ARBITRATION AND INTELLECTUAL PROPERTY DISPUTES

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I. INTRODUCTION

Some commentators have suggested that high and increasing costs of patent litigation could be reduced by having those disputes resolved by expert arbitrators. For example, Kingston (1995) states “An important reason why intellectual property (IP) is far less effective for generating innovation than it could be is the excessively high cost of resolving disputes. This largely reflects the use of ordinary court arrangements to determine what are essentially technical issues.” Kingston also notes that in addition to the measurable costs of litigation, there also may be substantial unmeasured costs that take the form of “distraction, diversion of energy and misdirection of creativity that litigation imposes on innovatory firms.” Kingston proposed mandatory arbitration of patent disputes along with legal aid to the party that does not appeal the ruling to the courts. Kilb (1993) also recommended arbitration as a “…quick, efficient form of patent dispute resolution”...adding that “[A]n arbitration hearing before experts in the field allows the parties to avoid lengthy litigation that could leave the disputed patent out-dated before it reaches its potential.”

Despite the purported advantages of arbitration in IP disputes, the (relatively sparse) data on the number of arbitrated IP disputes indicate that it is seldom used in place of litigation (See below). What factors influence the decision to choose arbitration in IP disputes? Are they the same as those that would influence the decision to take the case to court?

II. LITERATURE REVIEW

Concern over the high costs of patent litigation led to the enactment of 35 U.S.C. § 294 in 1983. Prior to that time, federal courts had ruled that private settlements of patent disputes were unenforceable because they were contrary to public policy. The prevailing view was that the public had a special interest in the outcome of patent disputes and non-judges were incapable of dealing with the complexities of patent cases. Under the 1983 statute, Congress authorized contracting parties to settle their patent disputes through binding arbitration. Proponents of the statute argued that arbitration of patent disputes would be quicker and less

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2 Id.
costly than litigation. According to Lim (2005), the average cost of litigation in patent disputes is $2 million and the average length of time to final judgment for litigated patents is 12.3 years, or over half the lifetime of the patents.⁶

The long duration and high cost of patent litigation is primarily due to the prolonged period of discovery to address difficult technical issues and the costs of educating triers of facts sufficiently to understand the case, including costs of counsel and technical and financial experts.⁷ In principle, an arbitrator may be chosen who is already familiar with patent law and the technology associated with the particular patent(s) at issue, thereby eliminating significant costs. The expert arbitrator could dispense with much of the discovery process and decide the case more quickly and inexpensively. Proponents of arbitration also say that the arbitration process, unlike a public trial, is confidential and better protects trade secrets and other sensitive information that might be revealed in the course of litigation.⁸ It also is claimed that with arbitration there is more certainty about the timing of final judgment and that arbitration and other forms of mediation are less adversarial than litigation and offer better prospects for maintaining a potentially valuable business relationship between the opposing parties.⁹

However, as Lim (2005) notes, despite the purported time and cost savings of arbitration, it is generally not used in IP cases. Only 375 IP cases were filed with the American Arbitration Association (AAA) in 2007;¹⁰ during the same period 10,166 IP cases were filed in federal district courts.¹¹ In 2011, about 50 IP cases were administered by AAA¹² and 10,555 IP cases were filed in the federal district courts.¹³ Even if the total number of IP cases arbitrated in 2011 by other organizations was ten times the number arbitrated by AAA, only about 5 percent of the IP cases would have been arbitrated. Why then is arbitration so seldom used despite its purported advantages?

