

## **Standardizing the Law of Antitrust Oversight of Standard Setting in a Global Economy**

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Globalization has created a challenge for antitrust enforcement: how to manage multiple jurisdictional oversight of the same activity. An early harbinger of the tensions ahead emerged in the European Union's review of the merger between Boeing and McDonnell-Douglas, where the European Commission's (EC) antitrust review threatened to bar a transaction between two American companies whose merger passed muster at the Federal Trade Commission. That threat took on increased significance in the wake of the General Electric-Honeywell merger, where the EC blocked a merger between two American companies that had passed muster under U.S. antitrust standards. Similarly, the EC proceeded in 2004 to impose penalties and regulatory requirements on Microsoft above and beyond the requirements set forth in a U.S. consent decree. Consequently, the once hypothetical concern that American companies would face multiple antitrust regimes is now real. And the challenges of multi-jurisdictional oversight are only beginning.

The principal response by U.S. and foreign antitrust agencies to globalization and multi-jurisdictional oversight is to encourage convergence of antitrust standards and a dialogue on antitrust approaches. This strategy contrasts starkly, for example, with the models taken as to intellectual property and trade law. In the case of the World Intellectual Property Organization (WIPO), national authorities are required to adopt laws in compliance with international treaty obligations. As to the World Trade Organization (WTO), that body enjoys independent dispute resolution authority. In the case of antitrust law, no such international institution appears to be in the offing.

The challenges of multi-jurisdictional antitrust oversight are particularly significant for the information industries that are, by definition, operating in international markets. Increasingly, information technology firms realize that they are operating in an international environment where collaboration across countries and industry segments promises greater market opportunities and pro-competitive innovation. One institution that is uniquely situated to facilitate the development of new markets and to enable companies to work together effectively is standard setting bodies. Increasingly, such bodies are international by design, using the power of the Internet to involve engineers from all over the world in the development of new standards. Consequently, antitrust enforcers have recognized that "industry standards are widely acknowledged to be one of the engines of the modern economy."<sup>1</sup>

Standard setting bodies, particularly with regard to how they regulate the use of intellectual property in official standards, are both mindful of and greatly affected by antitrust oversight. Consider, for example, that the effort to develop a standard for third generation wireless standards has sparked an international round of antitrust and intellectual property litigation. In the United Kingdom, Qualcomm filed a legal action against Nokia, alleging that the Finnish firm had infringed "two Qualcomm patents in GPRS (General Packet Radio Service) and EDGE (Enhanced Data Rates for GSM Evolution) phones."<sup>2</sup> Nokia responded to this action by filing its own suit in the United States (in Delaware state court), claiming that Qualcomm had failed to comply with a standard setting body's requirement that it license certain patents on fair, reasonable, and non-discriminatory terms.<sup>3</sup> In its statement on the matter, Nokia alluded to the possibility of multiple jurisdictions getting involved in this dispute, explaining that "[t]his action seeking resolution through the Court follows the European Telecommunications Standardization Institute (ETSI) dispute resolution process."<sup>4</sup> Finally, Nokia and other firms have complained to the European Union's antitrust authority that Qualcomm has failed to live up to its commitment—

made as part of its participation in a standard setting body—to license its patented “technology on fair, reasonable and [non]discriminatory terms.”<sup>5</sup>

The challenges of globalization, as illustrated by the Qualcomm-Nokia dispute, include the need to develop an effective enforcement strategy where different jurisdictions could potentially decide matters related to information technology standard setting differently from one another. Particularly as to high stakes disputes emerging from intellectual property rights (IPR) and standard setting, firms are likely to seek favorable forums wherever they can find them around the world. As of yet, however, standard setting bodies have not developed effective strategies to prevent such forum shopping and to resolve IPR-related disputes, leading to lawsuits around the world aimed at defining standard setting body IPR licensing rules.<sup>6</sup> Unlike some aspects of antitrust oversight (say, the essential facilities doctrine<sup>7</sup>), different jurisdictions cannot simply adopt different approaches on standard setting body IPR policies because of the globalized nature of the information technology marketplace. In particular, because producers focus on international markets and users seek to benefit from economies of scale and network effects,<sup>8</sup> standard setting in the information industries is an inherently international activity and cannot easily comply with different rules in different parts of the world.

The disputes related to standard setting are only now emerging in full bloom because of the increased role that intellectual property (and, in particular, patents) play in official standards. As late as the early 1990s, patents were largely irrelevant in the software context, mostly large firms dominated standard setting, and standard setting bodies operated based on an ethic of cooperation, without the need for formal policies on matters such as intellectual property licensing. Indeed, in many contexts like the standard setting bodies that developed the basic Internet standards, standard setting efforts emerged out of a quasi-academic and cooperative environment truly dedicated to developing effective technologies. Today, most standard setting efforts must deal with conflicting business objectives and a series of pitfalls, including intellectual property rights that must be managed effectively in order for a standard to succeed. And such battles are high stakes ones, as the selection (or rejection) of particular standards can make or break information technology (IT) companies.

To explain the emerging issues related to antitrust oversight of standard setting in a globalized economy, Part I of this Chapter outlines how standard setting bodies have emerged as an important force in the information economy. Part II then evaluates the evolution of antitrust law as it viewed standard setting bodies, explaining how it has changed its attitude from one of skepticism to one of presumptive endorsement. Part III explains how standard setting bodies have adapted to the challenges of managing intellectual property rights related to official standards. Part IV returns to the question of how international antitrust oversight should address official standard setting. Part V offers a short conclusion.

## **I. The Emergence of Standard Setting In The Globalized Information Economy**

On many accounts, the first notable standard was the development of a uniform standard for railroads during the American Civil War.<sup>9</sup> This standard not only helped the North win the war (on account of its superior supply chain management), but also helped to spur the success of the railroad industry. In so doing, it underscored the importance of interoperability in network industries. Over the last twenty five years, as the digital revolution has picked up steam, economists have increasingly studied such issues, developing new models of “network economics.”

For the information economy, standards are uniquely important to facilitating the success of many new products and enabling different forms of interoperability on a global scale. In particular, different forms of interoperability range from enabling compatibility between rival products (say, enabling two telephone networks to communicate with one another), between platform products and complementary ones (say, enabling different products to plug into the telephone network), and between new products and old ones (say, enabling old software programs to work with a new computer operating system). Given the importance of interoperability in the information industries, it is not surprising that controversies and possible solutions related to interoperability issues have proliferated, with the increasing development of interoperable (and open) standards being one notable development. As one commentator noted over ten years ago, “[i]f all industries set standards at the same rate, one might expect fewer than one percent of standards pages to relate to information technology” where—at least in 1996—“more than 50 percent of all new standards pages [were] related to information technology.”<sup>10</sup> Over ten years later, the standards-intensive nature of the information industries show no signs of receding and the Internet has greatly fueled standards development activity, making clear that such standards set the framework for international markets in information technology products in both hardware (say, wi-fi routers) and software (say, instant messaging).

As an economic matter, standards are important and sometimes difficult to develop because they resemble, at least in many cases, a “public good.”<sup>11</sup> As classically defined, a public good is a resource that is non-rivalrous, non-excludable, and non-exhaustible.<sup>12</sup> Many standards, such as the standard size for paper used in copy machines or the TCP/IP standard that facilitates global Internet communications, share these qualities. In general, the question of how to encourage the production of public goods creates a dilemma because most individuals prefer to be free riders who do not contribute to their production rather than those who make the necessary investments (say, using more expensive technology to ensure clean air). In the standard setting context, the fundamental question is why customers or producers of a particular product will support a standard setting effort if they can enjoy the benefits of that effort—facilitating the emergence of new products, enabling interoperability between related products (either competitive or complementary ones), or ensuring product quality—without investing time or resources in that effort.

Reflecting the public goods-like quality of many standards, governments traditionally viewed standard setting as a function that they could and should assist. In terms of the Internet, for example, the U.S. government initially subsidized the development of TCP/IP as well as the Internet Engineering Task Force (IETF) that oversaw its evolution. In the telecommunications arena, regulatory authorities also have played an active role in standard setting for any number of reasons. In particular, regulators intervened in standard setting matters because the presence of a dominant firm justified regulatory oversight; because of a belief that a fractured marketplace would not adopt important standards; or because of industrial policy goals.<sup>13</sup>

In today’s global marketplace, the case for national standard setting is often difficult to make. After all, there is a premium on international cooperation and, to the extent that one country’s efforts succeed, it may well facilitate benefits that will be shared widely. Reflecting both the international pressures and the criticisms of government standard setting,<sup>14</sup> the emerging attitude of policymakers is that the private sector should lead in standard setting.<sup>15</sup> Indeed, the EU Commissioner for Information Society and Media recently explained that “[f]or governments to make a viable case for choosing any standard is much more difficult” than it was when the EU took a more active role, such as the setting of the GSM mobile telecommunications standard.<sup>16</sup> Similarly, the Clinton Administration praised the model of private standard setting and concluded

that it was “unwise and unnecessary for governments to mandate standards for electronic commerce.”<sup>17</sup>

For standard setting that takes place in the private sector, many engineers and engineering societies have traditionally viewed that activity as a form of public service whereby engineers act in their professional capacities and do not represent the interests of private firms. In the development of the Internet, for example, the IETF viewed itself as a quasi-academic body whose mission was to develop new standards based on “rough consensus and running code.”<sup>18</sup> Over the last ten years or so, the more romantic vision of standard setting has clashed with the reality of a more contentious process that is fraught with business implications.<sup>19</sup> Consequently, even IETF working groups are now heavily comprised of industry representatives, a development underscored by the organization’s acceptance of patented technologies as part of its standards and the increased delays in agreeing upon official standards.<sup>20</sup> Nonetheless, it is still admirable that standard setting bodies are able to maintain a “quasi-idealistic mission that succeeds through group synergy,” enabling its participants to “strive against long odds in what, at times, seems to be opposed to common sense and reality.”<sup>21</sup>

Given the dynamic and globalized nature of the information industries, the continuing development of new markets helps to explain the dramatic growth in standard setting over the last decade.<sup>22</sup> To be sure, the legacy engineering ethic of contributing to technological development for its own sake is still important, but more fundamentally, many companies believe that they cannot refrain from participating in standard setting because “architecture wins technology wars.”<sup>23</sup> As a collective matter for involved companies, new standards initiatives tend to provide important business opportunities because they “typically expand the total size of the market and may even be vital for the emergence of [a new] market in the first place.”<sup>24</sup> In practice, because standard setting bodies generally set “lowest common denominator” standards that leave room for proprietary extensions,<sup>25</sup> firms are potentially advantaged or disadvantaged by understanding how the technological architecture is developing and planning accordingly.

Another force that is raising the profile of standard setting around the world is the increasing importance of patented technologies in official standards. In particular, if a standard includes patented technology controlled by a single firm, that firm can charge royalties to all users of the standard. To be sure, such royalties may well be regulated by a commitment to license the technology at “reasonable and non-discriminatory” (RAND) terms, but this limitation—as discussed below—may only be minimally restrictive.

For smaller firms that cannot easily compete in an often global market where they must spur the development of a network based on their product, an established and well accepted standard that welcomes compatible applications may well provide them with an ability to compete.<sup>26</sup> Stated differently, standard setting bodies can overcome collective action problems—i.e., the need to signal to complementors and distributors to support a new product—that can destroy a product’s chance of success regardless of its high quality.<sup>27</sup> As standards have grown in importance and become more international, an increasing number of firms now participate in the standard setting process and often seek to patent technologies related to official standards,<sup>28</sup> making standard setting less “clubby,” more political, and increasingly marked by adversarial business objectives (as opposed to a cooperative and problem solving ethos). To address the challenges of managing so called “patent thickets,”<sup>29</sup> standard setting bodies have responded by sometimes requiring the disclosure of relevant intellectual property rights and often mandating that they are licensed at RAND terms.<sup>30</sup>

Managing claims for patent royalties is important because doing so can ensure that open standards remain inexpensive and can be adopted widely. Take, for example, the case of Wi-Fi, which is thriving because it is inexpensive,<sup>31</sup> but “if the cost of the technology goes up to pay for the license, even a little bit, it could throw off the economics.”<sup>32</sup> Not only would royalty payments jeopardize the proliferation of Wi-Fi technology, it would increase the price of Wi-Fi equipment and thereby undermine the ability of this technology to thrive (as opposed to would-be rivals such as Bluetooth).

