ARTICLE

BACK TO BEDROCK: CONSTITUTIONAL UNDERPINNINGS SET 'NEW' STANDARDS FOR PATENT INFRINGEMENT CAUSATION

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I. INTRODUCTION

Causation in patent infringement currently rests on shifting sands. Courts focus on, by turns, "but for," "reasonable foreseeability," and creative fact interpretation. The Federal Circuit has not returned to the bedrock of Constitutional intent when assessing cause and awarding damages.

The current "ad hoc" approach to determining causation leaves in its wake confusion, at the very least, and a continual reinvention of the wheel of the law of causation. This lack of stability and consistency is costly both in economic

and human terms. Upon what basis does an attorney build a credible case for causation, and upon what decision does the court base its determination? These murky waters become cloudier with each successive stirring of the sediment.

However, there is a simple solution, albeit initially time consuming. If the Federal Circuit got back to basics, current confusion and "ad hoc" decisions could be readily avoided. Firm new causation standards should be adopted. This original, yet logical, approach breaks new ground for courts and attorneys faced with knotty causation issues.

From *Aro* to *Panduit*, *Rite-Hite* and *Grain Processing*, much has been said about causation and limits on damages recoverable for patent infringement.[1] While a robust body of case law has developed regarding situation-dependent "but for" causation in infringement cases, policy-based proximate causation issues have been largely ignored. Using sometimes artificial "but for" analysis, courts have set many limits on the scope of an infringer's causal liability. Similarly, the foreseeability test for proximate cause adopted by the Federal Circuit in *Rite-Hite* provides some guidance.[2]

Yet, for all the case law hoopla, key questions remain. It seems both imperative and prudent to review the original Constitutional purpose and statutory intent underlying the granting of patents and the right to recover damages for infringement. This article suggests the Federal Circuit could improve patent law by expressly abandoning the tort-based fictions of "foreseeability" and "proximate cause." These phrases lack force as explanations of the outcomes of many cases. Some injuries – such as the loss of profits on sales of dock levelers in *Rite Hite* – were utterly foreseeable and causally connected in a very direct way to the infringing acts of defendant, and yet held non-compensable. It is time for the Federal Circuit to admit that it is trying to assess what Congress would have done if these particular kinds of harm had been considered; or, put another way, to define the types of injuries compensable under the statute.

The law of causation in patent infringement cases does not exist in a legal vacuum. The primary frame of reference for understanding patent law causation is tort law. In addition to the generally fact-intensive inquiry of "but

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[1] Four cases critical to the development of the law of causation in patent infringement cases are the Supreme Court's opinion in Aro Mfg. Co. v. Convertible Top Replacement Co., 377 U.S. 476 (1964), the Sixth Circuit's seminal opinion on "but for" causation in Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152 (6th Cir. 1978), and the Federal Circuit's more recent opinions in Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 867 (1995), adopting reasonable foreseeability as the standard for legal causation, and Grain Processing Corp. v. American Maize-Products Co., 185 F.3d 1341 (Fed. Cir. 1999), discussing "but for" causation and economic proof in the "but for" world.

[2] Rite-Hite Corp. v. Kelley Co., Inc., 56 F.3d 1538, 1546 (Fed. Cir. 1995) ("If a particular injury was or should have been reasonably foreseeable by an infringing competitor in the relevant market, broadly defined, that injury is generally compensable absent a persuasive reason to the contrary.").

for" causation, the legal idea of proximate causation is tempered by concepts of legal duty and policy.[3] In tort law, these issues may result in *ad hoc* determinations of legally recognizable types of compensable damages and have generated seemingly endless debate and confusion.[4]

But, confusion and a lack of predictability need not stymie the analysis of causation issues in patent infringement cases. Unlike tort's common law antecedents, patent infringement law is predicated on a clear and oft-stated statutory purpose based on economic incentives, legislative history, and abundant case law. This ample foundation lends clarity and narrows the focus to debate causation, duty and policy considerations.

The analytical and organizational approach of this article is in five parts. First, it places the case law analysis of causation in context by discussing the interplay between patent infringement cases and tort law causation issues. Second, it suggests an approach to analyzing causation in infringement cases using an antitrust model adopted by the Supreme Court. Third, it reviews rules of causation established by case law in patent infringement cases. The history of causation in infringement cases, as well as existing limits on causation-in-fact and proximate cause are discussed, and key unresolved issues are identified. Fourth, applying the suggested analysis, the author steps back to analyze causation in light of policy set forth by the Constitution, the enabling statute, and the legislative history underlying patent infringement damages. Finally, additional standards are suggested by a back-to-the-basics approach to determining causation-in-fact and proximate causation in patent infringement cases.[5]

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[3] After suggesting the proximate cause limitation is associated with causation-in-fact to some extent, Professor Keeton goes on to say, "Often, to a greater extent, however, the legal limitation on the scope of liability is associated with policy – with our more or less inadequately expressed ideas of what justice demands, or of what is administratively possible and convenient." W. PAGE KEETON, PROSSER AND KEETON ON THE LAW OF TORTS § 41, at 264 (5th ed. 1984); Richard W. Wright, *Causation, Responsibility, Risk, Probability, Naked Statistics, and Proof: Pruning the Bramble Bush by Clarifying the Concepts*, 73 IOWA L. REV. 1001, 1011 (1988) ("Thus, as should be clear to anyone who goes beyond the terminology to examine the actual reasoning employed in the proximate cause inquiry, that inquiry is not a causal inquiry but rather is a policy inquiry that deals with reasons for absolving a defendant from liability even though the tortious aspect of her conduct was a cause of the injury.").

[4] KEETON, *supra* note 3, § 41, at 263 ("There is perhaps nothing in the entire field of law which has called forth more disagreement, or upon which the opinions are in such a welter of confusion."); LEON GREEN, RATIONALE OF PROXIMATE CAUSE 136 (1927) ("But the truth is that the myth of 'proximate cause' finds its only rivals in those of theological origin."); FOWLER V. HARPER, ET AL., THE LAW OF TORTS § 20.1, at 86, n.4 (1986) (commenting on the confusion generated by the concept of proximate or legal causation and providing a lengthy list of literature on the subject); Wright, *supra* note 3, at 1001 *et. seq.* (an excellent article discussing the lasting confusion surrounding the concept of proximate cause).

[5] While this article attempts a broad overview and understanding of current issues relating to causation in infringement cases (both causation-in-fact and proximate causation), it does not attempt to cover the related but separate issue of standing to bring suit. *See* 35

A. *Gaining Perspective — A Primer On Tort Law Causation: Infringement as a Tort*

Suits for patent infringement are actually tort suits. As the Supreme Court has held, "An action for damages by reason of infringement of a patent is one sounding in tort."[6] The Federal Circuit also has treated patent infringement as a tort.[7] In analyzing a patentee's right to recover damages, the Supreme Court equated an infringer to a "tortfeasor."[8] As a consequence, the Federal Circuit and other courts often review issues of causation in patent infringement cases applying the language and basic approach of tort law.[9]

B. *The "Causation-in-Fact"/"Proximate Cause" Dichotomy*

Liability in tort requires a reasonable connection between defendant's act and plaintiff's injury.[10] An actor is only accountable for the harm he actually

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U.S.C. § 281 (2000) ("A patentee shall have remedy by civil action for infringement of his patent") and 35 U.S.C. § 100 (2000) ("When used in this title unless the context otherwise indicates . . . (d) The word 'patentee' includes not only the patentee to whom the patent was issued but also the successors in title to the patentee"); *See also Rite-Hite Corp.*, 56 F.3d at 1551-54, (where the Federal Circuit undertakes a thorough analysis of the issue of standing to sue for infringement).

[6] Schillinger v. U.S., 155 U.S. 163, 169 (1894); Farnham v. U.S., 240 U.S. 527, 540 (1916); Turton v. U.S., 212 F.2d 354, 356 (6th Cir. 1954) ("An action for damages by reason of infringement of a patent is one sounding in tort.") (citing *Schillinger*, 155 U.S. at 169).

[7] *See Rite-Hite Corp.*, 56 F.3d at 1559 (where, in discussing infringement damages, Judge Newman, in her dissent, states, "The purpose of tort damages is to place the wronged party, as closely as possible, in the financial position that it would have occupied but for the wrong."); Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211 (Fed. Cir. 1995), *cert. denied*, 520 U.S. 1115 (1995) (characterizing infringement as a continuing tort).

[8] Aro Mfg. Co. v. Convertible Top Replacement Co., 377 U.S. 476, 512 (1964).

[9] Compare tort law rules of causation in fact *infra* at text accompanying notes 21-29 *and* proximate causation *infra* at text accompanying notes 39-58 with related rules used in infringement cases, *infra* at text accompanying notes 120-129 (causation-in-fact) and notes 249 - 265 (proximate cause). In any event, rules of causation in contract law, the only readily apparent alternate method of analysis, are parallel to tort. *See* 5 ARTHUR LINTON CORBIN, CORBIN ON CONTRACTS §992, at 5 (1964). Compare Corbin's statement that "One who commits a breach of contract must make compensation therefor to the injured party. In determining the amount of this compensation as the 'damages' to be awarded, the aim in view is to put the injured party in as good a position as he would have has if performance had been rendered as promised" with tort law rules *infra* at text accompanying notes 21 - 29.

[10] *See* HARPER, ET AL., *supra* note 4, § 20.1, at 85 ("Negligence has traditionally been considered not to be a ground of liability unless it causes injury or damage to some interest that the law recognizes and protects. Moreover, it has traditionally not made a defendant liable for any injury or damage that is not a consequence of the negligence. The

causes another. Yet, proof of causation-in-fact is not the sole indicium of liability.[11] Courts deciding tort cases have long faced questions of not only "what happened" (causation-in-fact), but also "what the law ought to do about it" (proximate cause).[12]

Regarding causation-in-fact, one noted commentator has said, "In a philosophical sense, the consequences of an event go forward to eternity, and the causes of an event go back to the dawn of human events, and beyond. But any attempt to impose responsibility upon such a basis would result in infinite liability for all wrongful acts and would 'set society on edge and fill the courts

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establishment of the requisite causal connection is therefore an element of plaintiff's cause of action for negligence, to be pleaded and proved by him."); KEETON, *supra* note 3, § 41 at 263 ("An essential element of the plaintiff's cause of action for negligence, or for that matter any other tort, is that there be some reasonable connection between the act or omission of the defendant and the damage which the plaintiff has suffered."); Wex. S. Malone, *Ruminations on Cause-In-Fact*, 9 STAN. L. REV. 60, 65 (1956) ("[A] defendant should not be charged with responsibility for a plaintiff's harm unless we can conclude with some degree of assurance that the harm could not have occurred in the absence of defendant's misconduct.")

[11] *See* HARPER ET AL., *supra* note 4, § 20.1, at 85-86 ("Obviously the legal test includes a requirement that the wrongful conduct must be a *cause in fact* of the harm; but if this stood alone the scope of liability would be vast indeed for 'the causes of causes [are] infinite' – 'the fatal trespass done by Eve was cause of all our woe.'") (emphasis by the author, no citation noted for quotation); KEETON, *supra* note 3, § 41, at 266 ("As a rule regarding legal responsibility, at most this [causation-in-fact] must be a rule of exclusion: if the event would not have occurred 'but for' the defendant's negligence, it still does not follow that there is liability, since other considerations remain to be discussed and may prevent liability."); Fowler V. Harper, *Liability Without Fault and Proximate Cause*, 30 MICH. L. REV. 1001, 1001 (1932) ("As a logical matter there seem to be two possible schemes of legal liability. The first one may be stated as follows: One may be liable for *all* consequences of *all* of his acts. While it has been suggested that this was the principle of the mediaeval law, it has been pointed out by Professor Winfield that such was never literally the case. Under this principle, as he has shown, everyone would be in jail, no one could legally keep anyone else in jail, and no one could legally build a jail in the first place.") (citing Percy H. Winfield, *The Myth of Absolute Liability*, 42 L. Q. REV. 37 (1926)) (emphasis by the author); Fleming James, Jr. & Roger F. Perry, *Legal Cause*, 60 YALE L.J. 761, 783 (1951) ("We have seen how some reasonable showing of cause in fact is always a requisite of liability. But such showing may not suffice for liability. There may still be problems under the fault system. . . .").

[12] *See* Malone, *supra* note 10, at 60 ("At the close of the last century courts used the term 'cause' indiscriminately to express either their conclusion as to 'what happened' or as a means of explaining 'what the law ought to do about it.'"); Wright, *supra* note 3, at 1011 ("[T]ort liability is based on three distinct but interconnected inquiries: the tortious-conduct, actual-causation, and proximate-cause inquiries. . . Only the second inquiry is concerned with whether the defendant's tortious conduct was a *cause* of (contributed to) the injury. the third inquiry asks, *given* that the defendant's tortious conduct was a cause of the injury, whether that tortious cause should be treated as a *proximate* (responsible) cause.") (emphasis by the author).

with endless litigation.'"[13] Thus, while causation-in-fact is a necessary prerequisite to liability, other factors come into play before liability is assessed.[14] There must be some boundary, some limit to liability.[15] There also must be some determination that the law is justified in imposing liability on the actor as a consequence of his actions.[16]

Over time, tort law has recognized two separate notions — causation-in-fact and "proximate" or "legal" cause.[17] Unfortunately, significant confusion exists regarding the meaning and overlap of these two terms.[18] In essence, causation-

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[13] KEETON, *supra* note 3, § 41, at 264; *See also* sources cited *supra* note 11 (establishing that "but for" alone is an unworkable test).

[14] *See* Wright, *supra* note 3, at 1011 (Reviewing the need to establish causation-in-fact and concluding, "Nevertheless, the third inquiry [into proximate cause] may be answered negatively, resulting in no liability, in the following circumstances: if the injury would have occurred anyway as a result of nonresponsible conditions, if it would not have occurred but for unforeseeable tortious conduct by others or unforeseeable independent abnormal events or conditions, or if other conditions that weigh against liability. . . . [T]he question is whether the defendant, who tortiously caused the injury, should be absolved of liability for noncausal reasons such as the unforeseeability or the nontortious duplicative nature of one or more of the other causes."); KEETON, *supra* note 3, § 41, at 268 ("It cannot be repeated too often that, although causation is essential to liability, it does not determine it. Other considerations . . . may prevent liability for results clearly caused.").

[15] *See* KEETON, *supra* note 3, § 41, at 264 ("Some boundary must be set to liability for the consequences of any act upon the basis of some social idea of justice or policy."); *See also* authorities cited *supra* note 11 (limitless liability resulting from application of causation-in-fact test has to be curbed for the legal system to work).

[16] *See* KEETON, *supra* note 3, § 43, at 281 (the question of proximate causation is "one of the fundamental policy of the law, as to whether the defendant's responsibility should extend to such results.").

[17] HARPER, *supra* note 4, at 86 (having discussed the development of causation-in-fact and related issues (*see supra* note 11) the author states, "But the law has not stopped there – it has developed further restrictions and limitations. The concept this development has produced is generally called 'proximate' or 'legal' cause."); Malone, *supra* note 10, at 60 ("As it became increasingly obvious that no single expression could fully support the burden of both inquiries [(1) what happened, and (2) what the law ought to do about it] without confusion, legal science began to recognize two separate notions – cause-in-fact, and 'proximate' or 'legal' cause."); Wright, *supra* note 3, at 1011 (identifying causation-in-fact and proximate cause as two critical inquiries).

[18] KEETON, *supra* note 3, § 41, at 264 (referring to causation-in-fact and proximate cause and stating, "There is perhaps nothing in the entire field of law which has called forth more disagreement, or upon which the opinions are in such a welter of confusion. Nor, despite the manifold attempts which have been made to clarify the subject, is there yet any general agreement as to the best approach. Much of this confusion is due to the fact that no one problem is involved, but a number of different problems, which are not distinguished clearly, and that language appropriate to a discussion of one is carried over to cast a shadow upon the others."); Malone, *supra* note 10, at 60 (explaining that "Writers of opinions undertook to explain in detail that the two types of cause [in-fact and proximate] perform entirely separate functions in the resolution of a tort dispute and that they are associated only by a vague common denominator – a confusing language similarity."). *See also*

in-fact answers the question of "what happened," while proximate cause answers the question of "what will the law do about it (and who will be responsible)." This dichotomy between causation-in-fact and proximate cause is now well recognized in the law of torts.[19] In practice, "It is . . . useful to inquire first into the factual basis for causation: would the injury have occurred in the absence of the alleged misconduct? If the answer is 'yes,' [sic "no"] then the court should still consider whether the policies or principles at the heart of a cause of action dictate a further limitation on liability."[20] In essence, what the courts envision is a two-fold inquiry – first into the question of strict factual causation and second into the policy of assigning liability in a given situation.

C. A Few Basics on "Causation-in-Fact"

An analysis of tort law causation begins with the simplest and most basic problem — causation-in-fact.[21] Causation-in-fact generally comprises an

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HARPER, *supra* note 4, § 20.1, at 86, n. 4 (listing dozens of articles on the subject).

[19] *See* Union Pump Co. v. Allbritton, 898 S.W.2d 773, 777 (Tex. 1995) (distinguishing between "but for" causation on the one hand and "legal" or "proximate" causation on the other) (In an excellent concurring opinion, Justice Cornyn begins an insightful review of the law of causation, saying, "A few words about the historical development of causation analysis in American jurisprudence provide a helpful context." What follows is a scholarly review of the law of causation over the past century.); HARPER, *supra* note 4 at 86 (identifying causation-in-fact and proximate cause as separate inquiries); Patrick J. Kelley, *Proximate Cause in Negligence Law: History, Theory, and the Present Darkness*, 69 WASH. U. L.Q. 49, 82 (1991) (identifying the existence of but-for causation (causation-in-fact) and proximate causation) (this article contains an excellent history of proximate cause and related issues); Malone, *supra* note 10, at 60 (separately identifying and describing the development of cause-in-fact and proximate or legal causation during the course of the past century).

[20] *Union Pump*, 898 S.W.2d at 782-83 ("The fact that a court may not be directly concerned with foreseeability as an element in the causal analysis does not, however, undermine the soundness of a two-prong approach to causation in other contexts. It is still useful to inquire first into the factual basis for causation: would the injury have occurred in the absence of the alleged misconduct? If the answer to this inquiry is 'yes,' [sic "no"] then the court should still consider whether the policies or principles at the heart of a cause of action dictate a further limitation on liability.") (Justice Cornyn concurring). In her dissent to the *Rite-Hite* opinion, Judge Nies suggests that, "Causation in fact of an injury (*i.e.* the but-for test) is applied *after* the legal determination is made that the asserted injury is a type which is legally compensable for the wrong." *Rite-Hite*, 56 F.3d at 1558 (emphasis by Judge Nies). Judge Nies' statement, unsupported by authority, is at odds with the test outlined by Justice Cornyn in *Union Pump*.

[21] KEETON, *supra* note 3, § 41, at 264 ("Although it is not without its complications, the simplest and most obvious problem connected with 'proximate cause' is causation in 'fact.'") (note that Keeton is not precise in his use of the term "proximate cause" in this passage).

inquiry into whether the alleged wrongful act did, in fact, cause the claimed damages and is peculiarly a question for the jury.[22] Simply put, "We are willing to exonerate a suspected person whenever we decide that his conduct 'had nothing to do with' the event in which we are interested."[23] To determine causation "in fact," a finder of fact is required to compare what did occur with what would have occurred if hypothetical, contrary to the facts, conditions had existed.[24]

The rule developed in numerous tort cases to determine causation-in-fact has been called the "but for" or "*sine qua non*" rule. That rule states that the defendant's conduct "caused" the event if the event would not have occurred "but for" that conduct.[25] Conversely, the defendant's conduct is not a cause of the event if the event would have occurred regardless.[26]

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[22] *See* KEETON, *supra* note 3, § 41, at 264-65 ("This question of 'fact' [causation-in-fact] ordinarily is one upon which all the learning, literature and lore of the law are largely lost. It is a matter upon which lay opinion is quite as competent as that of the most experienced court. For that reason, in the ordinary case, it is peculiarly a question for the jury.").

[23] Malone, *supra* note 10, at 66.

[24] *See* KEETON, *supra* at note 3, § 41, at 265 ("Although we speak of this issue [causation-in-fact as one of 'fact,' curiously the classic test for determining cause in 'fact' directs the 'fact finder' to compare what did occur with what would have occurred if hypothetical contrary-to-fact conditions had existed."). *Compare* the foregoing passage *with* the Federal Circuit's ruling in *Grain Processing* that, "The 'but for' inquiry therefore requires a reconstruction of the market, as it would have developed absent the infringing product, to determine what the patentee 'would . . . have made.' . . . Reconstructing the market, by definition a hypothetical enterprise, requires the patentee to project economic results that did not occur." Grain Processing Corp. v. Am. Maize-Products Co., 185 F.3d 1341, 1350 (Fed. Cir. 1999). *See also* Malone, *supra* note 10, at 67 (The "but for" test, "challenges the imagination of the trier to probe into a purely fanciful and unknowable state of affairs. He is invited to make an estimate concerning facts that concededly never existed.").

