In 1976, Edwin Land, the visionary inventor of sheet polarizers and instant photography, and the founder of Polaroid Corporation, observed,

The only thing that is keeping us alive is our brilliance. The only way to protect our brilliance is patents.

April 27, 1976

This oft quoted aphorism proved to be prophetic in Mr. Land's case, as in 1991 his company, obtained a judgment against Eastman Kodak Company, its rival in the photographic market, of almost one billion dollars, (including interest) for patent infringement. At that time, Polaroid was in somewhat shaky financial condition, and the huge award of damages provided a needed infusion of cash. Its stock went up almost seven percent the same day.

The subject of my presentation this afternoon is the extent to which the law governing damages in the United States has fostered an environment in which the true economic value of innovation can be preserved and protected for those individuals and companies that contribute to our collective well being, by moving the "state of the art" forward with their inventions.
It has long been believed, of course, that such protection of technological advances serves as an incentive for innovation, and that innovation is an important stimulus to economic development in the long run. The United States Constitution embraces this belief, giving to the federal government the power “to promote the Progress of Science and Useful Arts,” by granting to inventors the exclusive right to their discoveries, for a limited time.

Logically speaking, of course, just how effective the patent system is in promoting technological innovation, and just how much of an economic stimulus is afforded by the availability of such “exclusive rights” (in the form of a patent), depends on a number factors. These include the likelihood that the administering authority (in the United States, the Patent and Trademark Office) will allow claims that are reasonably consistent with the scope of the invention (compared to the existing state of the art), the likelihood that the patent will be upheld (found valid) and enforced by the courts, the breadth (or lack of it) that the courts are willing to attribute to the claims in applying them to an accused device or method, the likelihood that satisfactory injunctive relief will be available, and the amount of revenue that is likely to be generated by virtue of having obtained a patent, either in the form of license royalties or in the form of damages, should court enforcement prove necessary.

Judge Linn has already discussed the role of the Court of Appeals for the Federal Circuit in the development of a positive and uniform body of law regarding patents and their enforcement since its establishment in 1982, and Professor Evenson has analyzed the manner and extent to which a strong patent system contributes to a strong economy. In addition, Mr. Godici will tell you about the positive role played by the U.S. Patent and Trademark Office in
granting patents which are at once valid and at the same time grant to the inventors the full coverage to which they are entitled in view of the prior art.

In my portion of the presentation this afternoon, I will first review briefly the recent history of patent infringement damage awards in the United States and in Japan. I will then give you my thoughts on some possible explanations for the difference in results, and will explain the central features of U.S. law on patent infringement damages that has made the U.S. record possible.
I. Patent Damages Awards – the U.S. and Japan

Last month, a federal jury in the United States District Court in San Francisco returned a verdict awarding $521 Million in damages against Microsoft Corp. in a lawsuit alleging patent infringement, based on the Microsoft Explorer web browser. The award was based on a payment of $1.47 for each copy of Microsoft Windows sold from the time that the patent was granted, through September 2001. (Microsoft has of course announced that it will appeal.) In addition, as I have already mentioned, in 1991 Polaroid obtained a judgment of over $900 Million against Kodak. In 2002, the City of Hope National Medical Center received an award of $500,100,000 (including $200,000,000 in punitive damages) against Genentech. Finally, in 1996 and 1999, Texas Instruments settled patent disputes with Samsung Electronics and Hyundai Electronics for a total package which was reportedly $1.0 Billion in each case.

While these examples are concededly among the largest, they are indicative of the degree to which U.S. courts – and federal juries – are responsive to sound economic analysis of proven facts, in order to fully compensate aggrieved patent owners in infringement suits. In fact, according to recently published data, during the calendar year 2002, the top ten damage awards in intellectual property suits totaled over $1.7 Billion, and during the same period, the top ten settlements for which figures were available exceeded $660 Million. Moreover, during the past decade, there have been no fewer than six damages awards greater than $200 Million (seven counting last month’s verdict), and ten settlements totaling almost $4.5 Billion.