In short, standard setting organizations (SSOs), as one survey of cited patents suggested, “not only select important technologies but also may influence their future.”<sup>33</sup> This study focused on formal standard setting bodies, but it is important to appreciate that informal consortia can also be very important in establishing new technologies.<sup>34</sup> Formal standard setting bodies (at least in the United States) are generally associated with the American National Standards Institute (ANSI) and commit to follow due process-like procedures.<sup>35</sup> Such bodies, such as the Institute of Electrical and Electronics Engineers (IEEE), emphasize open participation, eschewing any requirements of undue financial contributions or limitations on voting. By contrast, informal consortia, such as an organization like the Bluetooth Special Interest Group, generally operate with a considerable degree of proprietary control by the founding members or are limited to specific participants that make a financial commitment to the standards organization.<sup>36</sup> Such consortia initially were created to respond to the lack of focus and speed on the part of formal standard setting bodies, but some have suggested that they have increasingly failed to live up to such aspirations.<sup>37</sup> In any event, both formal SSOs and consortia aspire to develop standards and face challenges such as how to regulate the use of intellectual property in approved standards and thus I shall not differentiate between the two types of organizations, using the term SSOs to refer to both of them.<sup>38</sup>

## **II. The Law and Economics of Standard Setting**

Standard setting bodies present a challenge for antitrust law in a global economy. As noted at the outset, the challenge for antitrust oversight of standard setting in a multi-jurisdictional environment is to develop a rough consensus so that SSOs do not face different standards across the world. There is indeed some evidence that antitrust law is developing a more hospitable attitude toward cooperation among competitors necessary to facilitate new standards. In particular, based on insights from network economics and the recognition that new forms of cooperation have given rise to new products, antitrust enforcers have become increasingly tolerant of standard setting activity. Nonetheless, as explained below, courts and commentators still have some work to do in order to coalesce on a well-defined strategy for evaluating the competitive effects of standard setting.

### **A. Standard Setting and Antitrust Law**

The initial stance of U.S. antitrust law toward standard setting bodies reflected the received wisdom that collective decision-making by industry participants undermined competition.<sup>39</sup> In an early case involving a standardized container for milk, for example, the Seventh Circuit upheld the FTC’s condemnation of an agreement on the ground that it was used to facilitate collusion on pricing.<sup>40</sup> In so doing, the court declined to consider the procompetitive aspects of uniform container sizes, ruling that the purpose and effect of the standardized container was not to comply with government health regulations, to create economies of scale in packaging or to prevent consumer confusion, but designed and implemented because it was “easier to reach the goal of uniform prices on a standard product than on one which was not.”<sup>41</sup> Over time, courts have increasingly re-assessed their initial skepticism of standard setting, recognizing that some

efforts represent “praiseworthy effort[s] at self-regulation [rather] than a device for facilitating supracompetitive pricing.”<sup>42</sup>

The traditional skepticism of concerted conduct by industry participants was certainly overbroad, but it also reflected legitimate concerns about exclusionary arrangements. In the famous *Allied Tube* case, for example, the Supreme Court ruled that a standard setting body’s refusal to certify as safe the use of plastic conduit constituted an illegal restraint of trade designed to exclude entry from an equally efficient competitor.<sup>43</sup> In that case, the standard setting body’s action created an anticompetitive impact because many government agencies adopted the standard setting body’s recommendations on safety regulation.<sup>44</sup> Consequently, *Allied Tube* provides that standard setting activity that is both motivated by an exclusionary purpose and creates such an effect is legally suspect. In so doing, *Allied Tube* followed earlier decisions (such as *Radiant Burners, Inc. v. Peoples Gas Light & Coke Co.*<sup>45</sup>) which concluded that biased and discriminatorily enforced standards can give rise to antitrust liability.

To respond to the concerns of antitrust courts, many standard setting bodies have established procedural safeguards and have sought to avoid playing a quasi-regulatory role. In *Eliason Corp. v. National Sanitation Found.*, for example, the Sixth Circuit turned away an antitrust challenge to a standard setting program that tested products in a patently non-discriminatory fashion and made no attempt to exclude disapproved products from the market.<sup>46</sup> This approach avoids evaluating the merits of the standard or judgments about the standard setting body itself—matters upon which antitrust courts (and particularly juries) are unlikely to be able to render effective judgments.<sup>47</sup> Instead, it emphasizes procedural safeguards, such as whether the standard setting body’s decisions are likely to injure competition and whether the body’s membership includes customers or only competing producers.<sup>48</sup> By so doing, it recognizes the important point made in *Allied Tube*: that, when standards are set based upon “objective expert judgments and through procedures that prevent the standard setting process from being biased by members with economic interests in stifling product competition, those private standards can have significant procompetitive advantages.”<sup>49</sup>

The emerging antitrust stance on standard setting continues to harbor some of the traditional skepticism that collective decision-making largely advances exclusionary objectives. Consider, for example, the recent decision in *Golden Bridge Technology, Inc. v. Nokia, Inc.*,<sup>50</sup> which rejected a motion to dismiss a claim that a standard setting body’s decision about a particular technology constituted a *per se* illegal group boycott—even without any allegation that the decision necessarily created an anticompetitive effect. In that case, unlike *Allied Tube*, the standard setting body’s decision merely failed to include a firm’s proprietary technology—it did not shun that technology as unsafe, nor knowingly signal to governmental authorities that it should be barred from use.<sup>51</sup>

Policymakers increasingly recognize that the traditional skepticism of collective decision-making on matters involving product standards for either quality, safety, or interoperability purposes can be counterproductive.<sup>52</sup> In particular, many standard setting efforts—like the one in *Golden Bridge*—are merely ones that facilitate the development of new products. By contrast, cases like *Allied Tube* raise distinct concerns insofar as they represent efforts by an incumbent firm to use standard setting forums backed by government authority to prevent new forms of entry.<sup>53</sup>

## **B. The Law and Economics of Interoperability**

Stated simply, the establishment of a standard to promote interoperability presents regulators with an apparent opportunity to promote economic efficiency. After all, viewed statically, interoperability increases competition and therefore should lower prices to consumers. Such a static perspective, however, does not appreciate that the opportunity to charge supracompetitive rates for a period of time is exactly what motivates the development of new technologies in the first place. In honor of Joseph Schumpeter, the late Austrian economist who heralded the importance of technological innovation and described economic progress as driven by forces of “creative destruction,”<sup>54</sup> the concept of dynamic efficiency is often equated with “Schumpeterian competition.” On the Schumpeterian perspective, it is the competition for the market and not within the market that really matters.<sup>55</sup>

The theory behind patent law’s guarantee of a temporary monopoly on the use of an invention is in line with Schumpeter’s theory of innovation. To that end, the patent system offers innovators an unrestrained hand—and protection from competition—in how they price their invention. For industries requiring significant upfront investments in research and development, the incentive of a patent, and the prospect of charging supracompetitive prices (often referred to as “monopoly rents”), is critical to spurring innovation. As Assistant Attorney General Barnett put it, “[w]here innovation requires substantial up-front research and development (R&D) costs, a rational firm will elect not to innovate if it anticipates a selling environment that too quickly resolves to marginal cost of production.”<sup>56</sup> Highlighting the flaw in the traditional economic focus on perfect competition (and the pricing of products at marginal cost), this point is often referred to as the “marginal cost fallacy.” That is, for industries with significant sunk and irreversible costs (such as telecommunications), marginal cost pricing “will not provide an adequate return to the investors who provide capital,” leading investors to be “cautious about investing money upfront because *ex post* competition could drive prices to nonremunerative levels.”<sup>57</sup>

From a purely Schumpeterian perspective, efforts to facilitate interoperability that would limit the ability of an inventor to reap monopoly rents might present a case of killing the goose that lays the golden eggs.<sup>58</sup> There is, however, another perspective—that of “network effects.” On this view, the innovation that develops a new market may not be dominant because of a novel invention (say, backed by patent protection), a terrific product, or an effective marketing strategy. Rather, a market leader may capture a dominant position because of the presence of strong network effects—i.e., the value created because a product enjoys a large customer base whereas rivals possess relatively small customer bases.<sup>59</sup> Invoking this perspective, Carl Shapiro suggested that, in network industries, the “lack of compatibility can be the death-knell of a new technology.”<sup>60</sup>

The concept of “network effects” is increasingly familiar to lawyers and business persons alike. In the old economy, it was largely irrelevant whether a greater number or only a few individuals adopted a particular product (say, a knife). In the new economy, particularly for information and communications technology products, the more users who adopted a product, the more valuable that product would be. In the case of the telephone network (or instant messaging to take a more modern example), there is a clear direct network effect—the more people a user can contact, the more valuable the service is. In the case of Microsoft’s operating system, the network effect is indirect—the more users of Windows, the greater the incentive to develop applications for that product (as opposed to less popular operating systems). For both direct and indirect network effects, there is a positive feedback effect—a more valuable platform creates more demand for that platform, making that platform yet more valuable.

### **C. The Role for Antitrust in Overseeing Standard Setting**

A fundamental choice for antitrust policy as well as intellectual property law is whether to put a thumb on the scale in influencing the nature of competition in particular markets. By encouraging or discouraging compatibility between potentially rival products (say, by subjecting cooperative efforts to greater or lesser antitrust scrutiny), policymakers can influence how an industry evolves. How antitrust policy should view compatibility issues is a matter of some controversy, with the Schumpeterian perspective suggesting the importance of intersystem competition (based on incompatibility) and the network effects perspective championing the importance of intrasystem competition (based on compatibility).

To make matters more complicated, it may well be that the proper strategy for antitrust oversight will depend on the dynamics of the particular market at issue. As the D.C. Circuit observed in the *Microsoft* case: “the economic consequences of network effects and technological dynamism [may] act to offset one another, thereby making it difficult to formulate categorical antitrust rules absent a particularized analysis of a given market.”<sup>61</sup> In *Microsoft*, the court concluded that dominant firms have an obligation not to adopt technologies that exclude rivals without a legitimate business reason. In so doing, however, it made clear that “[a]s a general rule, courts are properly very skeptical about claims that competition has been harmed by a dominant firm’s product design changes.”<sup>62</sup> Nonetheless, the *Microsoft* case made clear that there is a role for antitrust law to prevent the sabotage of the development of open standards by a firm seeking to maintain its expectation-based dominance.<sup>63</sup> Indeed, a critical issue in the *Microsoft* case was Microsoft’s deception of Java developers in an effort to frustrate the development of an open standard that threatened the dominance of its platform.<sup>64</sup>

Given the uncertainty between different policy strategies and how particular market dynamics may influence the appropriate strategy, it is a fair starting point for antitrust enforcers to proceed cautiously in this area and avoid categorical approaches (that would either deem conduct per se illegal or per se lawful). To this end, courts and policymakers generally reject the notion that all standard setting efforts are a front for collusion and they increasingly appreciate that many such initiatives serve procompetitive purposes. Recognizing this point, Congress enacted the Standards Development Organization Advancement Act of 2004, providing for rule of reason oversight of standard setting activity and restricting the availability of treble damages.<sup>65</sup>

In addition to adopting a cautious stance on regulating standard setting, antitrust enforcers should appreciate how particular factors counsel deference to the decisions of standard setting bodies and skepticism that antitrust oversight will be beneficial. First, deference toward standard setting should be even more pronounced where the body is predominantly comprised of individuals whose interests are not to exclude competitors or reap monopoly profits, but rather to promote greater product quality, interoperability, or facilitate the emergence of a new product. Second, if a rival standard exists—even if it is not popular—its ability to constrain any market power of an official standard should be a factor in evaluating the merits of antitrust oversight.<sup>66</sup> Third, the value of antitrust oversight is suspect where a firm complains of conduct that was disclosed to the standard setting body before it selected a standard (say, licensing arrangements for intellectual property that was embodied in an official standard) and the body—assuming it followed regular procedures and was not captured by a particular firm’s interest—proceeded to approve the standard.<sup>67</sup>

Antitrust law’s transformation from a skeptical to a hospitable stance toward cooperation on standards related issues reflects an increasing appreciation for the dynamics of the information economy and the role of network effects. Rather than endure a costly standards war where rival firms sponsor incompatible products, a cooperative venture—whether through a consortium of

private firms or an open standard setting body—can, as FTC Chair Deborah Majoras noted, “allow products supplied by different firms to interoperate, making them more valuable to consumers and thus increasing the chances of market acceptance.”<sup>68</sup> After all, as one standard setting veteran explained, “[a]lthough interoperable products can provide great value for customers, that value may not be realized unless standards exist to foster the availability of a network of related, interoperable products; many innovative products might never have existed without standards.”<sup>69</sup> In light of this recognition, Majoras suggested a tolerant stance toward standard setting, explaining that “we have not seen frequent instances of naked collusion” in standard setting and adopting an attitude markedly different from decades earlier.<sup>70</sup>

The evolving attitude toward standard setting bodies has accepted their procompetitive virtues and focused on a new concern: the problem of patent hold-up.<sup>71</sup> This problem reflects the confluence of the increased patenting in the technology sector as well as the increasing proliferation of standards to facilitate interoperability between competing or complementary products. As the FTC explained in its *Report on Intellectual Property and Competition Policy*:

If an innovator or producer learns that it has infringed a patent only after it has committed sunk costs to its innovation and production—and thus locked in to the effort—the patentee may be in a position to demand supra-competitive royalty rates. If, before lock in, the downstream actor had known about the patent and could have designed its product or innovation around it, then the firm might have used the opportunity to adopt alternative designs as leverage for seeking a competitive royalty rate. But after lock in, the downstream actor no longer has that option. Redesigning a product after significant costs have been sunk may not be economically viable.<sup>72</sup>

Reflecting this point, the FTC has since concluded that “[a]ntitrust scrutiny of possibly deceptive conduct in the standard-setting context is especially warranted when the standard-setting body has determined to carry out its work in an environment ostensibly characterized by cooperation rather than rivalry.”<sup>73</sup>

In theory, when technologies compete for inclusion in a standard, no patent holder can demand more than a competitive royalty rate. But after the standard is set and firms have incurred sunk investments in producing particular products, patent holders are in a position to extract supracompetitive royalties. The challenge in identifying hold-up behavior in practice is that there may not be a clear benchmark for the relevant technology and its apparently high rates might be the product of cutting-edge technology “developed through ‘superior skill, foresight, and industry.’”<sup>74</sup> Moreover, to the extent that rival technologies to the standard exist, those rivals should limit the ability of a patent holder to extract supracompetitive royalties.

