned with the purely factual issues raised by a genuine dispute over whether the patent holder has in fact complied with its commitment.) On these facts there is no deliberate deception at the time the commitment is made, but there is a deliberate failure to honor it.

Our test would almost always condemn such conduct. The facts will generally show that SSO participants reasonably understand that licensing commitments made to the group during the incorporation of a patent into the standard must be observed, and SSO participants faced with patent holders who renege on commitments and thereby acquire the ability to extract high royalties would likely either reduce their participation in SSOs or take other costly steps to reduce the risk of such behavior.[45]

But what if, as in *N-Data*, the commitment is breached by a subsequent owner of the patent who was not involved in the SSO and did not make the commitment itself? That subsequent patent holder may argue that he has not harmed competition, but rather taken advantage of an "historical accident"—the existence of unexploited market power that the original patent holder could not wield, but that is available to subsequent patent owners due to some defect in the terms or applicability of the original licensing commitment. The welfare consequences of tolerating this conduct could, however, be catastrophic: holders of intellectual property incorporated into an industry standard would face strong incentives to sell that intellectual property (at a premium) to purchasers who would promptly extract a

[45] It is also worth noting that this type of conduct—akin to breach of contract—may be economically harmful apart from its contribution to market power, and thus exclusionary, because the entity engaging in it already possesses market power. Breaches of contract may or may not be output-reducing—i.e., exclusionary—depending on the facts. In this situation, the breach is likely output-reducing because the breaching party, in possession of unrealized market power, gains the ability to wield it by breaching the very agreement that allowed it to obtain power in the first place.

monopoly rent from customers.[46] This would likely reduce output and harm consumer welfare.

We believe that our test can address this problem, at least in most cases. It seems likely that the participants in an SSO would reasonably expect that patent holders' licensing commitments could not be circumvented by the simple device of assigning the relevant patents to a third party without including in that assignment a covenant, enforceable by the other SSO members, to abide by the original licensing commitment. Neither is the intentional violation or circumvention of a licensing commitment a form of "competition on the merits" or even "historical accident." At the very least, if the subsequent purchaser is aware of the licensing commitment, there is no injustice in imputing to it the obligation assumed by its predecessor in title. In these cases, section 1 of the Sherman Act or section 5 of the FTC Act may reach conduct that arguably falls outside the reach of section 2, as the FTC suggested in *N-Data*. The FTC's analysis of section 5 speaks for itself; section 1 could apply to the agreement between the original patent holder and the subsequent transferee if, under the rule of reason, the anticompetitive effect of the transferee's evasion of the transferor's commitments outweighs any procompetitive benefit of an unencumbered transfer.

E. The role of the patent holder's intent

The role of intent evidence in antitrust cases presents unique challenges. This is not because it is any harder to ascertain intent in antitrust cases than in other cases in which the facts may be just as complex and as much or even more may be at stake (in murder cases,

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[46] *See* Analysis of Proposed Consent Order to Aid Public Comment *In re* N-Data, File No. 051 0094, 2008 WL 258308, at *37 (F.T.C. Jan. 22, 2008) ("N-Data's conduct, if allowed, would reduce the value of standard-setting by raising the possibility of opportunistic lawsuits or threats arising from the incorporation of patented technologies into the standard after a commitment by the patent holder."). While SSOs could attempt to guard against this with contractual commitments, it is not clear that such commitments would be enforceable against subsequent acquirers under contract law, and designing commitments could be both costly and uncertain, undermining the standard-setting process.

for example, courts and juries routinely plunge into nebulous questions of intent, provocation, and mental health, and corporate intent is routinely assessed in many kinds of cases, including criminal prosecutions of corporations). Rather, it is because it is often difficult for fact-finders to understand what "intent" we are concerned with in antitrust cases. It is not necessarily the intent to destroy one's rivals or dominate one's market, nor (usually) is it the intent to engage in the actual acts at issue. But in this particular context, intent can play an important role in two very specific ways.

