



DEPARTMENT OF JUSTICE

EFFICIENCY IN ANALYSIS OF ANTITRUST, STANDARD SETTING, AND INTELLECTUAL PROPERTY

GERALD F. MASOUDI
Deputy Assistant Attorney General
Antitrust Division
U.S. Department of Justice

High-Level Workshop on Standardization, IP Licensing, and Antitrust
Tilburg Law & Economic Center, Tilburg University
Chateau du Lac, Brussels, Belgium

January 18, 2007

I. Introduction

Good morning. I first want to thank our hosts at the Tilburg Law and Economic Center for organizing this workshop. The intersection of standard setting, intellectual property licensing, and antitrust is an important and fast-developing area, one that certainly deserves the attention we are giving to it today. Since this panel is entitled ‘IP Licensing, Antitrust, and Innovation,’ I will begin by discussing those general topics. Next, since I am this conference’s only speaker from the United States antitrust enforcement agencies, I will devote the largest share of my remarks to the concerns that standards development organizations (SDOs) have encountered with patent hold-up and perceived antitrust threats, and to the guidance that the Department of Justice and Federal Trade Commission recently have given through a series of speeches and the DOJ’s recent business review letter. I expect that Alden Abbott from the FTC, who is with me today as a discussant, will contribute to that topic as well. I will close with some suggestions about how the marketplace might best use the agencies’ guidance, and some observations about how *ex ante* licensing and other anti-hold-up measures may be expected to develop in the near future.

The application of antitrust law to certain standard-setting practices, including the use of *ex ante* licensing regimes by SDOs and certain actions by SDO members, is unsettled, and I do not have a complete set of answers today. This fact does not reflect any flaw in antitrust laws or policies, or any lack of analysis by the agencies. Rather, it reflects that fact that SDO practices are evolving and it is not yet clear what the specific practices and their effects are likely to be. Sound antitrust analysis is fact-specific and, at least outside the realm of *per se* violations, is effects-based, so I want to make clear that the U.S. antitrust agencies are reserving judgment on the many SDO practices that have not come before them. In particular, one should never assume

that when the agencies endorse a particular approach, they necessarily frown on others.

Businesses should feel confident that if they have ideas for creative, efficient, and procompetitive ways to structure SDOs, antitrust law will not stand in the way.

II. Efficiency: the Ultimate Goal of IP, Licensing, and Standard Setting

I would like to begin by asking a deceptively simple question, which is, why do we think intellectual property, licensing, and standard setting are good things? The commonplace answer is that they promote innovation, and innovation benefits consumers. That answer is certainly correct, but it is not phrased in the economic language that we need for today's discussion of how antitrust fits into the world of licensing and standards. We need a common term for measuring the good in this context, and that term is "efficiency." The goal of policies involving IP, licensing, and standards should be to promote efficiency, just as it is with antitrust policy.

Speaking broadly, there are two types of efficiency: static and dynamic. Static efficiency occurs when firms compete within an existing technology to streamline their methods, cut costs, and drive the price of a product embodying that technology down to something close to the cost of unit production. Static efficiency is a powerful force for increasing consumer welfare, but an even greater driver of consumer welfare is dynamic efficiency, which results from entirely new ways of doing business.¹ Economists now recognize that the gains from dynamic efficiency, also called "leapfrog" competition, can far outstrip the gains from

¹See Thomas O. Barnett, Assistant Att'y Gen., U.S. Dep't of Justice, Interoperability Between Antitrust and Intellectual Property, address before the George Mason University Symposium on Managing Antitrust Issues in the Global Marketplace 2-3 (Washington, D.C., Sept. 13, 2006), <http://www.usdoj.gov/atr/public/speeches/218316.pdf> (quoting JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY 84 (Harper Perennial 1976) (1942)).

incremental static improvements. It follows that policymakers should pay particular attention to the impact of laws and enforcement decisions on dynamic efficiency.

Intellectual property laws are aimed directly at encouraging dynamic efficiency. The same forces that yield the benefits of static efficiency – conditions that encourage rivals quickly to adopt a new business method and drive their production toward marginal cost – can discourage innovation (and thus dynamic efficiency) if the drive toward marginal cost occurs at such an early stage that it prevents recoupment of development expenditures, and makes innovation uneconomical. IP laws, therefore, create rights to exclude, which allow producers to recoup their costs and make the kind of profit that encourages them to engage in inventive-creative behavior. As AAG Tom Barnett put it in a speech last fall, intellectual property rights should not be viewed as protecting their owners *from* competition; rather, IP rights should be seen as encouraging firms to engage *in* competition, particularly competition that involves risk and long-term investment.² There is an interesting debate about what level of intellectual property protection creates the optimal incentives, which I will not attempt to settle today, but I think two points are beyond reasonable dispute: first, IP rights are crucial to certain types of innovations and creative work; and second, there is a strong correlation between a nation’s level of commercial creativity and the strength of its protection for IP.

