NOTE

STATE INDUSTRIES V. MOR-FLO AND THE MARKET SHARE APPROACH TO PATENT DAMAGES: WHAT IS HAPPENING TO THE *PANDUIT* TEST?

JOEL MEYER*

In recent years the U.S. Court of Appeals for the Federal Circuit has shown an increased willingness to approve massive damage awards for plaintiffs in patent infringement suits. The incentives inherent in such high stakes litigation has produced creative theorizing and has triggered new options for potential litigants. In *State Industries v. Mor-Flo*, the Federal Circuit endorsed the market share allocation of lost profits in a patent infringement suit. The market share approach is significant because it establishes an economically rational approach to analyzing damages, and it signals the flexibility of the courts to endorse new damage theories.

This Note analyzes the merits of the market share approach and discusses the implications that this case will have on future patent infringement litigation. Starting with a discussion of thc traditional lost profits framework, the Note focuses on how courts must analyze market behavior to determine the appropriate award. The Note then explains the *Mor-Flo* decision in light of the traditional lost profits framework. Finally, the Note argues in favor of the market share approach. From an economic perspective, the market share approach is an accurate method to determine the value of a patent with respect to the alternatives in the market.

I. INTRODUCTION

A. Introduction to State Industries v. Mor-Flo

In *State Industries v. Mor-Flo Industries*,[1] the Federal Circuit[2] approved the "market share" theory as a method for establishing lost profits in a patent infringement case. After successfully proving infringement of its patent,[3] State Industries sought to recover lost profits for lost sales attributed to Mor-Flo's infringing sales activity. Employing

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* University of Wisconsin Law School, Class of 1992.

1. State Indus. v. Mor-Flo Indus., 883 F.2d 1573 (Fed. Cir. 1989).

2. Congress created the Federal Circuit Court of Appeals in 1982. In part, the purpose of this new court is to consolidate all appeals of patent issues in an attempt to establish uniformity of patent law.

3. State Indus. v. Mor-Flo Indus., 8 U.S.P.Q.2d (BNA) 1971 (E.D. Tenn. 1988).

the "market share" theory, State Industries obtained a partial lost profits award in proportion to its market share and a reasonable royalty fee for the balance of Mor-Flo's infringing sales.[4] Having never ruled on the validity of the market share approach, the United States Court of Appeals for the Federal Circuit endorsed this theory for the first time.[5]

State Industries initiated its infringement claim in the Federal District Court for the Eastern District of Tennessee.[6] The district court found that Mor-Flo Industries had infringed the plaintiff's patent.[7] The Federal Circuit subsequently affirmed this finding of liability and denied the defendant's petition for rehearing.[8] The trial court then decided the damages issue in a separate trial without a jury.[9] The trial court ruled in favor of State Industries on the issue of actual damages,[10] and Mor-Flo appealed this finding to the Federal Circuit.

On appeal, the Federal Circuit accepted State Industries' ("State") application of the market share analysis[11] to determine the amount of damages incurred from Mor-Flo's infringing sales activity.[12] State requested that the court award lost profits in proportion to its established

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4. Generally, an award of lost profits is greater than the reasonable royalty the plaintiff may recover in the alternative. Thus, the patentee will usually attempt to maximize its recovery by attempting to prove its right to lost profits. If the patentee fails to obtain its lost profits, the alternative is a reasonable royalty fee assessed against the infringer's sales. Additionally, the patentee may recover attorney's fees as well as treble damages in cases where the infringement is willful. 35 U.S.C. §§ 284-85 (1988).

5. *Mor-Flo Indus.*, 883 F.2d at 1577.

6. State Indus. v. Mor-Flo Indus., 639 F.Supp. 937 (E.D. Tenn. 1986).

7. State Industries sought damages for infringement on its patented water heater. The patented process, which describes a method for insulating the exterior of a water heater with foam, satisfied a demand for energy-saving water heaters in the late 1970s. Because of the various advantages of the foam insulated model, Mor-Flo attempted to develop its own unit from a tear-down model of State Industries' heater. This attempt resulted in the infringing product giving rise to these damage proceedings.

8. *Mor-Flo Indus.*, 8 U.S.P.Q.2d (BNA) at 1972.

9. *Id.*

10. *Id.*

11. For a discussion of the market share method, *see* John M. Skenyon & Frank P. Porcelli, *Patent Damages*, J. PAT. TRADEMARK OFF. SOC'Y 762, 782-83 (1988).

12. A detailed analysis of the market share approach appears later in this Note. For now, it is important that the reader not confuse this test with the famous tort law method of allocating liability to manufacturers in the products liability context. Under the tort law theory, liability is allocated in proportion to the manufacturer's market share of the total sales of the product in question. In the context of the patent infringement suit, however, the litigant uses the method to allocate damages, not liability. Here, the plaintiff attempts to prove that it has lost sales due to the infringement. Essentially, the plaintiff claims that it could have sold its market share had the infringer not sold its product. Lost profits are then allocated in proportion to the plaintiff's market share. Sindell v. Abbott Laboratories, 607 P.2d 924, *cert. denied,* 449 U.S. 912 (1980) (allocating liability on the basis of the drug producer's market share).

market share. Specifically, State argued it would have sold its market share of the infringers' unlawful sales. Because State had captured forty percent of the market,[13] it reasoned that it was entitled to profits equivalent to the amount State would have made on forty percent of Mor-Flo's infringing sales. Mor-Flo contended that the existence of product substitutes precluded State from proving lost sales. Thus, Mor-Flo insisted that State recover only a reasonable royalty instead of the potentially greater award under the market share approach. However, both the district court and the Federal Circuit approved this novel application of the market share approach.

In approving this "market share" approach, the Federal circuit had to reconcile State's application of the market share test with the widely accepted *Panduit*[14] test. The market share approach and the *Panduit* test conflict in their treatment of product substitutes, a key factor in determining the causal relationship between an infringing sale and the patentee's allegedly lost sale. Circumventing this conflict, the Federal Circuit merely swapped the product substitute test of *Panduit* with the market share approach.[15] While the *Mor-Flo* decision presents future litigants with an interesting alternative, it also poses many difficult questions. For instance, can future litigants employ the market share approach independently of the *Panduit* test? Further, does the market share approach signal a significant policy shift in patent damage theory? This Note addresses these questions and advocates the use of the market share approacb to determine lost profits in multi-competitor markets.

B. Analysis Preview

1. THE MARKET SHARE ANALYSIS V. THE *PANDUIT* TEST

The market share analysis represents a sound economic approach to proving entitlement to lost profits when the existence of a multi-competitor market makes application of the traditional framework difficult. The true utility of the market share test is in the prediction of market behavior. Encompassing many market variables, the market share

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13. Using sales statistics compiled by the Gas Appliance Manufacturers Association (GAMA) and introducing State Industries' financial records, State established its market share. The market for infringed foam-insulated water-heaters was well defined because State could identify all five of the competitors and GAMA recorded the sales statistics of these competitors. *Mor-Flo Indus.*, 8 U.S.P.Q.2d (BNA) at 1974.

14. Panduit Corp. v. Stahlin Bros. Fibre Works, 575 F.2d 1152 (6th Cir. 1978).

15. *Mor-Flo Indus.*, 883 F.2d at 1577-78. In essence, the court swapped the market share test with one prong of the four-part *Panduit* test. In endorsing State's use of the market share test, the court then analyzed the new twist with this modified prong and the three remaining prongs of the *Panduit* test.

analysis employs proven sales data to predict consumer behavior. In contrast, the definition of the "market" under *Panduit* (the "traditional test")[16] is too narrow because it merely focuses on a vague concept of "acceptability" to predict consumer behavior. The definition of the relevant market under the *Panduit* test is confined to include only "acceptable" product substitutes. As a result, the *Panduit* rationale minimizes the impact of other market influences upon the consumer's preference.[17] The determination of damages should focus on the entire market[18] (all the alternatives available to the consumer) not just the acceptable non-infringing alternatives. The market share method seems to make more sense than the traditional approach because it solves an economic question with an economic analysis.