To date, the *Rambus* decision is the FTC’s (as well as any antitrust authority’s) most dramatic decision involving antitrust oversight of standard setting bodies. In that case, Rambus allegedly participated as a member of the Joint Electron Device Engineering Council (JEDEC) at the same time that it amended pending patent applications so as to cover the standard under consideration. As the FTC alleged in its complaint, Rambus violated the antitrust laws by “deliberately engaging in a pattern of anticompetitive acts and practices that served to deceive [JEDEC], resulting in adverse effects on competition and consumers.”<sup>75</sup> Even though Rambus officially withdrew from JEDEC before the final standard was adopted, the FTC concluded that it did so after failing to disclose its pending patent applications and with the intention of pursuing a hold-up strategy. Finally, as the FTC appreciated, the *Rambus* decision emerged in a context where none of the mitigating factors noted above were present; in particular, there were no

marketplace rivals to the selected standard and Rambus had not disclosed its patents and intended licensing fee before the adoption of the standard.

The *Rambus* decision is only beginning to influence the conduct of standard setting and some have suggested that a heightened role for antitrust in this area is inappropriate. In one line of criticism, Assistant Attorney General Barnett suggests that “if the government is too willing to step in as a regulator, rivals will devote their resources to legal challenges rather than business innovation” and, in particular, will not engage in “Schumpeterian competition.”<sup>76</sup> In a second line of criticism, Justice Department Deputy Assistant Attorney General Gerald Masoudi emphasized that compulsory licensing of intellectual property as an antitrust remedy should be rare, citing *Trinko* for the proposition that antitrust authorities should avoid assuming “the day-to-day controls characteristic of a regulatory agency.”<sup>77</sup> Finally, Professor Hovenkamp has claimed that failures by firms to disclose their patent positions and to later engage in a hold-up strategy are beyond the competence of antitrust authorities to address and “are probably best addressed via the institutional design of standard setting procedures, including predisclosure obligations, rather than by antitrust.”<sup>78</sup> To evaluate the merits of antitrust oversight in this area, Part III first assesses the institutional strategies used by standard setting bodies to avoid hold-up and Part IV then investigates the proper role for antitrust law in this area.

### **III. Institutional Responses To Hold-Up**

A significant challenge to standard setting bodies in a global economy is how to avoid holdup-type scenarios. To address that challenge, as I discuss in Section A, many standard setting bodies have adopted the strategy of mandating disclosure of any patent rights that inhere in official standards. As I discuss in Section B, however, the principal safeguard is often a requirement that firms participating in a standard setting body commit to license any patented technology at RAND—a requirement that begs the question of what RAND actually requires. To address such concerns, an increasing number of standard setting bodies have adopted a policy (discussed in Section C) of requiring holders of essential patents to commit to certain licensing terms before the patents are included in official standards.

#### **A. The Disclosure Requirement**

The concept of requiring firms to disclose their IP rights related to standards under consideration sounds like a fairly straightforward requirement. It is not. To avoid addressing a series of difficult questions related to the nature of a disclosure requirement, many SSOs leave the nature of the requisite search obligation vague or ambiguous on any number of dimensions. In particular, a number of SSO IPR policies do not specify the extent of the requisite search (the knowledge of the participant or a broader duty), whether the search covers patent applications as well as issued patents, or whether it is mandatory (or merely encouraged).

The diversity of possible approaches to a disclosure requirement is quite broad. At one extreme, SSOs can mandate a search of a participating firm’s entire patent portfolio, but at the risk of creating an undue burden and creating a considerable disincentive for firms to participate.<sup>79</sup> At the other extreme, if firms are only held accountable for patents of which the firm’s representative was aware, there is an incentive to send representatives with little knowledge of the firm’s patent activity. In general, SSOs attempt to steer a middle course, eschewing a broad disclosure requirement, but also requiring reasonable inquiries so that firms cannot strategically avoid complying with the requirement.

The American National Standards Institute (ANSI), which recommends that all accredited standards body impose a disclosure requirement, has explained the principal virtues behind this procedure. In particular, its IP implementation guidelines explain that:

Experience has indicated that early disclosure of patents is likely to enhance the efficiency of the process used to finalize and approve standards. Early disclosure permits notice of the patent to the standards developer and ANSI in a timely manner, provides the participants the greatest opportunity to evaluate the propriety of standardizing the patented technology, and allows patent holders and prospective licensees ample time to negotiate the terms and conditions of licenses outside the standards development process itself.<sup>80</sup>

Notably, ANSI recognizes that the presence of patented technology is a relevant consideration for SSOs selecting an official standard and that the awareness of licensing terms can influence the choice of whether to include a particular technology in an official standard.

Even after striking a balance on the extent of the search obligation, there are a series of other questions that SSOs must consider in crafting a disclosure requirement. As an initial matter, SSOs must decide what type of patents must be disclosed—i.e., whether pending (or future) patent applications are subject to the disclosure duty—as well as when the disclosure duty arises (say, at the time of the vote on the standard) and what consequences attach in the absence of a required disclosure (say, being subject to a RAND or royalty free mandate). Moreover, standard setting bodies must define the concept of an “essential patent claim,” either through a broad concept regulating all patents related to the standard or a narrower one focusing only on patents that are necessary to its implementation because no technically feasible technology exists.<sup>81</sup> In calibrating the nature of the disclosure obligation, standard setting bodies should be cautious about overbroad approaches that would (1) extend the scope of the disclosure obligation to all patents related to the standard (as opposed to those necessary to its implementation); (2) broaden the disclosure obligation to patents that might conceivably be related to the standard during any part of its development;<sup>82</sup> or (3) expect the disclosure of confidential unpublished patent applications.<sup>83</sup>

In both antitrust and patent litigation involving Rambus, the JEDEC’s lack of a clear disclosure requirement became a significant issue, underscoring the need for SSOs to evaluate the clarity of their policies. For the Federal Circuit (in a case addressing the relevant intellectual property issues), the lack of a clear disclosure requirement actually undermined the case that Rambus’ patents should be subject to equitable estoppel or an implied license (let alone the basis of a common law fraud claim). In particular, the court concluded that the JEDEC rule could only be interpreted as imposing an objective duty on participants to disclose patents involving essential claims. As it explained:

[T]he disclosure duty operates when a reasonable competitor would not expect to practice the standard without a license under the undisclosed claims. . . . To hold otherwise would contradict the record evidence and render the JEDEC disclosure duty unbounded. Under such an amorphous duty, any patent or application having a vague relationship to the standard would have to be disclosed. JEDEC members would be required to disclose improvement patents, implementation patents, and patents directed to the testing of standard-compliant devices—even though the standard itself could be practiced without licenses under such patents.<sup>84</sup>

By contrast, the FTC’s ruling holding Rambus liable under antitrust law adopted a “totality of the circumstances” approach to discerning the relevant disclosure obligation, considering Rambus’ subjective attitude, other JEDEC’s members’ understanding, and the behavior of other JEDEC members. Based on this approach, the FTC concluded that “Rambus’s silence, in the face of members’ expectations of disclosure, created a misimpression that Rambus would not obtain and/or enforce such patents.”<sup>85</sup>

## **B. The RAND Licensing Requirement**

Traditionally, many standard setting bodies have maintained that the essential—and only necessary—safeguard against hold-up is a commitment by all participating firms to license necessary patent claims at RAND terms and conditions. As of 2002, an overwhelming majority of SSOs with written IP policies (24 out of 36 surveyed) included some form of a RAND licensing commitment.<sup>86</sup> Attesting to the popularity of this approach, the IEEE, in its comments to the FTC, suggested that the “only reasonable approach [to safeguarding against hold-up concerns], and one that has proven to be very efficient and effective for decades, is to ensure that any known patent holders whose patents may be required (i.e., essential to implement or use the standard) are willing to offer licenses under terms and conditions that are reasonable and not unfairly discriminatory.”<sup>87</sup> In so stating, however, it acknowledged that this model is “performed on a voluntary and reasonable best effort basis”<sup>88</sup>—begging the question as to whether it can succeed in an environment where firms (like Rambus) are behaving more strategically and are not motivated by a spirit of cooperation.

The overwhelming belief in the commitment to RAND licensing as a strategy against holdup begs for closer analysis as to what the RAND commitment means in practice. As an initial matter, it is important to ask whether a commitment to RAND is self-evident as to what it requires. In principle, the answer is relatively straightforward, as most commentators agree that “the concept of a ‘reasonable’ royalty for purposes of RAND licensing must be defined and implemented by reference to *ex ante* competition, i.e., competition in advance of standard selection.”<sup>89</sup> In practice, however, an approach that leaves the meaning of RAND unsettled until after a standard is adopted and implemented is highly problematic. After all, “what a patent holder considers to be a ‘reasonable’ royalty rate will inevitably be considerably higher than what licensees believe such a rate to be, particularly at the *ex post* stage when the patent holder has the added leverage flowing from the lock-in effect of the industry adoption of the standard . . . .”<sup>90</sup> Recognizing the extent of the leeway under a RAND commitment, some commentators have suggested that, even under a RAND commitment, a firm can “unilaterally impose onerous license terms at that ‘ex post’ stage, an anticompetitive exercise of artificially created seller market power that adversely affects consumer interests generally.”<sup>91</sup>

The general weight of scholarly commentary has called for skepticism that the RAND commitment, standing alone, provides much of an effective safeguard. Robert Skitol, for example, contends that “[r]equiring RAND assurances makes sense in general but becomes counterproductive—a tool for misuse—when SSOs foreclose any opportunity for participants to ascertain what RAND will mean (actual license terms) prior to voting on the proposed standard in question.”<sup>92</sup> Similarly, Mark Lemley concluded, after a thorough survey of SSO IP policies, that the RAND commitment is often an empty formulation, as “[v]irtually no SSO specifies the terms on which licenses must be granted beyond the vague requirement that they be ‘reasonable’ and ‘nondiscriminatory.’ . . . The result is uncertainty over the cost and scope of patent licenses that may not prove much better than having no policy at all.”<sup>93</sup>

The best defense of the RAND commitment as providing a real safeguard is Joseph Miller's suggestion that RAND is, viewed properly, merely a commitment to accept a liability (i.e., damage) rule and to forgo a property rule (i.e., seeking an injunction). As he sees it, "the details of the license that the parties later negotiate [under the auspices of a RAND commitment] are quite minor compared to the paramount importance of establishing the patentee's inability to seek an injunction."<sup>94</sup> Consequently, Miller terms the RAND commitment as a "transaction-cost-minimizing governance structure equivalent to the separate patent licensing corporation that sits at the center of the typical patent pool."<sup>95</sup> This view of RAND is certainly plausible, but until courts rule on actions such as the one filed by Nokia against Qualcomm requesting this relief, the practical impact of a RAND commitment remains to be seen.