Licensing freedom also makes sense under a test that evaluates efficiency. Licensing allows intellectual assets to benefit from complementary factors of production³; in other words,

²*Id.* at 3-4.

³U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 2.3 (Apr. 6, 1995), <http://www.usdoj.gov/atr/public/guidelines/ipguide.pdf> [hereinafter IP-ANTITRUST GUIDELINES].

licensing permits an inventor to focus on what he does best – inventing – and leave the other elements of a product’s innovation (such as manufacturing and distribution) to specialists in those fields. In addition, licensing freedom permits businesses to use contracts, rather than court or agency interventions, to resolve the uncertainties and challenges that may be inevitable with an intellectual property system. For example, a portfolio cross license can buy “patent peace” between rivals, which in most circumstances will be more efficient, and therefore ultimately better for consumers, than using the courts to weigh multiple patent claims and counterclaims. Or a patent pool can offer a single license for patent rights essential to a piece of technology, saving manufacturers the burden of negotiating multiple patent licenses or accounting for multiple royalty streams.⁴ The law of licensing continues to develop in the United States, but the trend is to permit greater freedom of contract. One indication of this is the U.S. Supreme Court’s decision last year in *Illinois Tool Works Inc. v. Independent Ink, Inc.*, which held in a “patent tying” case that the mere fact that a tying product is patented does not support a presumption of market power, for purposes of antitrust tying analysis.⁵ The freedom to chose how to license, including whether to refrain from licensing at all, is an important economic freedom, and does not ordinarily run afoul of the antitrust laws.⁶

⁴See generally Letter from Joel I. Klein, Assistant Attorney General, U.S. Dep’t of Justice, to Carey R. Ramos, Esq. (June 10, 1999), <http://www.usdoj.gov/atr/public/busreview/2485.pdf> (explaining why the Department of Justice did not intend to oppose the structure of the 6-company DVD patent pool).

⁵126 S. Ct. 1281 (2006).

⁶See generally R. Hewitt Pate, Assistant Att’y Gen., U.S. Dep’t of Justice, Competition and Intellectual Property in the U.S.: Licensing Freedom and the Limits of Antitrust, address at the 2005 EU Competition Workshop 4-7 (Florence, Italy, June 3, 2005), <http://www.usdoj.gov/atr/public/speeches/209359.pdf>.

Finally, standard setting has an obvious efficiency justification.⁷ The goal of standard setting, generally speaking, is to find the best combination of technical success, cost, and time-to-market, while also delivering enough economic surplus that all parties (inventors, producers, and consumers) can share, so that the product is commercially viable.

As we all know, efficiency is also one of the key goals of antitrust law. It follows that antitrust law and the laws and policies governing IP rights, licensing, and standard setting are complements. The U.S. antitrust agencies stated that conclusion in their 1995 *IP-Antitrust Guidelines*⁸ and in many public statements since.⁹ Policy makers should avoid thinking of antitrust as a tool to regulate standard setting efforts, but rather they should analyze standard-setting practices for specific competitive harms.¹⁰ As a general rule of thumb, antitrust law should not prohibit practices that make standard setting more efficient, because efficiency is good for consumers.

⁷There are two primary types of standards: interoperability standards, which guarantee that products made by different firms can interoperate, and performance standards, which set minimum requirements for all products in a general product category. These comments focus on the former.

⁸IP ANTITRUST GUIDELINES § 1.

⁹E.g., Barnett, Interoperability Between Antitrust and Intellectual Property at 1-2.

¹⁰See, e.g., *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 509-11 (1988) (affirming court of appeals' reinstatement of a jury verdict awarding damages for a Sherman Act violation where producers and sellers of steel conduit had packed a meeting with new members whose sole function was to vote against a proposal to allow the use of equally viable plastic conduit in the building industry); *Am. Soc'y of Mech. Eng'rs v. Hydrolevel Corp.*, 456 U.S. 556, 574 (1982) (finding SDO liable for actions of its agents, acting with apparent authority, to discourage customers from purchasing one competitor's water boiler safety device, stating that the device did not comply with the SDO's safety code, even though it did).