2. THE FUTURE OF THE MARKET SHARE ANALYSIS

The market share analysis will enhance the patentee's ability to recover lost profits in multi-competitor markets where the traditional framework would have precluded lost profits recovery. The market share analysis will have this impact because (1) the Federal Circuit has begun to openly accept variations of the traditional framework, and (2) this openness is a reflection of the Federal Circuit's policies of protecting innovation, accurately compensating the patentee, and adhering to a well-reasoned economic analysis. The courts have tended to accept various damage theories provided they were founded on compensation for the financial loss of the patentee. The market share approach yields an award that does not surpass limits set under *Panduit*, yet it provides a greater remedy to those who would otherwise be forced to settle for a reasonable royalty. Additionally, the court's openness to this new theory seems to reinforce the value of novel technology. In protecting the patentee's ability to recover a lost profits award, the court enhances the

16. *Panduit Corp.*, 575 F.2d at 1152.

17. The preference of the consumer depends not only on a preference for patented advantages, but also preferences altered by geographic location, advertising, availability, and service.

18. "Market" refers to the wide range of alternatives available to the consumer. As discussed *infra*, the definition of "market" plays a pivotal role in determining the financial injury that the patent-holder has suffered due to infringing sales activity. *See infra* notes 106-17 and accompanying text. The scope of market alternatives available to the consumer determines in part the economic value of the patent. A narrow definition of market means that few alternatives exist for the patented product. Because of the lack of alternatives and the consumer demand that this creates, the patent has a corresponding higher economic value. The court's interpretation of the market thus directly relates to the economic value of the patent.

overall value of patents and the innovative technology they represent. Because the market share analysis comports with this policy trend and yet does not expand recovery beyond an amount sufficient to compensate the financial loss, future litigants will utilize the test to enhance their chances of recovering their lost profits.

C. Purpose of the Note

The purpose of this Note is twofold: (1) to analyze the soundness of the market share approach in light of the traditional lost profits framework, and (2) to assess the practical and policy-based implications of the *Mor-Flo* court's endorsement of the market share analysis. The Note begins in part II by establishing the basis for the current lost profits test. Specifically, the Note sets forth the underlying theory of patent damage recovery and explains the process of market analysis under the current case law. In part III, the Note begins with a detailed analysis of the *Mor-Flo* decision. Next, it compares the market share approach with the traditional approach. This Note illustrates that the market share analysis is perhaps a more logical approach to ascertain damages in a multi-competitor market. The remaining portion of the Note discusses the implications of the *Mor-Flo* decision. Within this discussion, in Subpart C, it focuses on the underlying policies driving the court. Finally, in Subpart D the Note explores the practical implications of the endorsement of the market share approach in the *Mor-Flo* decision.

II. BACKGROUND

Before discussing the market share approach, it is important to form a foundation from which one can assess the impact of the *Mor-Flo* decision. Clarifying the patentee's objectives is important to understanding what State Industries was trying to accomplish in *Mor-Flo*. In this section, the Note begins with a discussion of the compensation theory. From there, the Note focuses on the *Panduit* framework and, specifically, the key issue of product substitutes.

Once a court has decided that a patent is valid and infringed,[19] the

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19. To show infringement, the plaintiff must show either (1) that all of the elements of at least one claim of the patent "read on" the infringing device; or (2) that the "equivalent" infringing device performs substantially the same function, in substantially the same way, to accomplish substantially the same result as the patented item.

As a defense, the defendant can attempt to invalidate the patent by proving the elements of various statutory bars to patentability. Two examples of a statutory bar are: (1) the patent-holder put its patent on sale or publicly used the patent one year prior to the filing date, or (2) the patented device was "obvious" in view of the "prior art." Thus, to recover damages the patent must be valid and infringed. For a discussion of the legal patentee must establish the amount of damages resulting from the infringing activity. The patentee will seek to maximize its recovery in the damage phase of the proceedings.[20]

Because an award of lost profits provides a potentially spectacular award, the patentee will usually attempt to maximize its recovery by establishing its right to lost profits.[21] The case law provides a framework outlining the factors that form a basis for lost profit recovery. Applying complex sales activity and market analysis to this framework makes the damage question a highly fact-specific determination.[22] However, because the inquiry is highly factual, the patentee has some flexibility in the manner it attempts to prove its losses under the framework.[23] The patentee's key objective is to establish the economic value of his patent by showing that no product substitutes exist. Once the patentee has established that no alternatives exist, the patentee has then linked the infringing sale to its lost sale. At that point, the amount of lost profits is simply a matter of accounting and is limited to the amount necessary to compensate the patentee.[24]

A. The Aro *Case: Compensation is the Underpinning of Patent Damages*

In seeking lost profits, the underlying theory of compensation limits the extent of the patentee's damages.[25] Stated simply, the patentee can recover only enough to compensate the financial loss in profit caused by the infringer's sales. In *Aro Manufacturing. Co. v. Convertible Top Replacement Co.*,[26] the Supreme Court clarified the interpretation of the patent damages statute.[27] *Aro* involved a claim for damages resulting from Ford Motor Company's alleged infringement of a patent on convertible top fabrics. The Court had to determine whether Ford's payment to the patent holder constituted full satisfaction to the patentee

rules of infringement, see the trial court's opinion in the liability phase of the *Mor-Flo* decision. *Mor-Flo Indus.*, 639 F. Supp. at 946.

20. Many patent trials are bifurcated: the issues of patent validity and infringement are resolved in the first phase, and if the court finds the patent valid and infringed, then the issue of damages is settled in another proceeding.

21. Ned L. Conley, *An Economic Approach to Patent Damages*, 15 AIPLA Q. J. 354, 357 (1987).

22. *Id.*

23. *Id.*

24. The patentee may also recover attorney's fees and treble damages if he proves that the infringement is willful. 35 U.S.C. § 285 (1988).

25. Aro Manufacturing Co. v. Convertible Top Replacement Co., 377 U.S. 476 (1964).

26. *Id.*

27. 35 U.S.C. § 284 (1988).

for the infringing use of the patented structures.[28] In answering this question, the Court defined damages in the context of a patent infringement claim.

The Court began by quoting the relevant statutory language, which provides:

> 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 court.[29]

Citing legislative intent, the Court explained that the purpose of the statute was to prevent a double benefit to the patentee. Historically, the patentee could "disgorge" the infringer's profits as well as recover damages. To eliminate this double recovery, Congress drafted the present statute.[30]

Furthermore, the *Aro* Court clarified the definition of damages and reinforced the notion that compensation was the primary underpinning of patent damages. The Court defined damages as "compensation for the pecuniary loss [that the patentee] has suffered from the infringement, without regard to the question whether the defendant has gained or lost by his unlawful acts."[31] The relevant question is then: how much would the patentee have made had the infringer not infringed? In other words, the patentee must show that the infringement has caused it to lose sales.

Two essential points regarding damage recovery emerge from the *Aro* decision. First, the test for damages is generally founded on but-for causation: the patentee is entitled to recover what he would have made but for the infringing activity.[32] Second, this inquiry is limited by the amount necessary to compensate the patentee.[33] The but-for test forces the court to resolve a hypothetical question: would consumers have purchased the patentee's product? As a result, the inquiry is highly factual and difficult to resolve with a high degree of certainty. Consequently, the patentee must look to the infringing period and establish the

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28. *Aro*, 377 U.S. at 502.

29. 35 U.S.C. § 284 (1988).

30. H.R. No. 1587, 79th Cong., 2d Sess. (1946) ("The object of the bill is to make the basis of recovery in patent-infringement suits general damages, that is, any damages the complainant can prove, not less than a reasonable royalty, together with interest from the time the infringement occurred, rather than profits and damages.").

31. *Aro*, 377 U.S. 476 at 507.

32. *Id.* at 505-06.

33. *Id.*

market conditions that indicate a consumer preference for its product. Under the compensation theory, the amount of the award is the amount of lost profits due to lost sales. In *Aro*, the Supreme Court rejected the recovery of the infringer's profits, but allowed the patentee to recover its own lost profits.[34] Now the key proof is a showing that the consumer would have purchased the patented product had the infringer not infringed. Although the *Aro* decision had provided the groundwork for patent damages, it did not establish the elements of a lost profits claim with clarity.

