

# Consideration of Patents during the Setting of Standards

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*Standard Setting Organizations: Evaluating the Anticompetitive Risks Of Negotiating IP  
Licensing Terms and Conditions Before A Standard Is Set*

The world of standards setting and patents is changing.<sup>1</sup> I want to report on what I see, why things are changing, where I think the intersection of standards setting and patents is headed, and why attention should be paid to patents while standards are being set.

There are standards of various types, and not all standards play the same role.<sup>2</sup> My perspective is that of a participant in the information technology (“IT”) industry. My comments will focus on interoperability standards, which play a vital role in fostering growth in many IT markets.

## **Cooperate on Standards. Compete on Implementations.**

The IT industry produces products that form complex, interconnected and interdependent systems. Interoperability adds critical value to IT products, as is reflected in the network economics that is so characteristic of these systems. Although 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. As a result, HP’s longstanding approach has been to cooperate on standards and compete on implementations.

**Cooperate on standards.** The use of common protocols and interfaces can expand markets for networks of products that implement those protocols and interfaces.

**Compete on implementations.** Producers compete by innovating on top of the standardized functions. Although the functional characteristics specified in the standard may be the same in all products, innovation builds on those points of commonality (such as by implementing those characteristics with innovative techniques and by adding innovative features to products that incorporate the standardized elements).

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<sup>1</sup> Although in this paper I focus on patents, in the broader topic of *intellectual property* and standards setting, change is not limited to patents. For example, there are issues brewing concerning copyright in relation to those standards where literal code from the standard needs to be incorporated into implementations of the standard, such as is the case with some XML-based standards.

<sup>2</sup> One very different topic is that of safety standards.

## **Formulation of Patent Policy for Development of Standards is an Exercise in Balance**

Formulation of a policy for how to address the interplay between patents and standards is not a simple maximization exercise -- it requires balancing among a variety of interests:

- standards development organizations (“SDOs”)
- participants in the standards development process (companies and individuals)
- patent owners
- users of standards (implementers)
- customers (ultimate consumers)

These interests sometimes have competing concerns and other times share concerns, although often with differing priorities. The following are some examples of the concerns to factor into a patent policy: liability; complexity, speed, and effectiveness of the standardization process; control over use of patent rights (including whether rights are used, and if so what the compensation or other implications might be); burden on participants; competitive implications of resulting solutions, and impact on innovativeness and cost.

Like many companies, HP finds itself in many of these roles (patent owner, implementer, participant, consumer). HP invests in technology innovation and develops a large patent portfolio that reflects this investment. HP is a very large user of standards; it builds products that operate according to a multitude of standards, including products that will be successful only if there is market-wide acceptance of the standards to which they conform. HP’s own operations rely on many products and services that depend on standards. Given this degree of importance to HP’s business, HP has long been an active participant in the process of developing standards and has a strong interest in patent policies that foster success of standards.

## **Diversity in Standards Development Forums**

Standards in the IT industry are developed in a wide range of types of forums. This range can be illustrated by considering three regions of the range: promoters groups, consortia, and SDOs. At the SDO end are the long-lived more formal forums. At the other end are the short-lived promoters groups formed to launch initial versions of one or a small family of standards. The SDOs excel in breadth of participation; the promoters groups often act more quickly. An intermediate balance in this speed/participation trade-off is found in consortia.

This variety of forums is valuable. Marketplace dynamics may call for particularly expedited processes in some instances but may value 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 some other standards, thus calling for different kinds or degrees of participation. Some standards may be based on emerging technologies that 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, and thus calling for different degrees of tolerance for development efforts driven by one or a small number of firms.

## There Should be Variety in Patent Policies

The variety in characteristics of technologies, markets, business situations, and standards development forums should lead to variety in patent policies.

There is a wide range of the extent to which technical solutions vary in “performance”. This variation is sometimes due to variation in the nature of the constraints in the problem area. This affects the likelihood that a patented solution will offer significant advantage over alternatives. Often a protocol can be implemented in many ways that have similar performance; on the other hand, for example, where the degree of data compression is critical, it may be important to use one of the more well-refined algorithms.