III. DISADVANTAGES OF ARBITRATION IN IP DISPUTES

Some of the disadvantages of arbitration compared to litigation recognized in the literature include:

1. The arbitration agreement is only binding on the parties to the agreement. It does not set a precedent that can be used as a deterrent to

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⁷ Id.
⁹ Id.
¹² E-mail from Ryan Boyle, Vice President-Statistics and In House Research American Arbitration Association.
infringement from other parties.\textsuperscript{14} The plaintiff in a patent dispute obtains significant value from having the validity of the patent confirmed by the Federal Circuit. Once the patent’s validity has been confirmed by the courts, it obtains greater respect from the industry and the patent holder will be able to use the precedent against potential infringers.\textsuperscript{15} Alternatively, litigation will be preferred to arbitration by the defendant if there is an expectation that the patent can be invalidated or restricted.

2. Arbitrators are not bound by the Federal Rules of Evidence and the Federal Rules of Civil Procedure. Lim (2005) argues that since arbitrators are not bound by those rules they may admit unreliable testimony that would not be admissible in court.\textsuperscript{16} Lim also argues that the absence of rules with respect to testimony could lead to a “battle of the experts” that takes as much time and money as litigation.

3. A comparison of the litigation time for IP disputes contained in a study by the IP litigation firm of Harness, Dickey & Pierce and arbitration time for IP disputes reported by AAA seems to indicate that, absent an appeal, litigation of IP disputes requires about the same amount of time as arbitration or slightly less. Based on the Harness, Dickey & Pierce study, the time required for litigating an IP matter is typically from 13-20 months without an appeal. AAA reports the median number of days from filing an IP case to an award is 396 days (about 13 months).\textsuperscript{17} With an appeal and second trial, litigation would take from 34 months to 54 months but comes with the precedential value of a successful outcome.

4. The courts can compel parties to reveal information during discovery that would not necessarily be divulged to an arbitrator.

5. Parties submitting to binding arbitration have limited rights of appeal. According to Lim (2005), “Thirty-eight percent of judgments relating to patent validity and thirty-seven percent of judgments of infringement are appealed to the Federal Circuit. The Federal Circuit reverses these district

\textsuperscript{14} Lim, Marion M., “ADR of Patent Disputes: A Customized Prescription, Not an Over-The-Counter Remedy,” 
\textsuperscript{15} Id.
\textsuperscript{16} Id., p. 179.
\textsuperscript{17} American Arbitration Association, “Intellectual Property: Arbitration vs. Litigation.”
court judgments of validity and infringement twenty-two and twenty percent of the time, respectively.”

6. While the costs of litigation are high, the costs of losing may be much higher. If one of the parties to the IP dispute may suffer a catastrophic loss or have a huge gain from the outcome, it is more likely to pursue redress through the courts. There also is some evidence that litigation costs as a proportion of the amount at risk decline as the amount at risk increases. Based on the 2007 Economic Survey conducted by the American Intellectual Property Lawyers Association (AIPLA), Rajwani (2008) reports that the median litigation costs through disposition is $600,000 when less than $1 million is at risk, $2.5 million when $1-25 million is at risk, and $5 million when more than $25 million is at risk. This implies that the median litigation costs are at least 60 percent of the amount at risk when the amount at risk is less than $1 million, but no more than 20 percent of the amount at risk when the amount at risk is greater than $25 million. Results from the 2011 AIPLA Economic Survey make the point even more strongly. The mean litigation costs through trial in patent disputes were $916,000 when the amount at risk was less than $1 million. When the amount at risk was more than $25 million, litigation costs through trial averaged $6 million. In the later period, then, the litigation costs were equal to over 90 percent of the disputed amount when the latter was under $1 million, but less than 25 percent of the disputed amount when the disputed amount was over $25 million. If litigation costs are a smaller fraction of the amount at risk when the amount at risk is very large, there would be another reason to litigate when large amounts are at risk rather than reach an agreement through alternative dispute resolution (ADR).