By comparison, according to an article in Intellectual Property Today, in March of last year, the Tokyo District Court awarded patent infringement damages to Aruze Corp. totaling
¥8.4 Billion (then about $68.4 Million), which was reportedly a record amount for patent cases in Japan. The previous record, dating back to 1998, was ¥3.0 Billion (approximately $25.6 Million.) These figures show a disparity of an order of magnitude between the size of the awards made by Japanese courts compared with their counterparts in the United States, which of course begs the question, "Why?" That is, assuming that the true economic importance and impact, and hence the "value", of development work done in Japan is about the same as it is in the United States, why is the value placed on the fruits of that work so much smaller in Japan than in the United States. (The difference in size of the respective economies, to be sure, would account for some, but clearly not all of the disparity.)

My own view is that the answer likely has roots in both the legal framework in the two countries, and in historic and cultural considerations. In short, as I will discuss in greater detail later, in the United States, there is both a demonstrated willingness of the courts to accept any damages argument which is based on sound economic analysis of properly established facts, and a willingness on the part of companies to pursue full compensation for the entire economic harm that they have sustained in patent infringement cases. Whether this is good or bad, I leave to others to judge, but the overall atmosphere in the United States is certainly different.

II. Differences in Corporate Philosophies

There are, of course, all manner of philosophies which a company can adopt in accumulating, administering and exploiting its intellectual property portfolio. At the one end of the spectrum is the purely defensive view, which holds that companies should acquire patents

(...continued)

1 Intellectual Property Today, March 2003, p. 43.
solely for the purpose of cross licensing – as an entree to obtain access to technology developed by other companies – and for the purpose of avoiding having to pay royalties, but not for the purpose of acquiring royalty income. According to this philosophy a manufacturing company should earn a profit by offering good services and providing a better product, and should not attempt to earn a profit by licensing the results of its development efforts. Thus, development and the protection of its fruits, are regarded as a means to an end (better, more competitive products) and not the end itself.

At the other extreme are those companies which aggressively market their intellectual property assets, regarding them as either a competitive tool or as a potential profit center.

It is not my purpose to promote either of these two widely divergent viewpoints as better or more sound than the other: each has its own particular virtues, which will be valued differently depending on the economic and social perspective of the observer. Clearly it is fair to say, however, that the economic implications of the two extremes are likely to be very different. And these differences may well account to a large degree for the substantial differences in the level of compensation accorded to innovators in the U.S. and Japan.

It would of course be simplistic in the extreme to attribute one view or the other to all companies in a particular country. As might be expected, the range of philosophies among U.S. companies appears to extend to the entire economic spectrum, and I am sure that the same is true in Japan. Nevertheless, it is my belief that, to the extent that it is possible to generalize, Japanese companies have historically tended to gravitate more toward the defensive end of the
spectrum,\textsuperscript{2} while the distribution of U.S. companies is skewed more in the direction of the profit center/aggressive licensing model. It has been estimated that during the last decade of the Twentieth Century, for example, annual revenues from the licensing of U.S. patents grew from $15 Billion to $115 Billion,\textsuperscript{3} and estimates for the year 2002 place it as high as $150 Billion.\textsuperscript{4}

Probably the most prominent example of a U.S. company with a highly organized and effective patent licensing program is IBM Corp., which treats patent licensing as an important element of its overall business strategy. In each of the last ten years, IBM has ranked first in the number of U.S. patents procured, having obtained almost 3,300 in 2002, a slight decrease from the all time high of over 3,400 in 2001. Over the same ten year period, it has been estimated that IBM has earned over $10.0 Billion in licensing revenues, and that its current annual income from its licensing operation is $1.50 Billion. As an ancillary benefit, the company also considers that its comprehensive patenting program has enhanced its ability to "trade intellectual property with others", which gives their engineering operation "greater freedom of action and shortens [the company's] time to market".\textsuperscript{5}