The complexity and other implications of licensing vary depending on the industry and on product characteristics. For example, consider the differences between the situation where only a small number of companies need to implement the standard<sup>3</sup> and the situation where success of the standard depends on implementation by a very large number of different implementers. Also, the state of existing licensing or cross-licensing arrangements among the expected implementers (keeping in mind the possibility of new entrants) can also affect the degree of benefit in considering the licensing implications as a part of the standard setting process.

The following contrasting examples illustrate the need for different types of standard-setting rules, and 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 implementation in products from hundreds of different sources; some of these are products that are distributed without charging 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 (a component that will then be used in other products), where all of the component manufacturers already have established licensing arrangements; the standard is implemented in products with significant unit manufacturing cost.

In Case A, the impact that any royalties would have on product economics is more dramatic; in addition, the transaction costs of licensing are significantly higher than in Case B. This suggests a greater value in attending to patent issues in Case A than in Case B.

## Essential Patents

In talking about patents and standards, the focus is on what have come to be known as “essential patents”, since they have the most direct impact on standards. In general terms, essential patents are those to which one will need a license in order to implement the standard in products.<sup>4</sup> These essential patents are distinguished from other patents that, although possibly useful in

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<sup>3</sup> For example, some standards are implemented in components that are then incorporated into other products so that, although the standard is incorporated into products from many different companies, the components with the standardized features may be supplied by a small group of implementers.

<sup>4</sup> Actually, the focus should be at a slightly finer level of granularity: essential *claims*, rather than *patents*. Also, note that determination of “essentiality” to a standard can involve a variety of nuances beyond the discussion here.

implementing the standard, are not patents to which one must have a license, such as because of the availability of alternative ways of implementing the functions specified in the standard.<sup>5</sup>

Because a license to an essential patent is (by definition) essential to practicing the standard, that license can have significant impact on the competitive viability of participation of many parties who may seek to participate in markets for products that depend on the standard (flowing from timing, cost, and other factors associated with obtaining the necessary license).

## Tools for Considering Patents in Development of Standards

How might a standards development forum “take patents into consideration” when developing a standard? I find it useful to think of the tools (the rules that a standards development forum might use) for such consideration as falling into several categories:

- endorsement thresholds
- disclosure of essential patents
- licensing commitments
- disclosure of license terms

**Endorsement Threshold.** Many forums 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 on reasonable and non-discriminatory (“RAND”) terms. I refer to such rules as endorsement thresholds. Variables include: the licensing commitment that the forum might expect as a condition; and retraction (or not) of previously endorsed standards when an essential patent is identified after adoption of the standard. Note that, in the case of an endorsement threshold, the obligation or requirement is imposed on the forum, not on the patent owner; the patent owner has no obligation to make a licensing commitment.

**Disclosure of Essential Patents.** Various approaches have been taken to encouraging or requiring timely identification of essential patents. Variables include: scope of knowledge triggering the disclosure (whether, for example, any search or other inquiry beyond the individual participant’s own awareness may be expected -- most commonly not requiring a search); nature of the disclosed information (whether, for example, it includes only issued patents or also pending patent applications, often making a distinction between published and unpublished applications); and point or points in time when disclosure is to be made (e.g., early in the process, shortly before balloting, or at several different stages).

**Licensing Commitments.** In some forums, participants agree to commit to certain licensing terms with respect to essential patents they might hold. This tool is commonly used in promoters groups, and is used less widely as one moves toward the SDO end of the range of types of standards development forums. Variables include: who undertakes the licensing obligation (for example, whether the obligation is undertaken only by those participating in the development of the particular standard, or is undertaken by broader classes of interested parties); license terms to which the commitment is made (is a fee permitted? are particular terms specified? or is this a more generalized commitment?); to what patents does the obligation extend (already issued patents, future patents based on then-pending applications).

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<sup>5</sup> The concept of essential patents is also important in discussions of standards-related patent pools.

**Disclosure of License Terms.** Rather than expecting commitment to particular license terms, a forum might encourage or require that the terms under which essential patents will be licensed are disclosed. Variables include: the level of detail of the terms to be disclosed; what “required” means (such as a condition of participation in development of the standard, or as a condition of the forum’s endorsement of the standard). In factoring into the consideration of a proposed standard the implications of the required license, it may be appropriate to have an iterative process where license terms are disclosed, implications considered, and revised terms disclosed and considered; in its most extended form this could amount to a kind of license negotiation, as discussed further below.