B. The Panduit *Framework*

In *Panduit Corp. v. Stahlin Bros.*, the Sixth Circuit Court of Appeals clearly articulated the elements of the lost profits claim still widely cited today.[35] In order to establish the lost profits claim, the patentee must prove: (1) demand for the patented product, (2) absence of acceptable non-infringing substitutes, (3) manufacturing and marketing capability to exploit the demand, and (4) the amount of profit lost as a result of the infringement.[36]

In *Panduit*, the patentee sought to obtain lost profits for the lost sales of its patented product.[37] However, the court rejected the claim for lost profits because the patentee failed to prove the fourth prong of the test, the amount of lost profits.[38] The parties did not dispute that Panduit had the capacity to meet the demand for the product. The defendant, however, argued that acceptable non-infringing substitutes existed, citing its success in switching consumers to a non-infringing substitute when that became necessary. The lower court accepted this argument.[39] In addition, the lower court found proof of lost profits deficient because of the lack of proof of fixed costs.[40] On appeal, the appellate court agreed with the lower court on the issue of the amount of profits, but reversed the finding that "acceptable substitutes" existed.[41] As a result, the patentee was entitled only to a redetermination of its award of a reason-

34. *Id.* at 504-07. The court deemed the recovery of the infringer's profits punitive rather than merely compensatory for a financial loss. The patentee may only recover the profits it would have made had the infringement not occurred. Previously, the patentee could recover the profit the infringer had unlawfully made as well as its actual damages.

35. *Panduit Corp.*, 575 F.2d at 1156.

36. *Id.*

37. The patented product was an electrical wire conduit that permitted slipping wires into place as oppesed to fitting them through the end. *Id.* at 1161.

38. *Id.*

39. *Id.* at 1159-60.

40. *Id.* at 1157.

41. *Id.* at 1156.

able royalty.[42] Nevertheless, the *Panduit* Court set forth a useful lost profits test.

The court's four-point test embraced the compensation theory of recovery. The court cited *Aro* for the proposition that the patentee is entitled to "damages adequate to compensate for the infringement."[43] According to the *Panduit* Court, the objective of the patentee is "[t]o obtain as damages the profits on sales he would have made absent the infringement, i.e., the sales made by the infringer."[44] Essentially, the *Panduit* factors establish an analytical tool for proving lost profits under the broad test set forth in *Aro*. The four elements help establish the critical nexus between the infringing sale and the allegedly lost sale of the patentee. The product demand, marketing capacity, and absence of acceptable substitutes combine to indicate the likelihood that the infringing sale preempted the patentee's sale. The fourth element, the amount of lost profits, requires the patentee to prove its expected profit from its accounting records, thus establishing the actual amount of lost profits.

C. *The Evolution of the* Panduit *Framework*

Infringement litigants have widely used the *Panduit* framework to recover lost profits. Not surprisingly, courts have further defined the prongs of the *Panduit* test through the evolution of the case law.

1. THE FOCUS ON THE "ACCEPTABLE SUBSTITUTE" FACTOR

Because establishing proof of lost profits involves hypothetical consumer choices, the patentee must first define the relevant market for the patented product. The patentee must then establish the amount of lost profits due to the lost sales. In defining the relevant market, the key element of the *Panduit* test is the absence of acceptable non-infringing substitutes.[45] The rationale behind this requirement is that if such substitutes existed at the time of infringement, then an infringer's customers may have chosen the substitutes instead of the patented product. In this instance the patentee has not lost a sale, regardless of infringement.

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42. *Id.* at 1157.

43. *Id.* at 1156.

44. *Id.*

45. Skenyon & Porcelli, *supra* note 11, at 779. The definition of "acceptable" has taken on special legal significance. To be acceptable, a substitute must have all of the advantages of the patented device or process. If the substitute does not meet the "acceptability" standard, it is simply not considered as a market alternative under the *Panduit* framework.

The issue of product substitutes is the pivotal factor in the *Panduit* test and, thus, is the most heavily litigated issue.[46] The principal reason for focusing on the substitute factor is that it bears directly on the economic value of the patent in relation to the market alternatives. Additionally, two of the other *Panduit* factors are necessarily tied to the resolution of this issue.[47] Both the "demand"[48] and "the amount of lost profits"[49] are related to the extent to which the competing products represent "acceptable" alternatives. The demand prong requires the patentee to establish sufficient consumer demand so that the patent has some economic value. It follows that this demand and the corresponding economic value can be determined only by considering the nature of the relevant market. The product and its substitutes define the scope of the relevant market. To the extent that substitutes exist, the demand for the patented product diminishes. Likewise, if no substitutes exist, the demand for the patentee's product will be great and its corresponding value will increase.

The amount of lost profits is also closely linked to the issue of product substitutes.[50] The potential profit on the patented product depends on the "acceptability" of the substitutes in the market. Presumably, the patent is more valuable if there are fewer product substitutes available. Fewer consumer alternatives mean increased demand and a corresponding higher economic value. Conversely, the patentee must price its product more competitively if numerous substitutes exist. In short, the value of the patent hinges on the degree to which the alternatives are available and acceptable. Thus, the patentee must focus on proving that no acceptable substitutes exist.

2. THE LEGAL DEFINITION OF SUBSTITUTE

Even if substitutes exist, they must be legally "acceptable" such that they compete equally with the patented product.[51] The mere existence of product alternatives does not negate a lost profits claim.[52] The substitute must rise to the level of acceptability of the patented product. According to the *Panduit* rationale, if substitutes of this caliber exist, then

46. *Id.*

47. John D. Culbertson & Roy Weinstein, *Product Substitutes and the Calculation of Patent Damages*, J. PAT. & TRADEMARK OFF. SOC'Y, 749, 749-54 (1988).

48. The patentee must prove demand for the patented product to recover lost profits.

49. The patentee must also prove the amount of lost profits as part of the four-prong *Panduit* test.

50. Culbertson & Weinstein, *supra* note 47, at 749-54.

51. Skenyon & Porcelli, *supra* note 11, at 779.

52. *Id.*

the infringer's consumer would have been equally likely to purchase the substitute.[53] The result is the patentee fails to carry its burden to establish that it would have made the sale.

The court's definition of the scope of acceptable substitutes often determines the success of the patentee in proving lost profits. The more narrowly the court defines "acceptable," the stronger the causal connection between an infringer's sale and the patentee's lost sale. If the court deems the substitute unacceptable, the court does not consider it as a possible alternative for the consumer. In *Panduit*, the court of appeals reversed the lower court's finding that acceptable substitutes existed. The court in *Panduit* narrowed the scope of acceptable substitutes by finding that the patented advantage created a unique demand for the patentee's product. Under this notion, classifying non-infringing products as "acceptable" substitutes is difficult because products rarely have the unique patented advantage without also infringing the patent.[54] In *Panduit*, substitutes existed but the court rejected them because of the consumer preference for the patented advantage.[55]

The language in *Panduit* indicates that it is not sufficient that the alternative merely competes with the patented product in the economic sense.[56] Rather, the substitutes must have all the advantages of the patented product. In *TWM Manufacturing Co., Inc. v. Dura Corp.*,[57] the Federal Circuit stated that "mere existence of a competing device does not make that device an acceptable substitute. The special master committed no error in noting that none of the alleged substitutes had all of beneficial characteristics of the patented device."[58] With this narrow

53. Conley, *supra* note 21, at 362-64.

54. The court may assume that a product, by virtue of its patented feature, has no acceptable substitute. In this instance, the court placed great weight on the fact that the product has a patented feature in assessing its relative value over the substitutes. Moreover, the court may infer the infringer chose to utilize the patented invention because of its superiority over the alternatives known to the infringer. This reasoning is somewhat circular because it is true in every infringement case that the infringer chose to infringe rather than opt for an alternative. The probative value of this so-called choice is weak because it seems to assume that the infringer deliberately chose to infringe and risk litigation. In fact, the infringer may not have known of the patent or may have had a good faith belief that his product did not infringe. *Id.* at 363.

55. The patented device was an electrical duct that permitted the electrician to slip wires in place rather than thread the wiring in the end. The court noted that even the defendant had recognized the merits of this patented feature in an intra-company memo. Thus, even though substitute ducts existed, these substitutes did not provide an "acceptable" substitute for the patented product. *Panduit Corp.*, 575 F.2d at 1160. Note that even though market alternatives existed, the court may exclude them from the relevant market upon a showing of consumer preference for a patented feature.

