

**PUBLIC HEARING CONCERNING THE EVOLVING INTELLECTUAL
PROPERTY MARKET PLACE - EVIDENCE OF PROBLEMS IN ESTIMATION
OF PATENT DAMAGES IN RECENT TIMES**

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I. INTRODUCTION

The Federal Trade Commission commenced a series of hearings on patent and other intellectual property in December of 2008. The objective of these hearings is to better understand the evolving market for intellectual property and its impact on innovation and competition. In particular, it is to understand the changes that have occurred in buying, selling and licensing of patents (and other intellectual property) since the Federal Trade Commission issued its first report on intellectual property titled “To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy” in April of 2003.

Some of the specific questions raised in these hearings and addressed in this paper are: Do the legal rules governing patent damages result in awards that appropriately compensate the patent-holder? What evidence is there of any problems in damages estimation?

I look at data on damages awards to determine whether there is a significant increase in damages awards in recent time. I don’t find much evidence of run-away awards in the 2000s.

The second part of this paper discusses the specific damages methodologies – reasonable royalties and lost profits. It discusses the analytical improvements, if any, that can be made in the implementation of these methods.

II. DATA ON PATENT DAMAGES

Trends in Damages Awards for Patents in the Nineties:

In the 1990’s, the largest damage award was Polaroid Corporation’s damages award of \$900 million against Eastman Kodak. The second largest award was in a jury trial for Apex Computer against Nintendo for \$253 million (which was reversed at appeals level). The third largest award was \$211 million in a bench trial against Steelcase Inc. and in favor of Haworth, Inc. The fourth and fifth largest awards were \$178 million (The Proctor & Gamble Co. v. Paragon Trade Brands, Inc.) and \$171 million (Exxon Corp. & Exxon Chemical Patents Inc. v. Mobil Oil Corp. & Mobil Chemical Co. Inc.), respectively.¹ Please see Appendix 1 for the complete table.

¹ Kerr and Prakash-Canjels, Patent Damages And Royalty Awards: The Convergence Of Economics And Law, *les Nouvelles*, Journal of The Licensing Executive Society, June 2003

Trends in Damages Awards for Patents in the Two-Thousands:

For the 2000's, we see the largest award at \$521 million for Eolas Technologies against Microsoft. The second largest award is at \$500 million for City of Hope Medical against Genentech and the third largest award is for InterDigital Communications against Nikon for \$252 million.² The fourth and fifth largest awards were \$226 million (DePuy Spine v. Medtronic) and \$185 million (Bard Peripheral Vascular v. W.L. Gore), respectively.³ Please see Appendix 1 for the complete table.

There does not seem to be much evidence of runaway patent damages awards. Though, it is true that there are more \$200 million plus awards in the eight years of 2000-2007 than there were in the 1990s, the top ten awards for the period 1990 – 2007 have 5 awards from the 1990s and 5 awards from the 2000s.

III. DATA ON SETTLEMENT OF PATENT CASES

Now, for accurate assessment of the size of monetary payments/awards, it is important to look at settlements – the number of cases settling out of court and at what amount. (Are the large cases settling out of court?)

The evidence suggests about 63% cases settled during the period 1990-2000.⁴ According to Professor Janicke's presentation at the Federal Trade Commission, for the period 2005-2009, 86% of the patent cases settled before trial.⁵

The four largest settlements for 1990s that we have found data for were - (1) Texas Instruments v. Hyundai (\$1000 million), (2) Texas Instruments v. Samsung (\$1000 million), (3) Medtronic v. Siemens (\$300 million) and (4) University of Minnesota v. Glaxosmith Kline in 1999 (\$300 million). However, over the last eight years, the largest settlements have been \$1,350 million (Michelson v. Medtronic), \$1,250 million (Sun Microsystems v. Microsoft) and Medinol v. Boston Scientific at \$750 million. The BlackBerry settlement ranked fourth at \$612 million for NTP against Research in Motion.⁶ Moreover, there have been 11 settlements above \$300 million in the 2000s while there were only 2 above \$300 million in the 1990s.⁷

² FTI Consulting – Statistics on Patent Damages

³ Some very recent data on awards shows that Saffran was awarded \$431 million against Boston Scientific Corp. in 2008. It would be useful to be able to normalize these awards against, say, revenue or profits of the company (from the patented product at issue).