None of these tools represents “the solution”. The goal is one of balance, where different forums may strike different balances. To achieve its particular balance of interests, a forum’s patent policy will typically configure two or more of these tools and rely on that combination, rather than rely on one tool.

## License Terms Categorized

In considering the implications that a license to an essential patent may have on a standard, I have found it useful to group license terms into the following categories:

- (A) **scope of the grant:** essential claims; for the purpose of implementing the standard.
- (B) **reciprocal license:** not just any grantback, but the same license as the licensor is offering (such as limited to essential claims), possibly including a commitment to offer licenses to others.
- (C) **administrative terms:** customary, non-substantive terms such as choice of law.
- (D) **fees.**
- (E) **other compensation:** beyond any fees and the reciprocal license listed above, such as a broader grantback or requiring use of licensor’s products or services.
- (F) **control terms:** licensor-defined requirements imposed on implementations, such as technical requirements (beyond that specified in the standard), or requirements on how implementations are to be licensed or distributed.
- (G) **patent non-assert conditions.**
- (H) **anything else.**

The first three categories are to be expected in most cases.

Fees may or may not be required, depending on the situation. The extent to which standards developers should seek to find free solutions is context-dependent, and is a significant matter of debate in some forums.

In general, the last four categories should be empty. Terms in these categories should be treated with skepticism and given careful scrutiny, based on the full context of the particular standard. Because of the tight connection between a standard and the license for any patents essential to it, control terms, non-fee compensation, and patent non-assert provisions are particularly susceptible to being anticompetitive. As the other categories are generally adequate to do the job, anything in the catchall category at the end should be carefully considered.

## **Ex Ante Consideration of License Terms**

The time at which license terms for an essential patent are determined can have very significant implications, with the most dramatic difference being between the situation before (“*ex ante*”) and the situation after (“*ex post*”) the standard is set.

Traditionally, determination of license terms has been left until after the standard was set, when implementers were beginning to build products that met the standard. Typically, a statement by the patent owner of a willingness to offer licenses on RAND terms was all that was expected of the patent holder prior to the setting of the standard.

Yet, a commitment to offer a license on terms that are merely specified as “RAND” is not an adequate safeguard against abusive use of a patent that has become essential to a standard. The value of a patent is so dependent on the specific case (including both the particulars of the invention and of the context in which it is to be used) that different parties could have wildly different views of what RAND should mean in the context of any given standard or market environment. In particular, 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, referred to below as ‘Y’.

As a result, I have long advocated increased attention to license terms before a standard is set. Such *ex ante* consideration of license terms (1) facilitates factoring the patent license implications into the decision on selection of the best standard, and (2) reduces the risk of anticompetitive implications of selecting a standard that requires a license for which the terms have yet to be set.<sup>6</sup> Moving issues to *ex ante* consideration should operate to reduce the extent to which litigation is needed to resolve issues relating to patents and standards: *ex ante*, there are more options (both in technical decisions and in other business options for resolving the issues); *ex post*, more has become locked-in.

Some participants in standards development activities have refused to permit license terms to be taken into consideration in the selection of a standard because of a concern about antitrust risks. However, this reflects what I believe to be a misapprehension of such risk. In fact, *ex ante* consideration of license terms is fundamentally procompetitive, as it forecloses opportunistic holdup 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. Clarification of this risk issue could facilitate use of *ex ante* consideration to help make better choices in selecting standards and to reduce the potential for *ex post* adverse impact of essential patents.

Antitrust concerns should not inhibit experimentation with various means of considering patent license terms during a standard-setting process, including multilateral negotiation processes, because risks are outweighed by distinctly procompetitive benefits of the sort that render such activity eminently defensible under the antitrust laws.

