Patents and Standard-Setting Processes
Statement of Scott K. Peterson, Hewlett-Packard Company
for
FTC/DOJ Hearings on Competition and Intellectual Property
Law and Policy in the Knowledge-Based Economy

April 18, 2002

Introduction

I am pleased to have this opportunity to share perspectives from my experience on behalf of Hewlett-Packard Company (HP) as a participant in a wide array of standard-setting processes in the information technology sector. My focus is on standards that enable interoperability among both competing and complementary products employing new technologies, presenting some challenges beyond those involved in more traditional safety or related kinds of standards. Your agencies' interest in standards of this kind should be welcomed in many quarters in light of their central contribution to the evolution of open, competitive and innovative markets across the information technology landscape.

I propose to discuss the increasing role of patents in this area and some difficult issues presented by this trend. All of us involved in these standards processes should by this stage be sensitive to the combination of both positive and negative effects that can occur when technology subject to patent protection ends up in a final standard: it can enhance the quality of the standard and thereby promote both competition and innovation in affected new markets; but it can also enable the patent holder to obtain and exercise market power and to act opportunistically against its rivals. Before delving into these concerns, however, it is important to delineate the diversity of processes, contexts and circumstances under which IT standards evolve. An appreciation of

this diversity should then elucidate the need for considerable flexibility and experimentation in approaches to addressing the issues presented.

I. Diversity of the Standard-Setting Universe

Proposals to develop new information technology standards emerge in a myriad of ways and are pursued through a great variety of organizational structures. One can begin to appreciate the diversity by recognizing three different but common kinds of approaches: promoters' groups, consortia and standards development organizations ("SDOs").

A promoter's group may arise when a single firm seeks to develop a set of specifications around its own technology or piece of technology in a manner that facilitates widespread deployment so that the specifications ultimately becomes an industry standard. The firm -- or promoter -- may invite a small number of other firms, selected on the basis of their particular capabilities and incentives to contribute to the objective, to join as a group in developing the specifications. The group may proceed on a fast track and cease to exist upon completion of initial specifications. Its work product may thereupon be submitted to an SDO for formal adoption as an industry standard.

A consortium may arise when several firms involved in a technology market share a view on the need for standards that promote interoperability among their products and that can thereby expand their market to the advantage of all suppliers and users alike. They create an organization and agree on procedures for it as a vehicle for their collective development of the envisioned standards. It will typically encompass a larger number of firms, advance a broader agenda and remain at work for a significantly longer period than a promoter's group. It may, for example, contemplate developing a relatively broad array of specifications and successive generations of specifications, promoting their adoption over the course of several years.

An SDO may be an established trade association with a broad and diverse membership. One of its longstanding functions may be development of many different kinds of standards at the request of its members. It will typically pursue standard-setting in accordance with detailed ANSI-compliant procedures and policies aimed at ensuring maximum openness, due process and "consensus" decision-making among all affected or interested parties. It has both advantages and disadvantages as compared to what I have described as promoters' groups and consortia. On the one hand, the broader and more fullsome participation of affected interests can result in a better, more open and useable standard. On the other hand, the process in accordance with those procedures can take much longer to conclude than processes employed by smaller groups in less formal settings.

This tripolar picture I've outlined is a considerable oversimplification of the real world. There are many hybrids that fall, for example, somewhere between what may look like a promoter's group and what may look like a consortium. Many consortia, moreover, follow rules capturing the substance and spirit if not all procedures of an SDO. And, as noted, the work product of a promoter's group (as well as that of a consortium) may end up before an SDO for ultimate certification as an ANSI standard.

There is great value in this diversity. Some technologies are more complex and difficult than others in terms of the facility of their translation 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. Some of these processes entail joint development of the technology in question, thus looking more like what

could be called a "joint production venture" than a traditional standard-setting process, or a hybrid of both kinds of undertakings, thus calling for different degrees of tolerance for development efforts driven by one or a small number of firms. This last example is now common and is often aimed at building a market for what at the beginning may well include technology subject to patent protection. Therein lies one among several reasons why patents are playing an increasing role in standard-setting. I will shortly outline other reasons as well.

Consider the following examples that illustrate (i) the need for different types of standard-setting rules and (ii) the need to pay close attention to patents in some cases but less so in other cases:

> **Case A:** Success of standard A depends on its adoption in products from hundreds of different sources; some of these products are distributed within products for which customers are not presently charged any fee and for which the producer has essentially a zero marginal cost (as with many electronically distributed software products).
>
> **Case B:** Success of standard B depends on adoption by only a handful of manufacturers who will make the component embodying the standard and the component will then be used in many other products. Assume that all of those component manufacturers already have established licensing arrangements.