III. Standard Setting: Efficiency Problems, Solutions, and Agency Guidance

A. Hold-up, RAND, and Predisclosure

Let me now turn to standard setting in more depth. Recently the most talked-about issue regarding standard setting is patent hold-up. If SDO members first do the work of selecting a standard and only then discover that the standard infringes a patent right, the patent owner is said to be in a position to “hold up” the standard: the patent owner, knowing that the SDO has already chosen the technology as its preferred method, may be able to demand a higher royalty than if the negotiation had been conducted before the standard was set. This can inject inefficiency into the process in at least three ways: first, uncertainty; second, delay; and third, under some conditions, an allegedly uneconomical royalty rate. The concern is that the patent owner may be able to obtain a higher royalty rate as compared to the rate that would be reached if the SDO had not, in effect, conferred market power on the patent before attempting to license it. There have been three major attempts to solve this inefficiency: reasonable and nondiscriminatory licensing (RAND) commitments; predisclosure; and now, *ex ante* licensing. Let’s evaluate each of these according to the efficiency test.

RAND has been a partial success. The “nondiscriminatory” portion of this approach can provide a way for similarly-situated producers to ensure that they are treated alike, and can prevent a patentee from pursuing a potentially exclusionary strategy of charging higher rates to its horizontal competitors, although disputes may arise over the degree to which any licensee is similarly situated as compared to another. The “reasonable” part of RAND, however, has proven

to be a weaker link,¹¹ since what seems reasonable and inexpensive to the patent holder can often seem unreasonably high to the potential licensees.¹² The practical enforceability of reasonableness provisions is suspect, so SDOs have looked for additional approaches.

Predisclosure, as I use that term here, requires an entity participating in an SDO to disclose all intellectual property rights that may bear upon the standard, including issued patents and pending patent applications. In theory, the other participants can combine the knowledge gained through such disclosures with other information, such as their appraisal of the IP owner's commitment to reasonable royalties and general reputation; this information will permit the other participants to evaluate the pros and cons of including such IP rights in a standard. In practice, there are a number of problems that predisclosure causes or cannot solve, including: underdisclosure, particularly inadvertent nondisclosure when a patentee does not anticipate the direction in which a standards effort will eventually go; overdisclosure, particularly unnecessary disclosure of trade secrets covering technology that ultimately will not be incorporated into the standard; and an unclear remedy for violations.¹³ So SDOs are increasingly looking to a third

¹¹See generally Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CAL. L. REV. 1889, 1906 (2002) (discussing RAND policies).

¹²Depending on the contractual commitments, RAND regimes can leave open a number of important questions about the royalty, such as: should it be a percentage or lump sum basis; should it be calculated on the value of the smallest component or the device as a whole; could it be raised over time as the technology becomes more established, and therefore more valuable; or must it be reduced over time as the technology becomes commoditized, and therefore margins shrink.

¹³The FTC recently concluded that a patent holder violated Section 5 of the Federal Trade Commission Act by failing to disclose certain patent rights, under the circumstances of that case. *See In re Rambus Inc.*, No. 9302 (F.T.C. July 31, 2006), <http://www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf>. That matter remains pending before the Commission for consideration of remedy.

solution, *ex ante* licensing, which would require all those participating in standard-setting activities within an SDO, before the standard is set, to state the maximum royalty rate and other terms that they would demand if the standard uses their technology.

B. *Ex Ante Licensing, Sony v. Soundview, and Golden Bridge v. Nokia*

Broadly, there are two primary types of objections to *ex ante* licensing: practical and legal. One practical concern is that SDO participants are traditionally engineers whose only focus is how to get the best-functioning technology in the shortest amount of time. The fear is that these individuals do not have the time, expertise, or authority to negotiate licensing fees for their employers' patent portfolios, which means that *ex ante* licensing negotiations will require SDOs to import an entirely new class of participants from the ranks of lawyers and accountants. Adding a layer of commercial – as opposed to technological – research and negotiation may cause the SDO process to choose less than the best standard, and may slow it down. These are important things to consider, but they form the type of business problem that engineers and business people are capable of solving. Antitrust has little to say in this area.

The legal objection is that *ex ante* licensing could be or could facilitate price fixing, and may violate the antitrust laws in one of two ways. First, it could facilitate horizontal sell-side price fixing, by creating a forum in which potential horizontal competitors share prices and other terms. Second, it could facilitate buy-side monopolization, or monopsonization, under which potential licensees may band together to drive licensee fees and other terms to artificially low levels, thereby damaging the incentive to engage in research and development in areas that may be the subject of standards efforts. SDOs usually point to the district court decisions in *Sony v.*

*Soundview*¹⁴ and *Golden Bridge v. Nokia*¹⁵ as the source of their buy-side antitrust liability fears, so it is worth pausing to discuss these cases in some detail.