### C. The Endorsement of the SSO and The Value of Post-Disclosure Negotiations

The increasing concern that a RAND commitment does not provide a sufficient constraint on later royalty negotiations has led some SSOs to require the front-end disclosure and negotiation of licensing terms. To be sure, most SSOs have yet to require that participants disclose much information related to any essential patents, with 90% of those SSOs requiring some form of disclosure not calling for any information related to the pricing of essential patent claims.<sup>96</sup> Consequently, except for in a relatively few number of cases, SSOs do not have the necessary information to make price-quality tradeoff judgments as to the merits of one proposed standard versus another option.

Recognizing the limits of the RAND commitment and the potential value of an up-front evaluation of licensing terms, a number of commentators have suggested that standard setting bodies should provide a negotiation period over the royalty sought in the wake of the relevant disclosure.<sup>97</sup> In the past, such a model has generally been rejected on the grounds that (1) the engineers who participate in standard setting are not well positioned to make the necessary business judgments assessing the merits of technologies based on the relevant royalties; and (2) any such negotiations would, in effect, constitute an illegal group boycott under the antitrust laws.<sup>98</sup> I reject both suggestions, for reasons discussed in turn below.

#### i. *The Dynamics of Technology-Price Evaluations*

The classic response to the call for a greater awareness of the relevant costs of different technologies is that such a judgment is beyond the purview of the engineers who traditionally take part in standard setting. As I see it, this attitude about standard setting reflects an antiquated desire to preserve the model of standard setting as a quasi-public service by technologists. To be sure, standards continue to serve an important public function and many engineers still retain a public interest-type concern about technology quality. The reality, however, is that standard setting decisions can make or break companies, the process has grown increasingly contentious, and the intellectual property issues alone are increasingly significant in determining whether a standard can succeed. Consequently, to maintain the traditional stance amidst a new reality—as some standard setting bodies continue to do<sup>99</sup>—is, stated simply, unsustainable and unwise.

There are notable challenges in designing a disclosure system that can allow for judgments about both the quality of the technology and associated IP issues. If implemented appropriately, a disclosure regime can "encourage *ex ante* competition between substitute technologies without limiting the legitimate rights of patent-holders or harming innovation incentives."<sup>100</sup> This ideal is indeed the same principle that animates the commitment to RAND licensing, except it is implemented on the front-end as opposed to the back-end. It is debatable whether this model will be more effective than RAND, but it is clear that a sole reliance on

RAND is an imperfect strategy and it is worth investigating the effectiveness of alternative approaches.

With respect to the weaknesses of the front-end model of scrutinizing IP licensing terms, it is likely that SSOs that implement such a system may encourage some participants to focus their efforts elsewhere. Notably, developing licensing policies in advance of a market's development places a burden on businesses that they may prefer not to bear—both in terms of identifying relevant patents and in placing a value on them. But any delays or burdens created by this activity earlier in the process may well save time down the road, at which point the process of licensing necessary technology without the aid of any clear guideposts can be time consuming, contentious, and costly (even with a RAND commitment).<sup>101</sup> Finally, even though asking “individuals who are not knowledgeable about or authorized to make decisions about licensing terms”<sup>102</sup> will require a change in the culture of standard setting, this process is already underway and will become increasingly well accepted over time.

In short, the reality is that patents are increasingly a part of what makes standards successful and thus standard setting bodies cannot afford to ignore their existence. To pretend that decisions on standards are made on purely technical grounds is increasingly irresponsible and unrealistic, meaning that there are powerful reasons why standard setting bodies should endeavor to understand the relevant patent issues and associated licensing terms before committing to particular approaches. In short, “[t]he more that is known before a standard is adopted, the better from the standpoint of anticipating and protecting against the post-adoption exercise of market power that a patent may confer if it is essential to the standard's use.”<sup>103</sup> Over time, I expect that norms and policies will increasingly change to reflect this new reality, underscored by ANSI's current stance on the issue, which allows participants to make voluntary written disclosures of licensing terms.<sup>104</sup>

It is important not to overstate the extent of negotiations and evaluation of licensing terms at the stage of endorsing a proposed standard. A virtue of the approach that asks firms to disclose a maximum royalty rate and commit to a number of key non-price terms is that it does not purport to call for a thoroughgoing negotiation up front. Thus, while it may well be “folly to expect, much less insist upon, ex ante negotiation of detailed, tailored license terms,”<sup>105</sup> there are important issues that can be worked out in addition to an often vague commitment to RAND terms and conditions.

#### *ii. Post-Disclosure Negotiations and Antitrust Oversight*

The cause for antitrust concerns related to up front royalty discussions are increasingly diminished as antitrust enforcers, courts, and Congress have emphasized the procompetitive nature of standard setting in general and such discussions in particular. FTC Chairwoman Majoras, for example, suggests that “joint ex ante royalty discussions that are reasonably necessary to avoid hold up do not warrant per se condemnation.”<sup>106</sup> On her view, the firms that mandate royalty free licensing commitments have, in effect, already done just that. Moreover, she explains, the virtue of front-end discussions on licensing terms can “prevent delays in the implementation of the standard resulting from ex post litigation (or threats of it), which may involve inefficient allocation of resources intended for innovation.”<sup>107</sup> At the Department of Justice, Assistant Attorney General Barnett signed a business review letter in the fall of 2006, which—for the first time—gave its blessing to a standard setting body's policy of requesting that all patent holders disclose their maximum royalty rate and most restrictive non-price licensing terms before the body vote on any proposed standard.<sup>108</sup> In so doing, the Department also indicated that it would evaluate any collective negotiation and discussion of royalty terms (which

was not the case in the matter reviewed) “under the rule of reason because such practices could be procompetitive.”<sup>109</sup> Finally, in their joint report on *Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition*, the FTC and Department of Justice embraced the rule of reason model, further explicating the approach articulated by Majoras and Barnett.<sup>110</sup>

In the judicial realm, courts are affording standard setting bodies increased leeway. The First Circuit, for example, rejected an antitrust claim by a disappointed bidder that a private consortium of UNIX computer vendors violated the antitrust laws. In so doing, it not only explained that per se condemnation was inappropriate, but it emphasized the procompetitive potential of standard setting.<sup>111</sup> Similarly, district court decisions have called for rule of reason analyses to assess whether up front royalty restrictions create anticompetitive effects.<sup>112</sup> To be sure, there are still anomalous decisions by courts that view standard setting efforts with considerable skepticism,<sup>113</sup> but such decisions are increasingly rare and on shaky ground. In short, most courts recognize the obligation of antitrust plaintiffs to demonstrate the anticompetitive effects of a standard setting-related decision, including ones related to licensing issues.<sup>114</sup>

Weighing in on this issue, Congress enacted the Standards Development Organization Advancement Act, encouraging not only the disclosure of intellectual property rights in proposed standards, but also encouraging “discussions among intellectual property rights owners and other interested standards participants regarding the terms under which relevant intellectual property rights would be made available for use in conjunction with the standard or proposed standard.”<sup>115</sup> In particular, this law calls for rule of reason scrutiny of decisions that emerge from formal standard setting bodies and immunized such bodies from treble damage liability. To be sure, this statute only applies to formal standard setting bodies (and not other standard setting bodies or individual members of formal standard setting bodies), but its reasoning is more generally instructive as well.

The evolving stance on the role of antitrust oversight of standard setting reflects an increasing appreciation that SSO private ordering-based solutions are likely to be more effective than antitrust authorities in policing against hold-up concerns. The international nature of technology development and the multi-jurisdictional challenge of antitrust oversight mandates an even greater degree of caution concerning active antitrust oversight, as such a policy will most certainly invite conflicting approaches across the globe. In some contexts, different antitrust standards can even be healthy, say, allowing for different experiments as to the proper level of enforcement. In the standard setting arena, however, the international nature of the activity does not allow standard setting bodies to respond to different levels of oversight. Rather, most SSOs will be placed in the untenable position of attempting to satisfy all applicable antitrust rules—even when they are self-contradictory. Part IV, therefore, outlines the case for a modest role for antitrust oversight of standard setting in a global economy.

#### **IV. The Enforcement of SSO IP Policies, The Proper Role for Antitrust, and The Complications of Multi-Jurisdictional Oversight**

SSOs are increasingly aware that they have a responsibility to develop and enforce rules to ensure that firms do not abuse the standard setting process. As a legal matter, however, there are serious questions as to whether SSOs are in a position to enforce IP policies as contracts or, in the alternative, as creating implied licenses. Moreover, as a practical matter, only a limited number of SSOs have any procedure in place for resolving disputes.<sup>116</sup> Consequently, a critical

question for antitrust law is whether it is suitable to fill the breach and act as a backstop for enforcing SSO IP policies.

#### A. A Role for Antitrust Law?

In terms of the role for antitrust law as a response to holdup concerns, there are three possible theories: (1) antitrust imposes an oversight regime to guard against hold-up regardless of the underlying disclosure obligation;<sup>117</sup> (2) antitrust law serves to reinforce (and enforce) the disclosure obligation by providing a remedy; or (3) antitrust defers to the presence of an intellectual property right and leaves it to IP law (or private ordering) to guard against hold-up. On the last argument, there is considerable dicta in the *Trinko* decision that can be read as counseling against antitrust oversight over IP rights, both in terms of incentives to innovate as well as in terms of the difficulties in overseeing any antitrust remedy. Nonetheless, as former Assistant Attorney General Hewitt Pate explained, “[t]he mere presence of an IP right that somehow figures in a course of otherwise anticompetitive conduct does not act as a talisman that wards off all antitrust enforcement.”<sup>118</sup>

As I have argued elsewhere with respect to antitrust and regulation, I believe that antitrust oversight can complement intellectual property law and private ordering.<sup>119</sup> In fact, effectively focused antitrust oversight—as was the case in *Rambus*—can bolster the effectiveness of private standards bodies that might otherwise be less vigilant in ferreting out abusive conduct. Significantly, in order to enjoy the continued deference (as opposed to immunity) from antitrust liability, standard setting bodies will need to protect their reputations for procedural regularity and unbiased administration. Thus, at least as a backstop for egregious cases of patent holdup, antitrust law can play a constructive role in addressing anticompetitive conduct emerging out of standard setting activity.

Although the threat of hold-up appears to be a significant issue for antitrust authorities, there are questions as to how pervasive such threats are. As one commentator has suggested, the number of relevant abuses and disputes “remains very small when viewed in the context of overall standards development.”<sup>120</sup> Others, however, have maintained that “patent holdup has been a real problem, introducing delay, inefficient allocation of resources intended for innovation, and the possibility for individual patent holders to exercise unjustified control over the design of fundamental technology infrastructure on which the entire marketplace depends.”<sup>121</sup> In particular, one SSO has changed its patent policy on the ground that two previous episodes of holdup—where the presence of a RAND commitment was judged insufficient to ensure reasonable licensing terms—caused significant additional costs and delays in one case and, in another, rendered the standard commercially unviable.<sup>122</sup>

Even to the extent that antitrust oversight can be effective, the dynamic and globalized nature of the IT industries mean actions like that in *Rambus* should be reserved to truly exceptional (and very egregious cases). As discussed above, a rule of antitrust restraint increases the likelihood that different jurisdictions will not interpret and apply the rules of antitrust oversight of standard setting differently, thereby placing standard setting bodies in the untenable position of facing contradictory directives. Stated differently, because of the international nature of standard setting, national antitrust authorities cannot afford to conduct different experiments as to the appropriate level of antitrust enforcement (as they can in many other areas).