Another prolific example is Texas Instruments, which made a conscious decision in the mid 1980's to seek out a greater return on the company's R&D investment. The two settlements with Samsung and Hyundai referred to previously have rewarded this effort with over $2.0 Billion in revenues from those lawsuits and the related license agreements alone. Similarly, Lucent Technologies has also established an aggressive program which calls for identifying

\textsuperscript{2} This is of course hardly a novel observation.
\textsuperscript{3} Source: LPS Group website, www.informationholdings.com/1ps_files/market.html.
\textsuperscript{5} Industryweek.com/Current Articles/asp/articles.asp? Article Id. = 1400, quoting Jerry Rosenthal, vice president, intellectual property and licensing.
likely infringers of its portfolio of 25,000 patents worldwide, and initiating license negotiations or litigation. In addition to seeking royalties, the company also affirmatively pursues cross licenses, in which its licensees make their technology available to Lucent, sometimes with a resulting reduction of royalties paid to Lucent. And Bell South has divided its intellectual property operations into two entities: one to orchestrate the protection of IP, and another to actively seek out other companies that might be interested in tapping into Bell South’s pool of patents and know-how. While not large compared to IBM, for example, the program is regarded as successful and has generated revenues reportedly in the range of tens of millions of dollars per year.⁶

The amount that a prospective licensee (or infringer) may be willing to pay for a license of a particular technology depends of course, on numerous factors, including market demand and profitability, availability of suitable alternatives, scope of protection, and the like. However, all else being equal, it is also true that the higher the likely penalty for infringement, the greater any negotiated royalty rate is likely to be. The following table, which is derived from a proprietary study by The Analysis Group, in Washington, D.C. shows the currently prevailing royalty rates by industry segment in the United States.⁷

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⁶ J. Wild, “A Tale of Two Telco’s”, IAM, July/August 2003, p. 28.
Two Japanese companies which have been quite active in promoting and licensing their intellectual property portfolios are Hitachi, Ltd. and Canon, Inc. During the calendar year 2000, for example, Hitachi reported revenues of ¥ 50 Billion, or about $420 Million, from its licensing activities. Canon, on the other hand, which placed a somewhat distant second to IBM in the number of U.S. patents procured last year at 1,893, reported ¥ 20 Billion ($168 Million) in patent royalty income. According to the Japanese External Trade Organization (JETRO), in the year 2000, Japanese industry overall generated profits of about ¥ 185 Billion from patent licensing activities, which is about $1.5 Billion, the amount that IBM alone earned from its aggressive patent licensing program. Over the decade ended in the year 2000, the total for all Japanese industry was ¥ 1.9 Trillion, or about $15.8 Billion – well below that in the United States.
I believe that broadly speaking, the disparity in the extent to which technology companies are rewarded for their contributions in the U.S. and Japan is attributable, to a substantial degree, to cultural and institutional considerations. To increase the economic incentive, the institutional framework, including administrative agencies and the courts must be prepared to grant and enforce patents of reasonable scope and to consider the total economic impact of infringements, and companies must be prepared to assert their patents and to avail themselves of the opportunities that institutional framework has provided.

III. Infringement Damages in the United States

Generally

The amount of compensation awarded to patent owners in infringement cases is, of course, ultimately a function of the general attitude of the judicial infrastructure: to what degree are the courts willing to take into account the myriad types of damage that may be incurred under an infinitely variable array of circumstances? In the United States, the overall answer in my view is that the courts are quite receptive to any argument that is economically sound. In brief, the plaintiff-patent owner is entitled to be compensated for all economic losses that are reasonably attributable to the asserted infringement. Notably, this is not even limited to the concepts of a reasonable royalty or lost profits, which I will discuss shortly.

One hundred fifty years ago, the United States Supreme Court articulated the general principle that the purpose and goal of awarding damages to an aggrieved patent owner is to restore him to the position he would have occupied but for the infringement. *Seymour v. McCormick*, 57 U.S. (16 Howard) 480 (1853). Currently, this broad mandate is embodied in Section 284 of the U.S. Patent Statute, which provides as follows:
Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs fixed by the court.