First, the patent holder's intent to affirmatively deceive, or deliberately corrupt, can show that exclusionary conduct occurred, for the reasons described above. Second, the patent holder's intent can shed light on the SSO's participants' reasonable expectations. For example, the patent holder's intentional concealment may suggest that the SSO participants reasonably expect disclosure (if not, why would the patent holder conceal?) and that the patent holder expects other participants to rely on the nondisclosure in weighing the costs of the technology. The crucial intent question here would likely be not whether the patent holder intended to get its patent into the standard, but how it intended to do so, and what light that intention sheds on the reasonable expectations of the other participants.[47]

IV. DID IT MATTER?

The second great unknown facing an agency deciding whether to bring a case against a patent holder is determining whether the patent holder's wrongdoing "mattered." Put differently, the agency must determine whether it can show that the conduct enabled the patent holder to acquire market power that it would not otherwise have gained. This examination opens "a [P]andora's box of difficult technical questions."[48] Most of those difficult technical questions are factual and revolve around what the SSO would have done had the exclusionary conduct not occurred. The legal question is more straightforward: what burden of proof will the agency face if it brings an action?

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[47] The exception would be attempted monopolization cases under section 2, under which specific intent to achieve monopoly is required.

[48] *In re* Dell Computer Corp., 121 F.T.C. 616, 640 (1996) (Commissioner Azcuenaga, dissenting).

The legal test for antitrust causation in this context has generally required a material or significant contribution to the likelihood of actual adverse competitive effects, although there is a good deal of confusion over the precise standard.[49] We suggest that an agency (or a court) considering enforcement action should determine whether the facts show that, on the balance of probabilities, the patent holder's exclusionary conduct substantially contributed to the adoption of its patented technology by the SSO. In other words, the conduct must be causally responsible for creating or enhancing the patent holder's market power. This showing may be relatively easy in some circumstances. For example, if the SSO's policy and practice were to refuse to consider any technology without a prior RAND commitment, and that commitment was fraudulently made by the defendant, causation should be sufficiently established—at least to the extent necessary to support a prima facie case.[50]

The causation test becomes harder to apply when the SSO *might* have adopted the patented technology even had the patent holder not engaged in the relevant conduct. For example, had the patent holder disclosed the existence of its patent, the SSO participants would have weighed the technology's value against the costs of hold-up. In such cases, a prerequisite to agency action or the imposition of liability should be a determination that there were viable alternatives to the incorporation of the patent holder's technology into a standard (including the alternative of having no standard at all). By "viable," we mean only alternatives that would have been viewed as potential substitutes at the time, without the benefit of hindsight. The agency should not, however, be required to show that any particular alterna-

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[49] *See*, *e.g.*, Morgan v. Ponder, 892 F.2d 1355, 1363 (8th Cir. 1989) (imposing liability where conduct was "capable of materially impacting" competitors); Barry Wright Corp. v. ITT Grinnell Corp., 724 F.2d 227, 230 (1st Cir. 1983) (framing test as whether conduct "reasonably appears capable of making a significant contribution to creating or maintaining monopoly power"). *See also* FTC v. Consol. Foods Corp., 380 U.S. 592, 598 (1965) ("[O]nce the two companies are united no one knows what the fate of the acquired company and its competitors would have been but for the merger.").

[50] Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 315 (3d Cir. 2007) (SSO "would not have considered" incorporating Qualcomm's technology into the relevant standard absent the false promise).

tive outcome would definitely have occurred.[51] As the D.C. Circuit observed in the *Microsoft* case, the defendant—not the market—should be "made to suffer the uncertain consequences of its own undesirable conduct."[52]

Similarly, it is likely that a patent holder who complies with a disclosure rule and engages in prestandardization negotiations over licensing terms will agree to a lower licensing rate than one who negotiates *after* the standard has been adopted, because of the switching costs faced by licensees and the patent holder's certainty of the value of his patent.[53] As long as there is a potentially viable substitute, the SSO retains some leverage to negotiate a lower price ex ante compared to the price that would obtain after the standard has been established in the marketplace. This competitive dynamic is certainly one of the many intended to be preserved by the antitrust laws.[54]

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[51] Standard Oil Co. of Cal. v. United States, 337 U.S. 293, 309–10 (1949) ("[T]o demand that bare inference be supported by evidence as to what would have happened but for the adoption of the practice that was in fact adopted or to require firm prediction of an increase of competition as a probable result of ordering the abandonment of the practice, would be a standard of proof if not virtually impossible to meet, at least most ill-suited for ascertainment by courts."); United States v. Microsoft Corp., 253 F.3d 34, 79 (D.C. Cir. 2001) (en banc) (per curiam) ("To require that [Sherman Act section 2] liability turn on a plaintiff's ability or inability to reconstruct the hypothetical marketplace absent a defendant's anticompetitive conduct would only encourage monopolists to take more and earlier anticompetitive action . . . . [N]either plaintiffs nor the court can confidently reconstruct a product's hypothetical technological development in a world absent the defendant's exclusionary conduct.").