Even putting aside the international dynamic, a second reason for antitrust restraint in the oversight of standard setting is that it is important not to displace institutional experimentation and alternative strategies for addressing hold-up. In the aftermath of a consent decree action

involving Dell, for example, some commenters expressed the concern that the antitrust theory of the case was not well explained, leaving observers with the possible impression that antitrust law imposed on all participants in standard setting bodies a comprehensive duty to search their patent portfolios before standards were adopted.<sup>123</sup> Therefore, in developing antitrust rules, enforcers and courts must be mindful of the ongoing experimentation in this area, meaning that it would be a mistake to preempt the variety of approaches now being used in favor of a uniform strategy driven by federal guidelines.<sup>124</sup> Indeed, the opportunity for standard setting to take place in different contexts is an important strength of the U.S. system.<sup>125</sup> For this reason, ANSI has strongly opposed any suggestion that antitrust authorities displace the diversity of approaches used by standard setting bodies.<sup>126</sup>

A final reason that antitrust enforcers should be careful about over aggressive efforts to enforce SSO IP policies is that antitrust courts are often not in an effective position to devise effective remedies. In the *Rambus* case, for example, the FTC faced the question of how to “so far as practicable, cure the ill effects of the illegal conduct, and assure the public freedom from its continuance.”<sup>127</sup> This mandate required that the FTC undertake the difficult step of discerning what competitive conditions would hold absent Rambus’ forbidden conduct.<sup>128</sup> Thus, in that case, the FTC needed to evaluate—after-the-fact—whether JEDEC would have selected Rambus’ technology had it known that Rambus possessed a patent.<sup>129</sup> Concluding that it would not, the FTC imposed a royalty-free license on Rambus as to the technologies for which it engaged in a patent hold-up gambit.<sup>130</sup> In so doing, it recognized that such a remedy—as opposed to one that calculated the appropriate RAND rate—is considerably easier to administer.<sup>131</sup>

## **B. A Modest Role For Antitrust and the Risks of Multi-Jurisdictional Oversight**

Given the realities that antitrust oversight can take place abroad or at home, it is quite possible that there will be competition between jurisdictions (or forum shopping) to provide enforcement of antitrust oversight over standard setting activity. If such divergence in antitrust enforcement were to become significant enough, it would undermine the very enterprise of standard setting insofar as certain jurisdictions take radically different views on the procompetitive virtues of standard setting. Thankfully, there is a considerable degree of convergence in the attitudes of U.S. and European Union antitrust authorities, which are by far the most active agencies in antitrust matters.<sup>132</sup> Nonetheless, as antitrust law continues to develop in this area, it is important that international antitrust authorities adhere to similar principles and not undermine the potential for standard setting bodies to operate internationally without facing antitrust liability.

As explained above, the most important point is that international antitrust authorities should be hesitant to be overly interventionist either in second guessing standard setting body solutions to holdup concerns (such as requiring a commitment to a maximum licensing arrangement) or to address what appears to be a holdup situation. There are, to be sure, efforts by standard setting bodies that will cross over into collusive conduct or efforts by individual firms to abuse the standard setting process, but there is still an emerging response by the bodies themselves to develop institutional protections against patent holdup. In the main, it is very likely that it will be those protections—and not antitrust oversight—that will protect the integrity of standard setting processes.

Because standard setting so closely relates to the success of individual firms with respect to their IP portfolios and business strategies, firms will often be willing to seek redress under antitrust law when standard setting bodies make decisions that hurt them in the marketplace. It is critical that antitrust authorities—both in the U.S. and around the world—not allow themselves to

be pulled into second guessing expert judgments about standards or about price-quality comparisons insofar as one technology involved patent claims whereas another one did not. Given that standard setting is often an inherently international exercise, the opportunity for firms to take advantage of forum shopping possibilities is a real risk that can undermine the ability of standard setting bodies to develop effective governance mechanisms.

Antitrust authorities still have a great deal to learn about standard setting, but I believe there is an emerging scholarly consensus that can guide antitrust enforcement around the world. First, antitrust authorities should recognize that standard setting efforts are generally procompetitive and should not scrutinize them skeptically (say, by using *per se* rules). In particular, the case for deferring to standard setting bodies is even stronger where there is no evidence of procedural irregularity and where the composition of the standard setting body suggests that consumer interests (and not merely producer interests) were well represented. Second, antitrust authorities should not impose guidelines or other rules that would limit the ability of standard setting bodies to craft unique approaches. Notably, the tolerance of diverse approaches by standard setting bodies should include a willingness to allow SSOs to mandate disclosure of licensing terms and conditions before the decision to endorse a particular technology as part of a standard. Finally, antitrust authorities should recognize that they are positioned to play an important enforcement role in extreme cases, such as the Rambus' apparent hold-up strategy, but that such actions should be exceptional and should not be viewed as an alternative to SSO-based safeguards against holdup.

## V. Conclusion

The information technologies industries are, by many accounts, the quintessential globalized industry. For standard setting efforts to operate effectively, it is critical that such bodies develop effective strategies to address holdup-type behavior and for different jurisdictional tribunals to enable such efforts to operate. Therefore, the best stance for international antitrust authorities is to allow such bodies to experiment and develop new strategies, particularly when aggrieved firms complain that otherwise procedurally regular and diverse standard setting bodies made decisions that hurt their business models.

Over time, there will certainly be some exceptional cases where antitrust oversight is appropriate, but the principal goal for antitrust oversight should be to allow SSOs to develop their own strategies for addressing such conduct and preventing it from occurring. Thankfully, international antitrust authorities have not—unlike in merger review in cases like GE-Honeywell—found themselves adopting markedly diverse approaches to standard setting. As standard setting bodies continue to experiment with new approaches to address IPR issues in a global marketplace, it is important that antitrust authorities continue to allow them the latitude to develop effective governance mechanisms to prevent holdup and promote effective standard setting.

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<sup>1</sup> U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 6 (2007), available at

[www.ftc.gov/reports/innovation/P040101PromotingInnovationandCompetitionrpt0704.pdf](http://www.ftc.gov/reports/innovation/P040101PromotingInnovationandCompetitionrpt0704.pdf)

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(hereinafter, “Promoting Innovation”); *see also* Dell Computer Corp., 121 FTC 616, 626 (1995) (highlighting “the important role of standard-setting in the technological innovation that will drive . . . competitive vigor in the 21<sup>st</sup> Century”).

<sup>2</sup> Nancy Gohring, *Qualcomm sues Nokia in U.K.*, INFO WORLD May 25, 2006,

[http://www.infoworld.com/article/06/05/25/78666\\_HNqualcommsuesnokia\\_1.html](http://www.infoworld.com/article/06/05/25/78666_HNqualcommsuesnokia_1.html).

<sup>3</sup> Press Release, WebWire, Nokia asks Delaware court to enforce Qualcomm’s contractual obligations in essential patent licensing (Aug. 9, 2006), *available at*

<http://www.webwire.com/ViewPressRel.asp?aId=18170>.

<sup>4</sup> *Id.*

<sup>5</sup> Nancy Gohring, *Qualcomm Accused of Anticompetitive Conduct in EU*, INFO WORLD Oct. 28, 2005, [http://www.infoworld.com/article/05/10/28/HNqualcommeu\\_1.html](http://www.infoworld.com/article/05/10/28/HNqualcommeu_1.html).

<sup>6</sup> Nancy Gohring, *Nokia Files Complaint Against Qualcomm*, INFO WORLD, Aug. 9, 2006,

[http://www.infoworld.com/article/06/08/09/HNnokiasuesqualcomm\\_1.html](http://www.infoworld.com/article/06/08/09/HNnokiasuesqualcomm_1.html).

<sup>7</sup> *See, e.g.*, Robert Pitofsky, Donna Patterson & Jonathan Hooks, *The Essential Facilities Doctrine Under U.S. Antitrust Law*, 70 ANTITRUST L.J. 443 (2002).

<sup>8</sup> *Evolutionary Pressures in Standardization: Hearing on The Role of Technical Standards in Today’s Society and the Future Before the Subcomm. on Technology of the H. Comm. On Science*, 106 Cong. 63 (2001) (prepared statement of Carl Cargill, Director of Standards, Sun Microsystems, Inc.), *available at* <http://www.sun.com/software/standards/Testimony-Final-reformatted.pdf>.

<sup>9</sup> PHILIP SHAW PALUDAN, *A PEOPLE’S CONTEST, THE UNION AND THE CIVIL WAR 1861-1865* 141 (1988).

<sup>10</sup> Steven Oksala et al., *The Structure of IT Standardization*, 4 STANDARDVIEW 9, 10 (1996).

<sup>11</sup> To be more precise, standards are fairly considered an “impure public good” that “combine aspects of both public and private goods,” serving a purpose for private firms, but also producing public benefits as well. Consequently, how standards “are produced is a societal choice of significant consequence.” U.S. CONGRESS, OFFICE OF TECH. ASSESSMENT, *GLOBAL STANDARDS: BUILDING BLOCKS FOR THE FUTURE* 14 n.23 (1992), *available at* <http://www.wws.princeton.edu/cgi-bin/byteserv.prl/~ota/disk1/1992/9220/9220.PDF>.

<sup>12</sup> *See* RICHARD CORNES & TODD SANDLER, *THE THEORY OF EXTERNALITIES, PUBLIC GOODS, AND CLUB GOODS* 240–326 (2d ed. 1996) (describing the public goods concept); *see also* Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, J. ECON. PERSP., Spring 1994, at 93, 102–03 (noting that “an open communications network shares many features with a public good; small users may free-ride on large users who may bear the costs necessary to create and market the network”).

<sup>13</sup> For a discussion of this issue, *see* JONATHAN E. NUECHTERLEIN & PHILIP J. WEISER, *DIGITAL CROSSROADS: AMERICAN TELECOMMUNICATIONS POLICY IN THE INTERNET AGE* 385-406 (2005).

<sup>14</sup> Kathleen M.H. Wallman, *The Role of Government in Telecommunications Standards Setting*, 8 COMM L&W CONSP&CTUS 235 (2000).

<sup>15</sup> OFFICE OF MGMT. & BUDGET, CIRCULAR NO. A-119 REVISED (1998), *available at* <http://www.whitehouse.gov/omb/circulars/a119/a119.html#5> (directing agencies to “use voluntary consensus standards in lieu of government-unique standards except where inconsistent with law or otherwise impractical”); THE WHITE HOUSE., *A FRAMEWORK FOR GLOBAL ELECTRONIC COMMERCE* (July 1, 1997), *available at* <http://clinton4.nara.gov/WH/New/Commerce/read.html>; Jo Best, *EU Regulator: Let Consumers Pick Telecom Standards*, CNET NEWS.COM (Dec. 4, 2006), [http://news.com.com/2100-1033\\_3-6140471.html](http://news.com.com/2100-1033_3-6140471.html).

<sup>16</sup> Jo Best, *EU Regulator: Let Consumers Pick Telecom Standards*, CNET NEWS.COM (Dec. 4, 2006), [http://news.com.com/2100-1033\\_3-6140471.html](http://news.com.com/2100-1033_3-6140471.html).

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<sup>17</sup> THE WHITE HOUSE, A FRAMEWORK FOR GLOBAL ELECTRONIC COMMERCE (July 1, 1997), available at <http://clinton4.nara.gov/WH/New/Commerce/read.html>; see also *id.* at 28 (“[W]e urge industry driven multilateral fora to consider technical standards in this area.”); *id.* (“In some cases, multiple standards will compete for marketplace acceptance.”).

<sup>18</sup> See The Internet Society, Tao of IETF: A Novice’s Guide to the Internet Engineering Task Force, available at [www.ietf.org/tao.html](http://www.ietf.org/tao.html) (last visited May 30, 2007).

<sup>19</sup> TIM SIMCOE, STANDARD SETTING COMMITTEES 9 (Dec. 2006), [http://siepr.stanford.edu/programs/SST\\_Seminars/Simcoe\\_SSOCCommittees.pdf](http://siepr.stanford.edu/programs/SST_Seminars/Simcoe_SSOCCommittees.pdf) (“During the 1990’s, the IETF evolved from a small quasi-academic networking community into a high-stakes forum for technical decision making.”).

<sup>20</sup> Philip J. Weiser, *Internet Governance, Standard Setting, and Self-Regulation*, 28 N. KY. L. REV. 822, 831 (2001) (“In 1995, before the Internet became big business, private standard-setting bodies like the IETF could focus on the technical merits of proposed standards without the distorting influence of private companies that would benefit depending on the ultimate outcome.”); see TIM SIMCOE, STANDARD SETTING COMMITTEES 25 (Dec. 2006), [http://siepr.stanford.edu/programs/SST\\_Seminars/Simcoe\\_SSOCCommittees.pdf](http://siepr.stanford.edu/programs/SST_Seminars/Simcoe_SSOCCommittees.pdf) (suggesting that commercialization in the Internet environment increased the standardization process by approximately four months); Scott O. Bradner, RFC2026: The Internet Standards Process – Revision 3 (October 1996), <http://www.ietf.org/rfc/rfc2026.txt>.

<sup>21</sup> *Evolutionary Pressures in Standardization: Hearing on The Role of Technical Standards in Today’s Society and the Future Before the Subcomm. on Technology of the H. Comm. On Science*, 106 Cong. 63 [at 3 in PDF] (2001) (prepared statement of Carl Cargill, Director of Standards, Sun Microsystems, Inc.), available at <http://www.sun.com/software/standards/Testimony-Final-reformatted.pdf>.

<sup>22</sup> *Id.* at 66 (suggesting that a new such body is created every two weeks in the IT sector).

<sup>23</sup> Charles R. Morris & Charles H. Ferguson, *How Architecture Wins Technology Wars*, HARV. BUS. REV., Mar.-Apr. 1993, at 86.