It is immediately apparent that this language is not especially helpful in determining what the appropriate measure of damages is, or in arriving at an appropriate dollar amount in any particular set of circumstances. In short, much is left to the imagination, and it has been left to the courts, to develop the specific guidelines for determining damages; and as we shall see, they are not very specific.

Under prevailing case law in the United States, the overriding fundamental test is one of causation: "Was the alleged economic harm in fact caused by the infringement?" Moreover, Seymour v. McCormick, the United States Supreme Court recognized that one single formula for establishing economic damage does not exist:

It must be apparent to the most superficial observer of the immense variety of patents issued every day, that there cannot, in the nature of things, be any rule of damages which will apply equally in all cases. The mode of ascertaining actual damages must necessarily depend on the peculiar nature of the monopoly granted. 

In the century and a half since Seymour v. McCormick, the basic principles have been restated by numerous federal courts, with surprising consistency. In the 1995 decision in Rite-Hite Corp. v. Kelley Co., Court of Appeals for the Federal Circuit summarized the liberal approach of the U.S. courts in calculating infringement damages as follows:

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8 57 U.S. (16 How.) 480, 488 (1853). At the same time, the Court cautioned that this broad latitude given to inventors in proving their damages claims does not dispense with the need actually to prove damages:

Actual damages must actually be proved, and cannot be assumed as a legal inference from any facts which amount not to actual proof of the fact. Id.

The language of [§284] is expansive rather than limiting. It affirmatively states that damages must be adequate, while providing only a lower limit and no other limitation. (emphasis added)\(^\text{10}\)

And furthermore, the Court emphasized that the appropriate benchmark in patent suits is full compensation of all damage that is incurred:

While the statutory text states tersely that the patentee receive “adequate” damages, the Supreme Court has interpreted this to mean that “adequate” damages should approximate those damages that will fully compensate the patentee for the infringement. Further, the Court has cautioned against imposing limitations on patent infringement damages…. (emphasis in original)\(^\text{11}\)

In a sense, at least at one conceptual level, we could end the discussion at this point. Collectively, the decisions of the Supreme Court and the Court of Appeals for the Federal Circuit state the overarching consideration in establishing the existence of legally cognizable harm in patent infringement cases: proof of an actual causal connection between the infringement and

\(^{10}\) 56 F.3d at 1544, 35 U.S.P.Q. 2d at 1068.

\(^{11}\) Id. In Aro Manufacturing Co. v. Convertible Top Replacement Co., the Supreme Court reaffirmed the primary test of causation, as follows:

The question to be asked in determining damages is “how much has the Patent Holder…suffered by the infringement?” and that question is primarily: had the Infringer not infringed, what would the patentee…have made? 377 U.S. 476, 507, 141 U.S.P.Q. 681, 694 (1964).

More recently, in 1983, the Supreme Court expressed its view regarding compensation for patent infringement damages, observing that in enacting Section 284 (above), Congress sought to ensure that the patent owner would in fact receive full compensation for “any damages”…suffered as a result of the infringement. General Motors Corp. v. Devex Corp., 461 U.S. 648, 217 U.S.P.Q. 185 (1983) (emphasis added).

Still more recently the Court of Appeals for the Federal Circuit emphasized the open ended nature of the rule regarding patent damages in the United States:

We start with the presumption that...the only limit on the [trial court’s] discretion in selecting a remedy is that it be adequate to compensate for the damages suffered as a result of the infringement. State Industries, Inc. v. Mor-Flo, 883 F.2d 1573, 12 U.S.P.Q. 2d 1026 (Fed. Cir. 1989) (emphasis added).
any resulting economic loss which is asserted. In other words, in the United States, the extent to which an aggrieved patentee can be compensated is limited only by its own ingenuity, and that of its counsel, in identifying such a causal relationship. While we could stop here, I think that a further explanation will help to clarify the significance of this proposition.

