Dear Sir or Madam:

At the suggestion of Suzanne Michel I am submitting these comments to the above email address in response to the above identified Notice.

I am a former General Counsel of Eastman Kodak Company where I was involved in patent matters and other intellectual property issues throughout my thirty years at Kodak. I have continued my involvement in intellectual property matters, particularly patent matters, since my retirement from Kodak through affiliations with a series of economic and financial consulting firms. At present I am a Senior Advisor at Cornerstone Research. I have frequently written and spoken on innovation and the U.S. patent system, and gave invited testimony on two occasions at the FTC/DOJ hearings that led to the FTC's October 2003 report, *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy* (the FTC IP Report). Publications and presentations authored by me were considered and discussed in that report. The views expressed herein are my own, based on more than 45 years experience dealing with patent issues, and should not be attributed to Eastman Kodak Company or to Cornerstone Research.

My comments on the questions posed in the Notice of Public Hearings follow:

Question 1: The most important change in the past five years is not in fact a change but is the continued high level of patent issuances by the U.S. Patent & Trademark Office (USPTO). The number of utility patents grew from 54,744 in the USPTO's 1983 fiscal year, the year immediately following creation of the Court of Appeals for the Federal Circuit, to 171,500 in its fiscal year 2003 (a 213% increase). Patent issuances in the five years since FY 2003 have remained between 169,296 (FY 2004) and 154,699 (FY 2008) (FY 2004-2008 average = 159,487). These changes (i.e., the increased patenting since 1983 and the continued high level of patenting) have been driven by the combined effect of the lowered standards for patentability promulgated by the Federal Circuit (and applied at the USPTO) and by the dramatic increase in refiled continuing patent applications (11,905 in FY 1983, 83,033 in FY 2003, 160,728 in FY 2008) and the consequent inability of the USPTO to obtain final decisions as to the patentability of applications it has examined.

Since innovation depends on the absence of patents owned by others affecting the proposed innovation or the ability to obtain licenses under such others' patents, the impact of this continued inflation in the number of patents has been to make innovation more problematic and costly, and thus has almost certainly reduced the amount of innovation that otherwise would have occurred had patent issuances remained at the 1983 level.

The Supreme Court, in *KSR v. Teleflex* in 2007 appears to have sought to restore the higher standards for patentability that were followed in the courts prior to the Federal Circuit, and which have been ignored or evaded by the Federal Circuit and the USPTO. It remains to be seen the extent to which the Federal Circuit (and the USPTO) will implement the restored higher standards.

Implementation of the restored higher standards in the courts could be assured by adoption of the Nard/Duffy proposal for parallel appellate tracks in patent cases or by

restoration of appellate jurisdiction in patent infringement cases to the regular Courts of Appeals so that patent appeals are heard by courts that are unlikely to ignore or evade the Supreme Court.

The ability of patent applicants to avoid final decisions as to the patentability of their applications by refiling them could be eliminated by repealing 35 U.S.C. Secs. 120 and 132(b) so as to eliminate continuation and continuation-in-part applications and requests for continued examination, thereby enabling the USPTO to obtain final decisions as to the patentability of applications it has examined.

The combined effect of these two changes should be to reduce the number of marginal patents and thus enhance innovation by reducing the number of patents that impede innovation and competition.

Question 2: No comment.

Question 3: No comment.

Question 4: The legal rules governing patent damages more often than not result in overcompensating patentees. The Supreme Court interpreted the patent damages statute (35 U.S.C. Sec. 284) in *Aro v. Convertible Top*, 377 U.S. 476 (1964). According to the Supreme Court the statute provides for "compensation for the pecuniary loss ... [the patentee] has suffered from the infringement," and that patent infringement damages are to be "the difference between [the patentee's] pecuniary condition after the infringement, and what his [pecuniary] condition would have been if the infringement had not occurred." (Page 507 of the *Aro* opinion). The question, according to the Supreme Court, is "had the Infringer not infringed, what would the Patent Holder ...have made?" (Also page 507 of the *Aro* opinion). The frequent result of damages awarded in accordance with Federal Circuit law is to place the patentee in a better financial position than he or she would have enjoyed "had the infringer not infringed," contrary to the Supreme Court in *Aro*.

For example, Federal Circuit damages law mandates that patentees receive lost profits on lost sales proved by them and a reasonable royalty for any of the infringer's sales not included in the lost profits calculation. This combined award approach necessarily postulates a "but for world" in which the patentee can simultaneously license and not license, which is not a condition that exists in the "real world" the *Aro* decision says patent damages law should emulate.

Damages awarded on this combined basis are almost always more than the patent holder would have made had the infringer not infringed, and thus overcompensate the patentee. A damages rule consistent with the Supreme Court's *Aro* decision would treat lost profits and reasonable royalty damages as mutually exclusive and award the patentee the greater of his or her lost profits on sales proved to have been lost to the infringer or a reasonable royalty on all of the infringer's sales, but not some combination of the two that is larger than either.