[25] *See* HARPER, *supra* note 4, at 91 ("For the purpose of the present inquiry it is enough that defendant's negligence be *a* cause in fact of the harm. A rough working test of this relation, valid for most cases and enjoying wide currency, is the 'but for' or *sine qua non* test: defendant's negligence is a cause in fact of an injury where the injury would not have occurred *but for* defendant's negligent conduct.") (emphasis by the author); KEETON, *supra* at note 3, § 41, at 266 ("[M]any courts have developed a rule, commonly known as the 'but for' or '*sine qua non*' rule which may be stated as follows: The defendant's conduct is a cause of the event if the event would not have occurred but for that conduct; conversely, the defendant's conduct is not a cause of the event, if the event would have occurred without it."); Malone, *supra* note 10, at 65 ("In an effort to lend some sense of definiteness and finality to the process . . . , the courts have evolved several tests, the most frequently used of which is the 'but for' test. One fact or event, it is said, is a cause of another when the first fact or event is indispensable to the existence of the second. In the trial of controversies this means that a defendant should not be charged with responsibility for plaintiff's harm unless we can conclude with some degree of assurance that the harm could not have occurred in the absence of the defendant's misconduct.") (citing RESTATEMENT, TORTS § 432(1) (1934)).

[26] KEETON, *supra* note 3, § 41, at 266 (*see* quotation *supra* note 25); James Henderson & Aaron D. Twerski, *Intuition and Technology in Product Design Litigation: An Essay on*

The issue of "but for" causation is largely a question of fact.[27] "The plaintiff must introduce evidence which affords a reasonable basis for the conclusion that it is more likely than not that the conduct of the defendant was a cause in fact of the result."[28] However, the plaintiff "need not negate entirely the possibility that the defendant's conduct was not a cause, and it is enough to introduce evidence from which reasonable persons may conclude that it is more probable that the event was caused by the defendant than it was not."[29]

It is important to remember some have argued that causation-in-fact presents inherent policy issues.[30] One commentator suggests that the presence of policy factors is obscured by the term "cause."[31] The argument posits that, in determining "cause" the finder of fact must make a subjective determination of a relationship sufficient to be labeled "cause."[32] "The essential weakness of the 'but for' test is the fact that it ignores the irresistible urge of the trier to pass judgment at the same time as he observes."[33] Yet, these observations are not without critics. A vigorous and unresolved debate exists in academic circles as to whether or where policy issues should enter the discussion.[34] As we shall see, it appears policy decisions may have been made *sub silentio* as a part of "but for" analysis in patent infringement cases.

Proximate Causation, 88 GEO. L. J. 659, 663 (plaintiff must "show that, even assuming actual causation, the negligent aspect of the defendant's conduct was a necessary 'but for' causation of the plaintiff's harm. That is, the defendant prevails if the record shows that, even if the defendant had exercised reasonable care, the plaintiff would have suffered the same harm.").

[27] *See* Union Pump Co. v. Allbritton, 898 S.W.2d 773, 777 (Tex. 1995) (referring to the test as a question of fact) (Justice Cornyn concurring); KEETON, *supra* note 3, § 41, at 264-65 (*See* quotation *supra* note 22).

[28] KEETON, *supra* note 3, § 41, at 269. Compare the referenced rule with the rule for infringement cases set forth *infra* at text accompanying notes 124, 126.

[29] KEETON, *supra* note 3, § 41, at 269. Compare the referenced rule with the rule for infringement cases set forth *infra* at text accompanying note 124, 125.

[30] Malone, *supra* note 10, at 61 (the notion that policy issues are inherent in the determination of "but for" causation is the central thesis of the article).

[31] *Id*.

[32] *Id. See also* KEETON, *supra* note 3, § 41, at 264-65, § 42, at 273-74, 279-280, § 43, at 280-81 (references to policy considerations underlying the "causation-in-fact" analysis). There is some suggestion that skulduggery was involved in the inclusion of the foregoing references. *See* Wright, *supra* note 3, at 1009 ("Unfortunately, the revisers of Prosser's treatise, with minimal notice, abandoned Prosser's statements on the necessity of distinguishing the factual issue of actual causation from the policy issue of proximate causation with statements that assert the policy-dependent nature of the actual-causation inquiry and the causal nature of at least part of the proximate-cause inquiry.").

[33] Malone, *supra* note 10, at 66-67.

[34] *See* Union Pump Co. v. Allbritton, 898 S.W.2d 773, 777-778 (Tex. 1995) (referencing the debate about the nature of "causation-in-fact" (whether it is purely a factual inquiry) and "legal" cause (whether it is purely a policy inquiry)) (Justice Cornyn concurring); Wright, *supra* note 3, at 1009 (also referencing the debate).

While case law relating to causation-in-fact appears largely settled, issues remain. For example, while the "but for" test is generally adequate in cases in which there is only one potentially responsible cause, it is not as helpful in cases in which two or more potential causes exist.[35] Under these circumstances, other tests, such as the "substantial factor" test, have been developed. There also has been extensive discussion of how causation is apportioned.[36]

Importantly, while causation-in-fact is considered a prerequisite to liability, a finding of "but for" causation does not automatically establish liability.[37] Other factors, such as proximate causation, must be taken into account.[38]

D. A Few Basics on Proximate Causation

"Once it is established that the defendant's conduct has, in fact, been one of the causes of the plaintiff's injury, there remains the question whether the defendant should be legally responsible for the injury."[39] This inquiry forms the basis for determining proximate cause. Any discussion of proximate cause easily becomes confusing and complex. Confusing because causation-in-fact can exist without being proximate cause[40] and the term is indefinite;[41] and complex because "proximate cause has nothing to do with causation and little to do with proximity."[42] What is certain is that, "Modern tort theorists have

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[35] *See* KEETON, *supra* note 3, § 41, at 268 (referring to difficulties which arise when there are multiple causes of an injury).

[36] *See id.* (discussing the apportionment of cause as between two actors when the conduct of each is related to an event).

[37] *See* KEETON, *supra* note 3, § 41, at 268 ("but for" causation is essential, but not determinative); Malone, *supra* note 10, at 65 (The "but for" test for causation-in-fact "marks an effort to point out the bare minimum requirement for imposing liability. Unless we can go this far, we must dismiss the claim without further ado. If we do reach this point, we are warranted in investigating further under the guise of determining proximate cause.").

[38] *See* KEETON, *supra* note 3, § 41, at 266, 268 (observing that one must also consider proximate causation and policy issues).

[39] KEETON, *supra* note 3, § 42, at 272-73; *see* Wright, *supra* note 14, at 1011 (analyzing the factual inquires giving rise to liability).

[40] *See* Kelley, *supra* note 19, at 50 ("For one thing, defendant's negligence may be a *cause* of plaintiff's injury without being a *proximate* cause.") (emphasis by the author).

[41] *See* KEETON, *supra* note 3, § 42, at 273 ("The word means nothing more than near or immediate . . . It is an unfortunate word, which wrongly places emphasis upon the factor of sensical or mechanical closeness. . . . For this reason 'legal cause' or perhaps even 'responsible cause' would be a more appropriate term.").

[42] *See* Kelley, *supra* note 19, at 51. ("Both the Prosser and Keeton Handbook and the Harper, James and Gray treatise agree that proximate cause has nothing to do with causation and little to do with proximity. Thereafter, the two treatises part company."). *See also id.* at 82 ("Any question beyond the initial but-for causation question, then, is not a causal question at all, and formulating that question in causal terms is misleading, for 'it naturally induces misapprehension that the inquiry in any concrete instance concerns only some subtle distinction between different kinds of causes in the chain of causation.'") (citing

lavished seemingly boundless attention on the problem of explaining proximate cause, but the consensus of law students and others is that proximate cause remains a hopeless riddle."[43] Here, we examine only so much of the riddle as is necessary to understand application of the doctrine in patent infringement cases.

"Proximate cause" in legal reality is merely a label stating that a particular injury is among the types to which statutory remedies ought to apply.[44] We now investigate which types of harm relating to patent infringement ought to lead to recovery, and which ought not. There is always a debate on where the line for liability should be drawn and how clear that line can or should be.[45]

As Judge Andrews stated in dissent in *Palsgraf v. Long Island R..R.. Co.*,[46]

> What we . . . mean by the word 'proximate' is that, because of convenience, of public policy, of a rough sense of justice, the law arbitrarily declines to trace a series of events beyond a certain point. This is not logic. It is practical politics. . . . There is in truth little to guide us other than common sense.[47]

Bingham, *Some Suggestions Concerning "Legal Cause" at Common Law*, 9 COLUM. L. REV. 16 (1909)).

[43] Kelley, *supra* note 19, at 49-50. *See also* GREEN, *supra* note 4, at 135-36. Green states:

> 'Cause,' although irreducible in its concept, could not escape the ruffles and decorations so generously bestowed: remote, proximate, direct, immediate, adequate, efficient, operative, inducing, moving, active, real, effective, decisive, supervening, primary, original, contributory, ultimate, concurrent, *cuasa causans*, legal, responsible, dominating, natural, probable and others. The difficulty now is in getting anyone to believe that so simple a creature could have been so extravagantly garbed.

Id. While the topic is endlessly fascinating, there is no need to plumb the depths of the various controversies in order to gain a better understanding of patent infringement causation issues. The sources referred to herein, together with the boundless additional materials referred to in those works, should satisfy the appetite of even the most voracious student of the law.

[44] Proximate cause presents issues of duty and the policy decision of when a defendant should be held legally responsible for plaintiff's injury. *See* Union Pump Co. v. Allbritton, 898 S.W.2d 773, 777-778 (Tex. 1995) (exploring policy issues associated with the proximate cause inquiry); KEETON, *supra* note 3, § 42, at 273-74 ("Once it is determined that the defendant's conduct has in fact been one of the causes of the plaintiff's injury, there remains the question whether the defendant should be legally responsible for the injury. Unlike the test of causation, with which it is often hopelessly confused, this is primarily a problem of law."); Wright, *supra* note 3, at 1011 (describing the proximate causation inquiry as a "policy inquiry"). It is primarily a policy determination that legal responsibility for damages should not continue *ad infinitum*. *See supra* note 11, and cases cited therein. Proximate cause is a question of law. KEETON, *supra* note 3, § 42, at 273.

[45] *See* Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1546 n.5, (Fed. Cir. 1995), *cert. denied*, 516 U.S. 867 (1995) (referencing a disagreement between the majority and the dissent about where to draw the line of proximate causation).

[46] 162 N.E. 99 (N.Y. 1928).

[47] *Id.* at 103-04.

As another commentator observed,

> It should be noted at this point that many courts and legal writers have stressed the fact that policy considerations underlie the doctrine of proximate cause. Of course they do, but the policies actually involved often fail to get explicit treatment.[48]

Ultimately, attempts to find hard and fast rules for finding "proximate cause" appear doomed to failure.[49]

Examining all of the various policy issues at play in tort cases is not necessary for our purposes.[50] Instead, we examine the more closely related proximate cause limitation of "reasonable foreseeability."[51] "From the very beginning, the notion of foreseeability has been intertwined with the development of liability for negligence."[52] It is now almost universally accepted that unreasonable risk (foreseeability) of harm is the gravamen of liability for negligence.[53] Thus, the "foreseeability test" developed to determine whether any ordinarily prudent person would have foreseen that damage would likely result from that person's act.[54] Where damages were reasonably foreseeable, proximate cause is said to exist and a plaintiff may recover. It is perplexing why foreseeability has taken on this significance, although some commentators have offered theories.[55]

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[48] *See* James, *supra* note 11, at 784; *see also* Wright, *supra* note 3, at 1011 (describing the proximate cause inquiry as one involving a policy consideration).

[49] Drawing the line on what is or is not "proximate" is inherently subjective and not purely logical. Many hard questions of causation do not involve long "logic chains." For example, the logical link between a patentee's heart attack and receipt of news of infringement is probably shorter and more direct than the link between infringement and lost profits. Yet, lost profits are compensable, while personal injuries resulting from the heart attack are not. Given this, a long logic chain is not, in itself, the basis for denial of recovery in infringement cases. Similarly, proof of non-functionally related lost profits, as in *Rite-Hite*, is not a long chain. There, the "tag-along" sales of dock levelers were utterly foreseeable and logically connected to the patentees lost sales, yet the court held they were not compensable. Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1546 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 867 (1995). Something else is needed to explain when "proximate cause" exists. In the end, "judicial feel" is as descriptive as anything. Yet, "feel" is subjective and can be unpredictable.

[50] The Federal Circuit adopted "reasonable foreseeability" as the test for legal causation in patent infringement damage cases. *Rite-Hite*, 56 F.3d at 1546 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 867 (1995). We will, therefore, examine the tort aspects of this test in some detail.

[51] Tort law is rich with other considerations. We will focus on "reasonable foreseeability" and leave those other issues to another day.

[52] James, *supra* note 11, at 785.

[53] *Id.* at 787.

[54] *See* HARPER, *supra* note 4, at 133.

[55] *See* Kelley, *supra* note 19, at 77 ("The foreseeable consequences test of proximate causation may have seemed natural to judges who were used to applying a test of consequences foreseeable or contemplated at the time of the contracting in determining

In tort, reasonable foreseeability involves a foreseeable risk, a danger of injury and conduct unreasonable in proportion to the danger.[56] Thus, the same conduct which establishes liability also defines the scope of responsibility.[57] The doctrine presents three policy limits which restrict the scope of liability, "One restriction requires that the tortious conduct produce a foreseeable type of harm. Another requires that the harm come about in a foreseeable manner. The third limits recovery to a foreseeable class of persons."[58]

Using foreseeability as the test for proximate cause provides courts with flexibility.[59] While such flexibility offers courts great discretion in deciding cases, it is not necessarily positive. A flexible concept like foreseeability leaves the ultimate evaluative judgment to the court or the jury.[60] In effect, use of foreseeability as a test for causation can mask underlying policy decisions.[61] A court also may justify results that appear to be exceptions to the theories as applications of the theories themselves.[62] Given this, some have suggested that proximate cause analysis in tort cases be phrased as one of "duty" because the use of such a term is less likely to mislead people into thinking the ultimate

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whether consequential damages were recoverable for breach of contract, . . . Or, perhaps the positivist notion that, by experiencing recurrent patterns of successive phenomena, we discover scientific laws of causation, which, in turn, give us an ability to predict and foresee the consequences of our action, may have been an influence on widely-read judges like Pollock and Brett. Or 'foreseeability' may have just seemed an accurate and illuminating way of expressing the delicate judgments about the mutual expectations in social systems of reliance that underlie some of our basic judgments about wrongdoing in any particular social context.").

[56] *See* KEETON, *supra* note 3, § 43, at 280. *See also id.* at 281 (". . . no defendant should ever be held liable for consequences which no reasonable person would expect to follow from the conduct.").

[57] *See* Kelley, *supra* note 19, at 51 ("[T]he defendant's duty in a negligence cases [sic] should be limited to harm caused by the unreasonable foreseeable risk that made the defendant's conduct negligent in the first place.") (referring to Keeton, *supra* note 3 and Harper, *supra* note 4 and comparing similarities and differences between positions maintained by the two treatises).

[58] David A. Fischer, *Products Liability – Proximate Cause, Intervening Cause, and Duty*, 52 MO. L. REV. 547, 549 (1987).

[59] *Id.* at 580, Kelley, *supra* note 19, at 51-52.

[60] Kelley, *supra* note 19, at 52 (quoting Keeton, *supra* note 3, § 42, at 274, 294-95 and 297-300).

[61] Fischer, *supra* note 58, at 580-81 ("In reality, courts often take many matters, other than pure factual foreseeability, into account in deciding cases. They are able to do this because the concept of foreseeability is sufficiently flexible to give courts great discretion in deciding cases. Courts which use this flexibility to take other factors into account do not use foreseeability in a purely factual sense, but as a shorthand way of expressing social policy. The flexibility occurs because the court has discretion about how much detail to include in its characterization of what must be foreseeable. An event becomes less foreseeable as more details are included in its description.").

[62] *Id.*

decision is policy free.[63]

Understandably, the doctrine of foreseeability has had critics. One commentator concluded,

> Since foreseeability is a vacuous concept, it seems to explain the decided cases but provides no basis for deciding them. The 'foreseeability' theorists thus provide a wonderful confirmation for the legal realist theorists. Since judges purportedly basing their decisions on foreseeability must, in fact, be deciding on the basis of something else, the faulty theory that leads courts to explain their decisions in terms of foreseeability ironically produces the best examples to support the alternative legal realist theory.[64]

Thus, even when correct results are reached, the true basis for the decision may be obscured.[65] "This approach creates unnecessary cynicism about our legal system, and makes it harder to predict the legal consequences of one's acts."[66]

Not surprisingly, courts and commentators alike have advocated for a clear and predictable standard.[67] In order to accomplish this purpose, one must examine the underlying purposes of that branch of the law.[68] Yet, as one noted commentator observed,

> 'Proximate cause' cannot be reduced to absolute rules. No better statement ever has been made concerning the problem than that of Street: 'It is always to be determined on the facts of each case upon mixed considerations of logic, common sense, justice, policy and precedent. . . . The best use that can be made of the authorities on proximate cause is merely to furnish illustrations of situations which judicious men upon careful consideration have adjudged to be on one side of the line of the other.'[69]

The foregoing raises the questions: Do similar concerns and issues exist in patent infringement cases? If so, are they helpful or harmful? And, how can

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[63] Kelley, *supra* note 19, at 53 ("Analysis in terms of 'duty' is marginally better than analysis in terms of 'proximate cause' because the duty language emphasizes policy choices by the decision maker about the scope of the legal liability. It is therefore less likely to mislead people into thinking the ultimate decision is policy-free.").

[64] *Id.* at 105.

[65] Fischer, *supra* note 58, at 581.

[66] *Id.*

[67] *See* Union Pump Co. v. Allbritton, 898 S.W.2d 773, 783 (Tex. 1995) (advocating a clearer approach to issues of proximate causation) (Justice Cornyn concurring); Aaron D. Twerski, *Old Wine in a New Flask -- Restructuring Assumption of Risk in the Products Liability Era*, 60 IOWA L. REV. 1, 38 ("If defendants are to understand their responsibilities . . . they should be told quite clearly just what it is that courts want of them. The individualization of that decision . . . has not provided that guidance.").

[68] *See Union Pump*, 898 S.W.2d at 783 ("In setting limits to producing cause in products liability law, we must examine the underlying purposes of that branch of tort law.").

[69] KEETON, *supra* note 3, at 279 (citing Green, *supra* note 4).

we evaluate causation issues in infringement cases without the analytical complexity of tort law proximate causation? In approaching causation issues in infringement cases, it seems logical to adopt a "tried and true" model of analysis, such as one used by the Supreme Court in the antitrust context, in order to avoid the pitfalls just identified.

II. AN ANTITRUST APPROACH TO ANALYZING CAUSATION IN INFRINGEMENT CASES

In attempting to find a workable means to evaluate causation in patent infringement cases, the analytical framework employed by the Supreme Court in antitrust cases provides valuable guidance.[70] The test is for what the Court has called "antitrust injury." While recognizing distinct differences between antitrust and patent law, both remedies are statutorily based and thus differ fundamentally from the common law underpinnings of tort law.

The Supreme Court addressed issues of causation in antitrust cases and developed concepts of antitrust injury during the late 1970's and 1980's.[71] The process used to determine causation in those cases is helpful in addressing similar issues faced by courts in infringement cases.

The Court's analysis of causation began in the case of *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*[72] In that case, plaintiff bowling centers brought suit against a large bowling equipment manufacturer, alleging antitrust violations resulting from manufacturer's acquisition of competing bowling centers.[73] The Court recognized the difficulty of intermeshing a remedial statute with a damages action to remedy harm resulting from a violation of the statute.[74] In refusing to adopt "but for" as the basis for causation, the Court enunciated a new standard for recovering damages. The court stated first that plaintiffs "must prove more than injury causally linked to an illegal presence in the market," and went on to say that, "Plaintiffs must prove antitrust injury, which is to say injury of the type the antitrust laws were intended to prevent and that

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[70] In her dissent in *Rite-Hite*, Judge Nies seemed to suggest just such a test. *See* Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1570 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 867 (1995) (where Judge Nies paraphrases the rule adopted by the Supreme Court in antitrust cases for infringement cases as, "[Plaintiffs] must prove more than injury causally linked to any illegal presence in the market [*i.e.* the infringing goods]. Plaintiffs must prove [patent infringement] injury, which is to say injury of the type the [patent] laws were intended to prevent.") (bracketed material by Judge Nies). Ultimately, Judge Nies found no takers among the majority, which did not even mention the antitrust test. While the antitrust approach may not have gained acceptance by a majority of the Federal Circuit, the test for determining proximate causation adopted by the Court has much to recommend it.

[71] Associated Gen. Contractors of Cal., Inc. v. Cal. State Council of Carpenters, 459 U.S. 519 (1983); Blue Shield of Va. v. McCready, 457 U.S. 465 (1982); J. Truett Payne Co., Inc. v. Chrysler Motors Corp., 451 U.S. 557 (1981); Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc., 429 U.S. 477 (1977).

[72] 429 U.S. 477 (1977).

[73] *Id.* at 479.

[74] *Id.* at 486-87.

flows from that which makes the defendants' acts unlawful."[75]

In the patent law analog of *Rite-Hite*, the majority *sub silentio* declined to adopt a similar rule of causation for infringement cases, although it was suggested in Judge Nies' dissent.[76] What the *Rite-Hite* majority did do was adopt the "functional unit" test[77] as a kind of "fuzzy" limit on proximate causation.