<sup>24</sup> CARL SHAPIRO & HAL R. VARIAN, INFORMATION RULES: A STRATEGIC GUIDE TO THE INFORMATION ECONOMY 236 (1999); see also Robert A. Skitol, *Concerted Buying Power: Its Potential for Addressing the Patent Holdup Problem in Standard Setting*, 72 ANTITRUST L.J. 727, 735-36 (2005) (IT standards facilitate “joint development of new technologies necessary to the creation and growth of new markets and the related necessity for interoperability among new products”).

<sup>25</sup> Charles R. Morris & Charles H. Ferguson, *How Architecture Wins Technology Wars*, HARV. BUS. REV., Mar.-Apr. 1993, at 89.

<sup>26</sup> As Greg Werden explained, “[a] potential entrant into a market with network effects necessarily faces a disadvantage as compared with the incumbent. Without some offsetting advantage, the potential entrant has no prospect of success, and the stronger the network effects, the greater the potential entrant’s offsetting advantage must be.” Gregory J. Werden, *Network Effects and Conditions of Entry: Lessons From The Microsoft Case*, 69 ANTITRUST L.J. 87, 91-92 (2001). This dynamic is particularly true in the Internet context, where “the Internet opened up opportunities for competition” because compatible technologies “opened the door for smaller companies, which built businesses around limited product offerings.” *A Need For Intervention: Keeping Competition Alive in the Networking Industry in the Face of Increasing Patent Assertions Against Standards* 2, Apr. 2002, [www.ftc.gov/opp/intellect/020418lo.pdf](http://www.ftc.gov/opp/intellect/020418lo.pdf) (Statement of Allen M. Lo, Director of Intellectual Property, Juniper Networks).

<sup>27</sup> Gregory J. Werden, *Network Effects and Conditions of Entry: Lessons From The Microsoft Case*, 69 ANTITRUST L.J. 87, 109 (2001). On its own, a start up firm (or even an established one) might not be able to convince independent complementors to support its product, but a standard

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setting body will often be in a far better position to catalyze and encourage support for the new product.

<sup>28</sup> TIMOTHY S. SIMCOE, EXPLAINING THE INCREASE IN INTELLECTUAL PROPERTY DISCLOSURE 2 (Dec. 8, 2005), *available at*

[http://www.rotman.utoronto.ca/timothy.simcoe/papers/SSO\\_IPR\\_Disclosures.pdf](http://www.rotman.utoronto.ca/timothy.simcoe/papers/SSO_IPR_Disclosures.pdf) (dating the increase in standard setting-related patenting to the early to mid 1990s).

<sup>29</sup> Carl Shapiro, *Navigating the Patent Thicket: Cross License, Patent Pools, and Standard-Setting*, 1 INNOVATION POL'Y & ECON., 2001, at 199, 120, *available at* <http://haas.berkeley.edu/~shapiro/thicket.pdf> (“[O]ur patent system is creating a *patent thicket*: an overlapping set of patent rights requiring that those seeking to commercialize new technology obtain licenses from multiple patentees.”).

<sup>30</sup> For the classic study on this point, see Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CAL. L. REV. 1889 (2002).

<sup>31</sup> Marguerite Reardon, *Wi-Fi Standards Face Patent Threat*, CNET NEWS.COM Nov. 20, 2006, [http://news.com.com/Wi-Fi+standards+face+patent+threat/2100-7351\\_3-6137372.html](http://news.com.com/Wi-Fi+standards+face+patent+threat/2100-7351_3-6137372.html) (noting that, because it is inexpensive, “it’s easy to just stick a Wi-Fi chip in a consumer electronics device” (quoting Stan Schatt, ABI Research)).

<sup>32</sup> Marguerite Reardon, *Wi-Fi Standards Face Patent Threat*, CNET NEWS.COM Nov. 20, 2006, [http://news.com.com/Wi-Fi+standards+face+patent+threat/2100-7351\\_3-6137372.html](http://news.com.com/Wi-Fi+standards+face+patent+threat/2100-7351_3-6137372.html) (quoting Stan Schatt, ABI Research).

<sup>33</sup> Marc Rysman & Tim Simcoe, *Patents and the Performance of Voluntary Standard Setting Organizations 21*, (Networks, Elec. Commerce, and Telecomm. Inst., Working Paper No. 05-22, 2005), *available at* [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=851245](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=851245) (concluding that patents embodied in official standards of ETSI, IEEE, IETF, and the ITU were cited three times as often as others and were cited over a longer period of time, suggesting that the relevant technologies—i.e., those embodied in standards—were more influential).

<sup>34</sup> Some might also recognize more ad hoc coalitions chartered for specific purposes—sometimes referred to as “promoter’s groups” (or alliances) as a SSO of a sort, but such organizations lack the permanence of their more established counterparts, as they are often created to complete work on initial specifications that will be submitted to an established SSO. See *Patents and Standard-Setting Processes 2*, Apr. 18, 2002, <http://www.ftc.gov/opp/intellect/020418scottkpeterson.pdf> (prepared statement of Scott K. Peterson, Hewlett-Packard Company) (suggesting that promoters’ groups are similar to the other forms of standard setting).

<sup>35</sup> AMERICAN NATIONAL STANDARDS INSTITUTE, ESSENTIAL REQUIREMENTS: DUE PROCESS REQUIREMENTS FOR AMERICAN NATIONAL STANDARDS (Jan. 31, 2006), *available at* <http://www.itl.nist.gov/ANSIASD/ER0106.pdf>.

<sup>36</sup> The financial contribution can be substantial, routinely running as high as \$60,000 per year and even reaching as much as \$200,000. *Evolutionary Pressures in Standardization: Hearing on The Role of Technical Standards in Today’s Society and the Future Before the Subcomm. on Technology of the H. Comm. On Science*, 106 Cong. 67 (2001) (prepared statement of Carl Cargill, Director of Standards, Sun Microsystems, Inc.), *available at* <http://www.sun.com/software/standards/Testimony-Final-reformatted.pdf>.

<sup>37</sup> *Evolutionary Pressures in Standardization: Hearing on The Role of Technical Standards in Today’s Society and the Future Before the Subcomm. on Technology of the H. Comm. On Science*, 106 Cong. 63 (2001) (prepared statement of Carl Cargill, Director of Standards, Sun Microsystems, Inc.), *available at* <http://www.sun.com/software/standards/Testimony-Final-reformatted.pdf>.

<sup>38</sup> To be sure, the differences between the two types of organizations are significant in a number of ways. First, only technical standards developed by formal SSOs, which are sometimes called “voluntary, consensus standards bodies,” are eligible (and, in fact, required) to be used by federal

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agencies or to benefit from relaxed antitrust oversight. See OFFICE OF MGMT. & BUDGET, CIRCULAR NO. A-119 REVISED (1998), available at <http://www.whitehouse.gov/omb/circulars/a119/a119.html#5>; Standards Development Organization Advancement Act of 2004, Pub. L. No. 108-237, 83 Stat. 661 (2004). Second, in large part because of their due process requirements, formal standards bodies tend to operate on a far slower timetable than informal consortia, which often explains why firms will opt for that model to develop standards to facilitate the emergence and success of a particular project.

<sup>39</sup> See Herbert Hovenkamp, *Standards Ownership and Competition Policy*, 48 B.C. L. REV. 87, 91 (2007) (“The history of antitrust policy suggests that it has been unreasonably hostile toward private standard setting.”).

<sup>40</sup> *Milk & Ice Cream Can Inst. v. FTC*, 152 F.2d 478, 482 (7<sup>th</sup> Cir. 1946).

<sup>41</sup> *Milk & Ice Cream Can Inst. v. FTC*, 152 F.2d 478, 482 (7<sup>th</sup> Cir. 1946).

<sup>42</sup> *Vogel v. Am. Soc. Of Appraisers*, 744 F.2d 598, 603 (7<sup>th</sup> Cir. 1984) (Posner, J.).

<sup>43</sup> *Allied Tube & Conduit Corp. v. Indian Head*, 486 U.S. 492 (1988).

<sup>44</sup> *Allied Tube & Conduit Corp. v. Indian Head*, 486 U.S. 492, 493 (1988).

<sup>45</sup> 364 U.S. 656 (1961).

<sup>46</sup> 614 F.2d 126 (6<sup>th</sup> Cir.), *cert. denied*, 449 U.S. 826 (1980).

<sup>47</sup> Herbert Hovenkamp, *Standards Ownership and Competition Policy*, 48 B.C. L. REV. 87, 90-91 (2007) (“Antitrust tribunals, particularly juries, lack the technical skills to answer such questions as whether chiropractic is really a legitimate form of medical practice, whether a particular medical procedure is safe and effective, or whether a particular engineering standard is necessary for passenger limousines.”).

<sup>48</sup> See, e.g., *Moore v. Boating Indus. Ass’n*, 819 F.2d 693, 699-700 (7<sup>th</sup> Cir.), *cert denied*, 484 U.S. 693 (1987) (noting the role of customers in rejecting claim that per se condemnation was appropriate); *M & H Tire Co., Inc. v. Hoosier Racing Tire Corp.*, 733 F.2d 973, 980 (1st Cir. 1984) (track owner participation in setting tire standards suggested no animus toward firms in that market).

<sup>49</sup> 486 U.S. 492, 501 (1988) (citation omitted).

<sup>50</sup> 416 F.Supp.2d 525 (E.D. Tex. 2006).

<sup>51</sup> In fairness to the *Golden Bridge* court, its ruling may well find support in an FTC ruling that standard setting body cannot reject a technology on the sole ground that it is patented, even if it is tension with the reasoning of *Allied Tube*. See *American Society of Sanitary Engineering*, 106 FTC 324 (1985) (automatic exclusion from standard on the ground that a technology is patented violates antitrust laws).

<sup>52</sup> Consider, for example, that the enforcement agencies adopted guidelines that recognized the importance of such collaborations. See US DEP’T OF JUSTICE & FEDERAL TRADE COMM’N, GUIDELINES FOR COLLABORATIONS AMONG COMPETITORS 1 (2000), available at <http://www.ftc.gov/os/2000/04/ftcdojguidelines.pdf> (“[A] perception that antitrust laws are skeptical about agreements among actual or potential competitors may deter the development of procompetitive collaborations.”).

<sup>53</sup> In this sense, *Continental Airlines, Inc. v. United Airlines, Inc.*, reflected a possible abuse of standard setting insofar as United Airlines set a standard for allowable carry-on luggage that deliberately negated the advantage of Continental’s airplane fleet that was capable of carrying more than the standard permitted (or United’s planes were capable of handling). See 126 F.Supp.2d 962 (E.D. Va. 2001), *vacated*, 277 F.3d 499 (4<sup>th</sup> Cir. 2002).

<sup>54</sup> Schumpeter described his essential theory of creative destruction as follows:

[C]ompetition from the new commodity, the new technology, the new source of supply, the new organization . . . competition which commands a decisive cost or

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quality advantage and which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives.

JOSEPH SCHUMPETER, *CAPITALISM, SOCIALISM AND DEMOCRACY* 84 (Harper Perennial 1976) (1942).

<sup>55</sup> As Joseph Farrell & Michael Katz put it, “when firms recognize the possibility of [the market tipping to a single firm], they may compete vigorously to become the dominant supplier: [the] so-called competition for the market.” *The Effects of Antitrust and Intellectual Property Law on Compatibility and Innovation*, 43 ANTITRUST BULL. 609, 611 (1998).

<sup>56</sup> Thomas O. Barnett, Assistant Att’y Gen., Antitrust Division, U.S. Dep’t. of Justice, Presentation to the George Mason University School of Law Symposium Managing Antitrust Issues in a Global Marketplace: Interoperability Between Antitrust and Intellectual Property 3 (Sept. 13, 2006), available at [www.usdoj.gov/atr/public/speeches/218316.pdf](http://www.usdoj.gov/atr/public/speeches/218316.pdf).

<sup>57</sup> Reed Hundt & Gregory Rosston, *Communications Policy for 2006 and Beyond*, 58 FED. COMM. L.J. 1, 6 (2006).

<sup>58</sup> Thomas O. Barnett, Assistant Att’y Gen., Antitrust Division, U.S. Dep’t. of Justice, Presentation to the George Mason University School of Law Symposium Managing Antitrust Issues in a Global Marketplace: Interoperability Between Antitrust and Intellectual Property 4 (Sept. 13, 2006), available at [www.usdoj.gov/atr/public/speeches/218316.pdf](http://www.usdoj.gov/atr/public/speeches/218316.pdf).

<sup>59</sup> The classic statement of a market characterized by network effects is that “the utility that a user derives from consumption of the good increases with the number of other agents consuming the good.” Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424 (1985).