As noted previously, Section 284 of the U.S. Patent Status provides for a "reasonable royalty" as a floor, or minimum for compensation of a patent infringement. In many cases, however, the patentee will be able to show that it has suffered an economic loss in the form of "lost profits" which exceeds which might otherwise be deemed to be a reasonable royalty. In those instances, it is entitled to the greater amount. While the two concepts – lost profit and reasonable royalty – are largely overlapping, and in at least some instances many of the same factors will apply to both tests, they are essentially different – one relating to an accounting exercise and the other being based on a hypothetical arm's length negotiation.

**Lost Profits**

It is perhaps useful for present purposes to think of the term "profit" as the excess of a company's revenues from sales of a patented item over its cost of producing it. Hidden within this deceptively simplistic definition, however, are all of the economic and accounting issues which go into the calculation of both "revenues" and "expenses". This, of course, includes past, present and even future sales volumes, the scope of "relevant" sales, past, present and extrapolated prices, economic analysis of the impact of competition on pricing and production levels as well as on costs incurred, and the like, all of which may – if properly proven – be taken

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12 The reverse may of course be true, in that the patentee has suffered little, if any, in the way of measurable lost profit – for example, where it does not manufacture or sell the patented product. In this event, as noted previously, it is entitled to compensation under the reasonable royalty provision. *Rite-Hite*, 56 F.3d at 1544, 35 U.S.P.Q. at 1068.
into account in determining "lost profit". Thus, any form of economic detriment that can be proven to a reasonable degree of certainty is fair game.

The essence of the lost profits concept, of course, is that, by reason of the infringement, the defendant has diverted to itself, sales that would have been made by the patent owner, or has otherwise diminished the patent owners' sales and increased its costs. Moreover, in the *Rite-Hite* case, the Federal Circuit pointed out that in order to recover lost profits damages, a patentee need only show "a reasonable probability" that, but for the infringement, it would have made the sales that were made by the infringer.

This formulation clearly creates all manner of possibilities for defining the revenue base on which lost profit is to be calculated. In the *Rite-Hite* case itself, for example, the Court included in the lost profit calculation the patentee's lost sales of a model of its product that was not covered by the patents asserted against the infringer, but which was directly competitive with the infringing product. The patentee proved to the satisfaction of the Court that customers had bought large numbers of the infringing product instead of the patentee's second model. This, the

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13 One case which is frequently cited with regard to entitlement to lost profits is *Panduit Corp. v. Stahlin Bros. Fibre Works*, 575 F.2d 1152, 197 U.S.P.Q. 726 (6th Cir. 1978) (a "pre Federal Circuit" decision). There, the Court of Appeals for the 6th Circuit articulated a four part test, requiring that the patentee show:

1) demand for the patented product;
2) absence of acceptable non-infringing substitutes;
3) the patentee's manufacturing and marketing ability to exploit the demand; and
4) the amount of profit it would have made. 575 F.2d at 1156, 197 U.S.P.Q. at 730.

Subsequent decisions have made it clear, however, that while this four-part test is one way to establish entitlement to lost profits, it is not the exclusive test.

14 56 F.3d at 1545, 35 U.S.P.Q. 2d at 1069. To underscore this point, the Court went on to point out it is unnecessary for the patentee to "negate every possibility" that the purchaser might have taken its business elsewhere. Rather, it noted once more, it need only show that there was "a reasonable probability that [it would have made] the sales" in question, absent the infringement. (emphasis added).
Court found, was a reasonably foreseeable consequence of the infringement, and was a sufficient causal connection to warrant compensation.\textsuperscript{15}

Another type of economic loss which has been held to be compensable as "lost profit" results from the "price erosion" which can occur as a result of infringing competition. For example, in \textit{Brooktree Corp. v. Advanced Micro Devices, Inc.}\textsuperscript{16}, the Federal Circuit affirmed an award of damages for profits lost due to a price reduction made by the patentee in response to the infringer's announcement of its new (infringing) product, but before the actual infringement occurred. Applying "the general principle that the measure of recompense is the actual loss due to the infringement", the Court found such losses were reasonably related to the infringing activity".\textsuperscript{17}