56. Skenyon & Porcelli, *supra* note 11, at 779.

57. 789 F.2d 895 (Fed. Cir. 1986).

58. *Id.*

construction of the relevant market, the patentee is more likely to meet its burden of proving lost profits.

The patentee has the burden to establish that the alternatives are not acceptable, but the patentee need not establish whether the alternatives are infringing or non-infringing.[59] In *Central Soya Co., Inc. v. Hormel & Co.*,[60] the court concluded that "[i]t would be redundant to require Central Soya to additionally prove either infringement or non-infringement."[61] The court of appeals affirmed the lower court's ruling that the alternatives did not have the patented advantages of the patented product. The court went a step further by refusing to require that the patentee prove that other products infringe the patent in addition to being unacceptable. Thus, the court modified the "substitute" prong of the *Panduit* test in a manner that eased the patentee's burden of proof.

In sum, the issue of substitutes is the essential element of the *Panduit* test. By defining the relevant market, the patentee establishes the relative economic value of the patent over the market alternatives. As legally applied under the *Panduit* test, the scope of the relevant market has narrowed. The practical effect has been to ease the patentee's burden to recover lost profits. Although the issue of substitutes is the primary focus of a lost profits claim, the patentee must also prove the remaining *Panduit* prongs as well.

3. THE ADDITIONAL *PANDUIT* FACTORS

The remaining *Panduit* elements are: (1) demand for the patented product, (2) the manufacturing capacity to meet that demand, and (3) the amount of lost profits. The "manufacturing capacity" prong is rarely contested and is not central to our focus on market considerations. Thus, the "manufacturing capacity" need not be discussed in detail.[62] As noted above, the demand prong is closely related to the nature of the substitutes,

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59. 723 F.2d 1573 (Fed. Cir. 1983).

60. *Id.* at 1579.

61. *Id.*

62. In the majority of the cases, capacity is not an issue. Even where the manufacturing capacity did not exist during the infringing period, some courts have still awarded lost profits. Thus, if the patentee can show consumer demand and preference for its product, then the capacity prong of *Panduit* is most often satisfied as well. *See* Conley, *supra* note 21, at 367-68.

The alternative in the case in which capacity is lacking is to settle for a reasonable royalty rate assessed on the infringing sales. This rate is based on the hypothetical market value of the patent during the period of the infringement. *See* Scattle Box Co. v. Industrial Crating & Packing, Inc., 756 F.2d 1574 (Fed. Cir. 1985).

The computation of a reasonable royalty might become quite complicated and thus is beyond the scope of this Note. For further references on royalty computations in damage proceedings see Skenyon & Porcelli, *supra* note 11, at 763-77.

and thus it does not warrant separate discussion. Finally, the amount of lost profits is also linked to the substitutes issue,[63] but the legal interpretation should be discussed briefly to give one a fuller understanding of the application of *Panduit*.[64]

The courts have generally given the patentee considerable latitude in establishing the amount of lost profits. The requisite proof is only a "reasonable probability."[65] As a result of this diminished burden, the infringer must assume the risk of uncertainty in the determination of the award.[66] The amount of lost profits is generally the amount the patent owner would have earned if it had made the infringer's sales. Within the broad scope of the reasonableness standard, the district court has the discretion to choose the method for calculating lost profits.[67] Moreover, the district courts have given the patent-holder considerable flexibility to base its losses on a variety of sources.[68] Thus, the calculation calls for creative theorizing based on sound economics.

In summary, the patentee must show that there is a reasonable probability that he would have made the sales in the absence of the infringing sale. In establishing the lost sale, the patentee most often uses the *Panduit* framework. Within this framework, the key inquiry is the

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63. As mentioned above, the amount of lost profits is tied to the relevant market because the competition dictates the profit margin allocable to the patented product. Under *Panduit* the patentee would argue that the lack of non-infringing substitutes would have enabled him to obtain a higher profit margin during the infringing sales period. The patentee must establish the favorable market conditions first.

64. By using the phrase "legal interpretation," I intend to separate the product substitutes' effect on the amount of lost profit (discussed above) from the following discussion of the courts' interpretation of the amount of lost profits.

65. In defining the required level of certainty, the Federal Circuit has heeded the language of the Supreme Court that "while the damages may not be determined by mere speculation or guess, it will be enough if the evidence shows [sic] the extent of the damages as a matter of just and reasonable inference, although the result will only be approximate." Story Parchment Co. v. Paterson Parchment Paper Co., 282 U.S. 555, 563 (1931). For more current case law, see Bio-Rad Lab., Inc. v. Nicolet Instrument Corp., 739 F.2d 604, 616 (Fed. Cir. 1984) and Kori Corp. v. Wilco Marsh Buggies, Inc., 761 F.2d 649, 653 (Fed. Cir. 1985).

66. Lam, Inc. v. Johns-Manville Corp., 718 F.2d 1056, 1065 (Fed. Cir. 1983). Perhaps the rationale behind this allocation of burdens is to ensure complete compensation for the illegal infringement. The practical effect is to force the infringer to prove the patentee's accounting is erroneous.

67. *Kori Corp.*, 761 F.2d at 645-53; Paper Converting Machine Co. v. Magna-Graphics Corp., 745 F.2d 11, 21 (Fed. Cir. 1984). On appeal the infringer must show that "the district court abused its discretion by basing the award on clearly erroneous factual findings, legal error, or a manifest error of judgment." Nickson Indus., Inc. v. Rol Mfg. Co. 847 F.2d 795, 798 (Fed. Cir. 1988).

68. For example, lost profits can be based on actual lost sales, price cuts and discounts, projected lost sales, increased expenses, and the prices of non-patented items sold with the patented item.

existence of acceptable substitutes. The substitutes define the market and also dictate the pricing the patentee would have charged. The entire inquiry involves the resolution of a hypothetical re-enactment of what the infringer's consumers would have done.[69] Once the patentee has proved a lost sale, the courts are quite flexible in allowing the patentee to establish the amount of the loss.

D. The Panduit *Test in Perspective*

Although the *Panduit* framework is widely used in patent damages cases, it is not the sole test.[70] Increasingly, the courts have shown a propensity to consider variations to the *Panduit* framework. For example, in one case the Federal Circuit Court held that a market survey showing that 70-90% of interviewees would have purchased the patentee's product was enough to establish lost sales.[71] In another case, the patentee established a lost profits claim based on the notion that it had established a "mini-market" for its product.[72] The Federal Circuit Court awarded lost profits even though the patentee had only 25% of the total market share.[73]

This departure from strict application of the *Panduit* framework illustrates a trend of enhancing the value of patents and realizing that market data is a superior predictor of lost sales. The courts' openness toward variations in lost profits claims permits more patentees to recover a larger damage award, thus enhancing patent value in general. While this open approach signals a shift in attitude toward patents, the approach may be difficult to reconcile with the *Panduit* decision. At first blush, the open approach appears to have turned the *Panduit* definition of substitutes on its head. But looking deeper, the variations to *Panduit* follow the general trend of protecting the patentee's ability to recover. Using the concept of "acceptability" in *Panduit*, the courts have narrowly construed the range of substitutes in favor of the patentee. Moreover, the variations of *Panduit* also indicate the court's recognition that a product's past

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69. It is important to focus on the only relevant group of consumers: those who purchased the infringer's produet. Taking the infringing purchase from them, the litigant must then hypothesize on what they would have done. Generally, if the patented product has no equals, consumers would likely have chosen it (assuming that they would have purchased at all).

70. *Bio Rad Lab., Inc.*, 739 F.2d at 616 n.*

71. *Id.* at 616.

72. "Mini-market" means this particular producer had established a loyal consumer base in a given region. Thus, although the producer made up only a portion of the overall market for its good, it could prove that it had a virtual lock on a small segment of the market in that region.

73. Yarway Corp. v. Eur-Control USA, Inc., 775 F.2d 268, 276 (Fed. Cir. 1985).

success in the market is at least as probative as an analysis of "acceptability." In the end, the rising favor of patents creates a very flexible body of law.