Assume in each case that there are several options from which the standard can be selected and consider the implications of waiting to address licensing of essential patents until after the standard has been selected. In case A, waiting to confront the licensing of essential patents until after the standard has been selected could be fatal to the standard's success. In case B, there is far less danger in this respect.

II. The Increasing Role of Patents

Technologies subject to patent protection are often exceptionally valuable and sometimes essential inputs into IP standards. Many technologies either protected by outstanding patents or

subject to pending patent applications may embody innovations holding the potential to create new markets and to benefit both suppliers and consumers across many industries. For these reasons, standards-groups should welcome and encourage the availability of these technologies as inputs into the standards they develop. This, of course, does not mean that acceptance of such contributions should be without some strings attached or without conditions designed to ensure that standards create open and robustly competitive markets. More on that subject in a few minutes.

A related factor is a more general IT-sector-wide shift in emphasis from defensive use of patents and broad cross-licenses toward more aggressive exploitation of patents for revenue generation. Developers of technologies that are either already protected by patents or subject to pending patent applications increasingly see the incorporation of their technologies into proposed specifications as a way of leveraging their patents into positions to extract financial and competitive benefit from widespread adoption of the resulting industry standards. In this environment, innovators are highly incented to promote the consideration of their inventions in all promising standard-setting venues.

Another factor is the increasing rate of patent grants in recent years. The result is that there may be a multitude of patents shadowing or potentially burdening any particular standard-setting effort. Standard-setting participants usually include companies with large patent portfolios; a company's representative in a standard-setting process may not in fact know whether a proposed standard will or may implicate a patent within his or her company's portfolio. There may be no nefarious intent to hide the ball in this respect. Use of the ultimately adopted standard nonetheless may well require use of one or more of that company's patents.

Again, this is a consequence of patent proliferation and an unavoidable part of the climate in which standard-setting occurs.

In considering the tools that might be used for factoring patents into the standards development process, one might focus on the following three categories: disclosure policies; endorsement thresholds; and licensing policies. Each of these tools can be used in a variety of ways, as I will now briefly explain.

Disclosure policies. Different groups employ different approaches to encouraging or requiring timely disclosures of information about essential patents. Variables include (a) scope of knowledge triggering the disclosure (whether, for example, any search or other inquiry beyond the participant's own awareness may be expected); (b) nature of the disclosed information (whether, for example, it includes only issued patents or also pending patent applications); and (c) point or points in time when disclosure is to be made (early in the process, shortly before balloting, or at several different stages).

Endorsement threshold. Many groups use a rule under which the forum will not endorse or publish a standard for which the forum is aware of an essential patent unless certain conditions are met. Most frequently, the condition is an indication by the patent owner of a willingness to offer licenses. I refer to these rules as endorsement thresholds. Variables include: the licensing commitment that the forum might expect as a condition, extent of the necessary forum "knowledge" and retraction (or not) of previously endorsed standards.

Licensing. In some groups, participants agree to commit to certain licensing terms with respect to essential patents they might hold. Variables include: to whom the licensing obligation extends (for example, whether the obligation is undertaken only by those actively involved in the process or is undertaken by broader classes of interested parties); license terms to which the

commitment is made (RAND, free, other); to what patents does the obligation extend (already issued patents or also future patents based on then-pending applications).

Many groups impose on themselves the requirement that they will not select a standard that would require use of a patent that will not be available on reasonable and nondiscriminatory terms. This policy (an endorsement threshold) is widely employed.

III. Consideration of Patents During Standard-Setting

There is no rational argument in favor of "blissful ignorance" of patent implications during the course of a standard-setting process. The 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.

The FTC's **Dell Compute**r action of six years ago called attention to the manner in which anticompetitive "patent hold-up" or "patent ambush" situations can arise when standard-setting bodies go about their business of fashioning and voting upon proposed standards without knowledge that patents may be infringed by the use of the standards they adopt. That action, however, opened a virtual Pandora's Box of follow-on issues over how to address and minimize exposure to post-adoption opportunistic conduct by holders of patents required for a standard's use. In some situations, as alleged in several private lawsuits as well as in reports of now-pending FTC investigations, the problem may arise from deliberate deception during the standards development period. In other cases, however, no premeditation may be involved; it may indeed be that the existence of the patent coverage could not reasonably have been known when the standard was written. Nonetheless in those situations as well, anticompetitive consequences can emerge from the post-adoption discovery and assertion of the patent that the standard encompasses.

There are many ways that patent license terms revealed only after the standard is adopted can generate conflict and impair many parties' ability to compete in the affected market. Permit me to offer several examples of the possibilities in this regard:

- Patentee seeks a royalty that is "fair" from the patentee's perspective but greater than the average profit margin of all of the parties who will need licenses.