In \textit{Minnesota Mining \& Mfg. Co. v. Johnson \& Johnson Orthopaedics, Inc.}\textsuperscript{18}, the Federal Circuit upheld an award of almost $29 million in lost profits based on a finding that but for the infringement, the patent owner would have been able to raise its prices by two percent per year during the period of the infringement.\textsuperscript{19} And in \textit{Lam, Inc. v. Johns-Manville Corp.}\textsuperscript{20} damages

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\item \textsuperscript{15} 56 F.3d. at 1549, 35 U.S.P.Q. 2d at 1072. "[The defendant] has not provided, nor do we find, any justification in the statute, precedent, policy or logic to limit the compensability of lost sales of a patentee's device that directly competes with the infringing device if it is proven that those lost sales were caused in fact by the infringement. Such lost sales are reasonably foreseeable and the award of damages is necessary to provide adequate compensation for infringement under 35 USC §284." \textit{id.}
\item \textsuperscript{16} 977 F.2d 1555, 24 U.S.P.Q. 2d 1401 (Fed. Cir. 1992).
\item \textsuperscript{17} 977 F.2d at 1579, 24 U.S.P.Q. 2d at 1418. Similarly, in \textit{TWM Mfg. Co. v. Dura Corp}, the Federal Circuit approved an award of damages of $100 for each sale by the patentee at a discount that was forced by the infringing competition and $100 for each sale by the infringer, which the patentee could have made at a higher price. 789 F.2d 895, 229 U.S.P.Q. 2d 525 (Fed. Cir.), \textit{cert. den.}, 479 U.S. 852 (1986).
\item \textsuperscript{18} 976 F.2d 1559, 24 U.S.P.Q. 2d 1321 (Fed. Cir. 1992).
\item \textsuperscript{19} The Court noted the patent owner's proof of vigorous price competition and a steady decline in prices during the infringement period, and pointed out that, "although damages may not be based on speculation, they need not be proved with unerring precision, either." 976 F.2d at 1579, 24 U.S.P.Q. 2d at 1338.
\item \textsuperscript{20} 718 F.2d 1056, 219 U.S.P.Q. 2d 670 (Fed. Cir. 1983).
\end{itemize}
were predicated on a projected (future) diminution of sales **growth** (that is a reduction in the future rate of sales **increase**). The court pointed out that where a two supplier market exists, "an award based on projected lost sales is neither remote nor speculative", when based on evidence of actual pre-infringement and past-infringement growth rates.\(^2\)

The above are but a few examples of the types of economic losses which – if the requisite causal connection is shown – can be compensable under the rubric of "lost profit" under Section 284. There are of course many other examples, and a far more complete listing may be found in *Chisum on Patents* §20.03 [i][b][i]. note 17.

**Reasonable Royalty**

The concept of a "reasonable royalty" differs subtly but significantly from "lost profits" as a measure of infringement damages. While the latter requires at least some basis for calculating what the patentee's profits would have been but for the infringement, the determination of a reasonable royalty is predicated on the likely outcome of a hypothetical arm's length negotiation, and depends on numerous factors in addition to the patent owner's actual losses, or even whether there are such. For example, a patent owner who sells no products may be unable to show actual "lost profit". He is, however, entitled to be compensated nevertheless, and for that reason the statute provides a "reasonable royalty" as an alternative computation of damages.\(^2\)

If one thing is apparent from the extensive collection of cases that address this issue, it is that the determination of a reasonably royalty is more of an art than a science, which leaves much to the discretion of the trier of fact and to the ingenuity of counsel in formulating