[52] *Microsoft*, 253 F.3d at 79 (D.C. Cir. 2001) (citing 3 PHILLIP AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 651c, at 78).

[53] Daniel G. Swanson & William J. Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power*, 73 ANTITRUST L.J. 1, 9 (2005); *see also* Suzanne Michel, *Bargaining for RAND Royalties in the Shadow of Patent Remedies Law*, 77 ANTITRUST L.J. (forthcoming 2011).

[54] In contrast, in *Rambus* the court reversed the FTC because the FTC had conceded that there was at least a fifty percent probability that Rambus's failure to disclose would not have affected the incorporation of Rambus's technology in the standard, but instead resulted in a licensing rate higher

V. WHAT REMEDY IS APPROPRIATE?

The last "unknown" facing an agency is how to fix the problem. If the agency concludes that wrongdoing did occur, and that, moreover, it "mattered" (i.e., it caused an effect that raises antitrust concerns), one last question remains. The agency must determine whether it can design and enforce a remedy that will remove the anticompetitive effect without doing more harm than good. This is far from easy.

In principle, the remedies available to an agency include at least the following: (1) an injunction against future anticompetitive conduct (a cease and desist order); (2) an injunction imposing a duty to license, either with or without specified terms (such as RAND, at a particular royalty rate, or royalty-free); (3) divestiture of some or all of the intellectual property rights; or (4) disgorgement.

In choosing among these remedies, three challenges arise. First, if the remedy is to be successful, the agency's relief—often, a compulsory license—must address the harm without inefficiently stifling

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than likely would have prevailed had disclosure been made. Analogizing this set of facts to cases such as *Discon*, where the Supreme Court held that section 2 prohibited the acquisition or maintenance, but not the exercise, of monopoly power, the *Rambus* court held that the FTC had failed to prove its case. Rambus Inc. v. F.T.C., 522 F.3d 456, 466–67 (D.C. Cir. 2008). But, as described above, this seems to miss the point. But for the exclusionary conduct, the patent holder would not have acquired the monopoly power, because the parties would have bargained to a lower price. Further, the ex post licensing terms might have raised the technology's cost to the point where the SSO would have chosen some other technology, a nonproprietary option, a different standard, or no standard at all rather than accede to the license terms—because the patent holder would, by definition, be appropriating more of the value of the standard than its technology is worth. Thus, whatever the merits of the *Rambus* court's decision under the specific facts presented to it, it is very unlikely that those facts would be repeated, because it is very unlikely that the facts would show that an SSO faced with ex ante disclosure that included the ex post terms the patent holder would demand would adopt the patent holder's technology. In any event, in this circumstance, if the facts show that the patent holder's failure to disclose substantially contributed to the adoption of its technology, the patent holder should at the very least bear the burden of proving that the SSO would have adopted its technology had it made a full disclosure—including the terms on which it would have licensed—in advance.

competition, diminishing incentives to innovate, or inflicting some additional damage to the competitive process. The agencies have long recognized that in most cases they are not well-situated to determine, for example, the specific amount of a royalty.[55] A generalized commitment such as a RAND obligation can avoid the necessity of calculating a rate, but presents challenges of its own because it may be difficult or impossible to define a reasonable royalty in any particular case.[56] Imposing a royalty-free licensing requirement avoids the complexity of setting licensing terms, but is, like disgorgement, a remedy that is typically imposed only in extreme cases. Further, the remedy itself has competitive consequences: If the technology is subject to too low a licensing rate, the remedy could end up conferring an advantage on the technology in competition with other technologies for new versions of the standard or for subsequent standards. If the rate is set too high, the remedy will not solve the problems created by the conduct.

Second, this task is often made more challenging still by a significant lapse of time between the offending conduct and the agency's opportunity—after reporting, investigation, and adjudication—to impose a remedy. The process of standards development is typically an ongoing, iterative process, in which new versions of standards are constantly being constructed on the shoulders of existing specifications. The standard into which the offending patent was incorporated may already have receded into history, while new standards have emerged to take its place. Thus, it may be hard to determine the patent to which the remedy should be applied; licensing the technology that was the subject of the unlawful conduct may now be irrelevant, while imposing a licensing remedy on newer technologies may appear too aggressive or overbroad.