### **Risks**

Some have expressed the concern that collective *ex ante* consideration of license terms could be challenged as “buyer price-fixing” or a “buyers’ cartel.” This concern is unfounded. Price-fixing

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<sup>6</sup> See, for example, my statement submitted for the FTC/DoJ hearing on April 18, 2002, which is published at <<http://www.ftc.gov/opp/intellect/020418scottkpeterson.pdf>>.

and cartel appellations are reserved for naked kinds of collusive activity devoid of any valid business justification.

Collective consideration of terms for licenses (i) for use in implementing a standard that the parties are jointly producing (ii) of patents that would be essential to that contemplated standard would be an activity intimately connected to and supportive of the participants' entirely lawful undertaking to fashion a standard designed to grow a market that will be open to all comers on a level playing field.<sup>7</sup> Such license negotiation activity is the same in purpose and effect as various kinds of negotiation activity the parties to a joint production or technology development venture engage in when acquiring an input into the new product or technology they are creating. Antitrust's permissive rule of reason applies to these kinds of situations.<sup>8</sup>

Even under the rule of reason, concerted buying activity can give rise to "oligopsony" concerns. A necessary condition to anticompetitive oligopsony effects, however, is a reduction in the quantity of purchases, thereby reducing upstream output.<sup>9</sup> Collective *ex ante* consideration of license terms in the standard-setting context may well result in royalties that are lower than what they would be if unilaterally specified at the *ex post* stage, but there will be no reduction in the quantity of licenses sought and issued. Indeed, lower royalties can only increase the number of applicants and ultimate competitors in the affected product markets, an output-enhancing effect.

Could collective negotiation reduce "just rewards" from a patent holder's innovation investment and thereby anticompetitively reduce innovation incentives? This would appear highly implausible under any proper definition of a patent holder's just rewards. One could think of X as representing the value or leverage that the patent provides in a competitive environment when routes other than adoption of the standard to which that patent would be essential remain open. However, once there has been agreement on selection of a particular standard that requires use of that patent, the value or leverage that the patent provides is increased to X+Y. X is related to the inventive contribution of the patent. Y is related to the collective action of the standards setting activity. As the value of a patent is highly context dependent, X and Y are not readily susceptible of determination in the abstract. Instead, the value is best determined by conducting negotiation at the appropriate stage. *Ex ante* consideration of license terms is most likely to approximate X, while *ex post* consideration is most likely to result in X+Y.

One anticompetitive risk that should be considered is the possibility of "spillover" effects -- exchange of information on or discussions about impermissible matters such as the parties' expected product prices, product development plans, or marketing strategies. Those developing standards already have extensive experience managing this risk.

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<sup>7</sup> Note that, because the licensing considered here is for implementation of the standard, licensing of the same patents for other purposes can remain left to individual bi-lateral negotiations.

<sup>8</sup> See, e.g., *Addamax Corp. v. Open Software Foundation*, 152 F.3d 48 (1<sup>st</sup> Cir. 1988), affirming dismissal of an antitrust challenge to OSF, a consortium to develop a new industry-standard operating system platform for which the parties negotiated terms for the purchase of a security software input with competing suppliers. 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.

<sup>9</sup> See G. Levine, "B2Bs, E-Commerce & The All-Or-Nothing Deal," 28 *Rutgers Computer & Technology Law Journal* 305 (2002).

## **Benefits**

The fundamental and entirely procompetitive business justification supporting *ex ante* consideration of license terms is protection of all participants -- indeed nonparticipating but future new entrants in affected markets as well -- from *ex post* holdup by the party whose patent becomes essential to implement the standard. Absent *ex ante* agreement on terms, the standard-setting process may artificially hand the patent holder market or monopoly power that the patent by itself would not confer, enabling the patent owner to impose royalties that may bear little relation to the value of the patented aspect, and impose other anticompetitive conditions such as overbroad grantbacks and non-assert provisions. Excessive license royalties and other terms reflecting *ex post* artificial market power raise barriers to entry into affected markets, raise product costs and thereby raise product prices.

Anticompetitive effects may well be exacerbated by broad cross-licenses between major incumbents and the patent holder; in that event, the competitive disadvantage of supracompetitive royalties could be overwhelming to smaller rivals and could block new entry altogether. Conversely, *ex ante* consideration in connection with an open contest between competing solutions for the proposed standard can be expected to generate competitive license terms that enable new entry and maximally open competition in affected markets, avoiding supracompetitive product prices and creating an environment in which innovation rivalry can flourish.