With the increasing flexibility of the judiciary on the issue of damages, a patentee need not disregard any theory that tends to show consumer preference for its product.[74] The fact that the consumer purchased the infringing product may indicate that he would have purchased the patented product in lieu of the infringing product. Of course, product marketing and availability play a large role in the consumer's choice.[75] It seems logical that consumer surveys and market share analysis would be evidence of consumer preference.[76] The judiciary has shown an increased willingness to recognize the validity of tests that focus on market conditions.[77]

Consistent with this increasing focus on market concerns, patent holders have attempted to employ the "market share" test.[78] The market share test is a method for proving one's share of lost sales due to the infringer's sales activity. The market share test is applicable where the existence of several competitors makes proof of the *Panduit* framework difficult. Using market share statistics, the patentee argues that it is

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74. Skenyon & Porcelli, *supra* note 11, at 785. These commentators note that "[f]rom the patentee's point of view, the presentation of a damages case is not as simple as it once was, but by the same token, there are now new opportunities for presenting very plausible damages theories that ten years ago would have been inconceivable."

75. For a strictly economic analysis of product substitution, see John D. Culbertson & Roy Weinstein, *Product Substitutes and the Calculation of Patent Damages*, 70 J. PAT. TRADEMARK OFF. SOC'Y, 749, 757-59 (1988).

76. Beeause the key question is what sales the patentee would have made in the absence of the infringing sales, any test directed toward prediction of the market would seem to solve this question. To predict consumer preference, one logieally would begin with past market performanee. Skenyon & Porcelli, *supra* note 11, at 782-83.

77. *See supra* text accompanying notes 72-74.

78. Appellate courts have considered the market share test before, but until *Mor-Flo*, they had not endorsed it. In Hughes Tool Co. v. G.W. Murphy Indus., 491 F.2d 923, 929 (5th Cir. 1973), the Court of Appeals for the Fifth Circuit rejected application of the market share analysis because the patentee did not meet its burden of establishing the relevant market.

In Baumstimler v. Rankin, 677 F.2d 1061 (5th Cir. 1982), the same court again rejected the market share analysis. The *Rankin* court totally rejected the lost profits claim because the patentee had no manufacturing capability to make, use, or sell its patented invention. Citing its decision in *Hughes Tool Co.*, the court said "that market share analysis requires an examination of substitutes, demand, manufacturing eapability of the patentee, and the amount of profit that would have been made from these additional sales." *Rankin*, 677 F.2d at 1072.

entitled to lost profits attributable to its overall market share.[79] The underlying assumption of the market share analysis is that the patent-holder's market share sufficiently proves the portion of the infringer's sales that the patent-holder has lost. The success of the test hinges on the availability of sales data and a corresponding well-defined market.[80] If the market conditions are amenable to a market share analysis, patent holders may argue for lost profits under the market sbare theory as well as a *Panduit* test.

III. *State Industries v. Mor-Flo Industries*: The Federal Circuit Accepts the Market Share Test

A. State Industries v. Mor-Flo Industries

In *Mor-Flo*, the Federal Circuit upheld the use of the market share theory to apportion lost profits in a patent infringement suit. State Industries ("State") initiated the suit by enforcing its patent against Mor-Flo Industries. After successfully obtaining a judgment that the patent was valid and infringed, State sought damages in the form of lost profits and a reasonable royalty.[81]

Amidst the *Panduit* framework for lost profits,[82] State introduced evidence of its market share. State did not attempt to rely solely on the *Panduit* test or a market share test. Rather, State introduced evidence to support a *Panduit* argument and provided evidence of its market share as

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79. One may be inclined to believe that this must involve a comparison of market share before and after the infringement to determine the extent of lost sales. The sales, however, may be properly allocated by granting the patentee its market share as well as the infringer's share during the infringement period. This approach assumes that the infringer's presence in the market cut into only the patentee's market share. The balanee of the sales presumably would have gone to the other market participants.

80. Defining the relevant market is the primary function of the product substitute prong of *Panduit*. Often the relevant market is defined narrowly to exclude product substitutes. The problem with the *Panduit* test is that the lost profits claim fails when many strong competitors exist. The market share test is more flexible in this regard. In defining the relevant market under the market share approach, the patentee acknowledges the existence of the competitors. Nevertheless, if the close substitutes or competitors cannot be identified, the patentee will not be able to establish a market share argument. Thus, a well-defined market, one in which the substitutes are readily ascertainable, is a prerequisite to a market share analysis. For an economic analysis of market definition, see *infra* note 103. The analogy to antitrust law and the economic analysis of mergers is appropriate because the underlying issue of a product substitution is common to both patent damages and corporate mergers.

81. *Mor-Flo Indus.*, 8 U.S.P.Q.2d (BNA) at 1971.

82. Recall that the *Panduit* test for lost profits is: (1) proof of demand for the product, (2) capability to meet that demand, (3) the absence of acceptable, non-infringing substitutes, and (4) proof of the amount of lost profits. *Panduit*, 557 F.2d at 1164.

well. The use of market statistics was an attempt to bolster proof of the key *Panduit* element: the lack of acceptable, non-infringing substitutes.[83] As noted above,[84] defining the scope of the relevant market, and thus the range of substitutes, plays the pivotal role in determining the economic worth of the patent. If the scope of substitutes is broad, the value of the patent decreases because consumers can easily choose a competing product in place of the patented product.

Because the presence of substitutes can bar proof of lost profits under *Panduit*, State offered proof of market share as a tacit concession that it may not have made all the infringer's sales. State felt it to be more prudent to ask for only its market share rather than rely solely on the *Panduit* test and risk obtaining no lost profits.[85] The fact that five competitors existed made it risky for State to rely solely on the *Panduit* test because of the added difficulty of proving the absence of "acceptable" substitutes.[86] On the other hand, the existence of sales data facilitated proof of market share.[87] GAMA, a trade group, compiled sales statistics from which State could establish a well-defined market and its market share.[88] As a result, the market share test presented a viable alternative to strict adherence to the *Panduit* framework. State asked for lost profits in proportion to its market share and for a reasonable royalty rate assessed on the balance of the infringing sales.

Although proof of the *Panduit* test could have created a potentially larger award, the market share approach guaranteed a partial lost profit recovery. Under *Panduit*, proof of an acceptable substitute would bar a lost profit recovery. Yet under the market share approach, the existence of substitutes would cut into State's award only to the extent of the substitutes' market share. Despite the possibility of recovering lost profits for all the sales under a *Panduit* test, State settled for lost profits due to lost sales allocated to its market share. The test that resulted was a hybrid of the *Panduit* test. State established the groundwork for its lost profits recovery by introducing proof under the *Panduit* framework.[89] State then modified the "acceptable substitute" factor by proving consumer behavior through the use of market share statistics.[90] As a result, State argued that it should recover lost profits on its pro rata share of Mor-Flo's infringing sales.[91]

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83. *Mor-Flo Indus.*, 8 U.S.P.Q.2d (BNA) at 1979.
84. *See supra* text accompanying notes 45-50.
85. Telephone Interview with State's counsel, Mr. Ryan (September 1990).
86. *Id.*
87. *Id.*
88. *Id.*
89. *Mor-Flo Indus.*, 8 U.S.P.Q.2d (BNA) at 1979-80.
90. *Id.* at 1980.
91. *Id.*

Deferring to the discretion of the trial court on appeal, the Federal Circuit upheld the end result of State's argument. The Federal Circuit noted it would not overturn the damage award unless the challenger could show that the district court abused its discretion.[92] To have abused its discretion, the district court must have based the damage award on clearly erroneous factual findings, legal error, or a manifest error of judgment. Under these guidelines, the court gave considerable deference to the fact-finding of the lower court.

In light of this standard, the court set forth the legal requirements for obtaining lost profits. The court analyzed the lower court's lost profit award in terms of the *Panduit* test. The court, however, immediately encountered a conflict between the *Panduit* standard and the market share approach. The key conflict was the differing approaches to the relevant market under *Panduit* as opposed to the market share analysis. Regardless of this conflict, the court had to determine the propriety of the lower court's market share allocation of lost sales.