In *Sony v. Soundview*, Soundview owned a patent relevant to the manufacturing of the “V-chip,” a device used to block a television’s access to violent or sexually explicit programming. The U.S. government required that the V-chip be included in all television sets manufactured after January 1, 2000, which meant that the holders of IP rights in V-chip technology possessed essential technology by virtue of federal law. Soundview alleged that Sony, along with other manufacturers and a trade association, sought to fix the licensing fee for its patent that was likely infringed by the standard, refused to accept a RAND license proposed by Soundview, and improperly collaborated to challenge the patent’s validity. The trial court did not reach the merits of these allegations but held that they sufficiently stated a claim for purposes of a motion to dismiss. According to the court, its decision was nothing more than the conclusion that “[w]hether the [Sony] defendants in this case were acting as rational economic decision-makers or participants in an illegal price-fixing scheme cannot be determined on the pleadings alone.”¹⁶ Although some cite *Soundview* for the proposition that antitrust liability may attach in the *ex ante* licensing context, the reliance is somewhat misplaced. The conduct allegedly giving rise to antitrust liability in *Soundview* occurred *ex post*, after the V-chip requirement had been adopted. Further, several years later, the trial court granted judgments declaring that the manufacturers’ V-chip did not infringe Soundview’s patents and that Soundview’s antitrust

¹⁴Sony Elecs., Inc. v. Soundview Techs., Inc., 157 F. Supp. 2d 180 (D. Conn. 2001).

¹⁵Golden Bridge Tech., Inc . v. Nokia, Inc., 416 F. Supp. 2d 525 (E.D. Tex. 2006).

¹⁶Sony Elecs., Inc., 157 F. Supp. 2d. at 188.

claims had no merit.¹⁷ In sum, the *Soundview* case does not indicate a hostility to *ex ante* licensing under U.S. antitrust law.

It may seem strange to you that a case like *Soundview* could have such a great impact on standard setting participants, when a careful reading by an antitrust lawyer shows that it should have little impact. But that is just the point: standard setting participants generally are not antitrust lawyers or lawyers at all, and do not wish to delve into legal complexities. They have enough complexities of their own, in the technological field. They crave clear legal guidance. This explains why their response to the mere possibility of antitrust liability in *Soundview* was to look for a safe harbor, and many decided that one safe harbor would be simply to avoid discussing licensing fees at all. A problem, of course, is that retreating to this safe harbor may result in inefficiency.

Another problem is that refusing to discuss prices is not a safe harbor against all antitrust claims, as shown by the second decision I mentioned, *Golden Bridge v. Nokia*. This case was also a denial of a motion to dismiss. In *Golden Bridge*, the owner of a patent for mobile phone technology brought antitrust and related claims against members of an industry standards group. The patent owner claimed that the defendants' standard setting had the effect of excluding non-standard technologies from the market, and that defendants had conspired to remove the patent owner's technology – which had been included in an earlier draft of the standard – to prevent having to pay royalties to the owner.¹⁸ It is not obvious what the antitrust injury was alleged to

¹⁷See Sony Elecs., Inc. v. Soundview Techs., Inc., 389 F. Supp. 2d 443 (D. Conn. 2005); 281 F. Supp. 2d 399 (D. Conn. 2003); 225 F. Supp. 2d 164 (D. Conn. 2002).

¹⁸Golden Bridge Tech., Inc., 416 F. Supp. 2d at 528, 532.

be in *Golden Bridge*; clearly, the capture of an SDO in order to cripple a competitor's technology would state a claim under the antitrust laws,¹⁹ but just as clearly, the mere decision to choose a different technology for reasons of technological merit, price, or any other normal condition of healthy competition does not.

The U.S. antitrust agencies have great concern when antitrust law begins to be seen as part of the problem, not as part of the efficient solution, so they now have issued guidance to clarify this area of the law. And on June 22, 2004, the President signed into law the Standards Development Organization Advancement Act (SDOAA).²⁰ The Act grants SDOs a limited immunity from antitrust treble damages on the condition that the SDOs file proper notification of their activities with the agencies.²¹ The Act grants such immunity only to the SDO and not to its constituent members.