<sup>60</sup> Carl Shapiro, *Exclusivity in Network Industries*, 7 GEO. MASON L. REV. 673, 682 (1999).

<sup>61</sup> *United States v. Microsoft*, 253 F.3d 34, 50 (D.C. Cir.) (en banc), cert. denied, 534 U.S. 952 (2001) (“High profit margins might appear to be the benign and necessary recovery of legitimate investment returns in a Schumpeterian framework, but they might represent exploitation of customer lock-in and monopoly power when viewed through the lens of network economics.... The issue is particularly complex because, in network industries characterized by rapid innovation, both forces may be operating and can be difficult to isolate.” (citing Howard A. Shelanski & J. Gregory Sidak, *Antitrust Divestiture in Network Industries*, 68 U. CHI. L. REV. 1, 6-7 (2001)) (omission in original)); Joseph Farrell & Michael Katz, *The Effects of Antitrust and Intellectual Property Law on Compatibility and Innovation*, 43 ANTITRUST BULL. 609, 642 (1998) (“[T]here is a complex tradeoff between R&D and price competition, and one cannot say in a blanket fashion that either is more valuable than the other.”).

<sup>62</sup> 253 F.3d at 65.

<sup>63</sup> Nonetheless, it also emphasized that “[j]udicial deference to product innovation, however, does not mean that a monopolist's product design decisions are per se lawful.” *Id.* In particular, the D.C. Circuit concluded that Microsoft’s decisions to “exclu[de] IE [its Internet Explorer browser] from the Add/Remove Programs utility and commingl[e] browser and operating system code” undermined Netscape’s competitive position and did not rest on any legitimate business justification. *Id.* at 66-67.

<sup>64</sup> *Id.* at 76 (“[D]evelopers who relied upon Microsoft's public commitment to cooperate with Sun and who used Microsoft's tools to develop what Microsoft led them to believe were cross-platform applications ended up producing applications that would run only on the Windows operating system.”).

<sup>65</sup> Standards Development Organization Advancement Act of 2004, Pub. L. No. 108-237, § 104-105, 118 Stat. 661, 663-64 (2004).

<sup>66</sup> Joseph Farrell & Michael Katz, *The Effects of Antitrust and Intellectual Property Law on Compatibility and Innovation*, 43 ANTITRUST BULL. 609, 616 (1998) (even without making any

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sales, a losing standard can still affect “the market outcome as long as the winner’s advantage is not so great that the winner can price as a monopolist and still not lose sales to a rival”).

<sup>67</sup> This was the case in *Rockwell v. Townshend*, 2000 WL 433505, at \*5,\*8 (N.D. Cal. Mar. 28, 2000).

<sup>68</sup> Deborah Platt Majoras, Chairperson, Fed. Trade Comm’n, Address at Stanford University Law Conference on Standardization and the Law: Recognizing the Procompetitive Potential of Royalty Discussions in Standard Setting 1-2 (September 23, 2005), *available at* <http://www.ftc.gov/speeches/majoras/050923stanford.pdf>.

<sup>69</sup> Scott Peterson, Consideration of Patents During the Setting of Standards, Federal Trade Commission and Department of Justice Roundtable at 1 (Nov. 6, 2002) *available at* <http://www.ftc.gov/opp/intellect/021106peterson.pdf>.

<sup>70</sup> Deborah Platt Majoras, Chairperson, Fed. Trade Comm’n, Address at Stanford University Law Conference on Standardization and the Law: Recognizing the Procompetitive Potential of Royalty Discussions in Standard Setting 2 (September 23, 2005), *available at* <http://www.ftc.gov/speeches/majoras/050923stanford.pdf>.

<sup>71</sup> *Id.* (noting the concern about the “potential for an intellectual property rights owner to ‘hold up’ other members of a standard-setting organization after a standard has been set”).

<sup>72</sup> FED. TRADE COMM’N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY 29 (2003), *available at* <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>.

<sup>73</sup> *Rambus, Inc.*, FTC Dock. No. 9302, at 34 (Aug. 2, 2006), *available at* [www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf](http://www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf).

<sup>74</sup> Deborah Platt Majoras, Chairperson, Fed. Trade Comm’n, Address at Stanford University Law Conference on Standardization and the Law: Recognizing the Procompetitive Potential of Royalty Discussions in Standard Setting 4 (September 23, 2005), *available at* <http://www.ftc.gov/speeches/majoras/050923stanford.pdf>. (quoting *United States v. Alcoa*, 148 F.2d 416, 430 (2d Cir. 1945)).

<sup>75</sup> Press Release, Fed. Trade Comm’n, Initial Decision Reached In Rambus Case, (Feb. 24, 2004), *available at* <http://www.ftc.gov/opa/2004/02/rambusid.shtm>.

<sup>76</sup> Thomas O. Barnett, Assistant Att’y Gen., Antitrust Division, U.S. Dep’t. of Justice, Presentation to the George Mason University School of Law Symposium Managing Antitrust Issues in a Global Marketplace: Interoperability Between Antitrust and Intellectual Property 5 (Sept. 13, 2006), *available at* [www.usdoj.gov/atr/public/speeches/218316.pdf](http://www.usdoj.gov/atr/public/speeches/218316.pdf). To support this argument, Barnett cited Justice Scalia’s skepticism in *Trinko* of antitrust-based restrictions on property rights and forced sharing, noting that such measures “‘may lessen the incentive for the monopolist, the rival, or both to invest in . . . economically beneficial facilities.’” *Id.* (quoting *Trinko*, 540 U.S. 398, 407-08 (2004)) (omission in original).

<sup>77</sup> Gerald F. Masoudi, Deputy Assistant Att’y Gen., Antitrust Division, U.S. Dept. of Justice, Address at Digital Americas 2006 Meeting: Intellectual Property and Competition 8 (Apr. 11, 2006) Intellectual, *available at* <http://www.usdoj.gov/atr/public/speeches/215645.pdf> (quoting *Trinko*, 540 U.S. at 415 (quoting P. Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 ANTITRUST L.J. 841, 853 (1989))).

<sup>78</sup> Herbert Hovenkamp, *Standards Ownership and Competition Policy*, 48 B.C. L. REV. 87, 106 (2007).

<sup>79</sup> IEEE STANDARDS ASS’N, COMMENTS REGARDING COMPETITION AND INTELLECTUAL PROPERTY 2, (Apr. 17, 2002), *available at* <http://www.ftc.gov/os/comments/intelpropertycomments/ieee.pdf> (Requiring “burdensome patent searches” based on the knowledge of entire companies “would discourage participation [in standard setting bodies] since searches are expensive, time consuming, resource intensive and not foolproof”).

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- <sup>80</sup> AM. NAT'L STANDARDS INST., GUIDELINES FOR IMPLEMENTATION OF THE ANSI PATENT POLICY 5 (2003), *available at* <http://www.niso.org/committees/OpenURL/PATPOL.pdf>.
- <sup>81</sup> Compare INTERNET SOCIETY, INTERNET ENGINEERING TASK FORCE, INTELLECTUAL PROPERTY RIGHTS IN IETF TECHNOLOGY, (Mar. 2005), *available at* <ftp://ftp.rfc-editor.org/in-notes/bcp/bcp79.txt>, with DISTRIBUTED MANAGEMENT TASK FORCE, INC., DMTF PATENT AND TECHNOLOGY POLICY, (Oct. 2001), *available at* <http://www.dmtf.org/about/policies/patent-10-18-01.pdf>.
- <sup>82</sup> RICHARD J. HOLLEMAN, A RESPONSE: GOVERNMENT GUIDELINES SHOULD NOT BE ISSUED IN CONNECTION WITH STANDARDS SETTING 2, *available at* <http://www.ftc.gov/opp/intellect/020418richardjholleman2.pdf> (a disclosure obligation as to “any patents that ‘might’ be relevant creates a continuing nightmare because a developing standard may go through many iterations because it ultimately results in an approved standard”).
- <sup>83</sup> IEEE STANDARDS ASS'N, COMMENTS REGARDING COMPETITION AND INTELLECTUAL PROPERTY 2, (Apr. 17, 2002), *available at* <http://www.ftc.gov/os/comments/intelpropertycomments/ieee.pdf>.
- <sup>84</sup> Rambus, Inc. v. Infineon Techs. AG, 318 F. 3d 1081, 1100-01 (Fed. Cir. 2003).
- <sup>85</sup> Rambus, Inc., FTC Dock. No. 9302, at 67 (Aug. 2, 2006), *available at* [www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf](http://www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf).
- <sup>86</sup> Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CAL. L. REV. 1889, 1904 (2002).
- <sup>87</sup> IEEE Standards Ass'n, Comments Regarding Competition and Intellectual Property 2, (Apr. 17, 2002), *available at* <http://www.ftc.gov/os/comments/intelpropertycomments/ieee.pdf>.
- <sup>88</sup> *Id.*
- <sup>89</sup> Daniel G. Swanson & William J. Baumol, *Reasonable and Nondiscriminatory (Rand) Royalties, Standard Selection, and Control of Market Power*, 73 ANTITRUST L.J. 1, 10-11 (2005); CARL SHAPIRO & HAL R. VARIAN, *INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY* 241 (1999) (“Reasonable *should* mean the royalties that the patent holder could obtain in open, up-front competition with other technologies, not the royalties that the patent holder can extract once other participants are effectively locked in to use technology covered by the patent.”).
- <sup>90</sup> Scott Peterson, Consideration of Patents During the Setting of Standards, Federal Trade Commission and Department of Justice Roundtable 6 (Nov. 6, 2002) *available at* <http://www.ftc.gov/opp/intellect/021106peterson.pdf>.
- <sup>91</sup> Robert A. Skitol, *Concerted Buying Power: Its Potential for Addressing the Patent Holdup Problem in Standard Setting*, 72 ANTITRUST L.J. 727, 728 (2005); *see also* Daniel G. Swanson & William J. Baumol, *Reasonable and Nondiscriminatory (Rand) Royalties, Standard Selection, and Control of Market Power*, 73 ANTITRUST L.J. 1, 5 (2005) (“[A] RAND commitment is of limited value in the absence of objective benchmarks that make clear the concrete terms or range of terms that are deemed to be reasonable and nondiscriminatory.”).
- <sup>92</sup> Robert A. Skitol, *Concerted Buying Power: Its Potential for Addressing the Patent Holdup Problem in Standard Setting*, 72 ANTITRUST L.J. 727, 729 (2005).
- <sup>93</sup> Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CAL. L. REV. 1889, 1964-65 (2002).
- <sup>94</sup> Joseph Scott Miller, *Standard Setting, Patents, and Access Lock-In: RAND Licensing and The Theory of the Firm*, 40 IND. L. REV. 351, 358 (2007).
- <sup>95</sup> *Id.* at n.27.
- <sup>96</sup> TIMOTHY S. SIMCOE, EXPLAINING THE INCREASE IN INTELLECTUAL PROPERTY DISCLOSURE 11 (Dec. 8, 2005), *available at* [http://www.rotman.utoronto.ca/timothy.simcoe/papers/SSO\\_IPR\\_Disclosures.pdf](http://www.rotman.utoronto.ca/timothy.simcoe/papers/SSO_IPR_Disclosures.pdf).

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<sup>97</sup> See, e.g., Robert A. Skitol, *Concerted Buying Power: Its Potential for Addressing the Patent Holdup Problem in Standard Setting*, 72 ANTITRUST L.J. 727, 744 (2005); Patrick D. Curran, *Standard-Setting Organizations: Patents, Price Fixing, and Per Se Legality*, 70 U. CHI. L. REV. 983 (2003).

<sup>98</sup> RICHARD J. HOLLEMAN, A RESPONSE: GOVERNMENT GUIDELINES SHOULD NOT BE ISSUED IN CONNECTION WITH STANDARDS SETTING 4, available at <http://www.ftc.gov/opp/intellect/020418richardjholleman2.pdf>.

<sup>99</sup> See FOURTH GENERATION MOBILE STANDARDS FORUM, 4GMF IPR GUIDELINES (DRAFT VERSION), <http://delson.org/4gmobile/ipr.htm> (at a standards development meeting, you “must **not** discuss subjects like the pricing for use of a patent, how a patent should be licensed, validity or interpretation of a patent claim, or any terms or conditions of use”).

<sup>100</sup> TIMOTHY S. SIMCOE, EXPLAINING THE INCREASE IN INTELLECTUAL PROPERTY DISCLOSURE 10-11 (Dec. 8, 2005), available at [http://www.rotman.utoronto.ca/timothy.simcoe/papers/SSO\\_IPR\\_Disclosures.pdf](http://www.rotman.utoronto.ca/timothy.simcoe/papers/SSO_IPR_Disclosures.pdf).