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21 718 F.2d at 1068, 219 U.S.P.Q. 2d at 678.
arguments, based on economic analysis of proven facts. The judicially developed maxim that a reasonable royalty is one which would have been agreed upon by a willing licensor and licensee in a freely negotiated license tends not to be terribly helpful in this regard – being more of a statement of desired result than providing any real guidance on how to achieve it. What is in fact "reasonable" is largely subjective and is susceptible to widely divergent opinions, based on the same set of circumstances.\(^{23}\)

In order to help sort all of this out, in *Georgia Pacific Corp. v. U.S. Plywood – Champion Papers*, the U.S. Court of Appeals for the Sixth Circuit assembled a list of fifteen factors, each of which may (or may not) be applicable under a given set of circumstances.\(^{24}\) For those who may be interested, I have set these factors out in full in a footnote, in part because of the frequency with which this case is cited.\(^{25}\) However, while these factors certainly more sharply

\(^{22}\) It should be noted in this regard that in general, a patent owner is entitled to be compensated for the greater of the two measures of damages, but not both. Hence the statute offers the "reasonable royalty" standard as a floor: "in no event less than a reasonable royalty".


\(^{25}\) The fifteen factors are as follows:

1. The royalties received by the patentee for the licensing of the patent in suit, proving or tending to prove an established royalty.
2. The rates paid by the licensee for the use of other patents comparable to the patent in suit.
3. The nature and scope of the license, as exclusive or non-exclusive; or as restricted or non-restricted in terms of territory or with respect to whom the manufactured product may be sold.
4. The licensor's established policy and marketing program to maintain his patent monopoly by not licensing others to use the invention or by granting licenses under special conditions designed to preserve that monopoly.
5. The commercial, relationship between the licensor and licensee, such as, whether they are competitors in the same territory in the same line of business; or whether they are inventor and promotor.
6. The effective selling the patented specialty in promoting sales of other products of the licensee; the existing value of the invention to the licensor as a generator of sales of his non-patented items; and the extent of such derivative or convoyed sales.
7. The duration of the patent and the term of the license.
8. The established profitability of the product made under the patent; its commercial success; and its current popularity.
refine the broadly unstructured concept of what is "reasonable" under the circumstances, or what might be the outcome of the hypothetical negotiation referred to previously, I think it is fair to say that they really do little more than transpose the subjectivity of the determination to a more detailed conceptual plane, and leave tremendous latitude to the trier of fact.\(^{26}\)

While each of the factors articulated in \textit{Georgia Pacific} may prove useful to counsel in formulating a theory on which a reasonable royalty may be predicated in a particular case, there is one which I would like to single out as having potentially far reaching significance. That is, item 6: derivative or "convoyed" sales. The theory behind this factor is that sales of the patented invention may stimulate sales of non-patented items that are somehow associated with the patented article. In the context of a \textit{reasonable royalty} determination, such sales may 

\[(...continued)\]

9. The utility and advantages of the patent property over the old modes or devices, if any, that had been used for working out similar results.

10. The nature of the patented invention; the character of the commercial embodiment of it as owned and produced by the licensor; and the benefits to those who have used the invention.

11. The extent to which the infringer has made use of the invention; and any evidence probative of the value of that use.

12. The portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions.

13. The portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer.

14. The opinion testimony of qualified experts.

15. The amount that a licensor (such as the patentee) and a licensee (such as the infringer) would have agreed upon (at the time the infringer began) if both had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee – who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention – would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a prudent patentee who was willing to grant a license. 166 U.S.P.Q. at 238.

\(^{26}\) Thus, as noted by the Federal Circuit in 1990,

One challenging only the court's finding as to amount of damages awarded under the 'reasonable royalty' provision of §284, therefore, must show that the award is, in view of all the evidence, either so outrageously high or so outrageously low as to be unsupportable as an estimation of a reasonable royalty. \textit{Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.}, 895 F.2d 1403, 13 U.S.P.Q. 2d 1871, 1874 (Fed. Cir. 1990).
be taken into account, not as an exact measure of lost profits actually sustained but rather as one consideration that would reasonably be taken into account by a prospective licensor in determining what amount of royalty it is willing to accept.  