The court prefaced its discussion of market share by acknowledging the difficulty of proving hypothetical consumer behavior in establishing lost sales. As the number of identifiable competitors increases, predicting sales results in the absence of the infringing sales becomes more difficult. The *Mor-Flo* court recognized that while a lost sale may be readily inferred in the two-supplier market, the same is not true in a multi-competitor market.[93] Considering the *Panduit* notion of product substitutes, the court suggested that State might have ignored the substitutes because of their alleged inferiority.[94] However, the *Mor-Flo* court chose not to follow a rigid application of *Panduit*. Rather, the *Mor-Flo* court deferred to the district court's allocation of lost sales in accordance with the competitors' market shares.[95]

The *Mor-Flo* court's application of the market share measure shifted the question from one of consumer acceptability to one of established market share. In approving the use of the market share test, the court noted the lower court had effectively made the requirement that there be no acceptable substitutes a "neutral factor."[96] Instead of arguing that the alternatives were inferior, State in effect credited each of its competitors with their market share. The court noted State would be entitled to not only its market share, but also the market share of other "likely infring-

92. *Mor-Flo Indus.*, 883 F.2d at 1577.

93. *Id.* at 1578.

94. The product substitutes may have been inferior because they contained fiberglass insulation as opposed to the allegedly preferable foam insulation. *Id.* at 1576.

95. *Id.* at 1580.

96. *Id.* at 1578.

ers"[97] as well.[98] In suggesting that State be credited with a higher market share, the *Mor-Flo* court was really applying the product substitute test of *Panduit*.[99] Although the *Panduit* rationale provided a method for measuring the propriety of the lower court's award, the *Mor-Flo* court did recognize the market share approach as a valid method to allocate lost sales in the context of a multi-competitor market.

Finally, the court concluded that the market share test, combined with the remaining *Panduit* factors,[100] was sufficient to allow the recovery provided for by the lower court's decision.[101] The court upheld the lower court's finding that State had proven the demand for its patented water heater,[102] the capacity to meet that demand,[103] and the amount of profit it would have made.[104] In short, the court concluded that State had adequately shown it would have sold its market share of water heaters in the absence of *Mor-Flo's* infringing sales. Using the *Panduit* factors as an analytical tool to measure the validity of the findings, the court reaffirmed the partial award of lost profits for State's market share. Thus, State recovered lost profits on 40% of Mor-Flo's sales. On the balance of the sales, the court upheld the award of a reasonable royalty.[105]

In summary, the *Mor-Flo* court affirmed the application of the market share test, but the test was only a substitute factor for one prong of the *Panduit* framework. The court did not test the independent validity of the market share analysis. Rather, the court endorsed the test because it fell within the limits generally drawn by the traditional lost profits framework. As a result, the status of the market share approach as a

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97. The court cited the lower court's finding that other competitors, not parties in this action, also likely infringed State's patent. *Id.*

98. The court even went so far as to state that the defendant had received a windfall because of the likelihood that other infringers existed. State could conceivably have received its market share as well as other likely infringers' shares. These shares would then have been assessed against Mor-Flo's sales, and Mor-Flo would be obliged to compensate State for the other infringer's shares as well. *Id.*

99. The court was really suggesting that to the extent the competitors had either infringing or unacceptable products, they could be ignored in a lost sales analysis.

100. The market share test was a substitute for the lack of acceptable, non-infringing alternatives prong. The remaining requirements of *Panduit* are: (1) proof of demand, (2) manufacturing and marketing capability to meet that demand, and (3) the amount of profit.

101. *Mor-Flo Indus.*, 883 F.2d at 1580.

102. *Id.* at 1578-79.

103. *Id.* at 1579.

104. *Id.* at 1579-80.

105. A floor for the damage recovery is no less than a reasonable royalty. *Seattle Box Co.*, 756 F.2d at 1581. The patentee may split damages: lost profits to the extent they can be shown, and a reasonable royalty for the balance. *See TWM Mfg. Co.*, 789 F.2d at 898.

viable lost profits test independent from the *Panduit* test is unclear. The opinion seemed to imply that the market share test was consistent with *Panduit*, but in an economic sense, the tests are quite different.

B. The Market Share Analysis v. The Traditional Panduit *Test*

That the *Mor-Flo* decision combined the *Panduit* framework with the market share analysis is surprising when one considers the approach to the "relevant market" in each test. Under *Panduit*, the relevant market is limited to "acceptable substitutes." Consequently, the patented innovation creates a unique demand for the patented product that gives it greater economic value over the alternatives. Under the market share analysis, the market includes any product that competes with the patented product whether it is "acceptable" or not. Proven sales statistics are probative of the patented product's relative value over the alternatives. Thus, while the *Panduit* approach defines the market very narrowly, the market share approach recognizes a broader range of market alternatives. Acknowledging the existence of alternatives, the market share approach then values the patent according to its market share.[106] In short, the tests have a fundamentally different approach toward assessing the relative value of a patented product over the market alternatives.

Under the traditional *Panduit* test, the patented advantages are the primary indicator of consumer behavior. As noted above, courts have defined "acceptable" very narrowly: only products with the distinct patent advantages are considered "acceptable." Thus, in proving that "acceptable substitutes" do not exist, the patentee proves the worth of its patent by proving the inferiority of the alternatives. If the alternatives are inferior, the inference arises that the infringer's consumer would opt for a product having the patented advantage. It then follows that the patentholder has lost a sale to the infringer. Consequently, higher damages are warranted because the patent has created a unique demand that would have enabled the patentholder to reap greater profits.[107] However, to focus solely on the product's features to determine consumer

106. The amount of the damage award should correspond to the economic value of the patent. A greater market share entitles the patentee to a greater allocation of the infringing sales. As a result, the amount of the award increases with the market share.

107. In seeking to recover its lost profits, the patent holder is attempting to establish the economic value of its invention. The willingness of consumers to switch to a competing substitute determines in part the relative economic value of the invention relative to the substitute. *See* Culbertson & Weinstein, *supra* note 75, at 749-51.

preference oversimplifies the task of predicting consumer behavior.[108]

The traditional view of the relevant market, then, is that consumers choose products mainly because of their unique advantages. Additionally, this view assumes that consumers are aware of the unique patented advantage in relation to the other alternatives. In order to accurately predict consumer preference, one must consider other factors influencing the market as well.[109] However, one must remember the relevant group of consumers is those who have purchased the infringing product. Perhaps it is more likely that they chose the infringing product for its unique feature because they have implicitly favored it over the other market options in the first place. To focus on mere product features, however, oversimplifies consumer behavior.

On the other hand, the market share analysis employs past market behavior to establish likely consumer behavior. In this case, the question is not narrowed to an inquiry of acceptability; rather, the market share

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108. While a product's unique features affect the degree to which consumers will select the patented product over the alternatives, there are other factors that should be considered in attempting to predict lost sales with accuracy. To illustrate the need for a more thorough economic analysis of the market for the patented item, an analogy to the market approach in antitrust law is appropriate. A pair of commentators have suggested that the same methods for calculating lost profits in antitrust cases could be applied to lost profits analyses in patent cases. The economic analysis employed to establish lost profits in the context of mergers provides a useful method for identifying economic substitutes. *See* Culbertson & Weinstein, *supra* note 75, at 750-51. Culbertson and Weinstein suggest that courts adopt the Department of Justice's Merger Guidelines as a model to assess the value of a patented product relative to non-infringing alternatives.

Widely accepted by economists and courts, the Merger Guidelines present "an economically consistent, practical method for identifying substitute products." *Id.* at 750. In defining the product market, the Guidelines give weight to buyers' perceptions, similarities or differences in price movements among different sets of products over a period of years, similarities or differences in product characteristics, and evidence of sellers' perceptions. Department of Justice Merger Guidelines, 4 Trade Reg. Rep. (CCH) ¶ 13, 103 (June 14, 1984). Thus, the "acceptability" analysis under *Panduit* represents only one factor used to define the market. Once the market is defined, evidence of market share indicates the economic value of the patent. Consequently, the market share approach takes the analysis a step further. Given a defined market, the market share determines the market power of the product, and thus, its economic value relative to the other substitutes.