⁴ Prakash-Canjels, Trends in Patent Cases: 1990-2000, IDEA - The Journal of Law and Technology, Volume 41 – Number 2, 2001

⁵ The number of cases settling before trial during the period 1990-2000 is probably a number less than 63% because this number (63%) includes cases that settled during or after trial as well.

⁶ Kerr and Prakash-Canjels, Patent Damages And Royalty Awards: The Convergence Of Economics And Law, *les Nouvelles*, Journal of The Licensing Executive Society, June 2003; and FTI Consulting – Statistics on Patent Damages

⁷ The number of settlements rises to 13 and 3 for the periods 2000-2007 and 1990s, respectively, when the number \$300 million is included in the analysis.

Even though we see that it is not awards but it is settlement amounts that have been larger in the recent times as compared to a decade ago, the law regarding patent damages affects both damages awards and settlement amounts. The impact of patent law is more direct on damages awards, however, the likely award affects the settlement amount. This brings us to the question - whether patent law needs to be revised or there are some other factors that account for some of the larger settlements in this decade.

It is important to note, first, that *the evidence on runaway awards or excessive settlements is sketchy*. As Professor Janicke (University of Houston) pointed out in his presentation at the Federal Trade Commission, the verdicts are modest with medium award being about \$5-\$6 million. If cases where the patent-holder lost (and so the damage award was zero) are included in the analysis, median award was less than \$2 million. A district court by district court analysis of damages data did not reveal any other major differences. The data on median awards for the last 3 years (excluding zeros) was \$4-5 million in 2006, \$10-\$12 million in 2007 and \$6-\$7 million in 2008.⁸

IV. PATENT DAMAGES – REASONABLE ROYALTY

Damages Question: Does the patent law as relating to damages remedies - reasonable royalty - really needs to be amended/altered?

I, as a practitioner of the patent damages remedy law, think that the answer is “no”.⁹ The grab-bag of Georgia-Pacific factors as labeled by Professor Janicke lists several useful factors that affect negotiation of patent licenses in real life.¹⁰ It is a list of factors that provides economic experts sufficient flexibility in estimation of patent damages. I have been in the field of patent damages for eleven years and have yet to see a case that was identical to another case. The flexible framework of hypothetical negotiation is very useful in estimating damages. An economic expert does not always use all the Georgia-Pacific factors and often uses many additional factors as necessary for coming up with a reasonable estimate of damages. The objective of the hypothetical negotiation in patent exercise is very clear – what is the reasonable royalty that the infringer would have agreed to pay to the patent holder prior to starting to infringe the patent? Note, I am not using the word “rate” because reasonable royalty does not have to be a running royalty, it can be an upfront, lump-sum payment; a milestone payment; a combination of running royalty and lump-sum payment; payment in kind (technical assistance) or some other form of exchange of value.

The answer depends on the bargaining power of both sides as they come to the hypothetical negotiation table.

⁸ Another reason for somewhat larger settlements of patent cases may be the global nature of sales. Unlike the early 1990's, the existence of the internet and e-commerce has turned markets international. It is as easy to buy flowers for delivery in India while sitting in the United States as it is to buy flowers for delivery within the United States.

⁹ It is the implementation of the patent law regarding damages that needs to be the focus.

¹⁰ Georgia-Pacific v. United States Plywood Corp., 318 F. Supp. 1116. (I.S.D.N.Y. 1970)

One of the most important factors affecting the bargaining power of the parties and resultant royalty amount is the value added from the patent. What is the patent worth? What does it add to the value of the product? These are important questions that need to be answered before one can determine how this added value will be distributed between the patent holder and the infringer.

Thus, the bargaining power depends directly on what the patented feature adds to the value of the product, i.e., how much of a “product differentiation based monopoly” does the patented feature generate and what are the profits associated with this monopoly. It is not the profits of the product but the profits attributable to the patented feature that need to be accounted for or taken into consideration. If, because of the patented feature alone, the patent holder and the alleged infringer are able to sell the whole product (i.e., the patented feature allows them to distinguish their product from all other acceptable substitutes, and sell this product over and above the substitutes), then all the profits from the product sales are attributable to the patent.