**Entire Market Value Rule**

The amount of damages which are awarded for patent infringement, of course, depends on the revenue base on which the lost profit or a reasonable royalty is calculated. When the patented invention is part of a broader apparatus, this raises the issue of whether the computation should be based on the value of the patented feature itself, or on the value of the entire apparatus. In the United States, under the "entire market value rule", a patentee is entitled to obtain damages based on the value of the whole apparatus if it can show that the patent related feature is the "basis for customer demand". For example, in *Bose Corp. v. JBL, Inc.*, the court found that the patented "port tube" for a radio loudspeaker significantly enhanced the overall sound performance of the speaker, and calculated damages based on the value of the whole speaker and not merely the patented port tube.

**Other Issues: Treble Damages and Attorney Fees; Prejudgment Interest**

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27 Thus, as noted by the Court in *Georgia-Pacific*:

> The profitability of the collateral or convoyed sales was significant not only from the viewpoint of USP's bargaining position [as patentee] but also in terms of GP's own expectations of an economic advantage, obvious to both USP and GP. GP's reasonable expectations of collateral profits from convoyed sales of products sold along with its striated fir plywood is a factor in the hypothetical negotiations. 381 F.Supp. at 165, U.S.P.Q. 2d at 246. The court found that the prospect of such collateral sales would have tended "to increase significantly the amount of the reasonable royalty hypothetically negotiated between them."


30 Similarly, in *Fonar Corp. v. General Electric Co.*, the royalty rate was applied to the value of an entire MRI system where the patent in suit covered an improvement that enabled the machine to obtain multiple "slices" at different angles with a single scan. As a consequence, the potential amount of damages was enhanced considerably. 107 F.3d 1543, 1552, 41 U.S.P.Q. 2d 1801, 1808 (Fed. Cir. 1997).
Section 284 of the U.S. Patent Act provides that the court may increase the amount of damages awarded, up to three times the amount found or assessed. While the statute provides no standards regarding the awarding of enhanced damages, the Court of Appeals for the Federal Circuit has held that such an award may be appropriate in cases of wanton disregard or willful infringement.31 Similarly, under Section 285, the court is authorized to award attorney fees in "exceptional cases", which is usually also construed to apply to instances of willful or deliberate infringement, or in cases of bad faith continuation of a litigation.32

In addition, the United States Supreme Court has held that prejudgment interest should ordinarily be awarded "where necessary to afford the plaintiff full compensation for infringement".33 Such interest can be a substantial element of the overall recovery, especially where the infringement extends over several years, or where the litigation is protracted. For example, over half of Polaroid's $900 Million damages award against Kodak was in the form of interest.

The above brief summary has obviously omitted a tremendous amount of detail regarding the computation of damages in patent infringement cases in the United States. As you might suspect, there are literally hundreds of decisions in the federal courts which articulate specific criteria which seemed to the court to be especially relevant under the circumstances before it; and, as noted by the Supreme Court in Seymour v. McCormick, the arguments that may be made in support one result or another in a particular case are as varied as the myriad facts that may support them. My purpose, however, in presenting this highly abbreviated and

general overview is not to summarize the applicable legal standards, but rather to illustrate the proposition that, despite all of the court decisions expounding the applicable principles, the determination of infringement damages remains at its core a distinctly subjective exercise which accords broad latitude to both the advocate and to the trier of fact. In turn, this very subjectivity and latitude have fostered an environment that is conducive to full compensation of all economic losses in infringement cases.

IV. Conclusion

While the U.S. standards for assessing damages in patent infringement cases may differ somewhat from those in Japan, I doubt seriously that those differences alone can explain the disparity in the level of rewards that have historically been accorded to innovators in the two countries. Rather, I believe that the difference is more fundamental than that, residing most likely not only in the rules, but also (and perhaps most importantly) in the manner in which they are implemented, which in turn would appear to be a function of the collective individual and institutional attitudes and philosophies in the two social, economic and legal systems.