C. Antitrust Agency Guidance Regarding *Ex Ante* Licensing

The Department of Justice and FTC have made several public statements about the antitrust analysis of *ex ante* licensing negotiations in the SDO context. I will focus on the three that I consider to be the most important. In a 2004 speech on IP-antitrust issues, then-AAG for Antitrust Hew Pate said the following:

It would be useful to clarify the legal status of *ex ante* negotiations over price. [] It would be a strange result if antitrust policy is being used to prevent price competition. There is a possibility of anticompetitive effects from *ex ante* license fee negotiations, but it seems

¹⁹See Am. Soc'y of Mech. Eng'rs, 456 U.S. 556.

²⁰Pub. L. No. 108-237, 118 Stat. 661 (2004) (codified at 15 U.S.C. §§ 4301-05 (Supp. 4, 2000)).

²¹15 U.S.C. § 4303.

only reasonable to balance that concern against the inefficiencies of *ex post* negotiations and licensing hold up.²²

This balancing, of course, is known in the United States as the rule of reason. The next year,

Chairman Majoras devoted an entire address to the topic, and concluded,

[J]oint *ex ante* royalty discussions that are reasonably necessary to avoid hold up do not warrant per se condemnation. Rather, they merit the balancing undertaken in a rule of reason review. We would apply the rule of reason to joint *ex ante* royalty negotiations because, quite simply, they can be a sensible way of preventing hold up, which can itself be anticompetitive. Put another way, transparency on price can increase competition among rival technologies striving for incorporation into the standard at issue.²³

The third major development occurred in 2006 when the Antitrust Division released its favorable business review letter to the VMEbus International Trade Association (VITA), an SDO that develops standards for certain computer bus architecture.²⁴

The VITA *ex ante* licensing policy contains a number of provisions, including these five:

- *Disclosure.* Each member of a standards working group must disclose all patents or patent applications that it knows about and that it believes may become essential to implementation of the future standard. Members must do this on three occasions: before a working group is formed to create a standard; within sixty days after the working group is formed; and within fifteen days after the draft standard is published. In addition, any member must disclose any previously undisclosed essential patents at any meeting, and must follow that disclosure with a formal declaration within thirty days.

²²Pate, Licensing Freedom at 9.

²³Deborah Platt Majoras, Chairman, Fed. Trade Comm'n, Recognizing the Procompetitive Potential of Royalty Discussions in Standard Setting, address at Standardization and the Law: Developing the Golden Mean for Global Trade 7 (Stanford University, Sept. 23, 2005), <http://www.ftc.gov/speeches/majoras/050923stanford.pdf>.

²⁴Letter from Thomas O. Barnett, Assistant Att'y Gen., U.S. Dep't of Justice, to Robert A. Skitol (Oct. 30, 2006), <http://www.usdoj.gov/atr/public/busreview/219380.pdf>; *see also* Press Release, U.S. Dep't of Justice, Justice Department Will Not Oppose Proposal by Standard-Setting Organization on Disclosure and Licensing of Patents (Oct. 30, 2006), http://www.usdoj.gov/atr/public/press_releases/2006/219379.pdf.

- *Maximum terms.* Members must disclose maximum royalty rates, whether in terms of dollars or as a percentage of a device sale price, and also the most restrictive non-royalty terms they will demand for essential rights. The commitments are irrevocable; however, patent holders are free to submit subsequent declarations with lower rates and less restrictive terms.
- *Limited application.* These commitments apply to implementation of the VITA standard being developed, and any revisions to that standard, but they do not apply to any other uses of the technology.
- *No horizontal negotiations.* Working group members may consider the various declared licensing terms when deciding which technology to support for the standard, but cannot negotiate or discuss specific licensing terms among working group members or with third parties.
- *Arbitration and consequences.* The policy creates an arbitration procedure to resolve any disputes over members' compliance. There are a number of specified consequences for non-compliance, including that failure to disclose an essential patent will lead to that patent being licensed on a royalty-free basis within the standard.

In its letter, the Department of Justice concluded that this policy was not likely to harm competition. It found that the policy should not lead to depression of the price for licenses through joint, anticompetitive actions because it prohibits any joint negotiation of licensing terms. Indeed, working group members do not set actual licensing terms – the patent holders propose their terms, balancing their interest in fees against the possibility that too high a “price” *ex ante* would prevent their technology from being chosen for the standard. After the standard is set, the patent holder and each prospective licensee will negotiate separately, subject only to the maximum terms set forth in the patent holder’s original, unilateral declaration. Obviously, any attempt to use this process as a sham to cover horizontal price fixing would result in *per se* Sherman Act Section 1 liability, but the restrictions put in place by VITA appear to promote efficiency if they are followed and enforced.