Third, remedies other than divestiture or a specified royalty can force an agency into an ongoing supervisory role in the standard-

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[55] *See generally* Makan Delrahim, U.S. Dep't of Justice, Forcing Firms to Share the Sandbox: Compulsory Licensing of Intellectual Property Rights and Antitrust, Speech to the British Institute of International and Comparative Law 13–16 (May 10, 2001), *available at* http://www.justice.gov/atr/public/speeches/203627.pdf (discussing difficulties that arise when an agency imposes a compulsory license).

[56] *See, e.g.*, Swanson & Baumol, *supra* note 53, at 5.

setting process—a role for which it has neither expertise nor resources. This problem, which is a familiar concern, is particularly acute in the context of iterative standard-setting processes, in which questions will arise about the applicability of existing remedies to new patents and new standards or to old patents in the hands of new owners.

Shaping remedies policy in the shadow of these (and other) concerns becomes a dangerous business, as the FTC recognized in *Dell*. The agency will have no wish to pick sides in the competitive process by endorsing specific standards.[57] Neither will it want, in devising a remedy, to make the standard vulnerable to attacks from disgruntled participants, as mere uncertainty about the rights in a standard can hinder and discourage its use.[58] Neither will it want to intervene so often or so drastically in standard-setting activity that participants become reluctant to engage in the process itself.[59]

We suggest the following guidelines.

In general, *compulsory licensing* of the patent that was the subject of the misconduct should be the presumptive remedy for unilateral misconduct that causes a patent to be incorporated into a standard. The goal is to prevent the misconduct from introducing additional costs into the supply chain to the detriment of consumers. Thus, the licensing remedy should be designed to place the market in the position it would have occupied absent the misconduct.

Compulsory specified-royalty licensing is an appropriate remedy when the wrongdoing consists of the violation of a specific licensing commitment. In such cases the appropriate remedy is to make the intellectual property available to the market on the conditions on which it had been incorporated into the standard. This was the remedy applied in *N-Data*.

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[57] *In re* Dell Computer Corp., 121 F.T.C. 616, 626 (1996) (explaining that the Commission was not endorsing particular types of standards).

[58] *Id.* at 618.

[59] *Id.* at 625 ("The Commission recognizes that enforcement actions in this area should be undertaken with care, lest they chill participation in the standard-setting process.").

However, the Commission's Analysis to Aid Public Comment in *N-Data* highlights—and attempts to resolve—a problem that can arise when this remedy is chosen. The problem is this: A specified-royalty license can tempt any infringing user of the patented technology to simply ignore the patent holder's attempts to negotiate licensing terms, and in fact to do nothing at all until the patent holder sues for infringement, because the measure of damages in such a suit may be no more than the license rate that the patent holder would be required to offer in negotiation. Thus, the infringing party may have little or no incentive to come to terms before the suit is brought. The *N-Data* consent order allowed the patent holder to offer the mandated royalty for a limited period only—120 days at a flat rate of $1,000 per license—before filing an infringement suit, at which time the offered royalty could be increased to $35,000. The patent holder was required to hold this higher offer open until the expiry of the time to file a responsive pleading to the patent holder's complaint. And upon the expiry of this time, the patent holder's ability to extract a license fee for its patent would no longer be limited by the remedy.[60] This is meant to bring the infringer to the negotiating table, but it imposes a *more* onerous obligation upon the patent holder than the terms of the undertaking to the SSO (an offer to license at $1,000) would require, and it forces the agency into the unappealing role of price setter (why $35,000, and not $5,000 or $50,000?). Another solution would have been to require the patent holder to hold open its offer to license the patent to the infringer at the specific royalty for a fixed period of time—say, 90 days—at the end of which the obligation to license at a specified royalty would terminate entirely. At the end of the period, the patent holder could charge whatever he liked for the license, having discharged its obligation by offering to license on the terms that had been promised to the SSO.