In short, avoidance of the exercise of the “Y” leverage discussed above is a procompetitive benefit that can be achieved by *ex ante* consideration of license terms.

Indeed, one could argue that standards setting participants act irresponsibly in fashioning standards that incorporate patented technology without taking account in the course of the standard-setting process itself of the potential for anticompetitive effects if the patent holder subsequently imposes anticompetitive terms. The Supreme Court’s antitrust jurisprudence on standard-setting activities has consistently admonished SDOs and SDO participants to adopt safeguards against misuse of a standard by any participant that will be a position to employ it in an anticompetitive manner.<sup>10</sup> For all of the reasons already mentioned, *ex ante* consideration of license terms qualifies as precisely the kind of safeguard envisioned and encouraged by those decisions.

## **Process**

There will be challenges in incorporating greater consideration of patent issues into processes for developing standards. For example, consideration of patent issues requires expertise that is not part of the background of those who are typically most directly involved in the standards setting activities. I see these process challenges as being attacked incrementally -- starting with those situations where the patent issues are likely to have the greatest impact, and then moving forward as appropriate.

I have seen the creation of a diverse array of standard development forums to meet the specific needs of particular standards situations. In a sense, there is an active, competitive market among

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<sup>10</sup> See *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 500, 509 (1988); *American Society of Mechanical Engineers v. Hydrolevel Corp.*, 456 U.S. 556, 571 (1982); *Radiant Burner, Inc. v. Peoples Gas Light & Coke Co.*, 364 U.S. 656 (1961).

standards setting forums, within which the developers of standards have demonstrated an ability to innovate in the processes for accomplishing their goals. From this experience, I am confident that standards developers will meet the challenges associated with factoring patent considerations more fully into their processes.

## Hot Topic. Why now?

Standards and patents -- a hot topic these days. Why now?

Recent years have seen heightened recognition of the value of intellectual property. This is reflected in more aggressive enforcement of patent rights. For example, there is a broader, more intense interest in patent licensing as a direct revenue opportunity, and there is greater attention being paid to the competitive advantages that can be obtained from patent rights. Thus, when competitors sit down to cooperate on development of standards, it is understood that there is more at stake than might have been the case in the past. This has been particularly evident in the IT industry. With increased opportunistic use of patent rights to obtain competitive advantage, it is becoming less prudent to rely on expectations of *ex post* cooperative licensing.

## Guidelines?

Given the widely acknowledged need for flexibility to handle the great variety of standards setting situations, prescriptive guidelines seem undesirable.

However, the agencies could offer useful guidance in their final report on the hearings record on how they see patent-related behavior to relate to antitrust risk. I see particular value in agency guidance on the both risks and benefits associated with *ex ante* consideration of essential patents, as mentioned above. Such guidance could remove the impediment that uncertainty about the risk creates -- an impediment to behavior that is actually procompetitive.

## View of the Future

I anticipate a future in which greater attention will be paid to the interplay between standards and patents that are essential to those standards. This will include a greater interest in understanding the implications that patents hold for success of standards to which they are essential, and therefore a greater interest in factoring patent licensing considerations into the judgments that lead to selection of standards. Less frequently will statements limited to a willingness to offer a license on unspecified "reasonable and non-discriminatory" terms be the end of the consideration.

The extent of this attention will vary from standard to standard. The likelihood that essential patents will have significant impact on the success of any particular standard depends on a variety of factors. Many standards simply do not implicate patents. In some cases, those developing the standard might conclude that, although patented technologies may be involved, established licensing practices among the anticipated implementers are such that the standards developers can afford to devote a relatively low level of attention to these issues. But, in yet other cases, the terms for licenses to essential patents can have dramatic impact on success of a standard, and the standards developers may choose to pay careful attention to the implications of required patent licenses.

This will not eliminate all *ex post* patent issues; there is no effective way to identify all essential patents in advance. But this additional advance planning -- thoughtful, timely consideration of the important issue of patent licensing -- will make a positive contribution to the success of standards. This will be good for standards and good for the procompetitive, market-enlarging benefits that standards can offer.