Yet, the approach to causation taken by the Supreme Court in a later antitrust case has clarity and merit. In *Blue Shield of Virginia v. McCready*,[78] the Court tackled causation issues in antitrust cases and suggested a valuable analytical method. In that case, McCready alleged antitrust violations arising from a group health insurer's refusal to reimburse psychologist's fees while agreeing to pay a psychiatrist's fees.[79] The Court squarely faced the issues of when a person may have sustained injuries too remote to give standing to sue for damages.[80]

The Court recognized that, despite the broad wording of the statute, there "is a point beyond which the wrongdoer should not be held liable."[81] The Court observed that it was "forced to resort to an analysis no less elusive than that employed traditionally by courts at common law with respect to the matter of 'proximate cause.'"[82] The Court announced the following methodology for resolving such issues:

> In applying that elusive concept to this statutory action, we look (1) to the physical and economic nexus between the alleged violation and the harm to the plaintiff, and (2) more particularly, to the relationship of the injury alleged with those forms of injury about which Congress was likely to have been concerned in making defendant's conduct unlawful . . .[83]

The Court's reasoning seems to have particular applicability to analyzing causation issues in infringement cases. With few exceptions, courts have not addressed proximate cause issues in patent infringement cases.[84] Thus, use of

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[75] *Id.* at 489.

[76] *See id*. at 479 (quoting Judge Nies' suggestion).

[77] Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1550 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 867 (1995).

[78] 457 U.S. 465 (1982).

[79] *Id.* at 467.

[80] *Id.* at 476.

[81] *See id.* ("It is reasonable to assume that Congress did not intend to allow every person tangentially affected by an antitrust violation to maintain an action to recover threefold damages for injury to his business or property.").

[82] *Id.* The Court observed, "The traditional principle of proximate cause suggests the use of words such as 'remote,' 'tenuous,' 'fortuitous,' 'incidental,' or 'consequential' to describe those injuries that will find no remedy at law. . . . And the use of such terms only emphasizes that the principle of proximate cause is hardly a rigorous analytic tool." *Id.* at 477, n.13 (citation omitted).

[83] *Id.* at 478.

[84] The primary exception is Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538 (Fed. Cir. 1995),

the analytical tool suggested by the Supreme Court could bear important fruit by shedding additional light on the subjective analysis used to determine causation in a given case.

Less than a year after its decision in *McCready*, the Court again addressed causation issues in antitrust cases. In *Associated General Contractors of California, Inc. v. California State Council of Carpenters*,[85] plaintiff alleged that the defendants had coerced some of plaintiff's members into business relationships with non-union contractors in violation of antitrust laws. In a surprisingly oblique passage, the Court observed that:

> There is a similarity between the struggle of common-law judges to articulate a precise definition of the concept of 'proximate cause,' and the struggle of federal judges to articulate a precise test to determine whether a party injured by an antitrust violation may recover treble damages. It is common ground that the judicial remedy cannot encompass every conceivable harm that can be traced to alleged wrongdoing. In both situations, the infinite variety of claims that may arise make it virtually impossible to announce a black-letter rule that will dictate the result in every case. Instead, previously decided cases identify factors that circumscribe and guide the exercise of judgment in deciding whether the law affords a remedy in specific circumstances.[86]

The *Rite-Hite* majority relied on this rather vague passage as its foundation for analysis and adoption of the "reasonably foreseeable" test of proximate cause in infringement cases.[87]

The Supreme Court's "proximate cause" analysis in *McCready* provides a valuable road map for analyzing causation issues. Transposing the test for application in infringement cases requires a court: (1) to look to the nexus between the alleged infringement and the harm to plaintiff; and (2) in particular, to examine the relationship of the alleged injury to the forms of injury Congress was concerned with when passing the statute.

III. THE CURRENT STATUS OF CAUSAL LIMITS IN PATENT INFRINGEMENT CASES

To obtain a firm grasp on the law of causation in infringement cases, we will

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cert. denied, 516 U.S. 867 (1995).

[85] 459 U.S. 519 (1983).

[86] *Id.* at 536-37. While this is an honest utterance by the Court and tracks with experience, it provides scant guidance for lower courts and practitioners. For purposes of clarity and predictability, and to avoid *ad hoc* judicial decisions, the process of determining what "feels right" for causation must be more objectively described.

[87] *Rite-Hite Corp.*, 56 F.3d at 1546 ("Preliminarily, we wish to affirm that the 'test' for compensability of damages under Sec. 284 is not solely a 'but for' test in the sense that an infringer must compensate a patentee for any and all damages that proceed from the act of patent infringement. Notwithstanding the broad language of Sec. 284, judicial relief cannot redress every conceivable harm that can be traced to the alleged wrongdoing.") (citing Associated Gen. Contractors of Cal., Inc., *supra* note 86).

review historic decisions, Supreme Court precedent, and basic rules of damages. The courts have thoroughly analyzed causation-in-fact. Yet, perhaps because of the inherent deceptiveness of the label, there has been scant discussion of proximate cause. Applying the *McCready* analysis will assist us in navigating this aspect of the causation puzzle.

A. The Historic Development of Causation Rules

While there have been several patent statutes enacted since 1790,[88] all contained basic rules regarding damages. Those rules are that damages: (1) must be proved and cannot be presumed; (2) must be apportioned where the patented element is only part of a product; (3) are compensatory; (4) are established by proof of the patentee's pecuniary condition as it is and as it would have been "but for" the infringement; and (5) are the value of what was taken.

In the 1853 case of *Seymour v. McCormick*, the Court reviewed prior patent statutes and concluded that, "The mode of ascertaining actual damages must necessarily depend on the peculiar nature of the monopoly granted."[89] In holding that damages had to be proved and could not be presumed, the Court said, "a jury must judge from the evidence, under instructions from the court, that they can find only such damages as have actually been proved to have been sustained."[90]

Twenty years later, in *Philp v. Nock*, the Court held, "The plaintiff must show his damages by evidence. They must not be left to conjecture by the jury. They must be proved, and not guessed at."[91] In the same case, the Court said, "Where the infringement is confined to a part of the thing sold, the recovery must be limited accordingly."[92]

In an 1876 infringement case styled *Birdsall v. Coolidge*, the Court held that,

> Damages are given as a compensation, recompense, or satisfaction to the plaintiff, for an injury actually received by him from the defendant. Compensatory damages and actual damages mean the same thing; that is, that the damages shall be the result of the injury alleged and proved, and

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[88] For two decisions reviewing the history of U.S. patent statutes *see* Nike, Inc. v.Wal-Mart Stores, Inc., 138 F.3d 1437, 1440-43 (Fed. Cir. 1998) (a concise history of patent statutes); Georgia-Pacific Corp v. U.S. Plywood Corp., 243 F. Supp. 500, 516-33 (S.D.N.Y. 1965) (an exhaustive analysis of provisions and statutory remedies in successive patent statutes).

[89] Seymour v. McCormick, 57 U.S. 480, 489 (1853).

[90] *Id.* at 490 ("Actual damages must be actually proved, and cannot be assumed as a legal inference from any facts which amount not to actual proof of the fact. What a patentee 'would have made, if the infringer had not interfered with his rights,' is a question of fact and not 'a judgment of law.' The question is not what speculatively he may have lost, but what actually he did lose.").

[91] Philp v. Nock, 84 U.S. 460, 462 (1873).

[92] *Id.* at 462.

> that the amount awarded shall be precisely commensurate with the injury suffered, neither more nor less, whether the injury be to the person or estate of the complaining party.[93]

In the same case, the Court recognized the statutory right of the court to enter judgment for any sum above the verdict, not exceeding three times the amount of actual damages.[94]

In the 1886 case of *Yale Lock Manufacturing Co. v. Sargent*, the Court announced the rule later followed in *Aro*,

> As the plaintiff, at the time of the infringement, availed himself of his exclusive right by keeping his patent a monopoly, and granting no licenses, the difference between his pecuniary condition after the infringement, and what his condition would have been if the infringement had not occurred, is to be measured, so far as his own sales of locks are concerned, by the difference between the money he would have realized from such sales if the infringement had not interfered with such monopoly, and the money he did realize from such sales. If such difference can be ascertained by proper and satisfactory evidence, it is a proper measure of damages. [95]

In *Coupe v. Royer*, an 1895 case decided under the 1870 Act, the Court refined its analysis, holding, "[T]he plaintiff is entitled to recover, as damages, compensation for the pecuniary loss he has suffered from the infringement, without regard to the question whether the defendant has gained or lost by his unlawful acts; the measure of recovery in such cases being, not what the defendant has gained, but what the plaintiff has lost."[96]

In the 1915 case of *Dowagiac Manufacturing Co. v. Minnesota Moline Plow Co.*,[97] the Court confronted an infringement case where there were several other competitors in the relevant product market selling in direct competition with the patentee. It held that, under the evidence, "it could not be said that, if the sales in question had not been made, the defendants' customers would have bought from the plaintiff rather than from the other manufacturers."[98] The Court thus refused to award damages based on lost sales. In calculating a royalty, the Court held as a threshold matter that, "As the exclusive right conferred by the patent was property and the infringement was a tortious taking of a part of the property, the normal measure of damages was the value of what was taken."[99]

As we shall see, these precedents form the basis for more recent case law

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[93] Birdsall v. Coolidge, 93 U.S. 64 (1876).

[94] *Id.* at 69.

[95] Yale Lock Mfg. Co. v. Sargent, 117 U.S. 536, 552-553 (1886) (cited in Aro Mfg. Co. v. Convertible Top Replacement Co., 377 U.S. 476, 507 (1964)).

[96] Coupe v. Royer, 155 U.S. 565, 582 (1895) (cited in Aro Mfg. Co. , 377 U.S. at 507).

[97] Dowagiac Mfg. Co. v. Minnesota Moline Plow Co., 235 U.S. 641 (1915).

[98] *Id.* at 648.

[99] *Id.*

deciding causation issues in infringement cases.

B. Supreme Court Pronouncements on Causation Under 35 U.S.C. § 284[100]

The Court first addressed patent infringement damages under the current statute in *Aro Manufacturing Co. v. Convertible Top Replacement Co.*[101] in 1964. In *Aro*, respondent Convertible Top Replacement Co., Inc. ("CTR") was assigned all rights to a combination patent covering a top structure for automobile convertibles in the Commonwealth of Massachusetts.[102] Aro designed fabrics specifically tailored for installation as replacements for worn out fabric portions of convertible tops on certain models of cars which infringed the patent. CTR sued Aro to enjoin alleged direct and contributory infringement and to obtain an accounting with respect to replacement fabrics made and sold by Aro to manufacturer infringers.[103] Aro was found to be a contributory infringer under § 271(c).[104]

The *Aro* Court made several key findings regarding the scope of recoverable damages.[105] The Court also analyzed causation, holding that damages "have been said to constitute 'the difference between [the patentee's] pecuniary condition after the infringement, and what his condition would have been if the infringement had not occurred.'"[106] In further discussing issues relating to causation, the *Aro* Court concluded the question to be asked when determining damages is, "How much had the patent holder and the licensee suffered by the infringement?"[107] Phrased another way, the question "is primarily: had the infringer not infringed, what would patent holder licensee have made?"[108] The rule established by the Court states a clear "but for" basis for analyzing causation issues in infringement cases. A comparison of the rules of causation announced by the Court in *Aro* and the tort law rules of causation clearly

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[100] 35 U.S.C. § 284 (1952) provides in pertinent part that, "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."

[101] 377 U.S. 476 (1964).

[102] *Id*. at 478.

[103] *Id*. at 479.

[104] *Id*. at 493.

[105] *See id.* at 504-05 (only a patentee's damages are recoverable while an infringer's profits are not recoverable). This reading of the statute has been criticized. Roger D. Blair & Thomas F. Cotter, *An Economic Analysis of Damages Rules in Intellectual Property Law*, 39 WM. & MARY L. REV. 1585, 1596, n.45 (1998) ("Although this reading of the amendment has been criticized, . . . the courts have tended to follow Justice Brennan's adoption of it in his plurality opinion in *Aro*.") (citations omitted).

[106] *Id.* at 507 (citing Yale Lock Co. v. Sargent, 117 U.S. 536, 552-553 (1886)).

[107] *Id.* (citing Livesay Window Co. v. Livesay Indus., Inc., 251 F.2d 469, 471 (5th Cir. 1958)).

[108] *Id.*

demonstrate the tort law foundation upon which the patent law of causation is based.[109]

Nine years after *Aro*, the Supreme Court again reviewed the statutory basis for patent infringement damages in *General Motors Corp. v. Devex Corp.*[110] In that case, Devex sued General Motors for infringement of a patent relating to a lubrication process used to cold-form metal car parts. While the case focused on the proper standard governing the award of pre-judgment interest in a patent infringement suit, the Court made several observations pertinent to lost profit damages.[111] The Court concluded that Congress had excluded consideration of the infringer's gain by eliminating recovery of its profits, the determination of which had often required protracted litigation.[112] The Court went on to observe that, at the same time it had eliminated defendant's profits as a measure of damages, Congress sought to ensure a patent owner would receive "full compensation" for any damages suffered as a result of infringement.[113] The Court decided Congress's overriding purpose for enacting § 284 was to afford patent owners "complete compensation."[114] Finally, the Court held an award was necessary to ensure that the patent owner is placed in as good a position as if the infringer entered into a reasonable royalty agreement.[115]

C. Parameters of Causal Liability in Patent Infringement Cases

1. Types of Damages Allowed

Following *Aro* and *Devex*, lower courts — primarily the Federal Circuit — developed rules, tests and standards relating to two types of damages claimed under the statute: (1) lost profit damages, or (2) a reasonable royalty.[116] In addition, an award of damages can be split between lost profits and reasonable royalty,[117] and, if lost profits are not available, a reasonable royalty will be

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[109] Compare *Aro* rulings *supra* at notes 106-08 and accompanying text with tort law rules *supra* at notes 21-29 and accompanying text.

[110] 461 U.S. 648 (1983).

[111] *Id.* at 655.

[112] *Id.* (citing *Aro*, *supra* note 101, at 505).

[113] *Id.*

[114] *Id.*

[115] *Id.*

[116] Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1544 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 867 (1995). The Federal Circuit acknowledges that, "The purpose of compensatory damages is not to punish the infringer, but to make the patentee whole." Glaxo Group Ltd. v. Ranbaxy Pharm., Inc., 262 F.3d 1333, 1339 (Fed. Cir. 2001) (citing *Aro*, 377 U.S. at 507).

[117] *See, e.g.*, Crystal Semiconductor Corp. v. Tritech Microelectronics Int'l, Inc., 246 F.3d 1336, 1354 (Fed. Cir. 2001) ("Beyond reasonable royalties, a patentee may seek lost profit damages for infringement."); Minco, Inc. v. Combustion Engineering, Inc., 95 F.3d 1109, 1119 (Fed. Cir. 1996) ("The Patent Act permits damages awards to encompass both lost

awarded.[118] There are three types of lost profit damages: diverted sales, eroded prices, or increased expenses.[119]

D. Case Law Rules of "But For" Causation – Panduit and Its Progeny

1. Basic Rules of "But For" Causation in Infringement Cases

It is axiomatic that, "a patent owner must prove a causal relation between the infringement and its loss of profits."[120] As established in the benchmark case, *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.*,[121] an award of lost profits is proper when it can be determined that "but for" the infringement, the patent holder would have made the sale.[122] While the viability of the four part

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profits and a reasonable royalty on that portion of an infringer's sales not included in the lost profit calculation."); State Industries, Inc. v. Mor-Flor Industries, Inc., 883 F.2d 1573, 1577 (Fed. Cir. 1989), *cert denied*, 493 U.S. 1022 (1990) ("[T]he award may be split between lost profits as actual damages to the extent they are proven and a reasonable royalty for the remainder."); TWM Mfg. Co., Inc. v. Dura Corp., 789 F.2d 895, 898 (Fed. Cir. 1986), *cert denied*, 479 U.S. 852 (1986) (adopting the same rule); Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1157 (6th Cir. 1978) (adopting the same rule); Honeywell Int'l, Inc. v. Hamilton Sundstrand Corp., 166 F. Supp. 2d 1008, 1032 (D. Del. 2001) (adopting the same rule). *See also* Vulcan Engineering Co. v. FATA Aluminum Inc., 258 F.3d 1366 (Fed. Cir. 2002) ("For price erosion damages the patentee must show that, but for the infringement, it would have been able to charge and receive a higher price. . . . It is not required that the patentee knew theat the competing system infringed.") (citation omitted).

[118] *See, e.g., Crystal Semiconductor Corp.*, 246 F.3d at 1354 ("A patentee receives a reasonable royalty for any of the infringer's sales not included in the lost profit calculation."); AptarGroup, Inc. v. Summit Packaging Sys., Inc., 178 F.3d 1306, 1311 (Fed. Cir. 1998) ("Where the patentee is unable to establish lost profits, the district court may fix damages on what it finds to be a reasonable royalty for the infringer's sales."); Code-Alarm, Inc. v. Electromotive Technologies Corp., 114 F.3d 1206 (Fed. Cir. 1997) (adopting the same rule); *Minco, Inc.*, 95 F.3d at 1119 (adopting the same rule); SmithKline Diagnostics, Inc. v. Helena Laboratories Corp., 926 F.2d 1161, 1164 (Fed. Cir. 1991) (". . . if unable to prove actual damages, the patentee is entitled to a reasonable royalty") (citing Fromson v. Western Litho. Plate & Supply Co., 853 F.2d 1568, 1574 (Fed. Cir. 1988)); *TWM Mfg. Co., Inc.*, 789 F.2d at 898 (adopting the same rule); *Panduit Corp.*, 575 F.2d at 1157 (adopting the same rule).

[119] *Minco, Inc.*, 95 F.3d at 1118 ("This court has clarified that adequate damages can include lost profits due to diverted sales, price erosion, and increased expenditures caused by infringement."); Lam, Inc. v. Johns-Manville Corp., 718 F.2d 1056, 1065 (Fed. Cir. 1983) ("Lost profits may be in the form of diverted sales, eroded prices, or increased expenses."). Lost royalties on sales lost by licensees should also be added to this list. These are usually straight-to-the-bottom-line losses and hence should be included as lost profits. *See* BIC Leisure Prod., Inc. v. Windsurfing Int'l, Inc., 1 F.3d 1214 (Fed. Cir. 1993) (lost profits in the form of lost royalties due to infringer's interference with licensees allowed).

[120] Shockley v. Arcan, Inc., 248 F.3d 1349, 1362 (Fed. Cir. 2001) (citing BIC Leisure Products, Inc. v. Windsurfing International, Inc., 1 F.3d 1214, 1218 (Fed. Cir. 1993)).

[121] 575 F.2d 1152, 1156 (6th Cir. 1978).

[122] *See, e.g.*, BIC Leisure Products, Inc. v. Windsurfing Int'l, Inc. 1 F.3d 1214, 1218

analysis introduced in *Panduit* has been strongly questioned,[123] the "but for" rule is firmly entrenched as the primary rule of causation in patent law.

The "but for" rule only requires the patent holder to provide proof to a reasonable probability that the sale would have been made but for the infringement.[124] The patent owner needn't negate all possibilities that a

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(Fed. Cir. 1993) ("The patent owner must show that 'but for' the infringement, it would have made the infringer's sales."); Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559, 1577 (Fed. Cir. 1992) (adopting the same rule); *SmithKline Diagnostics, Inc.*, 926 F.2d at 1164; Kaufman Co., Inc. v. Lantech, Inc., 926 F.2d 1136, 1140 (Fed. Cir. 1991) (adopting the same rule); Kori Corp. v. Wilco Marsh Buggies & Draglines, Inc. 761 F.2d 649, 653 (Fed. Cir. 1985), *cert. denied*, 474 U.S. 902 (1985) (adopting the same rule); Paper Converting Mach. Co. v. Magna-Graphics Corp., 745 F.2d 11, 15 (Fed. Cir. 1984); *Lam, Inc.*, 718 F.2d at 1065 (adopting the same rule).

[123] *See infra* notes 189-194 and accompanying text.

[124] *See, e.g., Crystal Semiconductor Corp.*, 246 F.3d at 1354 ("In other words, the burden rests on the patentee to show a reasonable probability that 'but for' the infringing activity, the patentee would have made the infringer's sales."); Tate Access Floors, Inc. v. Maxcess Technologies, Inc., 222 F.3d 958, 971 (Fed. Cir. 2000) ("To recover lost profits, a patentee must show a reasonable probability that, 'but for' the infringement, it would have made the sales that were made by the infringer."); *AptarGroup, Inc.*, 178 F.3d at 1310 (Fed. Cir. 1998) (adopting the same rule); Fonar Corp. v. Gen. Elec. Co., 107 F.3d 1543, 1553 (Fed. Cir. 1997), *cert. denied*, 522 U.S. 908 (1997) (adopting the same rule); Stryker Corp. v. Intermedics Orthopedics, Inc., 96 F.3d 1409, 1467 (Fed. Cir. 1996) (adopting the same rule); *Minco, Inc.*, 95 F.3d at 1118; Oiness v. Walgreen Co., 88 F.3d 1025, 1029 (Fed. Cir. 1996) (adopting the same rule); GNB Battery Technologies, Inc. v. Exide Corp., 78 F.3d 605, 607 (Fed. Cir. 1996) (adopting the same rule); Carborundum Co. v. Molten Metal Equip. Innovations, Inc., 72 F.3d 872, 881 (Fed. Cir. 1995) (adopting the same rule); Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1222 (Fed. Cir. 1995) (adopting the same rule); *BIC Leisure Products, Inc.*, 1 F.3d at 1218 ("An award of lost profits may not be speculative. Rather the patent owner must show a reasonable probability that, absent the infringement, it would have made the infringer's sales'); *Minn. Mining & Mfg. Co.*, 976 F.2d at 1577 (adopting the same rule); *SmithKline Diagnostics, Inc.*, 926 F.2d at 1164 (adopting the same rule); *Kaufman Co., Inc.*, 926 F.2d at 1140 (adopting the same rule); *State Industries, Inc.*, 883 F.2d at 1577 (adopting the same rule); Del Mar Avionics, Inc. v. Quinton Inst. Co., 836 F.2d 1320, 1326 (Fed. Cir. 1987) (adopting the same rule); *Kori Corp.*, 761 F.2d at 653 (adopting the same rule); *Paper Converting Mach. Co.*, 745 F.2d at 21 (adopting the same rule); Lam, Inc. 718 F.2d at 1063 (adopting the same rule).