The *Polaroid v. Kodak* damages case illustrates the excess damages that result from the Federal Circuit's combined lost profits-reasonable royalty approach. In that case damages determined in accordance with Federal Circuit law was a combined lost profits/reasonable royalty award for $873 million (The $873 million judgment is reported

at 17 U.S.P.Q. 2d 1711 (1991)). A compensatory damages award, based on all of Kodak's sales, at the royalty the District Court said would have been acceptable to Polaroid, and taking into account the additional taxes Polaroid would have paid on its additional income, would have been $197 million since that was larger than Polaroid's lost profits damages ($195 million). Thus the Polaroid damages award overcompensated Polaroid by $676 million. Attached is a copy of a presentation I made at an ABA CLE Institute in 1992 that, among other things, details the Polaroid damages calculation. Also attached is a paper published in the Federal Circuit Bar Journal that illustrates the importance of calculating patent damages on an after-tax cash flow basis and the excess compensation that may result from damages awards based on accrual income.

Another damages issue that has attracted recent heated attention is the so-called "entire market value rule" that frequently leads to overcompensation of patentees, and the related topic of apportionment of reasonable royalty damages for patent infringement, and legislative proposals to prescribe detailed methodologies for ascertaining reasonable royalty damages so as to limit them to the economic contribution of the patented invention. Even the Chief Judge of the Federal Circuit has chosen to lobby Congress on this issue. See the May 3, 2007, May 21, 2007, June 7, 2007, and June 13, 2007 letters from Judge Michel to Senators Leahy and Hatch, Representatives Conyers and Smith, Ms. Winters, and Senators Leahy and Specter, respectively. The remedies articulated by the proponents of the legislation and the concerns of its opponents are, I believe, overblown to a considerable extent. There is already existing case law that is adequate to limit reasonable royalty damages to the economic contribution of the patented invention if that case law is only understood and applied by the Federal Circuit and by the courts that are obliged to follow the Federal Circuit.

Specifically, in the appeal of the famous *Georgia-Pacific* case, the Second Circuit determined that the royalty found by the District Court ($50 per thousand square feet) was excessive and reduced that royalty to $35.65 per thousand square feet, the difference between the infringer's $50.00 per thousand square feet expected profit on its infringing sales and the $14.35 profit per thousand square feet it would have earned on the infringing sales at its average net profit margin on all of its sales during the infringement period (9%). See 446 F.2d 295 (1971). In effect the Second Circuit determined the "economic contribution" of the patented invention to be the additional profit attributable to the patented invention and awarded that amount as reasonable royalty damages. However, it does not appear that the Federal Circuit is aware of or has followed the methodology of the Second Circuit.

Another case that provides a methodology for determining the "economic contribution" of a patented invention are the decisions by the Indiana District Court in *Grain Processing v. American Maize* in which reasonable royalty damages were awarded at a royalty rate that approximated the savings the infringer had enjoyed as a result of the infringement. See 979 F. Supp 1233 (1997). As in the case of the Second Circuit decision in *Georgia-Pacific*, the District Court had no difficulty determining the "economic contribution" of the patented invention and limited reasonable royalty damages to that amount. Although the Federal Circuit finally affirmed the Indiana District Court (185 F.3d 1341 (1999)), it is not entirely clear that the Federal Circuit understood the implications of its decision or that it has applied it subsequently.

Any statutory amendment aimed at dealing with damages problems should provide that lost profits damages and reasonable royalty damages are mutually exclusive, that the patentee whose patent has been infringed is to receive the larger of the two, and that reasonable royalty damages are not to exceed the economic value of the patented invention. In the expectation that these amendments will be sufficient to point the courts in the proper direction it should not be necessary to specify exact methodologies for determining economic value. The same expectation should be applied with respect to the importance of awarding damages and interest based on after tax cash flows rather than accounting "income." The likelihood of these expectations being realized would be substantially enhanced if the Nard/Duffy proposal for parallel appellate tracks in patent cases is enacted or if appellate jurisdiction in patent infringement cases is restored to the regular Courts of Appeals so that patent damages issues regularly come before appellate judges having broader and deeper legal and judicial experience than is typical of the Federal Circuit. If either of these expectations turn out to be incorrect then further statutory amendments may be required.

Attached is a comprehensive critique of economic shortcomings of key Federal Circuit patent damages cases by Dr. Vincent E. O'Brien, published in the University of Baltimore Intellectual Property Law Journal in 2000. It is my understanding that the Federal Circuit's economic failings identified by Dr. O'Brien remain unresolved by the Federal Circuit.

Question 5: No comment.

Question 6: Innovation, as previously noted, depends on the absence of patents owned by others affecting the proposed innovation, or at least the ability to obtain licenses under such others' patents. The Supreme Court changes, particularly the Supreme Court's *KSR* decision, if understood and implemented by the Federal Circuit, the courts that are obliged to follow the Federal Circuit, and the USPTO, should foster innovation by reducing the number of patents that impede innovation. Similarly, increased competition should result from the reduced the number of patents and that too should foster innovation.

Patent value is an elusive topic. Although I am not aware of definitive studies on the topic, estimates from credible sources are that only about 5-10% of U.S. patents are ever employed commercially. This means that 90-95% of U.S. patents are already worthless and their value will be unaffected by any of the recent changes.