- Patentee seeks a broad grantback that appears even handed but with significantly disparate effects on different parties, perhaps forcing particular licensees to forfeit the value of their own major innovation investments, but patentee refuses to deviate from its "standard" agreement for any reason.

- Patentee demands a minimum annual royalty based on "administrative costs" but with the effect of locking out smaller rivals and new entrants.

- Patentee seeks royalties from downstream providers (e.g., manufacturers of finished goods) and refuses to license suppliers of upstream inputs such as IC vendors. The purpose is to increase the income to the patentee (3% of a computer is more than 3% or even 5% of an IC within the computer), but this practice also greatly increases rivals' costs and time to market.

- Patentee requires admissions of infringement and validity, and/or retains the right to immediately terminate a license if the licensor challenges infringement or validity.

- Patentee requires acceptance of venue in a "home court" which might be fine for large companies but a major problem for small companies or foreign competitors.[1]

[1] For an example now in litigation, see Intersil Corp. v. Proxim, Inc., Civil Action No. 01-266 (U.S.D.C. Del., Complaint Filed April 24, 2001). The allegations are that (a) during an IEEE proceeding to develop a standard for a wireless LAN communications protocol, Proxim provided the requisite letter committing to license its patents (if needed for use of the standard) on reasonable terms; (b) after the standard was adopted in reliance on Proxim's commitment, Proxim filed infringement suits against numerous users and simultaneously sent letters to them with what the complaint describes as a "sham overture to negotiate license terms"; (c) recipients were required to sign an NDA forbidding disclosure of the proposed license terms to anyone else in the industry and were also required to admit infringement of Proxim's patents; and (d) recipients were given 30 days within which to accept the proffered terms and told that those failing to do so by that time would face "lengthy, complex and expensive litigation relating to the infringement" of the patents. The complaint also alleges that Proxim's intent was to disrupt implementation of the IEEE standard in order to benefit a competing protocol based on Proxim-supplied proprietary technology.

There is no single, ideal solution to this problem or combination of problems that would be appropriate for all of the different kinds of standard-setting going on in so many different contexts. There is no neat one-size-fits-all remedy that could be effective across the whole universe. A particular set of disclosure obligations or advance license commitments may be fine for some promoters' groups or particular consortia while being impractical and unacceptable for SDO proceedings involving large numbers of diverse participants. Different groups are now employing or considering different approaches, involving a variety of pre-adoption disclosure and license commitment policies. Everyone concerned about these issues, including your agencies, should welcome this diversity of experience and of experimentation with methods of addressing the problems at hand.

HP has in some circumstances favored an approach that we believe should be encouraged but that is often opposed by others upon what we believe is a misapprehension of antitrust risks. If a party promoting use of its patented technology for incorporation in a proposed standard states it is willing to offer a license on terms that are "reasonable and nondiscriminatory" (but terms that are not otherwise specified), consideration of the impact of the patent on the proposed standard often ends at that point -- indeed some participants insist any further or more specific discussion about it would invite antitrust trouble. But all potentially affected parties have a legitimate interest in knowing before a standard decision is made what the economic effects will be of accepting a patent into the standard. Nonetheless, when suggesting that licensing terms be considered, we have encountered the objection that doing so could invite antitrust challenge. Indeed, some standards organizations expressly prohibit consideration of license terms in their

rules.[2] These objections are unfounded. To the contrary, disclosures of the sort we have suggested would be procompetitive by foreclosing opportunistic hold-up situations that are all too easy to arise when a patent holder's view of "reasonable" license terms remains secret until after a standard has been adopted.

To be more specific, consider a circumstance where a consortium is developing what is expected to be a critically important standard that defines the infrastructure for a whole array of next-generation products that all consortium members and other parties as well need to develop to remain in the affected market space. One consortium member promotes specifications based on technology that it has patented and the patent is appropriately disclosed during the process. Other consortium members see technical benefits to those specifications but also recognize alternative approaches that would entail countervailing benefits as well as avoiding any need for users to obtain patent licenses.

The patent holder's proposal might be considered the "best technical solution" but that does not necessarily make it the "best solution" when the overriding objective is a standard that ensures a level playing field and robust competition in the new market that the standard is designed to foster. A standard that enables one user to extract exorbitant royalties from all other

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[2] See, e.g., "Understanding Patent Issues During IEEE Standards Development" at http://standards.ieee.org/board/pat/guide.html: "So what can you discuss about patents at a standards-development meeting? You can cover the content of the patent letter of assurance form, you can discuss the technical merits of using the technology under patent, and you can discuss the way patent information is made available from the IEEE. 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. These are not appropriate topics for discussion in a standards developing committee." See also "What You Need to Know About IEEE Standards and the Law" at http://standards.ieee.org/resources/StdsLaw_Brochure.pdf: "During standards-development meetings, discussions should be confined to technical, engineering, and safety considerations. Commercial considerations are not proper factors for consideration."

users could, in this light, be the "best technical solution" but not by a long shot the "best solution" either for the industry generally or from the broader standpoint of the public interest.