109. As noted above, product characteristics are only one factor, undoubtedly an essential factor, in defining the relevant market. *See supra* note 108. For a comprehensive background in defining markets and market power see TERRY CALVANI & JOHN SIEGFRIED, ECONOMIC ANALYSIS AND ANTITRUST LAW 77-119 (1979); ROGER BLAIR & DAVID KASERMAN, ANTITRUST ECONOMICS 106-16 (1985). *See generally* William Fellner, *The Adaptability and Lasting Significance of the Chamberlinian Contribution*, in MONOPOLISTIC COMPETITION THEORY: STUDIES IN IMPACT 3-5 (Robert E. Kuenne ed., 1967).

analysis involves a consideration of numerous market influences.[110] Market share statistics illustrate likely consumer behavior over a period of time. The market share does not indicate only consumer preferences due to unique advantages, but it also indicates the intangible elements of buyer and seller preferences as well. The market share test does not assume that consumers are aware of product advantages and that consumers are influenced by these advantages. Yet, the market share test still inherently takes these influences into account when it infers consumer behavior from the product's track record. Thus, the market share approach provides a more realistic prediction of consumer behavior because it accounts for more market influences than the traditional framework.

These distinctions between the traditional *Panduit* approach and the market share approach reduce the likelihood that a decision combining the tests can be reconciled because of the variance in their analyses of product substitutes. However, the *Mor-Flo* court did not attempt to reconcile the traditional market view with the broader view of the market under the market share analysis. The court actually substituted the market share analysis for the more narrow inquiry of the substitute's acceptability. In so doing, the court circumvented the need to consider the "acceptability" of the alternatives. In effect, the market share approach supplanted the "acceptability" test.

Although the alternative's acceptability was neutralized as a factor in determining the validity of the lower court's damage award,[111] it still played an important role in the remaining *Panduit* factors.[112] For instance, the level of acceptability played a large role in establishing demand for the patented product.[113] Obviously, if the patented product satisfied a long-time consumer desire, there would be considerable demand for the product. Likewise, that product would be more acceptable than its market alternatives. In *Mor-Flo*, the method of using foam

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110. Again, the antitrust analogy is apt because the underlying issue is determining a product's economic value relative to its product substitutes. Under the Merger Guidelines, market share statistics are used to assess the market power of a particular firm. Analogously, in the patent context in which substitutes exist, the market share is used to determine the economic value of the patent relative to the substitutes. The greater the market share, the stronger the economic value of the patent.

111. *Mor-Flo Indus.*, 883 F.2d at 1578-79.

112. The issue of "acceptable" substitutes is an essential factor in determining the economic value of the patent; therefore, courts should not completely ignore it. Returning once more to the antitrust analogy, the produet features help define the relevant market, the first step in defining market power of a firm. However, to predict lost sales, the *Panduit* rationale may define the market too narrowly, and thus, provide an unrealistic damage award. *See supra* note 108.

113. *Mor-Flo Indus.*, 883 F.2d at 1578-79.

insulation on the water heater caused the lower court to find the patented product more "acceptable" than its alternatives.[114]

Additionally, the product's advantages can also enhance the profit margin that the patentholder might maintain on sales of its product.[115] Taking the traditional notion, one may assume that the increased demand is directly attributable to the consumer's demand for the unique patented advantage. Given this, the patentholder can command a higher profit margin in accordance with this higher demand. In *Mor-Flo*, the court attributed the sales of the water heater to the unique patented foam insulation. Thus, State was able to obtain lost profits based on the entire market value of the water heater.[116] In short, the application of the market share test did not eliminate the inquiry into the alternative's acceptability because the question of "acceptability" is inexorably tied to the demand and amount-of-profits prongs of the *Panduit* framework.[117]

In summary, the court minimized the apparent clash between the market considerations of the market share test and the *Panduit* test merely by swapping the market share analysis for one prong of the *Panduit* framework. The notion that the patented product has unique advantages which create a consumer preference still came through in the remaining *Panduit* factors: the product demand and the amount of lost profits. Therefore, what once appeared to be a significant inconsistency was in actuality a sign of: (1) the importance of the product substitute analysis of *Panduit*, and (2) the court's flexibility in allowing the patentholder to fashion its remedy according to an economic analysis within the limits of the *Panduit* test.

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114. *Id.*

115. The higher the patentee can price its good without losing customers, the more the patented advantage is worth to the patentee. *See generally* FELLNER, *supra* note 109, at 3-5. The acceptability of the substitutes correlates directly to the monopoly profits the patent holder can reap on its patented product.

116. The "entire market value" rule is beyond the scope of this article. Essentially, it means that lost profits are computed in relation to the price of the entire product containing the patented feature as opposed to merely the profit allocated to the price of the patented part. This rule provides for much larger recoveries than even the cost of the patented part. Underlying this rule is the assumption that the consumer purchased the product mainly for the patented feature. *See* Skenyon & Porcelli, *supra* note 11, at 783-85; *See also* Conley, *supra* note 21, at 367.

117. *See supra* text accompanying notes 45-50. The "acceptability" test of *Panduit* is one very important factor in determining consumer preference. The injection of the market share test did not undermine this critical factor. Rather, the "acceptability" test must still be applied to prove demand for the product and to enhance the amount of lost profits. In essence, under this version of the market share approach, "acceptability" shifts from being the only factor to being one of the major factors in recovering lost profits.

C. The Market Share Approach: The Policies Driving the Court

The endorsement of the market share approach reflects the underlying policies currently driving the decisions of the Federal Circuit. First, the court departed from a strict application of the *Panduit* framework and shifted toward a stronger emphasis on economic analyses. Second, the court's willingness to accept the market share analysis is due to the fact that this analysis comports with the underlying theory of compensation. To the extent the court wants to discourage infringement, it will be more flexible towards a lost profits claim. In this manner, the court can deftly stay within "compensation" limits while achieving its policy goal. Finally, the court may favor the market share analysis because it injects more certainty into a very complex area of the law.

1. TREND TOWARD AN ECONOMIC ANALYSIS

The acceptance of the market share analysis illustrates the court's trend toward solving damages questions through a purely economic analysis.[118] Above, this Note contrasted the market share analysis with the current application of the *Panduit* framework.[119] That analysis illustrates the court's struggle in attempting to ascertain the economic value of the patent. Indeed, even the *Panduit* test as currently applied attempts to define the market value of the patent by examining the relative merits of the patented features over the product substitutes. However, in the *Mor-Flo* decision, the court took another step toward a purely economic approach. The market share approach is closer to an "economic" model because this approach considers not only "acceptability" but also inherently considers other influences[120] through the use of proven sales statistics.

This step toward a purely economic approach was gradual, however. Taking a broader view, other decisions might tend to cloud the significance of this trend. First, the Federal Circuit has noted the *Panduit* test is not the exclusive lost profits test.[121] Second, the current flexible interpretation of the *Panduit* framework already focuses on economic factors by trying to grapple with the definition of "acceptable" substi-

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118. For a discussion of Federal Circuit lost profits cases that depart from the *Panduit* framework, see *supra* text accompanying notes 72-74.

119. *See supra* part III B.

120. *See supra* note 108.

121. *See Bio-Rad Lab.*, 739 F.2d at 604.

tutes.[122] Finally, the court merely incorporated the market share test into the *Panduit* framework.[123] Thus, evidence of economic analyses of the market for the patented products is prevalent. Perhaps what is essential to the patentee is to recognize that a strong economic argument may enhance the chances of a lost profits recovery.

2. THE COMPENSATION THEORY OF DAMAGES

According to the Federal Circuit, the *Mor-Flo* decision comported with the purpose of patent damage law: to compensate the patentee for its financial loss. The market share theory entitles the patentee to recover lost profits on pro rata basis in accord with its market share. This recovery in theory is limited to the amount of profit the patentee would have made in the absence of infringement.[124] The *Mor-Flo* court purportedly endorsed the market share approach because the damage award was well within the compensation limit.[125] However, the message might be subtler than the court's rhetoric.

The message emanating from the court's willingness to award lost profits may be a subtle hint to future infringers. When the court recognizes a new theory that enhances the patentee's chances of recovering a larger award, it may be attempting to discourage infringement. To the extent the award goes beyond accepted lost profits standards, the court is manipulating the compensation limit to meet its policy goal. It is important to note that "compensation" is merely a function of the economic value of the patent.[126] Thus, a policy goal driving the court might be to protect innovation by discouraging infringement. By opening a new avenue to lost profit recovery, one could argue the court is surpassing the compensation limit. In these cases, large awards in the

122. By focusing on the "acceptable" substitute factor, the courts have already stated that unique patented advantages principally control consumer preferenees. As noted above, the products relative advantages do affect the ultimatc demand and corresponding profit for thc product. This Note has attempted to point out that from an economic perspective, one cannot rely on a product's features to predict consumer preference. Thus, a purely economic approach would require the court to consider all market influences. The test that would most accurately measure these influences would be the most accurate market predictor.