Of the remainder (i.e., the 5-10% that are employed commercially), those that are invalid under the restored higher standards, assuming those standards are actually applied in the courts, will be rendered worthless to their owners. But the value of such patents is derived from the monopoly prices consumers pay for goods or services covered by them or by the fees that others (innovators) pay for licenses under such patents. Any value lost by the patent owners will simply be transferred to consumers who no longer pay monopoly prices or to those innovators who no longer pay license fees. So the net result is a "wash." The loss in value experienced by the owners of such patents will be matched by the increased value (diminished costs) experienced by consumers and by innovators who are no longer required to pay license fees.

The remaining patents, i.e., those that are used commercially and that remain valid under the restored higher standards, will be unaffected.

The IP marketplace could become more efficient as the reduced number of patents should make it easier for innovators and patent owners to ascertain which innovations are affected by patents. But see the comments concerning Question 8, below. And, as previously noted, the amount of innovation should be enhanced by the reduction in the number of patents as there will be fewer patents to impede innovation and interfere with competition, which itself is a potent driver of innovation.

Question 7: The prevailing uncertainties as to patent validity and patent scope increase the cost of capital for innovation investments affected by patents. For example, in the *Polaroid v. Kodak* damages litigation the elimination of uncertainty as to the outcome of that litigation by announcement of a $909 million judgment against Kodak (later reduced to $873 million) resulted in an immediate increase of $921 million in Kodak's equity market value ($12 million more than the judgment!) and a corresponding decrease in the cost of Kodak's equity capital.

These uncertainties not only increase the cost of capital for innovation investments but reduce the efficiency of the IP marketplace by making it more difficult for innovators to know which patent rights they may need to secure to commercialize their innovations, and by making it more difficult for patent owners to know whether others' innovations involve their patents. And litigation to resolve these uncertainties is a frequent consequence. Thus much litigation may be thought of as a sign of market failure for the IP marketplace. But some significant but undetermined amount of litigation is initiated by patent owners hoping to "win the lottery," and that litigation likely would occur even in the absence of the uncertainties.

Question 8: The current IP marketplace is not transparent; at least in the sense a stock market with open trading and reported prices is transparent. Despite efforts at establishing public markets for IP (Ocean Tomo, etc.), virtually all IP transactions are private transactions. The auction houses apparently attract only IP for which their owners have been unable to find buyers or licensees. Although there is no simple mechanism for discovering what intellectual property is available for license or sale, or the prices at which IP has been sold or licensed, past efforts to establish such market mechanisms have been failures, perhaps because of a lack of demand. I am not at all sure the absence of such simple mechanisms makes any significant difference. Those in industry know what patents are held by their competitors and which patents of their own should be of interest to their competitors. And licensing (and sales) of IP between and among competitors is widespread. So I suspect the IP market is pretty efficient, and the only patents their owners have difficulty licensing or selling are those for which there are no viable commercial uses. Thus I am not sure additional transparency in the IP market would improve its functioning.

Question 9: The Bessen/Meurer book, *Patent Failure: How Judges, Bureaucrats, and Lawyers Put Innovators at Risk*, added greatly to our knowledge of our patent system and its shortcomings.

Although not emphasized in their book, Bessen and Meurer reported studies by others who found that patents were only infrequently important for innovation. They report

(page 79 of the book) a study by Moser who found that only 11.1% of British and 15.3% of U.S. innovations exhibited at the 1851 fair at the Crystal Palace in London were patented. They also report (page 89) a 1998 survey of European firms by Arundel and Kabla who found that only 35.9% of product innovations and 24.8% of process innovations by the surveyed firms were patented. Thus patents owned by the innovator were unimportant for at least the 88.9 % of British innovations and 84.7% of the U.S. innovations exhibited at the 1841 fair that were not patented. And for the surveyed European firms, patents were unimportant for at least the 64.1% of their product innovations and the 75.2% of their process inventions that were not patented.

Similar results were reported by Cohen et al in their famous study that found patents were regarded as an effective appropriability mechanism for only 34.8% of product innovations and 23.3% of process innovations, suggesting that patents were unimportant for 65.2% of product innovations and 76.7% of process innovations. Professor Mansfield surveyed 100 randomly selected firms to ascertain the percentage of their inventions commercially introduced in 1981-1983 that would not have been commercialized if patent protection could not have been obtained. He found that patent protection was judged essential for fewer than 30% of commercialized inventions for all surveyed industries except for chemicals and pharmaceuticals. Patents were judged essential for only 30% of chemical innovations and for 65% of pharmaceutical innovations. Thus, among the companies surveyed by Professor Mansfield, with the exception of the pharmaceutical industry, patents owned by innovators were unimportant for 70% or more of their innovations.

These studies strongly suggest that, with the possible exception of pharmaceuticals, patents are only infrequently important for innovation and efforts to "strengthen" patents are likely to be counterproductive for innovation. They further suggest, again with the possible exception of pharmaceuticals, that granting a patent that should not have been granted is far more likely to harm innovation than refusing a patent that should have been granted, further emphasizing the importance for fostering innovation of a high standard for patentability and reduced numbers of patents.

Cecil Quillen