Recent cases allow lost profit damages where there was inducement of infringement instead of direct infringement. Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 1 Fed. Appx. 879, 883, 2001 WL 21304, **3 (Fed. Cir. 2001) (relying on 35 U.S.C. § 271(b) (1994) ("[w]hoever actively induces infringement of a patent shall be liable as an infringer")); *but see* Embrex, Inc. v. Service Eng'g Corp., 216 F.3d 1343, 1350 (Fed. Cir. 2000) ("In this case, the district court found that Embrex [plaintiff] lost money on several potential sales and found that $500,000 was sufficient to compensate for those lost sales. However, as discussed above, because the sale of devices that may be used to practice a patented method cannot infringe without proof of direct infringement, [defendant's] offers to seel its machines cannot supply adequate evidentiary support for a compensatory damage award.").

purchaser might have bought a different product or might have foregone the purchase altogether.[125] Patentee must show only that there was a "reasonable probability" that the sales would have been made, "but for" the infringement.[126] More recently, the Federal Circuit has required that, "To show causation and entitlement to lost profits, a patentee must reconstruct the market to show 'likely outcomes with infringement factored out of the economic picture.'"[127] Once "but for" causation is established, there is an inference that lost profits were caused by infringing sales,[128] and the burden shifts to the infringer to prove the inference of causation is unreasonable for some or all of the lost sales.[129]

2. The *Panduit* Four-Factor Test

In *Panduit* the Sixth Circuit Court of Appeals identified a four-step test for obtaining lost profit damages on sales a patentee would have made absent infringement.[130] Under *Panduit*, in order to recover lost profits on sales made by an infringer, a patentee must prove (1) demand for the patented product; (2) absence of acceptable non-infringing substitutes; (3) the patent owner's manufacturing and marketing capability to exploit demand; and (4) the amount of profit he would have made.[131] Satisfaction of all four *Panduit* factors compels an inference that the patentee probably would have made the sale, but for infringement.

Courts, including the Federal Circuit, have repeatedly characterized the *Panduit* factors as a useful, "but not exclusive," test for determining "but for" causation of lost profit damages.[132] In August 2000 and again in January 2001,

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[125] *See, e.g.*, *Minn. Mining & Mfg. Co.*, 976 F.2d at 1577 ("However, it is not necessary for the patent holder to negate all possibilities that a purchaser might have bought a different product or might have foregone the purchase altogether."); *Kaufman Co., Inc*., 926 F.2d at 1140 (adopting the same rule); State Indus., Inc., 883 F.2d at 1577 (adopting the same rule); *Del Mar Avionics, Inc.*, 836 F.2d at 1326 (adopting the same rule); *Paper Converting Mach. Co.*, 745 F.2d at 21(adopting the same rule).

[126] Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1545 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 867 (1995) (citing Kaufman Co. v. Lantech, Inc., 926 F.2d 1136, 1141 (Fed. Cir. 1991)).

[127] Shockley v. Arcan, Inc., 248 F.3d 1349, 1362 (Fed. Cir. 2001) (citing Grain Processing Corp. v. American Maize-Products Co., 185 F.3d 1341, 1350 (Fed. Cir. 1999)). The court went on to say, "Such market reconstruction, though hypothetical, requires, 'sound economic proof of the nature of the market." *Id. See also* Crystal Semiconductor Corp. v. Tritech Microelectronics Int'l, Inc., 246 F.3d 1336, 1354 (Fed. Cir. 2001) (citing the same rule and source). For an in depth discussion of the *Grain Processing* decision, *See infra* text accompanying notes 216-247.

[128] *Id.*

[129] *Id.*

[130] Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1156 (6th Cir. 1978).

[131] *Id.* at 1156 (citing 3 R. WHITE, PATENT LITIGATION: PROCEDURES AND TACTICS § 9.03(2) (1971)).

[132] *See, e.g.,* Tate Access Floors, Inc., v. Maxcess Technologies, Inc., 222 F.3d 958, 971

the court reiterated this position.[133] The four *Panduit* factors have been applied to determine "but for" causation in dozens of cases[134] and were far and away the most predominant test for causation used by the courts. However, given the difficulty of applying the *Panduit* factors to real world situations, courts have developed alternatives and tailored the test to specific situations.[135]

a. Demand for The Patented Product

There has to be demand for the patented product,[136] and such demand is determined from the perspective of the consumer.[137] Documented sales of the

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(Fed. Cir. 2000) ("A useful, but not exclusive, way for a patentee to prove entitlement to lost profits is provided by the four-part Panduit test, which 'requires that the patentee . . . "); Mahurkar v. C.R. Bard, Inc., 79 F.3d 1572, 1581 (Fed. Cir. 1996), *appeal after remand*, 155 F.2d 574 (Fed. Cir. 1998), *cert. denied*, 525 U.S. 1106 (1999) (adopting the same rule); Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki, 72 F.3d 857, 867 (Fed. Cir. 1995), *cert. granted, judgment vacated on other grounds*, 520 U.S. 1111 (1997) (adopting the same rule); BIC Leisure Products, Inc. v. Windsurfing International, Inc. 1 F.3d 1214, 1218 (Fed. Cir. 1993) ("Properly applied, the *Panduit* test is an acceptable, though not an exclusive, test for determining 'but for' causation."); State Industries, Inc v. Mor-Flor Industries, Inc., 883 F.2d 1573, 1577 (Fed. Cir. 1989), *cert denied*, 493 U.S. 1022 (1990) (adopting the same rule).

[133] Tate Access, Inc. v. Maxcess Technologies, Inc., 222 F.3d 958, 971 (Fed. Cir. 2000) ("A useful, but non-exclusive, way for a patentee to prove entitlement to lost profits is provided by the four factor Panduit test, which requires . . . "); Chiuminatta Concrete Concepts, Inc. v. Cardinal Industries, Inc., 1 Fed. Appx. 879, 883, 2001 WL 21304, at *3 (Fed. Cir. Jan. 8, 2001) ("The *Panduit* factors provide a common, although not exclusive, method for demonstrating lost profits in a damage award."). However, the reluctance of some courts to use the *Panduit* test is understandable in light of the irrational requirement that there be "no" acceptable non-infringing substitute. Usually, some sales would have been made by the patentee no matter how many alternatives are on the market, and profits lost on those sales should be recoverable.

[134] For a list of cases, *See* DONALD S. CHISUM, CHISUM ON PATENTS § 20.03[1][b][v], n.61, at 20-92 (2000).

[135] *See* Micro Motion, Inc. v. Kane Steel Co., Inc., 894 F.2d 1318, 1322 (Fed. Cir. 1990) ("Where there is evidence of a third party competitor, the lost profits theory would appear to be nonviable inasmuch as the third-party could have made the sale rather than the patentee. Under such circumstances, there appears to be no possible causation. However, such is not the law. Patentees have successfully urged modifications to the basic damage theory so as to cover situations other than the simple two-supplier market.").

[136] *See* BIC Leisure Products, Inc. v. Windsurfing Int'l, Inc., 1 F.3d 1214, 1218 (Fed. Cir. 1993) ("The first Panduit factor – demand for the patented product – presupposes that demand for the infringer's and patent owner's products is interchangeable. Under this assumption, evidence of sales of the infringing product may suffice to show Panduit's first factor, 'demand for the patented product.'"); Mark A. Glick, *The Law and Economics of Patent Infringement Damages*, 10 UTAH BUS. J. 11, 12 (Mar. 1997) ("The first prong of the *Panduit* test is rarely difficult for the plaintiff to meet. In fact, it is nonsensical. After all, if there were no demand for the patented product, there would be no infringement either.").

[137] State Indus., Inc. v. Mor-Flo Indus., Inc., 883 F.2d at 1573, 1579 (Fed. Cir. 1989), *cert. denied*, 493 U.S. 1022 (1990).

infringing product by the infringer automatically establish demand for the patented product.[138]

But, what if the patented product and the accused product do not occupy the same market niche because of a significant price difference?[139] The Federal Circuit answered this question in the case of *BIC Leisure Products, Inc. v. Windsurfing International, Inc.*,[140] setting a limit on causation. In *BIC*, the court held that the patented and infringing products are required to compete in the same market.[141] Indeed, the patented product and the infringing product have to be similar products in the same market.[142]

The facts of *BIC Leisure Products, Inc.* are instructive. In that case, the trial court awarded Windsurfing International, Inc. ("Windsurfing") lost profits for BIC Leisure Products Inc.'s ("BIC's") infringement of Windsurfing's re-issued patent.[143] Because Windsurfing failed to show its customers would have purchased sailboards from Windsurfing and other manufacturers in proportion to their market shares, the Federal Circuit reversed the lower court's award of lost profits. The Federal Circuit found that, while Windsurfing manufactured its sailboards using a roto-molding process and sold its products at the upper end of the price spectrum, BIC began making sailboards with a more cost-efficient blow-molding process and sold its products at the lower end of the market.[144] The trial court modified the *Panduit* test by presuming that Windsurfing would have captured a share of BIC's sales in proportion to Windsurfing's share of the sailboard market, and thus awarded Windsurfing lost profits based upon its *pro rata* percentage of BIC's sales for each year of the damages period.[145] After analyzing the price disparity between the two

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[138] *See, e.g., BIC Leisure Prod., Inc.*, 1 F.3d at 1218-19 (Fed. Cir. 1993) (*see supra* note 136 and quotation therein); Gyromat Corp. v. Champion Spark Plug Co., 735 F.2d 549, 552 (Fed. Cir. 1984) ("The substantial number of sales by Champion [the infringer] of infringing products containing the patented features itself is compelling evidence of the demand for the product. . . . Champion's sales necessarily meant that there were buyers who wanted the product and were willing to pay Champion's price, which was substantially the same as that of Gyromat.") (citation omitted).

[139] Of course, the claims of a patent may embrace many different configurations of the invention.

[140] 1 F.3d 1214 (Fed. Cir. 1993).

[141] *Id.* at 1218-19.

[142] *Id. See also*, Crystal Semiconductor Corp. v. Tritech Microelectronics Int'l, Inc., 246 F.3d 1336, 1360 (Fed. Cir. 2001) ("If the patentee and infringer do not sell their products in the same market segment, 'but for' causation cannot be demonstrated."). As subsequent cases have borne out, the *Panduit* court was unsophisticated in phrasing the demand requirement in this manner. In reality, there has to be a demand for the version of the invention sold by the patentee, at the price for which the patentee sells the product, in the market where the product is sold, etc. A general demand for something (or anything) happening to fall within the claims of the patent is not enough.

[143] *Bic Leisure Prod., Inc.*, 1 F.3d at 1216.

[144] *Id.* at 1216-17.

[145] *Id.* at 1217.

products and the price sensitivity of the market, the Federal Circuit concluded the trial court had erred in assuming customers would have redistributed their purchases among all remaining sailboards, including Windsurfing's product at a price premium of $200 to $300.[146] Based on the foregoing analysis, the Federal Circuit concluded that,

> The *Panduit* test, however, operates under an inherent assumption, not appropriate in this case, that the patent owner and the infringer sell products sufficiently similar to compete against each other in the same market segment. If the patentee's and the infringer's products are not substitutes in the competitive market, *Panduit*'s first two factors do not meet the "but for" test – a prerequisite for lost profits.[147]

The nature of demand also is critical. Recall that, under general tort rules of "but for" causation, no causal link exists if the harm would have occurred regardless of the defendant's acts.[148] Where a product which incorporates a patented feature is given away as part of an overall sales program, the infringer may be able to effectively challenge the presence of consumer demand.[149] In one recent case, the Federal Circuit observed, that the defendant's "expert witness in this case testified that third-party products on the market were acceptable substitutes due to the lack of customer demand for the patented features."[150] This type of analysis leads directly to the second prong of the *Panduit* test.

b. Absence of Non-Infringing Substitutes

Panduit explored the logical foundation of the requirement that there be no acceptable non-infringing substitute as a prerequisite to proving lost profit damages.[151] Yet, taken on its face, the *Panduit* language precludes recovery of

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[146] *Id*. at 1218.

[147] *Id*. Here, the court focused on an erroneous assumption underlying *Panduit* – that all products falling within a patent's claims are the same in economic terms. As *BIC Leisure Prod., Inc.* so adroitly points out, they are not.

[148] *See* KEETON, *supra* note 3, § 41, at 266.

[149] *See* Micro Chem., Inc. v. Lextron, Inc., 161 F. Supp. 2d 1187, 1192 (D. Colo. 2001) (suggesting that, "the issue of commercial success [in evaluating an obviousness challenge] is problematic, as the machines are provided to the . . . customers free of charge" in conjunction with its discussion of a claim for lost profit damages and eventually holding, on several grounds, that such damages were not available.).

[150] Fiskars, Inc. v. Hunt Mfg. Co., 279 F.3d 1378, 1383 (Fed. Cir. 2002).

[151] Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1162 (6th Cir. 1978) (where, in rendering its opinion, the Sixth Circuit observed that, "Proof of the absence of non-infringing substitute: '(I)nvolves some of the same evidence as that which was introduced in support of the validity of the patent. The patent owner who had proved a long-felt need for a particular invention has a lighter burden in establishing that his customers, as well as the infringer's customers, were in fact seeking to obtain a patented solution to such need or problem. The other side of the coin involves a strong showing by the infringer that although the patent may have embodied some trifling improvement which

lost profit damages whenever there is a non-infringing substitute product. Faced with this inherently unworkable test, courts have modified the rigid *Panduit* factors and thus altered the parameters of "but for" causation in infringement cases.

Courts have struggled to find workable definitions of "acceptable" substitute products.[152] But, some standards are identifiable. "Acceptability" is viewed from a buyer's perspective.[153] To be considered "acceptable," the alternative product must contain advantages similar to the patented product's,[154] and buyers have to be motivated to purchase because of those advantages.[155]

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was patentable to a narrow extent, such improvement did not create any preference for the patented product rather than the non-infringing substitute.. . .'") (citing 3 R. WHITE, PATENT LITIGATION: PROCEDURE AND TACTICS § 9.03(2) (1971)).

[152] In the case of *Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1578 (Fed. Cir. 1992), the court dealt with the definition of acceptable substitute products. In that case, defendant Johnson & Johnson Orthopedics ("JJO") argued that the Special Master erred in finding that there were no acceptable non-infringing substitutes. JJO argued that it could have purchased for resale non-infringing alternatives to its products from a German manufacturer which held a license to the patents in suit. The Master had found, however, that although the German manufacturer was licensed to manufacture products under the patent in suit, it would have been unable to manufacturer a commercially acceptable version of those products. Thus, the absence of a commercially "acceptable," although licensed, version of the patented product was itself not an acceptable substitute. *Id*.

[153] Nat'l Research Lab. v. Eppert Oil Co., Inc., 104 F. Supp. 2d 851, 859 (S.D. Ohio 2000); Harold R. Brown, *Proof of Lost Profits Damages Following* Rite-Hite v. Kelley, 23 AIPLA Q.J. 577, 597 (1995).

[154] *See* SmithKline Diagnostics, Inc. v. Helena Lab. Corp., 926 F.2d 1161, 1166 (Fed. Cir. 1991) ("If purchasers are motivated to purchase because of particular features of a product available only from the patent owner and infringers, products without such features would obviously not be *acceptable* noninfringing substitutes.") (emphasis by the court); Kaufman Co., Inc. v. Lantech, Inc., 926 F.2d 1136, 1142-43 (adopting the same rule); TWM Manuf. Co., Inc. v. Dura Corp., 789 F.2d 895, 901 (Fed. Cir. 1986) (adopting the same rule). If the patented product is unique, there is no acceptable substitute. Heidelberger Druckmaschinen Ag v. Hantscho Commercial Prod., Inc., No. 87 CIV 4522 (LMM), 1995 WL 693170, at *2 (S.D.N.Y. Nov. 22, 1995). One court has even suggested that, a product lacking attributes or advantages identical to the patented product's is not an acceptable substitute. Northlake Marketing & Supply, Inc. v. Glaverbel, S.A., 72 F. Supp. 2d 893, 910 (N.D. Ill. 1999), *appeal dismissed*, 217 F.3d 857 (Fed. Cir. 1999) (citing TWM Mfg. Co., Inc. v. Dura Corp., 789 F.2d 895 (Fed. Cir. 1986), *cert. denied*, 479 U.S. 852 (1986)).

[155] *See* Stryker Corp. v. Intermedics Orthopedics, Inc., 96 F.3d 1409, 1418 (Fed. Cir. 1996) ("'The mere existence of a competing device does not necessarily make the device an acceptable substitute' and that a 'product on the market which lacks the advantages of the patented product can hardly be termed an acceptable substitute.'") (citing Standard Havens Prods., Inc. v. Gencor Indus., Inc., 953 F.2d 1360, 1373 (Fed. Cir. 1991)). Moreover, the patent owner has to show either (1) that purchasers in the marketplace generally are willing to buy the patented product for its advantages, or (2) that specific consumers of the infringing product purchase on that basis. Stryker Corp. v. Intermedics Orthopedics, Inc., 891 F. Supp. 751, 823 (E.D.N.Y. 1995) (quoting Standard Havens Prods., 953 F.2d at

"Accused infringers routinely rely on witness testimony to show that a non-infringing alternative is acceptable because customers do not seek the patented features absent from the substitute product."[156] The level of competition (including cross elasticity of demand and market interchangeability) between the infringed product and the proposed alternative must be considered when determining acceptability of the alleged substitute.[157] But, an infringer cannot wait until after a judgment awarding damages is entered, market a non-infringing product which gains market acceptance, and then argue that an "acceptable" alternative exists.[158]

Market power also is relevant. Patented products with market power inherently do not have acceptable substitutes.[159] Where infringement has occurred for a long time, this factor becomes less important. Courts seem willing to ignore this requirement where an infringer has continued to sell a patented product while ignoring a non-infringing substitute.[160]

The mere existence of a competing device does not necessarily make it an acceptable substitute.[161] To be considered "acceptable" in an elastic market – where changes in demand correspond to changes in price and/or supply – the alleged alternative cannot have a disparately higher price than, or possess characteristics significantly different from, the patented product.[162] A patented

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1373).

[156] Fiskars, Inc. v. Hunt Mfg. Co., 279 F.3d 1378, 1382 (Fed. Cir. 2002) (pointing out that, while the infringer "certainly had the opportunity at trial to present expert testimony that its non-infringing product would be acceptable to consumers, as was done in *Grain Processing*, [it] apparently chose not to do so." *Id.* at 1383).

[157] *See* BIC Leisure Prod., Inc. v. Windsurfing Int'l, Inc., 1 F.3d 1214, 1217-19 (Fed. Cir. 1993) (analyzing the different market niches occupied by the infringing and the infringed products and concluding that they did not compete).

[158] *See* Fiskars, Inc. v. Hunt Mfg. Co., 279 F.3d 1378, 1383 (Fed. Cir. 2002) (holding that post trial sales of a non-infringing product could not be used as a basis to reopen the judgment and vacate an award of damages).

[159] *See* Northlake Mktg. & Supply, Inc., 72 F. Supp. 2d at 911. ("It follows as a logical matter that if a patentee does possess market power (monopoly power), there cannot be close substitutes for the patented product.").

[160] *See Stryker Corp.*, 96 F.3d at 1418, n.13 ("As the *Panduit* court noted, '[t]he 'acceptable substitute' element, though it is to be considered, must be viewed of limited influence where the infringer knowingly made and sold the patented product for years while ignoring the 'substitute.'") (quoting Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1162, n.9 (6th Cir. 1978)); *Northlake Mktg. & Supply, Inc.*, 72 F. Supp. 2d at 910-11 (discussing the same rule).

[161] *See Stryker Corp.*, 96 F.3d at 1418 ("'the mere existence of a competing device does not necessarily make the device an acceptable substitute'"); *Standard Havens Prods., Inc.*, 953 F.2d at 1373 (adopting the same rule); *Stryker Corp.*, 891 F. Supp. at 823 (adopting the same rule).

[162] *See* Kaufman Co., Inc. v. Lantech, Inc., 926 F.2d 1136, 1142 (Fed. Cir. 1991) ("To be deemed acceptable, the alleged acceptable noninfringing substitute must not have a disparately higher price than or possess characteristics significantly from the patented product.") (citing Gyromat Corp. v. Champion Sparkplug Co., 735 F.2d 549, 553 (Fed. Cir.

product manufactured by a licensee has been found to be an acceptable alternative.[163]

The number of competitors in the market affects the analysis. As suggested above, *Panduit* seems to limit causal liability to situations where there were only two products – the patented product and one or more infringing products. Recognizing that such a scenario rarely occurs, courts have not felt tied to this restriction.

(1) "But For" Causation in Two-Competitor Markets

Panduit is best applied in a two-competitor market[164] because the inference of "but for" causation is readily met.[165] In fact, the inference is "nearly conclusive."[166] Because of the strength of the inference, some courts question whether a *Panduit* analysis is even necessary in cases involving two-competitor markets.[167] More recently, the Federal Circuit has flatly stated,

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1984)).

[163] *See* Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1222 (Fed. Cir. 1995) (competing products manufactured by patentee's licensee held to be acceptable noninfringing substitutes). *See also* Vulcan Engineering Co. v. FATA Aluminum Inc., 278 F.3d 1366 (Fed. Cir. 2002) (where the court held that a license "to have made" was not consistent with an award of lost profit damages).