Compulsory RAND licensing is a specific example of the foregoing. Although this remedy can be challenging to administer because of the indeterminacy of the RAND standard, it may give effect to the reasonable expectations of the SSO's members, it will prevent the patent holder from harming competition by discriminatorily refusing to

[60] Analysis of Proposed Consent Order to Aid Public Comment, *N-Data*, File No. 051 0094, 2008 WL 258308, at *40 (F.T.C. Jan. 22, 2008).

license (or imposing discriminatory terms), and it will likely constrain royalties to some level below the ex post maximum the standard would otherwise allow.[61]

Compulsory royalty-free licensing may be an appropriate remedy when the wrongdoing consists in concealing the existence of a patent that is implicated by the standard. This was the remedy imposed in *Dell*. Although such a remedy seems drastic, consider that it would only be imposed, under our proposed framework, when the failure to disclose: (a) violated the rules of the SSO, as they were reasonably understood by the other participants; (b) harmed competition and consumers; and (c) caused the patent to be incorporated into the standard. In such a situation, *ex hypothesi*, the counterfactual world "but for" the wrongdoing would be one in which no royalty was extracted for the use of the patent, because an alternative technology would have been used.

Finally, in cases in which the patent holder has already made an illicit profit from its misconduct, *disgorgement* of those profits may be an appropriate response—at least in cases of clear, egregious violations with evident anticompetitive effects.[62] The deterrent effects of a disgorgement remedy will complement the corrective effects of a compulsory license, in particular when the market has "moved on" from the relevant standard to a subsequent iteration that does not

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[61] *See generally* Swanson & Baumol, *supra* note 53, at 26–27; FTC, The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition 237 (2011), *available at* http://www.ftc.gov/os/2011/03/110307 patentreport.pdf. *See also* Daniel A. Crane, *Bargaining in the Shadow of Rate-Setting Courts*, 76 Antitrust L.J. 307 (2009) (noting in relevant part that "[i]ntellectual property owners are increasingly choosing to precommit to RAND licensing and judicial rate setting in order to avoid antitrust liability for various exercises of intellectual property rights, such as participation in standard-setting organizations (SSOs) or patent pools"); Stanley M. Besen & Robert J. Levinson, *Economic Remedies for Anticompetitive Hold-up: The* Rambus *Cases*, 56 Antitrust Bull. 583 (2011) (arguing that remedial compulsory royalties should be set *below* the hypothetical competitive level in order to deter misconduct).

[62] *See generally* FTC, Policy Statement on Monetary Equitable Remedies in Competition Cases (2003), *available at* http://www.ftc.gov/os/2003/07/disgorgementfrn.htm.

practice the relevant patent. Although prospective injunctive relief should attach only to the specific patent that was the subject of the misrepresentation, concealment, or other misconduct (because, among other things, the SSO's reasonable expectations applied only to the particular patent or patents at issue, not to hypothetical successor technologies), a disgorgement remedy ensures that the ill-gotten profits are not retained, that future misconduct is discouraged even in fast-changing markets, and that profits improperly derived from an abuse of the standard-setting process are ultimately restored to the public benefit.

Other remedies will not generally be appropriate in the absence of very special circumstances. A cease and desist order that proscribes *future* misconduct amounts to nothing more than a telling-off and would leave the effects of the abusive conduct in place. In almost all cases, in our view, compulsory licensing that restores the availability of the patent to the terms on which it would have been available in the counterfactual but-for world, perhaps accompanied by disgorgement, will solve the problem while avoiding the need for agencies to make improperly invasive decisions about licensing rates and terms. In the rare cases in which this will not solve the problem, it is entirely possible that the market, and consumers, may be best served by doing nothing.

VI. CONCLUDING REMARKS

By focusing on three issues—whether something went wrong in the standard-setting process, whether it mattered, and whether (and how) it can be resolved—we believe that the agencies can clarify and improve their approach to unilateral misconduct in the standard-setting arena. Our framework is firmly focused on ensuring compliance with an SSO's rules as reasonably understood by its participants. In our view, this approach would ensure that standard-setting bodies enjoy sufficient discretion to efficiently shape their own practices and policies without fear of regulatory second-guessing, as well as provide sufficient protection when those practices and policies are abused or violated for private gain at consumers' expense. Our approach also ensures that remedial action strikes a balance between the need, on the one hand, to correct future effects of such misconduct

by enforcing (through a compulsory license) the SSO's understanding of the terms on which the patent would be available to users of the standard, and the need, on the other, to confiscate the fruits of past misconduct to deter others from corrupting future standard-setting processes.

This is, of course, no more than a road map in an area of great complexity, but we hope that it will be of use to agencies and adjudicators attempting to forge a path through convoluted facts and subtle questions of causation in order to protect the standard-setting process and, through it, competition and consumer welfare alike.