Second factor (besides profits that are directly attributable to the patent) that a damages expert should carefully study is the market for acceptable, non infringing substitutes for the product. There should be some attempt to understand the cross elasticity of demand between the patented product and other potential substitutes in the market. An analysis of design-around costs (using substitute, non-infringing technologies/products) may be another important factor in accurately determining the value of the patent and associated damages award.

Value added from the patent to a product is exactly the measure of damages suggested by Professor Janicke and Ms. Levine (Verizon Communications Inc.) among others at the Federal Trade Commission hearings. Any good damages expert already takes this into account and Georgia-Pacific factor #13 clearly requires the expert to think in terms of what is the additional value that a patented feature adds to the product. This additional value may be reflected as “cost savings” or “increased revenue” associated with the patent.¹¹

V. PATENT DAMAGES – LOST PROFITS

The lost profits damages emanate directly from the Patent Act which states - *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 as fixed by the***

¹¹ One of the last questions raised at the damages hearings was - Should all Georgia-Pacific factors be given to the jury to review, understand, assimilate and apply? The answer is probably “no”. Only Georgia-Pacific factors that are relevant for the particular case and any other, non Georgia-Pacific factors that are relevant factors in the case should be listed for the jury to understand and apply in determining damages based on a reasonable royalty.

*court.*¹² The law allows for any damages award that is compensatory in nature such as an award of lost-profits or price-erosion.¹³

The factors most often considered by courts in order to determine whether an award of lost-profits is appropriate or not are stated in the *Panduit Corporation v. Stahl Brothers Fibre Works* case.¹⁴ A patent-holder is required to prove the following factors: 1) the existence of demand for the patented technology/feature; 2) the absence of acceptable, non-infringing substitutes; 3) the patent owner's ability to produce, market and distribute the additional sales; and 4) the patent-holder's ability to estimate the amount of lost profits in a reasonable or non-speculative manner. The Panduit factor # 2 has become less limiting following the *Mor-Flo* decision.¹⁵

Let us focus on Panduit factor # 2: This factor is easiest to prove if there is a two-player market; whereby every sale that the infringer makes comes out of the sales of the patent-holder. However, even to argue that it is a two-player market, an economic expert needs to undertake some amount of market analysis and determine what are other possible non-infringing substitutes to the patented product and are they acceptable to the consumers (and at what price). It becomes even more critical to do a proper analysis of the market definition for the patented product when there are clearly many, easily identifiable acceptable, non-infringing substitutes in the market (for example, the data from your client tells you that there are five competitors in the market as defined by your client). It is not appropriate to just include all sellers in the market (irrespective of whether they have the patented feature or not, or a substitute for the patented feature or not) in the market share analysis as is often done in *Mor-Flo* analysis because this will typically understate the market share of the patent-holder in the But-For world.¹⁶

In order to estimate lost-profits, an economic expert often relies on an analysis based on the But-For world. That is, the economist estimates the profits that the patent-holder would have made in a world where there was no illegal entry by the infringer and, thus, no unfair competition from the infringer. In this world, the patent-holder would be able to optimize the value that the patent generates as a legal monopoly.¹⁷ This optimal return is affected because of the illegal entry by the infringer.

Let us say that the Q_M would be sold in the But-For world at a price of P_M . Note both Q_M and P_M may be quite different from the quantity (Q_A) and price (P_A) observed in the actual world. Let us further assume that the profit margin (in percentage terms) is π_M in the But-For world. So, the profits in the But-For world are $P_M * Q_M * \pi_M$.

Now, in the actual world, the patent-holder did make some profits. Let us say, these profits are $P_A * Q_A * \pi_A$ where π_A is in percentage terms. These profits made in the real

¹² 35 USCA§ 284

¹³ In case of design patent (and other intellectual property such as trademarks), the patent-holder can seek an award of disgorgement of unjust gains made by the infringer.

¹⁴ *Panduit Corporation v. Stahl Brothers Fibre Works*, 575 F.2d 1152, 197 USPQ 726, 6th Cir. 1978

¹⁵ *State Industries, Inc. v. Mor-Flo Industries, Inc.* 883 F.2d 1573, 1577-78, Federal Circuit, 1989

¹⁶ Note the value of the patent (and patent damages) depends on who the user is and varies over time too.