<sup>101</sup> Patrick D. Curran, *Standard-Setting Organizations: Patents, Price Fixing, and Per Se Legality*, 70 U. CHI. L. REV. 983, 1005 (2003).

<sup>102</sup> RICHARD J. HOLLEMAN, A RESPONSE: GOVERNMENT GUIDELINES SHOULD NOT BE ISSUED IN CONNECTION WITH STANDARDS SETTING 4, available at <http://www.ftc.gov/opp/intellect/020418richardjholleman2.pdf>.

<sup>103</sup> Patents and Standard-Setting Processes 7, Apr. 18, 2002, <http://www.ftc.gov/opp/intellect/020418scottkpeterson.pdf> (prepared statement of Scott K. Peterson, Hewlett-Packard Company).

<sup>104</sup> For a critical take on the IEEE’s failure to follow ANSI’s guidelines in this respect, see Jim Zyren, *Revisit IEEE Patent Policy*, ELECTRONIC ENGINEERING TIMES (Jan. 10, 2005), available at <http://www.eetimes.com/showArticle.jhtml;jsessionid=C4N5YZNJDRDMKQSNDLPCKH0CJUNN2JVN?articleID=57300062>.

<sup>105</sup> Joseph Scott Miller, *Standard Setting, Patents, and Access Lock-In: RAND Licensing and The Theory of the Firm*, 40 IND. L. REV. 351, 370 & n.74 (2007).

<sup>106</sup> Deborah Platt Majoras, Chairperson, Fed. Trade Comm’n, Address at Stanford University Law Conference on Standardization and the Law: Recognizing the Procompetitive Potential of Royalty Discussions in Standard Setting 7 (September 23, 2005), available at <http://www.ftc.gov/speeches/majoras/050923stanford.pdf>.

<sup>107</sup> Deborah Platt Majoras, Chairperson, Fed. Trade Comm’n, Address at Stanford University Law Conference on Standardization and the Law: Recognizing the Procompetitive Potential of Royalty Discussions in Standard Setting 8 (September 23, 2005), available at <http://www.ftc.gov/speeches/majoras/050923stanford.pdf> (internal quotations omitted).

<sup>108</sup> Letter From Thomas O. Barnett, Assistant Att’y Gen., Dep’t of Justice, to Robert Skitol, (Oct. 30, 2006), available at <http://www.usdoj.gov/atr/public/busreview/219380.htm>, at 9-10; see also Letter From Thomas O. Barnett, Assistant Att’y Gen., Dep’t of Justice, to Michael A. Lindsay, (Apr. 30, 2007), available at <http://www.usdoj.gov/atr/public/busreview/222978.pdf> (adopting a similar stance as to an IEEE IPR policy).

<sup>109</sup> *Id.* at 9 n.27.

<sup>110</sup> U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 7-8 (2007), available at [www.ftc.gov/reports/innovation/P040101PromotingInnovationandCompetitionrpt0704.pdf](http://www.ftc.gov/reports/innovation/P040101PromotingInnovationandCompetitionrpt0704.pdf).

<sup>111</sup> In particular, Judge Boudin explained:

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Where the venture is producing a new product--here, the OFC-1 software package--there is patently a potential for a productive contribution to the economy, and conduct that is strictly ancillary to this productive effort (*e.g.*, the joint venture's decision as to the price at which it will purchase inputs) is evaluated under the rule of reason.

*See Addamax Corp. v. Open Software Found., Inc.*, 152 F.3d 48, 52 (1<sup>st</sup> Cir. 1998).

<sup>112</sup> *Sony Elecs., Inc. v. Soundview Techs., Inc.*, 281 F. Supp. 2d 399 (D. Conn. 2001).

<sup>113</sup> *Golden Bridge Tech., Inc. v. Nokia*, 416 F. Supp. 2d 525, 532 (E.D. Tex. 2006) (applying the *per se* rule to a decision by a standard setting effort to exclude a particular technology on account of its licensing demands).

<sup>114</sup> In general, the relevant inquiry was well explained by the Sixth Circuit in *Eliason Corp. v. National Sanitation Found.*:

Where the alleged boycott arises from standard-making or even industry self-regulation, the plaintiff must show either that it was barred from obtaining approval of its products on a discriminatory basis from its competitors, or that the conduct as a whole was manifestly anticompetitive and unreasonable.

614 F.2d 126, 129 (6<sup>th</sup> Cir. 1980); *see also* *Northwest Wholesale Stationers, Inc. v. Pacific Stationer & Printing Co.*, 472 U.S. 284, 294-95 (1985) (*per se* treatment only appropriate when practices not justified by plausible procompetitive virtues and where plaintiff has established that the venture “possesses market power or exclusive access to an element essential to effective competition”).

<sup>115</sup> 150 Cong. Rec. H3656-3657 (June 2, 2004).

<sup>116</sup> Benjamin Chiao, Josh Lerner & Jean Tirole, *The Rules of Standard Setting Organizations: An Empirical Analysis* 19 n.21 (Nat'l Bureau of Econ. Research, Working Paper No. 11156, 2005), available at <http://www.nber.org/papers/W11156> (9% of organizations have a dispute resolution mechanisms).

<sup>117</sup> David A. Balto & Daniel I. Prywes suggested such an approach. *See* DAVID A. BALTO & DANIEL I. PRYWES, STANDARD-SETTING DISPUTES: THE NEED FOR GUIDELINES, <http://www.ftc.gov/os/comments/intelpropertycomments/baltoprywes.htm> (last visited July 11, 2007).

<sup>118</sup> R. HEWITT PATE, COMPETITION AND INTELLECTUAL PROPERTY IN THE U.S.: LICENSING FREEDOM AND THE LIMITS OF ANTITRUST 2, <http://www.usdoj.gov/atr/public/speeches/209359.pdf>. In so stating, he referenced the dictum offered by the D.C. Circuit in *Microsoft* (calling it the “classic statement on this point”), “Microsoft’s primary copyright argument borders upon the frivolous. The company claims an absolute and unfettered right to use its intellectual property as it wishes. . . . That is no more correct than the proposition that use of one’s personal property, such as a baseball bat, cannot give rise to tort liability.”

*Id.* (quoting *United States v. Microsoft Corp.*, 253 F.3d 34, 63 (D.C. Cir. 2001)) (omission in original).

<sup>119</sup> Philip J. Weiser, *The Relationship of Antitrust and Regulation In A Deregulatory Era*, 50 ANTITRUST BULL. 549 (2005).

<sup>120</sup> RICHARD J. HOLLEMAN, A RESPONSE: GOVERNMENT GUIDELINES SHOULD NOT BE ISSUED IN CONNECTION WITH STANDARDS SETTING 1, available at <http://www.ftc.gov/opp/intellect/020418richardjholleman2.pdf>.

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<sup>121</sup> DANIEL WEITZNER, SUPPLEMENTAL COMMENTS, (Nov. 6, 2002) <http://www.w3.org/2002/11/15-doj-ftc-ipr-weitzner-suppl.html> (noting that patent holdup activity occurred within World Wide Web Consortium represents 10% of the time).

<sup>122</sup> Letter from Thomas Barnett, Assistant Att’y Gen., Dep’t of Justice, to Robert Skitol (Oct. 30, 2006), *available at* <http://www.usdoj.gov/atr/public/busreview/219380.pdf>.

<sup>123</sup> Michael G. Cowie & Joseph P. Lavelle, *Patents Covering Industry Standards: The Risks To Enforceability Due to Conduct Before Standard-Setting Organizations*, 30 AIPLA Q.J. 95, 124 (2002) (noting such criticism).

<sup>124</sup> *See* RICHARD J. HOLLEMAN, A RESPONSE: GOVERNMENT GUIDELINES SHOULD NOT BE ISSUED IN CONNECTION WITH STANDARDS SETTING 1, *available at* <http://www.ftc.gov/opp/intellect/020418richardjholleman2.pdf> (“I believe that a single set of uniform guidelines will deprive the U.S. of its current flexibility in developing standards according to different processes and policies that in turn are driven by the objectives of the particular standards project and related market factors.”); Gerald F. Masoudi, Deputy Assistant Att’y Gen., Dep’t of Justice, Remarks at the High-Level Workshop on Standardization, IP Licensing, and Antitrust: Efficiency in Analysis of Antitrust, Standard Setting, and Intellectual Property 1 (January 18, 2007), *available at* <http://www.usdoj.gov/atr/public/speeches/220972.pdf> (the case against more interventionist antitrust oversight “reflects the fact that SDO practices are evolving and it is not yet clear what the specific practices and their effects are likely to be”).

<sup>125</sup> As one commentator put it:

There is great value in this diversity. Some technologies are more complex and difficult than others in terms of the facility of their translations into open standards. Marketplace dynamics may call for particularly expedited processes in some instances but can tolerate longer, more deliberate incubation periods in other instances. Some standards may affect the competitive opportunities of more classes of parties and in more fundamental ways than will be the case with other standards, thus calling for different kinds or degrees of participation rights.

Patents and Standard-Setting Processes 3, Apr. 18, 2002, <http://www.ftc.gov/opp/intellect/020418scottkpeterson.pdf> (prepared statement of Scott K. Peterson, Hewlett-Packard Company).

<sup>126</sup> Standard-Setting Practices: Competition, Innovation, and Consumer Welfare: Hearing Before the Fed. Trade Comm’n and Dept. of Justice 2 (Apr. 18, 2002) (testimony of Amy A. Marasco, General Counsel, ANSI), *available at* [www.ftc.gov/opp/intellect/020418marasco.pdf](http://www.ftc.gov/opp/intellect/020418marasco.pdf) (noting that IP policies adopted by SSOs “vary widely in response to [] differing needs and objectives”).

<sup>127</sup> *United States v. U.S. Gypsum Co.*, 340 U.S. 76, 88 (1950).

<sup>128</sup> *Massachusetts v. Microsoft Corp.*, 373 F.3d 1199, 1232 (D.C. Cir. 2004) (“[T]he fruits of a violation must be identified before they may be denied”).

<sup>129</sup> There is evidence in the record that it would not have. *See* *Rambus, Inc.*, FTC Dock. No. 9302, at 74 & n.403 (Aug. 2, 2006), *available at* [www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf](http://www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf) (“[T]he one time that JEDEC members had advance knowledge that a Rambus patent was likely to cover a standard under consideration, the members took deliberate steps to avoid standardizing the Rambus technology.”); *Id.* at 76 (“[a]lternative technologies were available when JEDEC chose the Rambus technologies . . . had Rambus disclosed its patent position.”); and *Id.* at 75 & n.407 (noting that one member of JEDEC reported that “I personally and Sun as a company would have strongly opposed the use of royalty-bearing elements . . . in an interface specification”).

<sup>130</sup> *Rambus, Inc.*, FTC Dock. No. 9302 (Feb. 5, 2007), *available at* <http://www.ftc.gov/os/adjpro/d9302/070205opinion.pdf>.

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<sup>131</sup> If there is a royalty payment required, “ongoing supervision may be necessary to regulate the price and nonprice terms of the resulting licenses.” PHILLIP E. AREEDA & HERBERT HOVENKAMP, FUNDAMENTALS OF ANTITRUST LAW para 653b, at 99-100 (2002); *see also* U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 9 (2007), *available at* [www.ftc.gov/reports/innovation/P040101PromotingInnovationandCompetitionrpt0704.pdf](http://www.ftc.gov/reports/innovation/P040101PromotingInnovationandCompetitionrpt0704.pdf) (concluding that, as to patent pools, antitrust authorities should focus on the structure of the entity and not evaluate the reasonableness of the royalty rates). Reflecting the bias against judicial rate-setting, a royalty-free license is the remedy adopted by intellectual property law when an implied license or equitable estoppel theory governs a patent holder’s conduct. *Wang Labs, Inc. v. Mitsubishi Elecs. Am., Inc.*, 103 F.3d 1571, 1575-76 (Fed. Cir. 1997) (implied license); *Stambler v. Diebold, Inc.*, 11 U.S.P.Q.2d 1709 (E.D.N.Y. 1988) (equitable estoppel).

<sup>132</sup> *See* Gerald F. Masoudi, Deputy Assistant Att’y Gen., Antitrust Division, U.S. Dept. of Justice, Address at Digital Americas 2006 Meeting: Intellectual Property and Competition (Apr. 11, 2006) Intellectual, *available at* <http://www.usdoj.gov/aatr/public/speeches/215645.pdf>.