

Litigation Risk Analysis: The Economics of Patent Litigation, Part V

By Samson Vermont

Last month, we examined common decision tree issues, tools and techniques. In this installment, we propose a hypothetical suit and analyze it with a basic decision tree.

Hypothetical Suit

Imagine we represent a company that recently filed a patent suit, and the defendant just offered to settle for \$500K. (In 15 percent of cases, alleged infringers file declaratory actions and are technically plaintiffs.¹ By “plaintiff,” however, I mean the patentee.) We’d like to avoid legal fees and expenses so we start thinking about the case’s settlement value, but soon find ourselves deluged by innumerable variables and fundamental uncertainties.

Fundamental legal uncertainties that often arise include those surrounding claim interpretation, literal infringement, infringement under the doctrine of equivalents, prosecution history estoppel, patent validity and inequitable conduct. All of these issues contain sub-parts which contain their own sub sub-parts. Damages--which *must* be estimated to determine settlement value--raise another host of questions. Will they be based on lost profits, reasonable royalties or both? Will there be willfulness damages? What is the amount of lost revenues, the appropriate market share for the plaintiff, the definition of the market, the elasticity of demand, the portion of the infringing product attributable to the patented invention, the going license royalty in the precise market at issue, the appropriate prejudgment interest rate, and so on for a good long while. And there are always numerous questions about evidence and procedure.

So we turn to decision analysis. Our goal is to determine and compare the expected value of litigation and the value of settlement. (Thus, the *option* branches in all of our trees will only be “litigate” and “settle.”) For pedagogical reasons, we’ll look at what happens generally by using the average and median numbers available in the empirical literature on patents, which is sparse and scattered. Most of the numbers represent the combined and weighted statistics from both judge and jury trials.

Note that the use here of median and average money damages is not an endorsement of using them when evaluating a real case. For success on the merits (*e.g.*, the chances of a verdict of infringement or invalidity) median and average numbers *are* informative. Before a defendant gets too excited about its inequitable conduct defense, it should know that only about 12 percent of all patent trials result in a finding of unenforceability.² Median and average award numbers, however, are less useful for estimating likely damages in a particular case—because damages are so variable. They can range from one dollar to one billion dollars depending entirely on circumstances such as the size of the companies and the market at issue. In a real case, therefore, the judgment of experts *should* be quantified for success on the merits but it *must* be quantified for damages.

Baby Tree

As shown in the Figure, Baby Tree has two option branches (litigate or settle) and two event branches (win or lose). At the terminal node of the settle branch is the defendant's offer of \$500K.

Recent research shows that patentees prevail 58 percent of the time *at trial*.³ More specifically, they prevail 51 percent of the time in a bench trial and 68 percent of the time in a jury trial.⁴ (Although the number of trials is fairly evenly divided between judges and juries,⁵ this is going to change as this recently unearthed disparity becomes widely known. After all, alleged infringers win less than one-third of the time before juries. Recent research also shows that plaintiff win rates vary enormously depending on the forum and whether the patent owner or alleged infringer first files the case.⁶) So we put 0.58 under the win branch and 0.42 under the lose branch. The tree is now complete with regard to probabilities of success on the merits. We must now determine the outcomes to which these probabilities are applied.

The average award over the 1990s for reported cases was \$14 million.⁷ However, the award amounts for reported cases tend to exceed the award amounts for unreported cases, and there are almost twice as many unreported as reported cases.⁸ Plus, in 1990 Polaroid slapped Kodak with an \$873 million judgment,⁹ which skews the average over the entire decade from \$10 million to \$14 million. On the other hand, for the last few years the average reported award has been around \$20 million;¹⁰ so \$14 million is probably a reasonable figure and we'll use it.

Consistent with the simplicity of Baby Tree, we take the average patent award of \$14 million and subtract the median legal costs of \$2 million for a first scenario net payoff of \$12 million. We then put the legal fees at the terminal end of the lose branch for a second scenario net payoff of (\$2 million). (In the text of this article, negative values are enclosed in parentheses; in the Figure they are enclosed in “<>” symbols.)

Now we roll back the tree. We multiply the first net payoff by 0.58 percent, the result of which is \$7 million. We then multiply the second payoff by 0.42 percent, which is (\$840K). To determine the expected value of litigating, we add together these two products. Since the result, \$6.1 million, exceeds the \$500K offer, Baby Tree indicates the plaintiff should continue litigating.

Baby Tree is simple, overly so. In the next installment, we’ll increase the level of sophistication by analyzing the same hypothetical suit with “Mama Tree.” Mama Tree refines both the chances of success on the merits and likely outcomes. After that, we’ll look at “Papa Tree,” which focuses mainly on outcomes and costs. It models not only what the plaintiff stands to gain but also what the defendant stands to lose. Thus, Papa Tree will really be two separate trees—“Papa Trees.” By the time we finish the Papa Trees, we will have taken almost everything imaginable into account with regard to outcomes and costs.

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¹ See Kimberly A. Moore, Forum Shopping in Patent Cases: Does Geographic Choice Affect Innovation? 79 *N.C. L. Rev.* (May 2001); Jean O. Lanjouw and Mark Schankerman, Stylized Facts of Patent Litigation: value, scope and ownership, pg. 9, NBER Working Paper No. 6297 (NBER 1997). Moore reports 14 percent; Lanjouw and Schankerman report 16 percent.

² Derived from Kimberly A. Moore, Judges, Juries, and Patent Cases – An Empirical Peek Inside the Black Box, 99 *Mich. L. Rev.* (Nov. 2000) The 12 percent figure refers to all patent suits filed, whether inequitable conduct was a real issue or not. In suits where inequitable conduct was a real issue, and was tried, 27 percent of patents were held unenforceable.

³ Moore, Judges, *supra*.

⁴ *Id.*

⁵ *Id.*

⁶ *Id.* See also Moore, Forum, *supra*.

⁷ See generally Trends in Patent Infringement Lawsuits 1990-1999, Navigant Consulting Inc. (2000) (available from Dr. William O. Kerr, Washington DC).

⁸ Moore says 55 percent of cases are reported. She also says “reported” means reported to the PTO or Administrative Office of the U.S. District Courts. It does not mean “published,” as in a published opinion resulted. Personal telephone communication with Kimberly A. Moore, June 2001. See also Moore, Judges, *supra*; Trends, *supra*.

⁹ *Polaroid Inc. v. Eastman Kodak Co.*, 228 USPQ 305 (D.Mass 1985), *aff’d* 229 USPQ 561 (Fed. Cir. 1986).

¹⁰ See generally Trends, *supra*.