IV. Observations Regarding *Ex Ante* Licensing

The VITA letter is, as of this writing, the latest and most specific word from the U.S. enforcement agencies as to intersection of antitrust, IP, licensing, and standard setting law. You can be assured that it will not be last, since this important area continues to develop. I will close with a few observations about such development. These are discrete points, in no particular order.

As I mentioned, we now have three rounds of attempts to solve the problem of patent hold-up within standard setting. Each of the previous two solutions – RAND and simple predisclosure – spawned new, largely unforeseen problems and evasion strategies. The law of unintended consequences functions with particular speed in the intellectual property area and we would be wise to stay on the lookout for problems with respect to *ex ante* licensing as well. But if we focus on the ultimate question – does a particular practice promote efficiency, or not? – I am confident that we will be able to handle such challenges in the cautious and incremental manner in which antitrust law has developed in the past.

One should resist the temptation to treat the latest statement from the Antitrust Division as the only safe way to proceed, or to conclude that if a policy deviates in any of its particulars from one cleared by the Division, it necessarily violates the antitrust laws.²⁵ The Department of Justice has seen businesses make such an error in the context of its business review letters regarding patent pools, which for a time came to be seen, incorrectly, as the only method for

²⁵A business review, by law, relates only to the specific practices for which the letter was sought, and does not speculate as to the proper analysis of different practices not mentioned in the business review request. *See* 28 C.F.R. § 50.6; *see also* Antitrust Division Business Review Procedure, <http://www.usdoj.gov/atr/public/busreview/procedure.htm>.

creating an antitrust-compliant patent pool. Antitrust law is not so inflexible. The U.S. agencies recognize that different industries face different challenges and, therefore, efficient new solutions may require differences from those tried in the past. The rule of reason is adaptable, by design.

There certainly is no affirmative requirement in antitrust law that businesses *must* create a RAND, disclosure, or *ex ante* licensing system. Doing nothing remains an option, and may be a viable option in view of the fact that there are many self-correcting mechanisms within traditional standard setting approaches. It may be reasonable to conclude that reputational constraints are enough to prevent hold-up strategies in some industries, or that simple economic incentives – those who hold up a standard too much could delay or kill the standard, which would deprive them of royalties – would suffice. Or perhaps an SDO may recognize the benefits of a policy like VITA’s, yet conclude that those benefits are not enough to compensate for the additional personnel, costs, and delays that such a policy may require.

And finally, one reason to encourage different approaches to *ex ante* licensing is that experimentation and competition between SDOs, as in any corner of the marketplace, is a good thing. Hopefully, we can expect to see some natural experiments that test our assumptions about which provisions of *ex ante* licensing policies are most efficient. What *ex ante* requirements will be considered acceptable by patent owners, and what will drive patent owners to avoid an SDO out of fear that royalty rates will be pushed too low? Which *ex ante* terms will cause people to overlawyer their relationships and bog down the SDO process, and which will operate well so that the technologists can do their work? Are fears about the difficulty of *ex ante* licensing overblown, particularly given that patent pools and portfolio cross licensing also were once

thought highly difficult, yet today are routine? The great strength of the competitive marketplace is its ability to experiment, recover from false starts, and seek an efficient equilibrium through an organic development process. We should not expect to be able to predict where the best ideas will come from, but with all respect to my colleagues in the enforcement community, I doubt they will be developed entirely from the top down by antitrust enforcers in the U.S. or elsewhere.

V. Conclusion

There is a role for antitrust enforcers to play in the development of efficient standard setting models, but given the potential importance of this area to dynamic efficiency and long-term consumer welfare, it is a role we should play with great caution. Inefficient rules, or rules that become inefficient over time, are nearly inevitable in developing areas of the law. When inefficient rules are imposed by private SDOs, there are a number of safety valves available; for example, businesses can choose not to participate in standard setting or can form competing SDOs or otherwise contract around the problem. When an unsound rule is proposed by a government enforcer, however, there is often no way to contract around it, and worse, there may be no way to conduct a natural experiment without the rule that can prove it should be abandoned. As we consider the challenges and proposed solutions within standard setting, we should rigorously focus on the efficiency implications of each practice and keep in mind the benefits of licensing freedom and the power of markets to self-correct. And businesses, when applying guidance put forth by the enforcement agencies, should have every confidence that past guidance will be adapted to new developments in a flexible and efficient way.