[164] *See* Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki, 72 F.3d 857, 867 (Fed. Cir. 1995), *cert. granted, judgment vacated on other grounds*, 520 U.S. 1111 (1997) ("When there is a two-supplier market occupied by the patentee and the infringer, it is reasonable for the jury to infer that the patentee would have made the infringer's sales, absent proof to the contrary."); State Industries, Inc. v. Mor-Flo Industries, Inc., 883 F.2d at 1573, 1578 (Fed. Cir. 1989), *cert. denied*, 493 U.S. 1022 (1990) ("In the two-competitor market, it is reasonable to assume, provided the patent owner has the manufacturing and marketing capabilities, that it would have made the infringer's sales.").

[165] *See* Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1222 (Fed. Cir. 1995) ("In a market with only two suppliers, the patentee and the infringer, this requirement is readily met, for example by applying the guideline set forth in *Panduit* . . ."); Gasser Chair Co., Inc. v. Infanti Chair Mfg. Corp., 943 F. Supp. 201, 215 (E.D.N.Y. 1996) *vacated on other grounds*, 95 F.3d 1165 (Fed. Cir. 1996) ("Where the holder of the patent and the infringer are in what has been referred to during the trial as a 'niche' market, that is a market with only two suppliers, the patentee and the infringer, the 'but for' prerequisite is easily satisfied."); Heidelberger Druckmaschinen Ag v. Hantscho Commercial Products, Inc., No. 87 CIV 4522 (LMM), 1995 WL 693170, *2 (S.D.N.Y. Nov. 22, 1995) (adopting the same rule).

[166] *See* Kaufman Co., Inc. v. Lantech, Inc., 926 F.2d 1136, 1141 (Fed. Cir. 1991). The *Kaufman* court stated:

> The same inference [that the patentee would have made the infringer's sales] can be compelled by another course [in addition to meeting the *Panduit* factors]. When the patentee and the infringer are the only suppliers present in the market, it is reasonable to infer that the infringement probably caused the loss of profits. Consequently, when the fact situation compels the reasonableness of the inference via both courses, the inference approaches conclusiveness.

Id.

[167] *See id.* (suggesting an alternative to the Panduit factors); *State Industries, Inc.*, 883

"The patent owner's initial burden can be met by showing the existence of a two-supplier market."[168]

(2) "But For" Causation in Multi-Competitor Markets

Questions regarding "but for" causation in multi-competitor markets remain thorny. In such situations, the *Panduit* factors are difficult, if not impossible, to apply. Rather than preclude lost profit damages altogether in such situations, a case law alternative to "acceptable non-infringing substitutes" was created. Courts developed the market share test, which allows a patentee to recover lost profits, despite the presence of acceptable, non-infringing substitutes, if it can prove with reasonable probability sales that would have been made "but for" the infringement.[169] While the patent owner and the infringer must compete in the same market and the products must be similar, market share proof allows recovery of lost profit damages where strict "but for" proof cannot be established.[170]

The Federal Circuit explored the interplay between demand and the patent owner's share of the relevant market in *State Industries, Inc. v. Mor-Flo Industries, Inc.* ("Mor-Flo").[171] In that case, Mor-Flo and its subsidiary infringed State Industries, Inc.'s ("State's") patent covering a method for insulating water heaters with foam. The patent at issue related not to the water heater itself, but rather to a method of insulating the water heater tank by using polyurethane foam.[172] Because of the intensely competitive and fragmented nature of the water heater market, State produced evidence of lost sales, saying

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F.2d at 1578 (adopting market share analysis); Del Mar Avionics, Inc. v. Quinton Inst. Co., 836 F.2d 1320, 1327 (Fed. Cir. 1987) (holding, without mentioning *Panduit*, that: "When the patent owner and infringers were the only suppliers of the patented product, it is reasonable to infer that the patent owner would have made the sales made by the infringers."); Paper Converting Machine Co. v. Magna Graphics Corp., 745 F.2d 11, 21 (Fed. Cir. 1984); Lam, Inc. v. Johns-Manville Corp., 718 F.2d 1056, 1065 (Fed. Cir. 1983) (stating, without mentioning *Panduit*, that: "Where, as here, the patent owner and the infringer were the only suppliers of the product, causation may be inferred.") (citing Livesay Window Co. v. Livesay Industries, Inc. 251 F.2d 469, 473 (5th Cir. 1958)).

[168] Polymer Industrial Products Co. v. Polymer Enterprises, Inc., 10 Fed. Appx. 8132, 819, 2001 WL 253259, at *5 (Fed. Cir., Mar. 13, 2001) (citing SmithKline Diagnostics, Inc. v. Helena Labs. Corp., 926 F.2d 1161, 1165 (Fed. Cir. 1991); *see also* Honeywell International Inc. v. Hamilton Sundstrand Corp., 166 F. Supp. 2d 1008, 1032 (D. Del. 2001) ("[A] patent owner's initial burden can be met by showing the existence of a two-supplier market.") (citing *Polymer Industrial Products Co.*, 2001 WL 253259, at *5; *SmithKline Diagnostics, Inc.*, 926 F.2d at 1165).

[169] *See BIC Leisure Products, Inc.*, 1 F.3d 1214, 1219 (Fed. Cir. 1993) ("This court has held that a patent owner may satisfy the second *Panduit* element by substituting its market share for proof of the absence of acceptable substitutes.") (citing *State Industries, Inc.*, 883 F.2d at 1578).

[170] *BIC Leisure Products, Inc.*, 1 F.3d at 1219.

[171] 883 F.2d 1573 (Fed. Cir. 1989), *cert. denied*, 493 U.S. 1022 (1990).

[172] *See id.* at 1575.

it should recover lost profits for its market share of Mor-Flo's infringing sales with a reasonable royalty for the remainder.[173] In analyzing the *Panduit* "demand" prong, the Federal Circuit specifically found that

> Foam insulation was the source of customer demand. The only two available methods, State's and Ream's, were patented. It, therefore, is probable, in light of the district court's undisputed finding that customers did not care about the particular method used, that both State and Ream would have sold their market shares of Mor-Flo's infringing sales.[174]

The Federal Circuit declined to disturb the trial court's award of reasonable royalties based on the fact that, "The water heater industry was intensely competitive with small profit margins, and fibreglass was a lesser alternative that manufacturers, however reluctantly, would opt for if the licensing fee for foam was too high."[175] Ultimately, the Federal Circuit decided it was within the district court's province to conclude that, "Potential licensees would have stayed with lesser alternatives promising some profit, rather than risk losing money by signing on at a high rate."[176] Other factors also are relevant to defining acceptable substitutes.[177] Issues arise when the patented feature of the product is not always used by the ultimate purchaser[178] and again when the patentee does not utilize its own invention.[179]

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[173] *Id.* at 1576.

[174] *Id.* at 1579.

[175] *Id.* at 1581.

[176] *Id.*

[177] *See* C.R. Bard, Inc. v. Boston Scientific Corp., No. 99-1304, 2000 WL 915241, at *4 (Fed. Cir. July 7, 2000), corrected No. 99-1304, 2000 WL 1300936 (Fed. Cir. Aug 28, 2000) (noting that the jury considered substantial evidence on whether Bard "had a reasonable probability of otherwise making the infringed sales and [to] calculate the damage amount . . . . [s]pecifically . . . evidence about its competitors, including data on their products; market structure, size, and shares; pricing; marketing strategies and expenditures; and the predicted sales and profit figures."); Bose Corp. v. JBL, Inc., 112 F. Supp. 2d 138 (D. Mass. 2000) (identifying market segments based on price); Harold R. Brown, *Proof of Lost Profits Damages Following* Rite-Hite v. Kelley, 23 AIPLA Q.J. 577, 595 (1995). Brown notes:

> Factors favoring a finding that there are acceptable, non-infringing alternatives have included: a patent owner's loss of sales to a third party making a non-infringing product; testimony that a purchaser would have purchased either the patented or a non-infringing alternative product; and the availability of non-infringing products having features that are not possessed by the patent owner's product and that are desired by customers.

Id. (citing SmithKline Diagnostics v. Helena Labs, 926 F.2d 1161, 1166 (Fed. Cir. 1991)).

[178] *See* Stryker Corp. v. Intermedics Orthopedics, Inc., 96 F.3d 1409, 1418 (Fed. Cir. 1996) (describing the patent at issue relating to the stem component of an artificial hip prosthesis inserted into a patient's femur where the patented device was frequently used or implanted during surgery). For a more detailed discussion of the *Stryker* litigation and how the Federal Circuit resolved the issue presented, *see infra* notes 302-06 and accompanying text.

[179] See Ajinomoto Co., Inc. v. Archer-Daniels-Midland Co., No. CIV. A 95-218-SLR, 1996 WL 621835, *2, n.6 (D. Del. Oct. 21, 1996), aff'd, 229 F.3d 1338 (Fed. Cir. 2000).

c. Manufacturing and Marketing Capability

Without an ability to manufacture and market the patented product in sufficient quantity to meet market demand (both actual and the amount allegedly lost), a patentee is unable to prove "but for" causation.[180]

d. Amount of Damages

Analysis of damage calculations by courts demonstrates how the parameters of "but for" causation liability have been shaped by the courts. Plaintiff's burden requires the presentation of proper evidence for the computation of the loss of profits,[181] yet plaintiffs do not need to negate every possibility the purchaser might not have purchased a product other than the patentee's, absent the infringement.[182]

A plaintiff is not required to prove the amount of damages with unerring precision.[183] The trial court is required to approximate, if necessary, the amount due a patent owner.[184] However, while damages cannot be speculative,[185] the risk of uncertainty in the calculation is borne by the

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The court notes:

> ADM cites a footnote in *King Instrument Corp. v. Perego*, 65 F.3d 941, 951 n.5 (Fed. Cir. 1995), for the proposition that a patentee must sell a product in competition with the infringer in order to recover lost profits. The *King Instruments* court did not specifically pronounce this rule. The court explained in the same footnote that when a patentee does not sell a product in competition with the infringer, it "reflects the general rule that lost profits are recoverable only if demonstrated by adequate evidence in the record.

Id.

[180] *See* Gargoyles, Inc. v. United States, 113 F.3d 1572, 1617-18 (Fed. Cir. 1997) (noting that plaintiff lacked capacity to produce additional products); Fonar Corp. v. General Elec. Co., 902 F. Supp. 330, 352 (E.D.N.Y. 1995), *aff'd in part, rev'd in part*, 107 F.3d 1543 (Fed. Cir. 1997), *cert. denied*, 522 U.S. 908 (1997) (examining evidence of the capacity of the patentee to produce the patented product); Stryker Corp. v. Intermedic Orthopedics, Inc., 891 F. Supp. 751, 825 (E.D.N.Y. 1995) (examining evidence of the capacity of the patentee to produce the patented product).

[181] *See Stryker Corp.*, 891 F. Supp. at 818 ("The plaintiff's burden includes the presentation of proper evidence for the computation of the loss of profits.") (citing Standard Havens Products v. Gencor Indus., 953 F.2d 1360, 1372-73 (Fed. Cir. 1991)).

[182] *See* Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1545 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 867 (1995) ("A patentee need not negate every possibility that the purchaser might not have purchased a product other than its own, absent the infringement.") (citing Kaufman Co. v. Lantech, Inc., 926 F.2d 1136, 1141 (Fed. Cir. 1991)).

[183] *See, e.g.*, Del-Mar Avionics, Inc. v. Quniton Instrument Co., 836 F.2d 1320, 1327 (Fed. Cir. 1987) (stating that "'the amount need not be proven with unerring precision'") (citing Bio-Rad Laboratories v. Nicolet Inst. Corp., 739 F.2d 604, 616 (Fed. Cir. 1984)).

[184] *See, e.g., Stryker Corp.*, 891 F. Supp. at 818 ("Courts recognize that the determination of damages 'is not an exact science,' . . . Rather, '[t]he trial court is required to approximate, if necessary, the amount to which the patent owner is entitled.'") (citing Del-Mar Avionics, Inc. v. Quniton Instrument Co., 836 F.2d 1320, 1327 (Fed. Cir. 1987)).

[185] *See, e.g.*, Oiness v. Walgreen Co., 88 F.3d 1025, 1030 (Fed. Cir. 1996) (holding that

infringer instead of by the patentee.[186] The trial court maintains discretion when selecting the method used to calculate lost profit damages.[187] As a consequence, courts have used several methods to calculate lost profits, including the most frequently used "incremental profits" approach.[188]

3. *Panduit* – Dead or Alive?

The four-step *Panduit* test has received consistent attention as a "useful, but not exclusive test for determining 'but for' causation."[189] At the same time, the

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the computation of damages was speculative and reversing the award). For a more detailed discussion of the *Oiness* litigation and how the Federal Circuit resolved the issues presented, *see supra* notes 204 - 215 and accompanying text.

[186] *See, e.g.*, Minco, Inc. v. Combustion Engineering, Inc., 95 F.3d 1109, 1118 (Fed. Cir. 1996) ("[T]he trial court may resolve doubts underlying the precise measurement of damages against the infringer.") (citing Lam, Inc. v. Johns-Manville Corp., 718 F.2d 1056, 1065 (Fed. Cir. 1983)); Story Parchment Co. v. Paterson Parchment Paper Co., 282 U.S. 555, 563 (1931)). *Story Parchment* was a pre-1946 case involving calculation of an infringer's profits. Hence, there is a question whether the logic of the rule adopted in that case applies today. The rule has been cited often enough, however, that it is firmly entrenched in the law of infringement damages.

[187] *See, e.g.*, *Minco, Inc.*, 95 F.3d at 1118 ("Because fashioning an adequate damages award depends on the unique economic circumstances of each case, the trial court has discretion to make important subsidiary determinations in the damages trial, such as choosing a methodology to calculate damages.") (citing SmithKline Diagnostics, Inc. v. Helena Lab. Corp., 926 F.2d 1161, 1164 (Fed. Cir. 1991)); Mahurkar v. C.R. Bard, Inc., 79 F.3d 1572, 1579 (Fed. Cir. 1996), appeal after remand, 155 F.2d 574 (Fed. Cir. 1998), cert. denied, 525 U.S. 1106 (1999) ("A trial court has discretion both in selecting the methodology for and in calculating a damage award.") (citing King Instrument Corp. v. Perego, 72 F.3d 855 (Fed. Cir. 1995), cert. denied, 517 U.S. 1188 (1996)).

[188] *See, e.g.*, Northlake Marketing & Supply, Inc. v. Glaverbel S.A., 72 F. Supp. 2d 893, 911 (N.D. Ill. 1999) ("The incremental profit approach is well established in patent damages cases."); Proctor & Gamble Co. v. Paragon Trade Brands, Inc., 989 F. Supp. 547, 602 (D. Del. 1997) ("P&G presented undisputed testimony as to which of its costs were fixed, semi-variable, and variable during the damages period. . . . [presenting] undisputed evidence of its before-tax profit margin . . . . Thus, P&G established the amount of profit it would have made on sales lost to the infringing products.") (citations to the record omitted); Gasser Chair Co., Inc. v. Infanti Chair Mfg. Corp., 943 F. Supp. 201, 216 (E.D.N.Y. 1996), *vacated on other grounds*, 95 F.3d 1165 (Fed. Cir. 1996) (describing an incremental profit calculation); *Stryker Corp.*, 891 F. Supp. at 825 ("Incremental profits are the difference between gross revenues resulting from regaining the sales lost due to infringement and the incremental cost of making those sales. This measure of profit loss is appropriate when the patentee's fixed costs do not rise, or only slightly increase, relative to increases in production.") (citing State Industries, Inc. v. Mor-Flo Industries, Inc., 883 F.2d 1573, 1580 (Fed. Cir. 1989), *cert. denied*, 493 U.S. 1022 (1990); Paper Converting Machine Co. v. Magna Graphics Corp., 745 F.2d 11, 22 (Fed. Cir. 1984)).

[189] On its face, the *Panduit* test is of limited benefit because of the apparently irrational requirement that there be "no" acceptable substitutes. Often, there is some acceptable non-infringing substitute yet some infringing sales would probably have been made by the patentee. Logically, those lost profits should be recoverable.

case has been the subject of numerous court-engrafted expansions, limitations and qualifications. While the case clearly has some value for determining causation-in-fact, even if as nothing more than a departure point for the analysis, questions naturally arise as to the continued vitality of the four-part test. Recent remarks made by a member of the Federal Circuit bench may shed some light on the issue.

During the AIPLA 2001 Mid-Winter Institute, Judge Rader of the Federal Circuit spoke extemporaneously before a luncheon audience and provided his thoughts on patent infringement damages.[190] Judge Rader made the following observations regarding the continuing utility of *Panduit*:

> The *Panduit* test has been repeatedly stated by the court to not be the exclusive test. And, as the court has become more sophisticated in its economic analysis, I think the court is beginning to recognize that *Panduit* really only works in a two-supplier market with identical products without any outlying substitutes. Essentially, *Panduit* only works in the hypothetical situation that I've rarely seen.[[191]] In truth, in a real marketplace situation, you almost always have substitutes. Not direct substitutes, but market substitutes. . . . We do have to recognize that *Panduit* has tremendous shortcomings.[192]

The Judge later concluded, "I'm suggesting that *Panduit* is probably a test with very limited application."[193] Judge Rader's remarks seem appropos, given current case law. *Panduit* is on its last legs, if it ever had any to begin with.[194] But, if *Panduit* is not the touchstone it once may have been, what are the correct tests for determining causation-in-fact? While there is abundant support for using "but for" as the test for causation-in-fact, the absence of a clear standard may prove problematic.

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[190] Judge Randall R. Rader, Remarks at AIPLA Mid-Winter Institute, *Protecting or Attacking Damages Judgments at the Court of Appeals* (January 2001) (hereinafter "Rader") (tape available from American Intellectual Property Law Ass'n, 2001 Jefferson Davis Highway #203, Arlington, Va. 22202).

[191] *But see* Vulcan Engineering Co. v. FATA Aluminum Inc., 278 F.3d 1366, 1383 (Fed. Cir. 2002) (Michel, J., dissenting, criticizing the majority because it "failed to apply the 'but for' test for a two supplier market"); Electro Scientific Industries, Inc. v. General Scanning Inc., 247 F.3d 1341, 1353 (Fed. Cir. 2001) (Rader, J., stating that the parties "competed in a two-supplier market"); Polymer Industrial Products Co. v. Bridgestone/Firestone, Inc., 10 Fed. Appx. 812, 819, 2001 WL 253259, at *5 (Fed. Cir. 2001) (where yet another two-supplier market is found).

[192] Rader, *supra* note 190.

[193] *Id.*

[194] *Id. But see* Mary A. Woodford, *Did Grain Procession [sic] Murder Panduit in the Conservatory with a Candlestick? or, Are Rumors of Panduit's Demise Exaggerated*, INTELL. PROP. L. NEWSL., Winter 2001, at 6 (concluding that "Panduit lives.").

4. The "But For World" – Economic Factors and *Grain Processing*

Federal Circuit opinions have employed the vigorous application of "but for" requirements, coupled with economic analysis, to establish new limits to causal liability. Judge Rader explored the Federal Circuit's growing focus and reliance on economic issues.[195]

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[195] Rader, *supra* at note 190. Based on a hypothetical infringement case, Judge Rader postulated a damage calculation involving a situation in which the infringer sold more infringing products than the patentee at a lower price and lower margin than the patentee. In the prototypical case, the patentee's higher gross profit, derived from a higher sales price at lower volumes, would be multiplied by infringer's higher unit sales, obtained with a lower sales price and lower margin. Given this scenario, Judge Rader observed that the calculation

> is what I would really characterize as the deterrence model. It is perhaps characterized by ease of proof. You can quickly supply your profit figures. You can quickly calculate how many products the infringer sold. I multiple them and I have damages – lost profit damages. The problem is that those lost profits damages are probably not compensatory. They are a wonderful reflection of a punitive tax on the infringer. Why punitive? Well, because some economist is going to very quickly point out a flaw in my damages reasoning. The flaw is that, frankly, at the price that I was selling at to make a . . . profit, I could not have made all the sales . . . This all depends, of course, upon economics and economic analysis.

Id. Judge Rader went on to explain, that in a compensatory model based on sound economic principles,

> for every price on a demand curve, we have a certain quantity that can be sold. And an economist will tell us that demand curves slope downwards. Meaning that at higher prices you sell fewer of a interchangeable product than you would sell at lower prices. Very common sense economic analysis.

Id. Thus, Judge Rader's economic analysis teaches that if we assume that a patentee sold at a higher price than the infringer, the patentee would sell fewer products. Conversely, if an infringer sells at a lower price, then it will be able to sell more products. As Judge Rader observed, "This would happen in all but the rarest circumstances where price does not have an effect on demand. I have never personally seen that model shown in any real life situation. But, it is theoretically possible." *Id.*

In commenting on the compensatory economic model, Judge Rader went on to say,

> It is very clear that in a truly compensatory system, [the patentee] could not have made all of [the infringer's] sales at the higher price [at which the patentee sold]. An accurate compensatory lost profit calculation, even in the simplest two supplier market with identical products, is going to demand a demand curve. To compute lost profits, I'm going to have to know what effect price has on my product. To compensate I'm going to have to know the economics of demand, supply and price over time.

Id. Further clarifying his thoughts regarding the economics of supply and demand and their impact on infringement damage calculations, Judge Rader stated,

> Demand curves slope downwards. Therefore, there is no way that [the patentee] could have sustained the same quantity of sales at a higher price. How are we going to calculate then what that price should actually be in a compensatory model? We're going to have to know what the slope of the demand curve is. We're going to have to have an economic analysis of the market place as it actually exists and then understand that we are really dealing with a slightly different marketplace – the marketplace that would have existed but for infringement. And, we are going to need to come up with a

Examples of this trend include the court's opinions in at least four opinions.