123. *Mor-Flo Indus.*, 883 F.2d at 1578.

124. The *Mor-Flo* court prefaced its discussion of the market share with a reference to the componsation limit. *Id.* at 1577.

125. The *Mor-Flo* court affirmed the lower court's damage award. In dicta, the court suggested that State Industries could have obtained more through more solid proof of the *Panduit* elements. *Id.* at 1578.

126. "Compensation" may be construed as limited to a plaintiff's recovery. However, bcneath the broad theory, the court is making a determination of "acceptability" or market share that actually dictates the value of the patented product relative to the other competitors.

form of lost profits act to encourage competitors to pay up front for the right to use the patent. Allowing higher awards in the form of lost profits also encourages investment in development of advanced products.

However laudable this goal may be, the market share analysis involves a concession that product substitutes do exist.[127] Thus, the recovery is not an expansion beyond the recovery limits of *Panduit*. To clarify, the *Mor-Flo* decision provides another possible method for achieving a partial lost profit award; it does not extend the amount of that award beyond the maximum limits of the *Panduit* framework.

3. THE MARKET SHARE APPROACH INJECTS CERTAINTY INTO PATENT DAMAGE AWARDS

Finally, the market share test enhances the certainty with which the court determines the amount of pecuniary loss. Proven sales statistics are more certain than the court's assessment of a product's relative advantages over the alternatives. Often the products involve technologically complex features that test the understanding of even the most experienced judge. In assessing the patent's value, if the judge focuses on what is considered to be a unique advantage, the chances of reaching an award that reflects the patent's market value are diminished. On the other hand, if the judge focuses on the proven market behavior inherent in the market share test, the award will very likely be more certain and more readily attained.

Because of the certainty with which the market share approach predicts lost sales, the court is more likely to favor the new approach. In *Mor-Flo*, the court recognized that ascertaining damages was not an exact science.[128] Indeed, the standard of proof is a "reasonable probability."[129] However, when State presented well-documented evidence of its past sales and also named its competitors, State provided solid, objective evidence of its market share. The court did not have to enter the mind of the consumer to ascertain the level of "acceptability." Thus, in shifting

127. Implicit in the market share approach is the concession that product substitutes do exist. If these substitutes are "unacceptable," the patentee could recover lost profits for all of the infringer's sales, not just its pro rata share. Thus, the market share approach presents an alternative method to obtain a *partial* lost profits award when proof of "unacceptability" is too difficult. In the past, the patentee would have been forced to settle for a "reasonable royalty" in this situation. Generally, this situation would arise when many successful producers compete in the national market.

128. *Mor-Flo Indus.*, 883 F.2d at 1577 (quoting Paper Converting Mach. Co. v. Magna-Graphics Corp., 745 F.2d 11, 21 (Fed. Cir. 1984)) ("But '[t]he patent holder does not need to negate *all* pessibilities that a purehaser might have bought a different product or might have foregone the purchase altogether.'").

129. *Mor-Flo Indus.*, 883 F.2d at 1577.

toward a more objective standard, State Industries comported with the court's desire to achieve a more certain result.

In summary, the market share test provides a logical solution to a complex economic question. Perhaps a court can better answer an economic question by examining true economic indicators. The court may reach a certain result quickly without delving into one judge's subjective concept of "acceptability." If the underlying purpose of the court is to discourage infringement and encourage investment, the court may achieve this end by focusing on the market's assessment of the product's value. If no consumer preference exists for the patented product, then the patent is not very useful nor unique anyway. In short, the market is the truest indicator of a product's worth. The award of lost profits should reflect that worth. Thus, the Federal Circuit's endorsement of the market share approach was sound.

D. The Market Share Analysis: A Look Ahead

The *Mor-Flo* decision represents a significant practical implication for future litigants. By providing a method for recovering lost profits in a multi-competitor market, the market share method has enhanced the chances that future patentholders can recover lost profits. The existence of numerous product alternatives had created an impediment to establishing lost profits under the *Panduit* test. In these situations a lengthy dispute over "acceptability" often ensued. If the patentholder could not establish that the patented advantage created a special demand for its product, then the patentholder would have had to settle for a reasonable royalty rate.

Now the patentholder has another option. Without diminishing the force of its *Panduit* argument, the patentee can argue for lost profits apportioned according to its market share. First, the patentee may establish the *Panduit* framework. Then, as an alternative, the patentee can consistently argue that it would have at least sold its market share had the infringer not captured its sales. The *Mor-Flo* opinion expressly endorsed the market share theory as a corollary to the *Panduit* method.[130] Thus, the patent holder need not fear that presenting both theories concurrently would jeopardize the maximization of recovery under *Panduit*. Instead, the use of the market share test bolsters the chances the patentee will recover at least a portion of its lost profits.

A patentee must be cautious in asserting the market share theory, however. The *Mor-Flo* decision did not independently validate the market share test, but rather, accepted a version of the market share analysis combined with the *Panduit* framework. The market share test, standing

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130. *Id.* at 1578-80.

alone, might not enable the patentee to recover lost profits. Whether a patentee could be successful in obtaining lost profits while only introducing market share statistics is a question left open by *Mor-Flo*. It is probably not crucial that the patentee cloak a market share test under the guise of *Panduit*.[131] What is relevant is that the patentee establish a continued demand for its product, a clear indication of its profit margin, and finally the manufacturing capacity at least to make its market share of sales.[132]

Merely relying on sales statistics may prove fatal to a lost profits claim. Although the Federal Circuit does not exclusively endorse the *Panduit* test, successful lost profit claims nevertheless require a clear sbowing of the patentee's profit and demand for its product.[133]

Additionally, in *Mor-Flo*, the court followed a *Panduit*-like analysis in verifying the lower court's award. In multi-competitor markets to which the market share method applies, product demand is not easily inferred. The plurality of alternatives clouds the issue of consumer behavior. Thus, introducing evidence of the remaining *Panduit* factors is essential.

IV. CONCLUSION

In conclusion, the Federal Circuit's decision in *Mor-Flo* decision represents the endorsement of the market share method for apportioning lost profits in a patent infringement suit. The decision enables the patentee to employ the market share test in multi-competitor market cases where proof of lost profits becomes more speculative. The decision also represents the Federal Circuit's flexibility accepting variations in the traditional lost profits framework.

The underpinnings of *Panduit* still remain important. The patentee should attempt to establish *Panduit*-like factors to the greatest extent possible. The courts tend to value a patented product by the relative advantages it has over the market alternatives. To be successful in securing a lost profit recovery, the patentee must establish the product

131. The terminology is not relevant, because the Federal Circuit has recognized that the *Panduit* test is not the exclusive lost profits test. Other tests may be used as long as the patentholder proves the lost sale and its causal connection to the infringing activity. *See infra* note 128. Essentially, the lost profits test is a variation of the *Panduit* test, each having the same underlying policy of compensation. Of course, the key usefulness of *Panduit* is that it is widely cited in Federal Circuit opinions. This wide recognition at least assures the litigant that the court will not reject the underlying legal analysis, even though it may reject the arguments supporting that analysis.

132. *See* Conley, *supra* note 21, at 356-71.

133. *See Bio-Rad Lab.*, 739 F.2d at 604. In *Bio-Rad*, the Federal Circuit Court endorsed a variation of the *Panduit* test and noted that *Panduit* was not the exclusive lost profits test. The plaintiff in *Bio-Rad* proved demand directly by conducting a consumer survey, showing 70-90% of the interviewees would have purchased the patentee's product.

demand and the amount of lost profit with the product's relative advantages in mind.

Standing on its own, the market share method is a certain and sound economic test in predicting consumer behavior. Because consumer behavior is the central question in the lost profits claim, the best indicator of market behavior may be the best test. The market share test incorporates all of the market factors that make up the complex consumer market. In addition, the market share analysis does not involve subjective speculation. The patentee's quest is to show its losses with a reasonable probability. Now the Federal Circuit has recognized that this test may provide that "reasonable probability" level of certainty. In short, the market share method provides an additional ground for recovery of lost profits. Because of the sound economic underpinnings of this method, it will be very useful to future infringement litigants.