7. There is a suspicion among some observers that arbitrators tend to split awards evenly among the claimants. Studies by AAA in 2001 and 2007 provide evidence that this is not the case. A 2001 survey of all arbitrated domestic and international commercial cases awarded in 2000 revealed that only 9 percent of awards were divided near the

\[19\] Lim offers the example of Polaroid Corp. v. Eastman Kodak Co., 789 F.2d 1556 (Fed. Cir. 1986). “Kodak was forced to cease production of a multi-million dollar line of instant cameras and Polaroid received an award of $873,158,971.” Id., p. 174.
halfway mark. A 2007 study by AAA using data from 111 commercial cases arbitrated in 2005 by the International Centre for Dispute Resolution found that in only 7 percent of the cases were the awards in the midrange (41-60% of their filed claim amount); 93% were awarded outside the claim midrange. Although data are not available specifically for intellectual property (IP) arbitration awards, there is no reason to suppose that the majority of those awards were split evenly among claimants.

IV. GENERAL CIRCUMSTANCES UNDER WHICH ARBITRATION MIGHT BE ATTRACTIVE/UNATTRACTIVE TO PATENT HOLDERS/INFRINGERS IN PATENT DISPUTES

The opposing parties in intellectual property disputes are more likely to prefer ADR including binding arbitration under the following circumstances.

1. The parties have an ongoing business relationship.
2. The parties are about the same size and have similar market shares.
3. Each party must be able to afford to lose.
4. A dispute would be publicly embarrassing.
5. Valuable evidence exists only in the form of hearsay or unauthenticated handwritten notes inadmissible at a trial but useful in ADR.

Opposing parties are unlikely to prefer ADR under the following circumstances.

1. One or more of the parties wants to drive the other out of business.
2. One or both parties enjoys betting against the odds.
3. The parties have not previously been involved in traditional litigation.
4. The dispute involves a small patent owner that is unafraid to battle with a large corporation.

5. The patent holder wants to set a precedent for future litigation.

6. One of the parties seeks injunctive relief.

7. The case depends heavily on the discovery process.

V. NASH BARGAINING MODEL AND PATENT DISPUTE OUTCOMES

Suppose firm 1 holds a valid patent on a new process for making computer chips and firm 2 wants to use the process to make its own chips. For simplicity, assume that firm 2 is the only potential licensee and that both firms know what the total incremental profits are from using the process. There are 3 possibilities: (1) firm 2 negotiates with firm 1 to obtain a license to use the process; (2) firm 2 develops a non-infringing alternative to using the patented process (3) firm 2 is able to copy the process without permission and infringes the patent.

A. The Division of Incremental Profits in the Absence of Litigation or Arbitration

In the first case, the two firms will bargain over license terms, which will consist of some share of the incremental profits from using the patent. For each firm there will be some “disagreement” profit level at which they will walk away from the negotiations, where the disagreement profit will be the incremental profit each would obtain if no agreement is reached. For the patent holder (firm 1), the disagreement profit will be the lowest share of the incremental profit it will be willing to accept to grant a license to firm 2. For the licensee (firm 2), the disagreement profit will be the highest share of the incremental profits it is willing to pay for use of the license. The solution to the bargaining problem (the share of the profits obtained by each firm) then will lie somewhere between the disagreement profit for firm 1 and firm 2.

The Nash Bargaining Solution (“NBS”) provides a generally accepted framework for identifying and evaluating factors that influence negotiation outcomes between parties. The original intention of the NBS was to furnish a sound theoretical methodology for understanding various types of bargaining problems, i.e. what transaction prices will emerge from trade between nations; or what wage rates will result as the product of negotiations between employers and their employees. As discussed above, the common element associated with these problems and similar ones was that outcomes to these types of negotiations were thought to be indeterminate, i.e. economists either could not provide an answer, or the answer included a wide

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range of possible observations. Nash furnished tools that allow one to narrow and sometimes eliminate this range of indeterminacy.

Nash obtained his solution to negotiations between parties by first describing a set of conditions that one would expect to exist in the outcome of any reasonable royalty negotiation. These conditions include the following:

a) The solution should be such that no other feasible outcome is better for one side and not worse for the other. Economists refer to this condition as a Pareto Optimum, named after the 19th century Italian economist, Vilfredo Pareto.

b) Negotiators should behave rationally such that neither side is worse off reaching an agreement than would be the case if the parties failed to reach agreement.