¹⁷ Note, a patent is a right to exclude and does not by itself guarantee market power.

world need to be deducted in order to arrive at the lost-profits damages that will adequately compensate the patent-holder. That is, the economic expert is attempting to estimate: Profits in the But-For world - Profits actually made = Profits on Lost Sales = $P_M * Q_M * \pi_M - P_A * Q_A * \pi_A$.

In damage analysis, one often sees the economic expert estimating each of the components (quantity, price and margin) separately. That is, he/she first estimates lost units ($Q_M - Q_A$) and then multiplies this amount by a But-For price (P_M). Now, this may or may not be a valid operation depending on whether prices and margins are same in the But-For world and actual world or not. Similarly, economic expert will often estimate an incremental profit margin. Is the incremental profit margin an attempt to understand the difference between the But-For and actual margins? Finally, when a financial expert estimates the change/erosion in prices, it is important to simultaneously talk of the affect of this new price on quantity sold and profit margin, if any.

VI. CONCLUSION

In conclusion, the methods of damage estimation in patent cases when implemented appropriately provide reasonable estimates and are flexible enough for the economic expert to adjust these methods to widely differing situations encountered in real work.

APPENDIX 1

Top Ten Patent Damages Awards for 1990-1999

Year	Plaintiff	Defendant	District Award
1990	Polaroid Corp.	Eastman Kodak Co.	\$909,457,567
1994	Alpex Computer Corp.	Nintendo Company Ltd.	\$253,641,445
1996	Haworth, Inc.	Steelcase Inc.	\$211,499,731
1997	The Proctor & Gamble Co.	Paragon Trade Brands, Inc.	\$178,429,536
1998	Exxon Corp. & Exxon Chemical Patents Inc.	Mobil Oil Corp. & Mobile Chemical Co. Inc.	\$171,000,000
1999	Hughes Aircraft Company	The United States	\$153,775,000
1994	Exxon Chemical Patents Inc.	Lubrizol Corp.	\$128,400,000
1994	Stac Electronics Corp	Microsoft Corp.	\$120,000,000
1991	Minnesota Mining & Manufacturing Co.	Johnson & Johnson Orthopedics, Inc.	\$116,797,696
1994	Dow Chemical Co.	The United States	\$86,817,461

Top Ten Patent Damages Awards for 2000-2007

Parties	Award	Date	Court
Eolas Technologies v. Microsoft	\$521,000,000	August-03	N.D. Illinois
City of Hope Medical v. Genentech	\$500,000,000	June-02	Sup. Ct. California
InterDigital Communications v. Nokia	\$252,000,000	January-06	Arbitration Panel
DePuy Spine v. Medtronic	\$226,300,000	September-07	D. Massachusetts
Bard Peripheral Vascular v. W.L. Gore	\$185,000,000	December-07	D. Arizona
Masimo v. Nellcor	\$164,000,000	August-04	C.D. Texas
z4 Technologies v. Microsoft	\$160,000,000	August-06	E.D. Texas
Union Carbide v. Shell Oil	\$153,600,000	October-05	E.D. Texas
Intergraph v. Intel	\$150,000,000	October-02	D. Massachusetts
Freedom Wireless v. Boston Communications	\$148,100,000	October-05	D. Massachusetts

APPENDIX 2

Gauri Prakash-Canjels, Ph.D. is a Vice-President and Chair of the Intellectual Property - Antitrust practice at ARPC in Washington , DC . Dr. Prakash-Canjels specializes in damage estimation for patent and other intellectual property infringement lawsuits. She has also been retained as an expert in a patent misuse case regarding market definition and attempted monopolization. Dr. Prakash-Canjels has experience in analysis of market conditions and damage estimation in antitrust lawsuits. She also works on breach of contract, tortious interference, wrongful termination, business valuation/bankruptcy and other commercial disputes. Some of her case highlights are: Estimate reasonable royalty damages in 19 cases, Estimate lost profits damages including price erosion in 11 cases, Antitrust damage analysis in 13 cases including class actions involving MFN clause, price fixing, exclusive dealing, bundling and so on in many industries, and Estimate breach of contract damages in 5 cases. Dr. Prakash-Canjels has taught courses in Economics and Statistics at graduate and undergraduate levels. She has published in The Review of Economics and Statistics, IDEA - The Journal of Law and Technology, ABA - Robinson-Patman Act Newsletter, les Nouvelles - Journal of the Licensing Executive Society and ABA - International Bulletin.