First, in *BIC Leisure Products, Inc. v. Windsurfing International, Inc.*,[196] an opinion authored by Judge Rader, the Federal Circuit limited the "but for" test by holding that, "If the patentee's and the infringer's products are not substitutes in a competitive market, *Panduit's* first two factors do not meet the 'but for' test – a prerequisite for lost profits."[197] Based on a substantial price differential between the infringed and the infringing products, the court found the patentee would not have lost sales and profits. The court signaled its willingness to consider economic and market conditions in applying the "but for" standard for causation.

Second, in *Pall Corp. v. Micron Separations, Inc.*,[198] the trial court awarded damages split between lost profits and a reasonable royalty. In that case, there were initially three competitors in the relevant product market. Both competing products infringed Pall's patent. During the pendency of the case, Pall licensed one previously infringing competitor. The Federal Circuit held that, prior to the license grant, there were no non-infringing substitute products, while after the license, the licensee's presence in the marketplace provided a non-infringing substitute and thus limited the amount of potential lost profits to the share of defendant's sales Pall would have made.[199] In its

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> demand curve that accounts for those factors. It will require substantial economic evidence. Economic evidence of some reliability and credibility.

Id. Interestingly, during his remarks Judge Rader referenced "more to come" from the Federal Circuit. *Id.* We now have two additional opinions authored by judge Rader exploring the economic aspects of damages. Shockley v. Arcan, Inc., 248 F.3d 1349 (Fed. Cir. 2001); Crystal Semiconductor Corp. v. Tritech Microelectronics International, Inc., 246 F.3d 1336 (Fed. Cir. 2001).

In response to questions from the audience inquiring about the extent to which the Federal Circuit has provided guidance on appropriate demand curves, Judge Rader said, "The court has not, and should not dictate the precise forms of proof [of demand curves]. That's going to differ in every case with the differences in the marketplace. I think what you will see the court taking into consideration is the reliability of the economic evidence." Rader, *supra* note 190. Later Judge Rader observed,

> The court really has provided guidance. It has said that the curve is the curve that would have occurred but for infringement. We're talking about a hypothetical marketplace that did not occur. But, it's a hypothetical marketplace that is based upon actual market data. The actual market data is the elasticity of demand. What is the effect of price on the number of sales in the market? Elasticity is a measure of the amount of quantity change with a 1% change in price. Well, that can be measured. Then, of course, you have to factor in the additional implications of what would have happened but for infringement. Removing the infringing product from the market, how would that have effected differently the price elasticity of demand? . . . . This is not speculation. I think this is the essence of calculation of compensatory damages.

Id.

[196] 1 F.3d 1214 (Fed. Cir. 1993). *See supra* text accompanying notes 140-147 for the facts of this case.

[197] *Id.* at 1218.

[198] 66 F.3d 1211 (Fed. Cir. 1995) (Newman, J.).

[199] *Id.* at 1223.

opinion, the court specifically stated that, "This holding implements the reasoning that the purpose of compensatory damages is not to punish the infringer, but to make the patentee whole."[200] In response to Pall's argument that the infringer would receive a windfall anytime the patentee settled with any of the remaining infringers, the court said, "We doubt that injustice is inevitable, for the setting of the royalty rate and the discretion to multiply damages can assist in achieving a just remedy."[201]

The court also analyzed the margin allowed Pall for its lost profits. The evidence showed Pall's prices were higher than the infringer's. In calculating lost profits, the trial court reduced the margin introduced in evidence by Pall, stating that some customers in the market would have purchased other types of competing products. While noting that, "In general, an infringer's sales at a lower price do not defeat the patentee's recovery of its losses at the patentee's price, for the principle of patent damages is to return the patentee to the pecuniary position it would have been in, but for the infringement," the court found no clear error in the district's court's finding of a reduced rate for Pall's profits.[202]

The court affirmed the award of damages split between lost profits and a royalty after the license and remanded for a recalculation of lost profits on all of defendant's sales made before the license at the reduced margin.[203]

Third, in *Oiness v. Walgreen Co.*,[204] the owner of a patent for a folding headrest sued Walgreen for infringement. The Federal Circuit considered Walgreen's appeal of an award of $1.1 million in lost profits and $10.5 million in projected lost profits. At trial, Oiness did not present proof of Walgreen's sales. Rather, Oiness developed a damages theory based on its calculation that every one of Walgreen's 1,600 stores devoted about two square feet of floor space to the infringing product and that the stores averaged $379 of sales per square foot.[205] Oiness then projected sales over a five year period.[206]

In another opinion authored by Judge Rader, the Federal Circuit showed little support for Oiness' creative approach to damages, declaring that, "This evidence [of lost profits] adds vague estimation and gross extrapolation to unsupported presumption. At every step this damage calculation is fraught with speculation."[207] The court, alluding to demand curves, went on to say that, "Instead of presenting evidence of actual sales combined with reliable economic analysis of demand, supply, and price over time, Oiness invites the

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[200] *Id.*

[201] *Id.*

[202] *Id.* Note that the district court's finding of a lower margin, which was affirmed by the Federal Circuit, incorporates, *sub silentio*, the downward sloping demand curve analysis suggested by Judge Rader. *See supra* note 195.

[203] *See Pall Corp.*, 66 F.3d at 1223.

[204] 88 F.3d 1025 (Fed. Cir. 1996).

[205] *Id.* at 1029.

[206] *Id.*

[207] *Id.*

jury to engage in rapt speculation."[208]

In turning to the evidence, the court determined the number of infringing products Walgreen's had likely sold, multiplied that number by Oiness' net profit and remanded the case to the trial court with instructions to enter judgment for lost profits in that amount.[209]

The Federal Circuit then directed its attention to the award of projected lost profits. The court began its discussion with an acknowledgment that projected future losses were recoverable.[210] Oiness claimed that Walgreen's infringement had destroyed any potential market for its product.[211] In analyzing the retail market, Oiness' expert projected sales over the life of the patent, based on the initial burst of product sales by Oiness prior to the entry into the market of another infringer. As a consequence, Oiness projected sales growth of 450% for several years and 150% near the end of the patent term.[212] Calling the entire premise flawed, the Federal Circuit observed that Oiness had projected an increasing demand for the product year after year contrary to the, "economic axiom that demand curves slope downward."[213] Concluding that Oiness' projected lost profits relied on faulty assumptions and a lack of reliable economic testimony, the court reversed the award of projected lost profits in the retail market.[214] In refusing to allow projected lost profits in two other markets, the court engaged in a similar type of analysis.[215]

Finally, a more recent, and perhaps most dramatic, use of economic analysis to shape the scope of "but for" causal liability came in the case of *Grain Processing Corp. v. American Maize-Products Co.*[216] In another opinion authored by Judge Rader, plaintiff Grain Processing Corp. ("Grain

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[208] *Id.* at 1030.

[209] *See id.* The court specifically concluded that its decision squared with *Lam, Inc. v. Johns-Manville Corp.*, 718 F.2d 1550 (Fed. Cir. 1983), in which it held that, even where defendant's sales records are not complete, damages may not be determined by mere speculation. Since Walgreen's records were the best remaining evidence in light of Oiness' failure of proof, they formed the basis for the award.

[210] *See id*. at 1031. The court stated that it

> acknowledges that a patentee may produce sufficient evidence to recover projected future losses . . . but those projections must not be speculative. . . . "The burden of proving future injury is commensurately greater than that for damages already incurred, for the future always harbors unknowns. . . . While estimate of lost future profits may necessarily contain some speculative elements . . . the fact finder must have before it such facts and circumstances to enable it to make an estimate of damage based upon judgment, not guesswork.

Id. (citations omitted).

[211] Oiness claimed projected lost profit damages in three markets: the premium market, the retail market, and the advertising specialty market. The court dealt with each market utilizing the same analytical framework.

[212] *See id.* at 1031.

[213] *Id.* at 1031-32.

[214] *Id.*

[215] *Id.* at 1032-34.

[216] 185 F.3d 1341 (Fed. Cir. 1999).

Processing") and defendant American Maize-Products Co. ("AMP") were embroiled in a suit over the production of low dextrose malto-dextrins, important ingredients in a wide variety of foods.[217]

Grain Processing owned a patent for a cost-effective process to make low dextrose malto-dextrins from a waxy starch hydrolysate. Importantly, other commercially acceptable but more expensive ways to make low dextrose malto-dextrins existed during the infringement. Grain Processing sued AMP, alleging infringement of its process patent. AMP promptly changed its method of producing the low dextrose malto-dextrins, believing its new process would yield a product falling outside the claims in Grain Processing's patent.[218] However, after several court proceedings, it was concluded AMP that still infringed. When faced with this development ten years into the dispute, AMP switched to another, non-infringing process in just two weeks.[219] Ultimately, the validity and infringement of the patent by the earlier AMP methods were adjudicated in favor of Grain Processing.

After a trial on damages, Judge Easterbrook refused to award lost profits, holding that AMP established it could have produced a non-infringing product at the time of first infringement, which "scotches" Grain Processing's request for lost profit damages.[220] At the same time, the judge distinguished the Federal Circuit's holding in *Rite-Hite*.[221]

On appeal the Federal Circuit vacated the award of royalty damages and remanded the case for reconsideration of whether lost profits should be awarded, stating that, "The law is clear – to be an acceptable non-infringing substitute, the product or process must have been available or on the market at the time of infringement. The district court's holding to the contrary is

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[217] *See Grain Processing*, 893 F. Supp. 1386, 1388 (N.D. Ind. 1995).

[218] *See id.* at 1389.

[219] *See id.*

[220] *Id.* at 1392. In essence, Judge Easterbrook found that Grain Processing was unable to prove the second prong of Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152, 1156 (6th Cir. 1978) (the absence of acceptable non-infringing substitutes). Moreover, Judge Easterbrook sub silentio refused to allow Grain Processing to use the market share theory announced in State Industries, Inc. v. Mor-Flo Industries, Inc., 883 F.2d 1573 (Fed. Cir. 1989), as a proxy for the second Panduit prong. See supra text accompanying notes 171 to 176 for a detailed discussion of the State Industries case and the market share rule. Judge Easterbrook found that the product produced by a non-infringing process was indistinguishable from a product produced by the patented process. *See Grain Processing Corp.*, 185 F.3d at 1390 ("[B]ut no one argues that any customer cared a whit about the product's [patented characteristics]."). In the absence of a demonstrable market for the patented feature of the product, Grain Processing was also unable to meet the first prong of Panduit – demand for the patented product or process. *Panduit Corp.*, 575 F.2d at 1156.

[221] *See Grain Processing Corp.*, 185 F.3d at 1390 ("The premise of GPC's claim is that it was injured by AMP's sale of a 10 D.E. malto-dextrin; if AMP, unlike the infringer in Rite-Hite, was able to offer perfectly lawful competition, then GPC cannot show lost profits damages.") (citation omitted).

erroneous."[222]

On remand, Judge Easterbrook stated, "I do not wish to be presumptuous, but it seems to me that my opinion did what the Court of Appeals believes ought to have been done. That is, I found as a matter of fact that the 'non-infringing product' *was* available no later than October 1979."[223] Citing the Federal Circuits earlier opinion, Judge Easterbrook said that he had previously found and reiterated "(a) that noninfringing substitutes for the patented product were on the market at the time of infringement, and (b) that AMP had 'available' at the critical time a process that would have ensured that its own product did not infringe the patent."[224] In finding that an acceptable non-infringing substitute must have been "available" during infringement Judge Easterbrook noted that AMP did not have to invent around the patent.[225] He pointed out that all AMP had to do to avoid infringement was use a different enzyme in its manufacturing process. AMP had not used that enzyme previously solely because it was more expensive than the enzyme AMP had been using.[226] Under these circumstances, and in light of the fact that AMP was able to switch to the non-infringing enzyme in just two weeks, Judge Eaterbrook held the alternative was "available."[227] This legal conclusion was consistent with his earlier observation that the Federal Circuit said an acceptable non-infringing substitute must be "available *or* on the market at the time of the infringement."[228] Given the short time it took AMP to cure the infringing process using existing non-infringing products and processes, Judge Easterbrook decided there was an acceptable substitute "available"[229] and reaffirmed his intent to award a reasonable royalty.[230]

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[222] *See id*. at 1393.

[223] Grain Processing Corp. v. American Maize-Products Co., 979 F. Supp. 1233, 1234 (N.D. Ind. 1997).

[224] *Id.* at 1234-35.

[225] *Id*. at 1235.

[226] *See id.*

[227] *Id.*; *see also* Micro Chemical, Inc. v. Lextron, 161 F. Supp. 1187, 1194 - 95 (D. Colo. 2001) (discussing why an infringer delayed converting machines to avoid infringement). There, the court found; (1) that there were numerous allegedly infringing machines in the marketplace that would have been expensive to convert; (2) the infringer relied in good faith on counsel's opinion of invalidity; (3) the infringing machines could be retrofitted so they would not infringe; and (4) the infringing machines were retrofitted when the Federal Circuit overturned the district Court's opinion that the patent was invalid. *See id.* If this type of analysis survives scrutiny by the Federal Circuit, the scope of "available" substitutes may be widened considerably.

[228] *Id*. at 1235.

[229] *Id.*

[230] *Id*. at 1238. In distinguishing the Federal Circuit's opinion in *Rite-Hite*, Judge Easterbrook analyzed demand for the patented product. He reiterated there was no extant demand for the patented process. Instead, the demand was for low dextrose malto-dextrins, of which the patented product is just one example functionally identical to its unpatented rivals in the marketplace. Judge Easterbrook pointed out it was only the higher

On the next appeal, the Federal Circuit accepted Judge Easterbrook's approach to damages.[231] The court undertook a four step analysis.

First, the court considered the requirement that a "patent owner must show 'causation in fact,' establishing that 'but for' the infringement, he would have made additional profits."[232] The court cited *Aro* for the holding that the statutory measure of damages is, "the difference between [the patent owner's] pecuniary condition after the infringement, and what his condition would have been if the infringement had not occurred."[233] Based on this precedent, the court concluded that, "The 'but for' inquiry therefore requires a reconstruction of the market, as it would have developed absent the infringing product, to determine what the patentee 'would . . . have made.'"[234]

Second, having established the necessity of market reconstruction, the court recognized the right of both patentees and accused infringer's to submit proof of the "but for world" and discussed the scope of relevant evidence. Initially, the court held that, "Reconstructing the market, by definition a hypothetical enterprise, requires the patentee to project economic results that did not occur."[235] Observing that courts afford patentees an opportunity to prove and recover lost profits for a wide variety of foreseeable economic impacts of infringement, the Federal Circuit stated that trial courts, "with this court's approval, consistently permit patentees to present market reconstruction theories showing all of the ways in which they would been better off in the 'but

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manufacturing costs associated with the unpatented process that allowed Grain Processing any royalty. In distinguishing *Rite-Hite*, Judge Easterbrook ruled there could be an economically significant demand for the patented product even though there were other ways to obtain the objective. Specifically, the other product was Rite-Hite's and it, too, was patented. Thus, Rite-Hite could sell the entire market's demand and collect profits from all syphoned sales. As a consequence, *Rite-Hite* was factually distinct from *Grain Processing*. Judge Easterbrook also distinguished the Federal Circuit's opinion in *State Industries, Inc. v. Mor-Flo,* relying on the definition of "available." *Id.*

[231] Grain Processing Corp. v. American Maize-Products Co., 185 F.3d 1341 (Fed.Cir. 1999).

[232] *Id.* at 1349 (citing King Instruments Corp. v. Perego, 65 F.3d 941, 952 (Fed. Cir. 1995)).

[233] *Id.* (citing Aro Mfg. Co. v. Convertible Top Replacement Co., 377 U.S. 476 (1964)).

[234] *Id.* at 1350.

[235] *Id.* The court went on to observe that, "To prevent the hypothetical from lapsing into pure speculation, this court requires sound economic proof of the nature of the market and likely outcomes with infringement factored out of the economic picture." *Id.* (citing Oiness v. Walgreen Co., 88 F.3d 1025, 1029-30 (Fed. Cir. 1996)). In *Fiskars, Inc. v. Hunt Manuf. Co.*, 279 F.3d 1378 (Fed. Cir. 2002), a judgment awarding lost profit damages was entered against the infringer. Nearly two years after judgment, the infringer filed a motion pursuant to Fed. R. Civ. P. 60(b)(6) seeking to reopen the judgment and vacate the damage award. The infringer argued that a non-infringing product it began selling in the wake of the trial was an acceptable non-infringing substitute for the patented product. *Id.* at 1380. The court referenced its holding in *Grain Processing*, but refused to allow the infringer to adduce evidence of an acceptable non-infringing alternative which arose nearly two years after the trial. *Id.* at 1383.

for' world and, accordingly, to recover lost profits in a wide variety of forms."[236] The court concluded by observing that, "In sum, courts have given patentees significant latitude to prove and recover lost profits for a wide variety of foreseeable economic effects of the infringement."[237]

Having allowed patentees such latitude, the court went on to hold that, "By the same token, a fair and accurate reconstruction of the 'but for' market also must take into account, where relevant, alternative actions the infringer foreseeably would have undertaken had he not infringed."[238] The court discussed an infringer's right to adduce evidence of non-infringing substitutes, first observing that, "Several opinions of this court have noted that 'market sales' provide significant evidence of availability as a substitute."[239] Going further, the court reasoned that, "Because these previous cases addressed only market sales, they did not consider that available substitutes, though not literally on sale, can affect market behavior as in the present case."[240] Relying on this logic and prior case law, the court concluded that "available technology not on the market during the infringement may constitute a noninfringing alternative."[241]

Third, the court then turned to the case before it and analyzed whether a noninfringing substitute was "available" to AMP.[242] The court concluded that a noninfringing substitute had been available based on several specific, concrete factual findings made by the lower court which were unchallenged on appeal.[243] The findings of fact undergirding the court's conclusion that a substitute noninfringing was "available" at the time of infringement included: the availability of necessary raw materials to AMP; the availability of necessary technology to AMP; that AMP had all necessary equipment, know-how and experience; that AMP did not have to "invent around" the patent; that

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[236] *Id*. at 1350. *See* Crystal Semiconductor Corp. v. Tritech Microelectronics International, Inc., 246 F.3d 1336, 1356 (Fed. Cir. 2001) ("[T]o determine a patentee's market share, the record must accurately identify the market. This requires an analysis which excludes alternatives to the patented product with disparately different prices or significantly different characteristics.").

[237] *Id*. at 1350.

[238] *Id*. at 1350-51. The court went on to observe that, "Without the infringing product, a rational would-be infringer is likely to offer an acceptable noninfringing alternative, if available, to compete with the patent owner rather than leave the market altogether. . . . Moreover, only by comparing the patented invention to its next-best available alternative(s) – regardless of whether the alternative(s) were actually produced and sold during the infringement – can the court discern the market value of the patent owner's exclusive right, and therefore his expected profit or reward, had the infringer's activities not prevented him from taking full economic advantage of his right." *Id.*

[239] *Id*. at 1351.

[240] *Id*. at 1352.

[241] *Id.* at 1351 (citing Slimfold Manuf. Co. v. Kinkead Industries, Inc., 932 F.2d 1453 (Fed. Cir. 1991)).

[242] *Id*. at 1353.

[243] *Id.*

the sole reason AMP had not used the substitute was economic (cost); and, the absence of demand for a product having the patented attributes.[244]

Fourth, the court analyzed whether the legally "available" noninfringing product was, in fact, a substitute for the patented product.[245] After analyzing customer demand for the patented aspects of the product and finding none existed, the court concluded that the substitute was a "perfect substitute" for the patented product, and that the alternate product was an acceptable substitute.[246]

The court concluded its analysis by stating, "In summary, this court requires reliable economic proof of the market that establishes an accurate context to project the likely results 'but for' the infringement."[247]

Capping a long line of cases extending from the first patent law statute, *Grain Processing* secured the "but for" test and proof of the "but for world" as the *sine qua non* of causation in infringement cases.[248] But, what has become

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[244] *Id.* at 1354. Whether the court's holding that a noninfringing substitute may be legally available although not on the market constitutes a significant expansion of the law remains to be seen. In *Honeywell International Inc. v. Hamilton Sundstrand Corp.*, 166 F. Supp. 1008, 1029 (D. Del. 2001), the court faced the issue of, "whether an acceptable non-infringing alternative was available." Relying on *Grain Processing*, the court stated the rule as, "A non-infringing alternative is only available during the accounting period if the infringer had all of the necessary equipment, know-how, and experience to [use the alternative] whenever is chose to do so during the time of infringement." *Id.* In another district court opinion, the court observed, "In *Grain Processing*, the court looked at whether: (1) the materials were readily obtained, (2) the effect of the modification was well-known, and (3) all the necessary equipment and know-how were available." Micro Chemical, Inc. v. Lextron, Inc., 166 F. Supp. 2d 1187, 1192 (D. Colo. 2001) (citation omitted); *see also* Mark Chretien, Note, *The Question of Availability: Grain Processing Corp. v. American Maize-Products Co.*, 38 HOUS. L. REV. 1489 (2002).

[245] *See id.* at 1355 ("Whether and to what extent American Maize's alleged alternative prevents Grain Processing from showing lost sales . . . depends not only on whether and when the alternative was available, but also on whether and to what extent is was acceptable as a substitute in the relevant market.").

[246] *Id.* at 1355.