Mathematically, Nash demonstrated that the only point that satisfies the conditions outlined above is the one obtained by solving the following constrained maximization problem:

$$\max (\pi_1 - d_1)(\pi_2 - d_2)$$  \hspace{1cm} (1)

Where:
- $\pi_1$ is the licensing profit for the patent holder/licensor
- $\pi_2$ is the profit for the infringer/licensee from licensing
- $d_1$ is the disagreement profit for the patent holder/licensor
- $d_2$ is the disagreement profit for the patent infringer/licensee

The equilibrium payoffs are:

$$\pi_1^* - d_1 = \pi_2^* - d_2$$

$$\pi_1^* + \pi_2^* = \Pi$$

Where: $\pi_1^*$ and $\pi_2^*$ are the equilibrium payoffs for the licensor and licensee, respectively, and $\Pi$ is the total incremental profit created from licensing.

Solving yields the Nash Bargaining Solution:

$$\pi_1^* = d_1 + \frac{1}{2} (\Pi - d_1 - d_2)$$

$$\pi_2^* = d_2 + \frac{1}{2} (\Pi - d_1 - d_2)$$

$$\pi_1^* + \pi_2^* = \Pi$$

The last of the 3 equations represents the cooperative value of the game. If $d_1 = 0$, meaning that without a license, neither the licensor nor the licensee obtains benefits from the patented technology, then:

$$
\pi_1^* = \frac{1}{2} \Pi
$$

$$
\pi_2^* = \frac{1}{2} \Pi
$$

Application of the Nash Bargaining Solution demonstrates that if neither the licensor nor the licensee is able to monetize the patented technology without reaching a license agreement, the parties split the incremental profits created by licensing. However, if the patent holder is a producing entity capable of practicing the patented technology or the infringer can turn to non-infringing alternatives, the result of the NBS need not be 50/50. This result follows because alternatives available to the parties outside of reaching agreement (i.e. the disagreement profits of each) affect the relative bargaining power of licensors and licensees. The more valuable these alternatives, the greater the bargaining power. Enhanced relative bargaining power based on alternatives results in an increased claim on the incremental profits created by licensing such that a 50/50 split of the benefits is not inevitable.²⁶

**B. Solution with the Threat of Litigation²⁷**

If a credible threat of litigation exists, the disagreement profit for firm 1 and 2 will depend on the probability of winning the case, the expected costs of litigation, and the profits that would be obtained by the firms from the use of the patent after the verdict. Following Lanjouw and Lerner (1997), we will assume that the patent holder will receive a transfer from the defendant determined by the court. The case will go to trial if the expected payoff from the cooperative agreement is less than the payoff from litigating, net of litigation costs for one of the parties. In particular the expected payoffs for each of the parties with a trial are

$$
\pi_1 + \theta_1 j_1 - l
$$

$$
\pi_2 - \theta_2 j_2 - l
$$

Where $l_i$ is the legal cost to firm $i$, $\theta_1$ patent holder’s expectation of winning, $\theta_2$ is the defendant’s expectation of winning, $\pi_1$ is the plaintiff’s profit with damages due to infringement and $\pi_2$ is the defendants profit from using the infringing process. Finally, $j_i$ is the value of the court-awarded


judgment to party i. The sum of the plaintiff and defendant’s expected payoffs is the trial or “non-cooperative” value of the game. If the only issue to be resolved is the amount of the money to be transferred from the defendant to the plaintiff, then the stakes in the game are the same for each player and $j_1 = j_2$. The (cooperative) value of settling the dispute is $\pi_1 + \pi_2$ and the perceived surplus from settling rather than going to court is:

$$-j (\theta_1 - \theta_2) + (I_1 + l_1)$$

If the parties will settle whenever the net gains of settling exceed those obtained through litigation (the perceived surplus is greater than or equal to 0), then they will always settle when

$$J(\theta_1 - \theta_2) \leq (I_1 + l_1).$$

That is, when the joint court costs exceed the difference in expected payoffs from litigation, the parties will prefer to settle. Note also that this means that if the parties expectations or beliefs about the probability of winning are the same ($\theta_1 = \theta_2$), they will always settle. Alternatively, if the beliefs about the outcome are very different (e.g. the plaintiff thinks it is very likely to win and the defendant thinks the plaintiff is unlikely to win) then the probability the parties will settle out of court is low. Differences in expectations about the probability of winning could arise if one of the parties has private information about the patent or the extent of the infringement.

The other obvious implications are that the lower the court costs and /or the higher the expected transfer to the defendant, the more likely the parties will go to court.

As Lanjouw and Lerner (1997) argue, parties also may be more likely to go to court if the stakes in the case are not symmetric, in particular if the expected value of a court victory to the plaintiff is greater than the monetary amount transferred from the defendant to the plaintiff.28 This could occur if the plaintiff’s patent is broad and the patent holder expects to license the product in many markets. A victory in court against one defendant would set a precedent that could make the expected value of a victory in court greater than the amount transferred from the defendant.29 Citing a study by Siegelman and Waldfogel (1996),30 Lanjouw and Lerner indicate that there is evidence that the stakes for plaintiffs are significantly higher than for defendants. They attribute this to the fact that plaintiffs obtain an advantage in future anticipated infringement disputes from winning.

29 Id., p. 11.
Finally, as Lanjouw and Lerner explain, trial may be made more likely by the peculiarities of the patent and antitrust laws. If the validity of a patent is upheld in court, the patent holder will be able to legally exclude all others from using the patent and may extract monopoly profits from the sale of products using the patent. On the other hand, if the patent holder shares the use of the patent through a licensing agreement, the licensor and licensee may not be able to jointly obtain monopoly profits without violating antitrust laws.\footnote{31 Lanjouw, Jean O. and Lerner, Josh, “The Enforcement of Intellectual Property Rights: A Survey of the Empirical Literature,” NBER Working Paper 6296, December 1997, p. 5.}

VI. CONCLUSIONS

As noted above, the median costs of litigating patent disputes through disposition in 2011 ranged from roughly $900,000 to $6 million, depending on the amount at issue. The typical length of the trial in federal district court ranged from 13-20 months. And for the 53 percent of IP district court judgments that were granted a second trial, final judgment was rendered from 34 to 54 months after the initial filing. In principle, an arbitrator with technical background who also is an expert in patent law could resolve an IP dispute in less time and at a lower cost. This is consistent with results reported by the AAA.

There is evidence that trials are more likely when the stakes are greater for the plaintiff than the defendant. This might be the case if the plaintiff intends to use a favorable outcome as a precedent to discourage infringement by other potential defendants. An arbitration ruling is binding only on the parties to the agreement and has no precedential value, so patent holders who intend to pursue other infringers would prefer a trial.

If the stakes involve survival, parties to the IP dispute are more likely to go to court than arbitration. There also is at least some evidence that the costs of litigation are a smaller fraction of the amount at risk when the amount of risk is greater. This would also tend to make a trial more likely than arbitration when the amount at risk is very large.

It also could be argued that a trial is more likely if the plaintiff believes the probability of winning in court is greater than the defendant does. Plaintiffs and defendants may have different expectations about their chances of winning if one or more of the parties to the dispute have private information that influences their belief. If either party suspects that the other has private information, it is likely to take the matter to court where the opposing party may be compelled to reveal the information through the discovery process. Arbitrators do not have the power to compel testimony, so that disputants who suspect the other party is withholding important information will prefer a trial to arbitration.
References


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