In that scenario, why should not all of the consortium members have the right to ask the patent holder, before any decision is made on which approach to adopt, to specify the royalty and other terms the holder would impose if its technology is selected? A truly informed and intelligent decision on which among these alternative approaches would best serve all parties' interests -- including the public's interest in competitive market conditions -- cannot be made without knowing what the patent holder would extract from all users as the price for admission into the affected market.

Now let's assume that that same consortium proposes to go beyond requesting disclosure of the holder's planned license terms and embarks on a concerted negotiation over mutually acceptable terms under which they will adopt the holder's specifications for the new standard. One could characterize that scenario as a form of "joint buying" of an input into a new "product" that the parties are jointly developing. The agencies have blessed joint buying scenarios in many contexts, and this is one where agency approval would be appropriate as well.[3] We are worlds

[3] See, e.g., FTC/DOJ "Antitrust Guidelines for Collaborations Among Competitors" at 14 (April 2000), recognizing that many "agreements jointly to purchase necessary inputs . . . do not raise antitrust concerns and indeed may be procompetitive." The guidelines also recognize that there are situations where such agreements may create or facilitate the exercise of buyers' market power or threaten collusion among the participants. These concerns, however, are quite unlikely to arise from the mere consideration of -- or indeed even negotiation over -- proposed license terms for a patent on technology that may be written into proposed specifications. Agreement on what to include in the standard is a necessary part of every standard-setting process; and the fundamental purpose of considering license terms at an early stage of the process of reaching that agreement is to protect against the patent holder's exercise of market power that it may obtain as a direct result of the standard itself against all other users of the standard that otherwise would be highly vulnerable to opportunistic conduct. There is no reason to assume or expect collaboration about such license terms to spill over into unlawful forms of collusive activity and, in any event, procedures can be fashioned to obviate any concern of that sort.

away from case law condemning "buyer cartels"; we are talking about collaborations for creating new standards that advance new technologies, and these collaborations fit well within case law applicable to "joint ventures" of many kinds.[4]

In short, the sort of "joint negotiation" or joint consideration of license terms during a standard-setting process that I have described in my example should be unassailable under the governing antitrust rule of reason. Indeed, as I have already suggested, it may often be the most efficient if not the only practical way of avoiding patent holdup or ambush problems and should be considered presumptively procompetitive on that ground. Limitations on the scope of or other safeguards attaching to this activity can be fashioned to obviate concern over any countervailing anticompetitive risk. The bottom line, in my view, is that it is desirable and in the public interest that standard-setting groups be not only permitted but encouraged to experiment with various mechanisms for consideration of specific license terms before decisions on the content of a standard are engraved in stone. Thoughtful guidance from your agencies on this point should be welcomed by all quarters of the standard-setting community.[5]

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[4] See, e.g., Addamax Corp. v. Open Software Foundation, 152 F.3d 48 (1st Cir. 1998), affirming dismissal of an antitrust challenge to OSF, a consortium to develop specifications for a new industry-standard UNIX platform. The Court of Appeals saw OSF as a "venture . . . producing a new product" with "potential for a productive contribution to the economy . . . ." Id. at 52.

[5] Your agencies' guidance in this regard could be particularly valuable as applied to situations involving government-mandated industry standard setting such as that envisioned by the proposed "Consumer Broadband and Digital Television Promotion Act" (S. 2048, 107th Congress, 2d Session, introduced March 21, 2002). That Act would (a) require the information technology and digital content industries to reach agreement on "security system standards for use in digital media devices" (PCs, TVs, etc.) within one year of enactment; and (b) thereafter prohibit the sale of any digital media device unless it "includes and utilizes standard security technologies that adhere to" the adopted security system standards. The one-year deadline would virtually compel development of these standards around already existing technologies that are highly likely to be protected by patents. Given the proposed mandate that all device vendors comply with the standards and without any advance understanding on patent license terms, the

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Finally, as your agencies review issues presented by standard-setting processes in the information technology space, it is important to be sensitive to the thoroughly international nature of the standards that we are talking about. This characteristic highlights why conflicts or inconsistencies in applicable public policies among jurisdictions could significantly impede the progress of standard-setting groups and thereby slow innovation and technology development generally. For this reason, your agencies could play a valuable role in promoting policy harmonization on a global basis.

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patent holders would wield extraordinary power to impose terms and conditions as they see fit. The result could be exceptionally anticompetitive, enabling the patent holders to raise rivals' costs beyond the point of meaningful competitive viability and raise entry barriers beyond penetration.