[247] *Id.* at 1356.

[248] Before leaving the Grain Processing opinions, there is one interesting and potentially critically important holding in the cases which should not be overlooked. In its final opinion, the Federal Circuit affirmed the lower court's holding that the production cost difference between the infringing and noninfringing products was a cap on reasonable royalties. The Federal Circuit stated,

> The district court also found that American Maize's production cost difference between infringing and noninfringing [products] effectively capped the reasonable royalty award. American Maize showed that it cost only 2.3% more to make noninfringing . . . products that it did to make the infringing . . . products. . . . The district court also found that 'buyers viewed as equivalent' the [infringing and noninfringing products] . . . but no one argues that any customer cared a whit about the products [patented characteristics]." The district court concluded that under these facts, American Maize, when faced with a hypothetical offer to license the [patent] would not have paid more than a 3% royalty rate.

of the policy considerations underlying "proximate" or "legal" causation which have so vexed tort law commentators? Can or should a test of causation-in-fact be the totality of the inquiry? While few cases discuss the issue, in *Rite-Hite*, the Federal Circuit said, "no."

E. Proximate Causation in Infringement Cases – Rite-Hite *and Its Progeny*

In analyzing proximate causation, *McCready* suggests courts focus on the nexus between the alleged infringement and harm to the patentee. Recent Federal Circuit cases provide insight into this inquiry.

1. Federal Circuit Adopts "Reasonably Foreseeable" As Test For Proximate Causation

In 1995, the Federal Circuit announced the "reasonably foreseeable" test for proximate causation in *Rite-Hite Corp. v. Kelley Co., Inc.*[249] Both Rite-Hite and Kelley manufactured vehicle restraints and dock levelers.[250] Vehicle restraints secured trucks to loading docks to prevent accidents during the loading and unloading process, while dock levelers semi-automatically bridged gaps between the truck and the dock so that forklift trucks could pass safely over that gap. Prior to the use of dock levelers, loose plates were used during loading and unloading and separations could result in serious accidents.[251]

Rite-Hite spent nearly five years developing the first commercially successful system, introducing the Automatic DOK-LOK Model 100 ("ADL-100") in April 1980.[252] The ADL-100 was covered by Rite-Hite patents other than the one that became the subject of Rite-Hite's suit. Rite-Hite continued to develop its vehicle restraint system, and by the spring of 1981, it had developed a Manual DOK-LOK ("MDL") vehicle restraint incorporating a release able locking device covered by Patent No. 4,373,847 ("'847 patent").[253]

Kelley began selling its "Truk-Stop" version of the MDL vehicle restraint about seven months before the '847 patent issued.[254] Rite-Hite sued Kelley

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Id. at 1347. This holding provides that reasonable royalty rates may be capped by real world economic factors, such as the perceived value of the patented invention in the marketplace. Infringers facing reasonable royalty claims should argue that "but for world" proof is as relevant to a reasonable royalty case as it is to a lost profits case. The remaining question is whether the absence of "but for" causation could entirely eliminate a reasonable royalty in the right case, even in light of the statutory mandate? The answer is likely "no," under current case law, but the amount of a "reasonable royalty" under appropriate circumstances could be small indeed.

[249] 56 F.3d 1538 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 867 (1995).

[250] *See* Rite-Hite Corp. v. Kelley Co., Inc., 774 F. Supp. 1514, 1519 (E.D. Wis. 1991). In fact, during the period of infringement, the two competitors accounted for more than 80 percent of all dock leveler sales and 95 percent of all vehicle restraint sales. *See id.*

[251] *See id*.

[252] *See id*. at 1519-20.

[253] *See id*.

[254] *See id*. at 1525.

three weeks after the patent was awarded, claiming Kelley's Truk-Stop system infringed Rite-Hite's '847 patent.[255]

The trial court found that the '847 patent was valid, not obvious and infringed.[256] After a trial on damages, the district court decided Rite-Hite could recover profits from sales of a product not containing the patent in suit (the ADL-100) which were lost to competition from defendant's infringing product (the MDL).[257] The Federal Circuit affirmed the district court's award.[258] To reach this conclusion, the Federal Circuit undertook a three-step analysis.

First, the court reviewed the statutory basis for damages in patent infringement cases and concluded the language of the statute was intentionally broad.[259]

Second, the court identified the "but-for" test as a requirement for proving lost profit damages and discussed its application to Rite-Hite's claims.[260]

Third, the court adopted a new "reasonable foreseeability" test as an additional requirement for proving "legal causation" in lost profit damages.[261] As a basis for this new limit on damages, the court said the scope of damages under the statute could not be unlimited.[262] The court ruled the test was not solely a "but for" test, and there existed a background question as to whether the injury was of a type for which the patentee may be compensated.[263] When examining "reasonable foreseeability" as a judicial limitation on damages, the court reviewed case law and treatises discussing proximate cause and

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[255] *See* Rite-Hite Corp. v. Kelly Co., Inc., 56 F.3d 1538, 1542 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 867 (1995).

[256] *Id.* at 1543.

[257] *Rite-Hite Corp.*, 774 F.3d at 1536-37. The district court also awarded Rite-Hite damages for lost profits resulting from Kelley's sale of 1,692 dock levelers, an unpatented "tag along" product sold by both Kelley and Rite-Hite in conjunction with the patented/infringing vehicle restraint systems. *Id.* at 1530.

[258] *Rite-Hite Corp.*, 56 F.3d 1538. The Federal Circuit reversed the District Court's award of lost profits on "tag along" products and adopted the new "functional unit" test for determining application of the entire market value rule and entitlement to damages. *Id.* at 1550.

[259] *Id.* at 1544-45.

[260] *Id.* at 1545.

[261] *Id.* at 1546.

[262] *Id.* (citing Associated General Contractors, Inc. v. California State Council of Carpenters, 459 U.S. 519, 536; W. PAGE KEETON, PROSSER AND KEETON ON THE LAW OF TORTS § 41, at 264 (5th ed. 1984)).

[263] *Rite-Hite Corp.*, 56 F.3d at 1546. In stating the rule, the court held, "Thus, along with establishing that a particular injury suffered by a patentee is a 'but for' consequence of infringement, there may also be a background question whether the asserted injury is of the type for which the patentee may be compensated." *Id.* As stated, this requirement is remarkably similar in tone to the rule of antitrust injury enunciated by the Supreme Court in *Brunswick Corp. v. Pueblo Bowl-o-mat, Inc.*, 429 U.S. 477 (1977). *See supra* at text accompanying notes 72-75.

foreseeability. The court noted that the law of causation under the statute was to be seen in terms of "objective foreseeability."[264]

Ultimately, the court decided a patentee could recover lost profit damages on an invention not covered by the patent-in-suit when the infringing product directly competed both with the patented and "unpatented" invention because lost sales for the invention not covered by the infringed patent were "reasonably foreseeable."[265]

2. Dissents In *Rite-Hite*

Six judges dissented to one or more portions of the majority opinion in *Rite-Hite*. Two compelling and illuminating dissenting opinions were filed.

In a lengthy dissenting opinion, Judge Nies was joined by Chief Judge Archer, Senior Circuit Judge Smith and Circuit Judge Mayer. This dissent highlights issues related to the use of reasonable foreseeability as a test for proximate causation in infringement cases and aids in identifying issues which still exist.

First, there was one area of agreement: an infringer's liability should be limited. As the majority stated, "Notwithstanding the broad language of Sec. 284, judicial relief cannot redress every conceivable harm that can be traced to an alleged wrongdoing."[266] Judge Nies added, "The term 'damages' in the patent statute must be interpreted in light of the familiar common law principles of legal or proximate cause associated generally with that term."[267] But, agreement ended there. The majority observed,

> After an explication of established patent law principles, the partial dissent of Judge Nies ultimately agrees that there are judicial limitations on damages; the dissent simply disagrees that the damages sought here fall within those limitations, concluding instead that the damages are too 'remote.' The dissent's disagreement thus centers not on whether lines are drawn regarding the compensability of damages, but only on where those lines are to be drawn.[268]

As the foregoing suggests, the majority and dissent disagreed dramatically on the nature and extent of the causal limitation imposed. Judge Nies advocated a statute and property-based rule, "Patent 'damages' are limited to legal injury to property rights created by the patent, not merely causation in fact."[269] On the other hand, the majority adopted a broader, tort-based rule, that, "If a particular injury was or should have been reasonably foreseeable by an infringing competitor in the relevant market, broadly defined, that injury is

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[264] *Rite-Hite Corp.*, 56 F.3d at 1546.

[265] *Id*.

[266] *Id*.

[267] *Id*. at 1559 (Nies, J., dissenting).

[268] *Id*. at 1546 n.5.

[269] *Id*. at 1557 (Nies, J., dissenting).

generally compensable absent a persuasive reason to the contrary."[270]

Second, there was a dramatically different view on the doctrinal basis for limiting the scope of recoverable damages. Judge Nies strongly advocated limitations based on the statutory nature of the patent property right. The Nies dissent states that, "To constitute legal injury for which lost profits may be awarded, the infringer must interfere with the patentee's property right to an exclusive market in the goods embodying the invention of the patent in suit."[271] The Nies dissent paraphrases the *Brunswick Corp*. antitrust damage standard, "[Plaintiffs] must prove more than injury causally linked to any illegal presence in the market [*i.e.* the infringed goods]. Plaintiffs must prove [patent infringement] injury, which is to say injury of the type the [patent] laws were intended to prevent."[272] These conclusions were based on the dissent's conclusion that, "The patent defines the metes and bounds of legal injury."[273]

In contrast, the majority based its rule of proximate cause on the notion of compensation for injuries sustained, stating, "The partial dissent of Judge Nies appears to confuse exclusion under a patent of a product that comes within the scope of the claims with the determination of damages to redress injury caused by patent infringement once infringement has been found."[274]

Judge Nies succinctly distinguished the contrasting approaches, saying, "The majority divorces 'actual damages' from injury to patent rights."[275] In essence, the dissent's position is founded on the notion that, "From the character of the right of the patentee we may judge of his remedies."[276] Thus, the dissent uses lost profits as a basis to measure damages, not as the legal injury (the recoverable injury allowed under proximate cause analysis).

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[270] *Id*. at 1546. However, query what does tort law provide in real property cases when a trespass by an intruder causes a property owner to suffer a heart attack and compare the result to the court's holding in *Rite-Hite*?

[271] *Id*. at 1556 (Nies, J., dissenting). One commentator bluntly called Judge Nies' statement "plainly wrong." John J. Marshall, *Proximate Causation as the Grand Unification Theory of Patent Damages: An Analysis of* Rite-Hite v. Kelley *and* King Instruments v. Perego, 23 AIPLA Q.J. 645, 654 (1995).

[272] *Rite-Hite Corp.*, 56 F.3d at 1570 (Nies, J., dissenting).

[273] *Id*. at 1566 n.1 (Nies, J., dissenting). The remainder of the footnote reads:

> The term 'actual damages' is used to distinguish from an award based on a hypothetical reasonable royalty. In the majority view, this dissent 'confuses' the patent right to exclude with the separate determination of actual damages for patent infringement. Contrary to the majority, both determinations depend on injury to the patent rights. . . . The majority and the dissent do not merely quibble over 'line-drawing' by reason of 'remoteness' or an injury but rather fundamentally disagree over the legal scope of the market protected by a patent.

Id.

[274] *Id*. at 1547 n.6. Judge Nies responded saying, "In the majority's view, the consideration of patent rights ends upon a finding of infringement. The separate question of damages under its test does not depend on patent rights but only on foreseeable competitive injury." *Id*. at 1569 (Nies, J., dissenting).

[275] *Id*. at 1556 (Nies, J., dissenting).

[276] *Id*. at 1562 (Nies, J., dissenting).

While the majority did not adopt Judge Nies' statute-based approach, her analysis has merit. As we shall see, reliance on statutory intent can provide valuable insights into issues of proximate cause.[277]

Third, Judge Nies raised questions regarding the use of foreseeability as the sole test for a strict liability type statute. She observed,

> Nothing in the statute supports the majority's "foreseeability" rule as the sole basis for patent damages. To the contrary, no-fault liability is imposed on "innocent" infringers, those who have no knowledge of the existence of a patent until suit is filed. . . . Foreseeability is a wholly anomalous concept to interject as the basis for determining legal injury for patent infringement. While unknowing infringers cannot "foresee" any injury to the patentee, they are subject to liability for damages, including lost profits, for competition with the patentee's patented goods. Now they will be liable for diverting sales of the patentee's unprotected competitive products as well.[278]

The majority did not respond directly to this challenge, but its reasoning is clear, "Such lost sales [of a patentee's device that competes directly with the infringing device] are reasonably foreseeable, and the award of damages is necessary to provide adequate compensation for infringement . . ."[279] Tort law supplies a more definitive response to Judge Nies' literal reading of what is foreseeable and by whom. In tort, foreseeability is determined in light of what a reasonable person would have foreseen and is not limited to what defendant actually foresaw, though that is considered.[280]

Fourth, the dissent said a "foreseeability" standard could not be squared with the requirement that a patentee mark its product as set forth in 35 U.S.C. § 287(a).[281] The dissent persuasively argued that an award of damages is at odds with the statutory provision that cuts off a patentee's damages until actual notice of infringement is given, unless the product itself is marked, pointing out,

> To hold that a patentee may recover damages respecting injury to its business in products that do not embody the invention which are unmarked or marked with a different patent number would treat a patentee that does not practice its invention more favorably than a patentee that does. The marking statute generates absurd results when applied to damages tied to products not made under the patent in suit.[282]

While the dissent is correct, it does little more than point out already apparent anomalies associated with the marking requirement. Yet, the majority's response to this point is less than intellectually satisfying. In its

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[277] *See infra* text accompanying notes 398-404 (discussing statutory intent).

[278] *Id*. at 1570 (Nies, J., dissenting).

[279] *Id*. at 1549.

[280] *See* Harper, *supra* note 4, at 167.

[281] *See Rite-Hite Corp.*, 56 F.3d at 1570 (Nies, J., dissenting).

[282] *Id*. at 1571 (Nies, J., dissenting).

response, the majority quoted the above language and went on,

> We disagree. The marking statute provides that if a product is not marked, no damages shall be recovered by the patentee except on proof that the infringer was notified of the infringement. . . That a patentee cannot recover damages in the absence of actual notice when it has not marked remains the law, but that law does not preclude assessing damages for lost sales of diverted products *after* actual notice of infringement has been given.[283]

In the end, conflict with the marking requirement and logic suggests that foreseeability may not tell the entire story of proximate cause in infringement cases.

Finally, the dissent raised an important issue regarding recovery of damages for products in the public domain. The dissent pointed out that, "a key factor in the majority's decision awarding damages for lost sales of the ADL-100 is that the 'device' is 'patented.'"[284] The dissent said the validity of those patents was never tested and that, "If those patents are invalid, the majority's analysis collapses."[285]

In the same vein, defendant Kelley argued that the award of lost profits on the ADL-100 unduly expanded Rite-Hite's rights in the '847 patent, violating the prescription against using a patent to obtain a "monopoly" on unpatented materials.[286] In response, and again relying on a damage-oriented approach to the issue, the majority characterized the cases cited in support of the argument as inapposite and stated,

> The present case does not involve expanding the limits of the patent grant in violation of the antitrust laws; it simply asks, once infringement of a valid patent is found, what compensable injuries result from that infringement, *i.e.*, how may the patentee be made whole. Rite-Hite is not attempting to exclude its competitors from making, using or selling a product not within the scope of its patent. . . . Rite-Hite is simply seeking adequate compensation for . . . infringement.[287]

If nothing else, the foregoing suggests *Rite-Hite* was not the last word on proximate cause limits.

Circuit Judge Newman, with whom Judge Rader joined, concurred with the majority opinion relating to lost profits on unpatented products, yet dissented with regard to the new limit on the entire market value rule. In concurring with the majority's result allowing lost profit damages on the ADL-100, Judge Newman said considerations in such analyses are directness, foreseeability,

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[283] *Id*. at 1549 n.8.

[284] *Id*. at 1572 (Nies, J. dissenting).

[285] *Id*. at 1573 (Nies, J., dissenting) (citing to Lear v. Adkins, 395 U.S. 653 (1969) ("Federal law requires that all ideas in general circulation be dedicated to the common good unless they are protected by a valid patent.")).

[286] *Id*. at 1573 (Nies, J., dissenting).

[287] *Id*. at 1547.

and duty.[288] She concluded that the issue of damages in patent cases must be viewed with a "practical eye" in order to implement the policy of damages.[289]

3. Subsequent Cases

Later in 1995, *King Instrument v. Perego* extended *Rite-Hite* by holding that a patentee "who has suffered lost profits is entitled to lost profits damages regardless of whether the patent owner has made, used, or sold the patented device."[290] This decision engendered another vigorous dissent.

Plaintiff King Instrument Corporation ("King") held three patents relating to loading magnetic or videotape into closed cassettes.[291] The trial court held that only one of the three patents, the '461 patent, had been infringed by defendants and awarded lost profit damages for that infringement.[292]

The underlying facts in *King* differed from *Rite-Hite* in one critical aspect. Rite-Hite manufactured both a product embodying the patented invention and an "unpatented" product, and each was sold in competition with the infringing product. The Federal Circuit allowed Rite-Hite to recover lost profit damages resulting from lost sales of both products.[293] King did not manufacture or sell any product embodying the invention claimed in the '461 patent. Thus, King's competing product (and the one for which all lost profit damages were awarded) did not embody the patent defendants Perego and Tapematic infringed.[294]

The Federal Circuit observed that "the patentee's sale of a competing product not covered by the patent within the market [for the infringed product] does not change the policy justifications for restoring the parties to the positions they would have occupied absent infringement."[295] The court then noted the Patent Act creates an incentive for invention, and that lost profits damages preserve that incentive.[296] The court reasoned that the market, not the court, should dictate the nature of the incentive. As a matter of policy, the court observed that requiring direct use by the patentee before allowing it to claim lost profit damages would be counterintuitive. The court also reasoned

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[288] *See id*. at 1579 (Newman, J., concurring in part and dissenting in part).

[289] *Id.*

[290] King Instruments Corp. v. Perego, 65 F.3d 941, 947 (Fed. Cir. 1995).

[291] *Id*. at 944.

[292] *Id*. at 945.

[293] *See supra* text accompanying notes 249-265.

[294] *See* King Instruments Corp., 65 F.3d at 947 ("The district court also took into account that King's competing product did not embody the invention of the '461 patent asserted against Tapematic. The district court, however, found reason to redress King's injury notwithstanding King's election to refrain from making or selling the patented invention. Tapematic challenges the award of lost profits in such an instance, alleging instead that lost profits can be awarded only to one who makes or sells the patented device. The court must reject Tapematic's challenge. . . .").

[295] *Id*. at 949.

[296] *See id*. at 950.

that, depending on circumstances, the patentee may have better returns by excluding others and not practicing the invention.[297]

In her dissent, Judge Nies said that in *King*, the panel majority had eliminated *Rite-Hite*'s requirement for the patentee to offer a competitive counterpoint to the infringing product. She added, "Under this decision, any economic loss to a patentee's business is held legally compensable as damages for patent infringement."[298] She criticized the majority, calling the opinion counter to all arguments based on the statute, prior precedent, policy, and logic. Distinguishing *Rite-Hite*, she observed that "under *Rite-Hite*, King would have had to, at least, offer a reel changer. King offers no reel changer – competitive or otherwise – for its own tape loader. . . . Thus, the awards of lost profits here expand upon the *Rite-Hite* ruling."[299]

She suggested clarification was needed from a higher authority on the scope of protection afforded by a patent and the meaning of patent infringement "damages."[300] In a later dissent to the denial of panel rehearing, Judge Nies characterized *Rite-Hite* as "the most profound departure from basic patent law concepts that any court has ever pronounced."[301]

Subsequent cases continued to develop the nascent law of proximate causation in infringement cases. *Stryker Corp. v. Intermedics Orthopedics, Inc.* involved claims of infringement of a patent on a stem for an artificial hip prosthesis inserted into a patient's femur.[302] The infringing femoral stem was

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[297] *See id*. In reaching this conclusion, the majority distinguished its prior decisions in *Trell v. Marlee Elecs. Corp*., 912 F.2d 1443, 1445 (Fed. Cir. 1990) and *Lindemann Maschinen Fabrik Gmb. H. v. American Hoist and Derrick Co., Harris Press & Shear Div.*, 895 F.2d 1403, 1406 n.2 (Fed. Cir. 1990). The court concluded that in *Trell* and *Lindemann*, the patentee had not sold any product in the United States. Thus, the patentee had no possible basis for a lost profit damages claim.

[298] King Instruments Corp., 65 F.3d at 953 (Nies, J., dissenting).

[299] *Id*. at 956 (Nies, J., dissenting).

[300] *Id*. at 961 (Nies, J., dissenting).

[301] King Instruments Corp. v. Perego, 72 F.2d 855, 857 (Fed. Cir. 1995) (Nies, J., dissenting).

[302] 96 F.3d 1409 (Fed. Cir. 1996), *affirming*, Stryker Corp. v. Intermedics Orthopedics, Inc. 891 F. Supp. 751 (E.D.N.Y. 1995). A brief review of the patented invention may be helpful. The '023 patent related to a part of an artificial hip prosthesis. The court stated,

> The two major components of an artificial hip prosthesis are the new acetabulum, the acetabular prosthesis, and the new femoral head, the femoral prosthesis. The '023 patent is directed to the femoral prosthesis of a total hip replacement prosthesis, *i.e.* the component that is inserted into the femur. . . . The '023 patent is concerned solely with the femoral element, and in particular, with the stem portion thereof.

Id. at 1410.

As the district court noted, "Among the key features of the '023 patent [the patent in suit] is a metal distal (lower end) tip adapted for engagement with the prosthesis's stem by means of complementary tapers." *Stryker Corp.*, 891 F. Supp. at 761. The same court also noted that the product found to infringe "has a metal distal sleeve which engages with the distal portion of the stem by means of a complementary taper." *Id.* at 762.

As the Federal Circuit noted:

sold as part of an entire unassembled prosthesis package available for the surgeon to use during hip replacement surgery. The evidence showed that while defendant sold the entire prosthesis package, the infringing device (the femoral prosthesis) often was not required and, thus, was not used or implanted during surgery. However, the district court did not limit the patentee's damages only to the infringing devices actually implanted.[303]

In affirming damages, the Federal Circuit agreed with the lower court's finding that "in most circumstances, the final decision of whether or not to install the [infringing femoral distal tip] was made in surgery. Because of the timing of this decision, the surgeon needed the entire system [including both patented and unpatented components] in the operating room and a responsible . . . sales agent [for the infringing product] would make sure that the sleeves were available in the operating room for the surgeon."[304] Based on this finding, the Federal Circuit found that the patentee lost a sale each time the infringer supplied a surgeon with an infringing system, and not only when the patented femoral portion of a system was actually installed.[305] In applying the "reasonably foreseeable" test, the court linked that test and the test for "but for" causation saying, "It is also noted that this court held in *Rite-Hite* that the 'but for' test must be read in light of the 'reasonable limits of liability' and that damages thus must be based upon 'a particular injury that was or should have been reasonably foreseeable by an infringing competitor in the relevant market,' absent a persuasive reason to the contrary." [306]

The Federal Circuit applied the new legal causation standard in *Minco, Inc. v. Combustion Engineering, Inc.*[307] The case involved Minco's patent on a rotary furnace for fusing materials. Combustion Engineering ("CE") infringed the patent by manufacturing its own rotary furnace and competed with Minco

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The '023 patent abstract describes the distal tip as "selectively removable and replaceable to enable a choice of size combinations in the joined stem and distal tip of the prosthesis." Thus, the '023 patent discloses a femoral prosthesis that is not a single piece prosthesis, but preferably comprised of a joined stem and distal tip.

Stryker Corp., 96 F.3d at 1412. A key factor in marketing the infringing product was the distal sleeve. *Id.* at 1417.

[303] *See Stryker Corp.*, 891 F. Supp. at 821-22. In construing *Rite-Hite*, the District Court said, "Finally, the Federal Circuit recently explained in *Rite-Hite* that the "but for" test for compensability of damages must be read in light of the "reasonable limits of liability" imposed on damages by the law. Rite-Hite Corp. v. Kelly Co., Inc., 56 F.3d 1538, 1546-47 (Fed. Cir. 1995). These limits include reasonable objectively foreseeable damages. Accordingly, when deriving lost sales due to infringement, the court can compensate the plaintiff for 'a particular injury that was or should have been reasonably foreseeable by an infringing competitor in the relevant market,' absent a persuasive reason to the contrary.'" *Stryker Corp.*, 891 F. Supp. at 819.

[304] *Stryker Corp.*, 96 F.3d at 1416 (citing *Stryker Corp.*, 891 F. Supp. at 822-23).

[305] *Id.* at 1417 ("Put another way, by supplying the [infringing product] to surgeons, appellants kept the [patented product] out of the operating room.").

[306] *Id.* (citations omitted).

[307] Minco, Inc. v. Combustion Engineering, Inc., 95 F.3d 1109, 1118 (Fed. Cir. 1996).

for the sale of fused minerals manufactured using the patented kiln. The trial court awarded significant lost profit damages resulting from lost sales of fused minerals. CE appealed the decision, arguing that such diverted sales of "unpatented" products (the fused minerals) could not be recovered. In upholding the award of lost profits, the Federal Circuit cited *Rite-Hite*, saying CE "should have reasonably foreseen that infringement of the . . . patent would harm Minco's sales in the fused silica market."[308]

Trial courts also have applied the "reasonably foreseeable" standard to shape damage awards. *National Research Laboratories v. Eppert Oil Co., Inc.* involved claims that patents for composition and methodology of metalworking fluids had been infringed.[309] The patentee sought damages for lost profits on maintenance services sold in conjunction with the patented fluids. The court denied the alleged infringer's motion for summary judgment, citing *Rite-Hite* and the "reasonably foreseeable" rule.[310] The court said, "Thus, provided that [the patentee] can show that the distribution of [the infringing product] caused it to lose profits on its service plans, those losses are compensable."[311] The court added, "Accordingly, [the patentee] may recover lost profits for unpatented goods, at least in the abstract, where those losses were foreseeably caused by defendant's infringement."[312]

Thus, it appears that the *Rite-Hite* "reasonable foreseeability test" has acted more as a limit on damages arising from lost sales of unpatented products than as a broad-based rule of legal causation.

F. Other Patent Law Policies Affecting Proximate Causation

In addition to specific holdings regarding causation-in-fact and proximate cause, courts have developed other rules that may well shape the law in this area in the future.

1. Cases Relating to Specific Types of Damages [313]

In *Read Corp. v. Freiday*,[314] the Federal Circuit reviewed a case in which the trial court introduced a "price sensitivity" component, thus discounting the number of infringing units contributing to lost profits.[315] In essence, the "price sensitivity" component was the trial court's attempt to impose a downward sloping demand curve on the patentee's projected lost sales.[316] Noting that the

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[308] *Id.* at 1118.

[309] 104 F. Supp. 2d 851 (S.D. Ohio 2000).

[310] *See id.* at 861.

[311] *Id.*

[312] *Id.* at 862.

[313] *See* DONALD S. CHISUM, CHISUM ON PATENTS, § 20.03[1][b][i] n.17, p. 20-76 (2000) for an extensive list of lost profits cases.

[314] 66 F.3d 345 (Fed. Cir. 1995).

[315] *See id.* at 346. This resembles Judge Rader's demand curve. *See supra* note 195.

[316] *See Read Corp.*, 66 F.3d at 344. The court noted that:

The district court, however, found that Read had not met its burden regarding

case involved a two-supplier market and that in such a market it is reasonable to assume that the patentee would have made the infringer's sales, the court vacated the judgment and remanded the case with instructions to enter judgment awarding lost profits on all lost sales.[317]

In *Unisplay, S.A. v. American Electronics Sign Co., Inc.*,[318] the patentee argued it was entitled to a reasonable royalty on projected sales because the infringer had "poisoned the market" for the patented invention by selling inferior infringing products. The trial court granted the infringer's motion to exclude such evidence, but the evidence crept into the trial. On appeal, the Federal Circuit rejected the "poisoned market" theory on the grounds that the patentee had failed to prove a hypothetical negotiation between the parties would have yielded an agreement at the higher royalty rate patentee sought.

After a trial court enhanced a reasonable royalty award with a 9% "*Panduit* kicker," the Federal Circuit in *Marhurkar v. C.R. Bard, Inc.*, said the lower court had abused its discretion and remanded for a recalculation of the royalty.[319] The court held that *Panduit* does not authorize a "kicker" on top of a reasonable royalty because of heavy litigation or other expenses.[320] If damage awards are to be enhanced, there are statutory standards both for enhancement and fees.

The Federal Circuit affirmed a trial court's decision rejecting a patentee's claim to damages equal to the difference between the price it obtained for the sale of its business and what it estimated the value would have been but for the infringement in *Minco, Inc. v. Combustion Engineering, Inc.*[321] In doing so,

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acceptable noninfringing substitutes or demand for the patented product. In reaching its conclusion on the two factors, the district court imposed a 'price sensitivity' component based on general economic conditions. The district court found that 'in the recessionary era that we are talking about, where building was down, developments were off, the was a large, at least in this area, collapse in the real estate market, that what a buyer would find acceptable would be very price sensitive. And this of course. slides over into the demand for the patented product.' Assuming these conclusions and that Shaker Buddy's [the infringer's] machines were cheaper than plaintiff's as fact, the district court stated that it could not find that there was even a reasonable probability that Read would have sold fifty-two units. Rather, the district court found that sale of ten units by Read was more likely, roughly 20% of the number of infringing units sold, the court said. Accordingly, lost profits were awarded on only ten units for a total of $61,100.

Id.

[317] *Id.* at 346; *see also* Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1223 ("In general an infringer's sales at a lower price do not defeat the patentee's recovery of its losses at the patentee's price, for the principle of patent damages is to return the patentee to the pecuniary position it would have been in but for the infringement."). *But see supra* note 195 for Judge Rader's suggestion that demand curves must be used to avoid deterrent damage awards as opposed to the compensatory damages called for by the statute.

[318] 69 F.3d 512, 516 (Fed. Cir. 1995).

[319] 79 F.3d 1572, 1581-82 (Fed. Cir. 1996).

[320] *Id.* at 1580.

[321] 95 F.3d 1109, 1120-21 (Fed. Cir. 1996).

the Federal Circuit held the evidence suggested the patented product had not driven the sale. In addition, the court indicated such an award could amount to double recovery beyond lost profits and a reasonable royalty.[322]

In *Rodime PLC v. Seagate Technology, Inc.*,[323] the Federal Circuit considered a patentee's claim to "consequential business damages." Specifically, the patentee alleged that the infringer's refusal to take a license deprived it of revenue sufficient to allow it to survive and prosper. Instead, it was forced to declare bankruptcy. During the course of the litigation, the patentee elected to forego lost profits as a measure of damages in favor of reasonable royalty.[324] However, as a part of its reasonable royalty case, the patentee sought to prove "consequential business damages" amounting to the profits it lost due to the bankruptcy.[325] In affirming the trial court's refusal to allow evidence of such damages, the court held that the consequential damages were "merely a species of lost profits. Having elected to pursue only a reasonable royalty, [the patentee] cannot, in the district court's words, 'bootstrap evidence of its lost profits back into the case by reference to reasonable royalties.'"[326]

Courts have been doubly unkind to corporate shareholders. In *Rite-Hite v. Kelley Corp.*, the Federal Circuit expressly held that a reduction in the value of stock in a patentee corporation because of infringement is a remote consequence not legally compensable.[327] Relying on *Rite-Hite*, a District Court in Delaware said that losses suffered by a shareholder/patentee due to sales lost by its subsidiary/licensee were not recoverable.[328]

The Federal Circuit has acknowledged a patentee's right to receive lost future profits as damages on several occasions but has only rarely affirmed awards of such damages.[329]

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[322] *Id.* at 112. Interestingly, however, the court did not flatly rule out the possibility that such damages could be awarded in the proper case.

[323] 174 F.3d 1294, 1308 (Fed. Cir. 1999).

[324] *See id.* at 1307.

[325] *Id.* at 1307-08.

[326] *Id.* at 1308.

[327] Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 867 (1995).

[328] Ajinomoto Co., Inc. v. Archer-Daniels-Midland Co., CIV. A 95-218-SLR, 1996 WL 621830, *2 (D. Del. Oct. 21, 1996), *aff'd*, 228 F.3d 1338 (Fed. Cir. 2000).

[329] In *Shockley v. Arcan, Inc*, the Federal Circuit held:

> This court acknowledges that a patentee may be able to produce sufficient evidence to recover projected future losses. In fact, this court has affirmed future lost profits awards where the patentee has presented reliable economic evidence of 'but for' causation. Although future lost profit calculations necessarily contain some speculative elements, a patentee may supply adequate evidence to enable the fact-finder to responsibly estimate future losses based on sound economic models and evidence, not pure guesswork.

Shockley v. Arcan, Inc., 248 F.3d 1349, 1362 (Fed. Cir. 2001).

The *Shockley* court cited to *Oiness v. Walgreen Co.*, 88 F.3d 1025, 1031 (Fed. Cir. 1996),

Finally, in *Rite-Hite*, the Federal Circuit declared that "remote consequences, such as a heart attack of the inventor . . . are not compensable."[330] In *King Instruments Corp. v. Perego*, the Federal Circuit further clarified issues relating to economic loss,

> The types of harm for which infringement damages are recoverable are not, however, completely unlimited. Although broad, the term 'damages' in the Patent Act has limits. Compensatory (or actual) 'damages' are generally those which are the natural result of the harmful act in question. *Black's Law Dictionary* 390 (6th ed. 1990). For instance, if the patentee's mother died of a heart attack due to the shock of discovering an infringing product at the supermarket, the Act would not authorize damages for wrongful death or emotional distress. The unfortunate death would not be economic harm, nor the direct and foreseeable result of infringement. Economic harm, such as the profits lost on sales of competing products in this case, however, is a direct and foreseeable result of infringement. Indeed, the infringer actively seeks to attract customers away from competitors. Thus, the infringer cannot feign surprise that the lost profits of a competitor are the direct and foreseeable result of infringement. Lost economic profits on products in direct competition with the infringing products are clearly foreseeable and constitute 'damages.'[331]

2. The Entire Market Value Rule: A Case Study in Causation Analysis

The development of the entire market value rule (hereinafter "EMVR") provides helpful insights into factors at play in determining the limits of proximate causation. In short, when a patentee seeks damages on "unpatented" components sold in tandem with patented products, the EMVR governs whether such components should be bundled in a damage computation. It is essentially a rule of proximate causation. As noted above, the EMVR addresses issues not dissimilar to causation apportionment issues in tort cases.[332] The rule is doubly important because it relates not only to lost profit damage claims, but also to determination of the royalty base in cases where reasonable royalties are at issue.[333] A review of key cases teases out

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and *Lam, Inc. v. Johns-Manville Corp.*, 718 F.2d 1056, 1068 (Fed. Cir. 1983), in support of its observation. In *Lam*, the court affirmed an award of lost future profits, stating, "an award based on projected lost sales is neither remote nor speculative when there is evidence of actual pre-infringement and post-infringement growth rates. . . . These damages were not picked out by mere speculation or guess, but rather, found by the district court as the result of an extrapolation of actual data." *Id.*

[330] Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 867 (1995).

[331] King Instruments Corp. v. Perego, 65 F.3d 941, 948 n.3 (Fed. Cir. 1995).

[332] *See supra* note 36.

[333] *See* Bose Corp. v. JBL Inc., 274 F.3d 1354, 1357-58 (Fed. Cir. 2001) ("In determining

fundamental policy considerations.

The Federal Circuit's decision in *Rite-Hite* was a turning point in the law relating to the EMVR.[334] Prior to *Rite-Hite*, the EMVR was a rule of causation which, "permits recovery of damages based on the value of the entire apparatus containing several features, where the patent-related feature is the basis for customer demand."[335]

The EMVR was generally construed using one or more of three tests. First, the courts developed a "market and financial dependence" test.[336] Courts said it was the "financial and marketing dependence on the patented item under standard marketing procedures which determines whether the non-patented features of a machine should be included in calculating compensation for infringement."[337] Second, courts developed a "normally anticipated sale" test which suggested that, where the patentee could normally anticipate that unpatented and patented components would be sold bundled, damages were recoverable on both products.[338] Third, the "reasonable probability" of selling such products was analyzed. There, courts held that, "if in all reasonable probability the patent owner would have made the sales which the infringer has made, what the patent owner in reasonable probability would have netted from the sales denied to him is the measure of his loss, and the infringer is liable for that."[339]

a. The Rite-Hite *Opinion – "The Functional Unit" Test for the EMVR*

In *Rite-Hite*, the Federal Circuit vacated the district court's award of

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the appropriate basis for calculating a royalty base the court may use the entire market value rule.") (citing Fonar Corp. v. Gen. Elec. Co., 107 F.3d 1543, 1552 (Fed. Cir. 1997); *see also* Interactive Pictures Corp. v. Infinite Pictures Inc., 274 F.3d 1371, 1385 (Fed. Cir. 2001) ("The jury was entitled to rely on evidence of bundling and convoyed sales in determining the proper scope of the royalty base") (citing Deere & Co. v. Int'l Harvester Co., 710 F.2d 1551, 1559 (Fed. Cir. 1983)).

[334] Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 867 (1995).

[335] State Industries, Inc. v. Mor-Flo Industries, Inc., 883 F.2d 1573, 1580 (Fed. Cir. 1989); TWM Mfg. Co., Inc. v. Dura Corp., 789 F.2d 895, 901 (Fed. Cir. 1986), *cert. denied*, 479 U.S. 852 (1986); Kori Corp. v. Wilco Marsh Buggies and Draglines, Inc., 761 F.2d 649, 656 (Fed. Cir. 1985), *cert. denied*, 474 U.S. 902 (1985); Gyromat Corp. v. Champion Spark Plug Co., 735 F.2d 549 (Fed. Cir. 1984).

[336] Decisions discussing the "market and financial dependence" test include, *TWM Mfg. Co.*, 789 F.2d at 901; *Kori Corp.*, 761 F.2d at 656; and *Gyromat Corp.*, 735 F.2d 549.

[337] *TWM Mfg. Co.*, 789 F.2d at 901.

[338] Decisions discussing the "normally anticipated sale" test include, Kaufman Co., Inc. v. Lantech, Inc., 926 F.2d 1136, 1144 (Fed. Cir. 1991); Del Mar Avionics, Inc. v. Quinton Inst. Co., 836 F.2d 1320, 1327 (Fed.. Cir. 1987); *TWM Mfg. Co.*, 789 F.2d at 901; *Kori Corp. v. Wilco Marsh Buggies and Draglines, Inc.*, 761 F.2d 649, 656 (Fed. Cir. 1985), *cert. denied*, 474 U.S. 902 (1985).

[339] *Kaufman Co., Inc.*, 926 F.2d at 1144.

damages for products it found would have been sold in conjunction with products (both patented and unpatented) for which sales were lost and lost profit damages.[340] The Federal Circuit said, "It is a clear purpose of the patent law to redress competitive damages resulting from an infringement of the patent, but there is no basis for extending that recovery to include damages for items that are neither competitive with nor function with the patented invention."[341] To reach this conclusion, the court undertook a three-step analysis.

First, the court reviewed case law and application of the EMVR.[342] The court reiterated that the EMVR rule governs damage compensation both for lost profits and for the royalty base used in calculating a reasonable royalty.[343]

Second, the court adopted a new "functional unit" test for limiting applicability of the EMVR.[344] The court initially observed that where products could be used independently, yet were sold in combination with the patented item only for marketing reasons or convenience and not because they essentially functioned together, then the EMVR precludes a patentee from recovering damages. The court stated the "functional unit" test as, "All the components together must be analogous to components of a single assembly or be parts of a complete machine, or they must constitute a functional unit."[345] Conversely, the court held there is no basis for recovery when the "unpatented" products neither compete with nor function with the "patented" product.[346]

Finally, the court applied the newly clarified rule to *Rite-Hite*. It decided Rite-Hite had failed to meet the requirement which would allow it to recover lost profit damages on sales of dock levelers.[347] The court distinguished its holding under the EMVR from its other key holding, affirming an award of lost profit damages on products not covered by the infringed patent.[348] Thus,

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[340] Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1549-51 (Fed. Cir. 1995), *cert. denied*, 516 U.S. 867 (1995).

[341] *Id*. at 1551.

[342] *See id*. at 1549.

[343] *See id*. ("When a patentee seeks damages on unpatented components sold with a patented apparatus, courts have applied the 'entire market value rule' to determine whether such components should be included in the damage computations, whether for reasonable royalty purposes, . . . or for lost profits purposes, . . .") (citations omitted).

[344] *Id*. at 1550.

[345] *Id*.

[346] *Id*. at 1551.

[347] *Id*. ("Although the two devices may have been used together, they did not function together to achieve one result and each could effectively have been used independently of each other.").

[348] *See id*. at 1551. The court stated:

> We distinguish our conclusion to permit damages based on lost sales of the unpatented (not covered by the patent-in-suit) ADL-100 devices, but not on lost sales of the unpatented dock levelers, by emphasizing that the Kelley Truk Stops were devices competitive with the ADL-100s, whereas the dock levelers were merely items sold together with the restraint for convenience and business advantage. It is a clear

the Federal Circuit expressly rejected the district court's attempt to expand the definition of "convoyed sales." In fact, the court appeared to have adopted a new, more restrictive, expression of the EMVR.

Judge Nies discussed the EMVR, and the apparent lack of logic behind the rule enunciated by the *Rite-Hite* majority, in her dissent in *King Instrument Corp. v. Perego*.[349] Having reviewed the court's holding as to the EMVR, Judge Nies said that, "Perhaps the panel majority did not attempt to apply the entire market value rule to the lost profits award involving a patentee's unpatented goods because it makes no sense."[350] She reviewed the law relating to the EMVR prior to *Rite-Hite*, then observed that, "The *Rite-Hite* court did not explain how the entire market value rule should work when dealing with a patentee's claim for lost profits on its unpatented goods and the defendant's device contains only an infringing feature as here. In this context, I find application of an entire market value rule mind-boggling."[351] The judge concluded the EMVR was "jettisoned" in this case and observed that, "A patent now hangs like the Sword of Damocles over competition with unpatented goods and serves as a powerful means for extortion."[352]

The Federal Circuit's treatment of the EMVR in *Rite-Hite* merits comment. Without question, the sales of dock levelers lost due to the infringement were readily and reasonably foreseeable. While the levelers were not physically connected to the patented product, a sale of the levelers was anticipated each time a patented product was sold. There is no question of "but for" causation — had the patented product been sold, the levelers certainly would have been sold. Yet, the Federal Circuit denied recovery for such damages. There is no explanation of this result, other than as an example of a judicial "feeling" that sales of levelers are not the type of harm that should be recognized under 35 U.S.C. § 284. Since such feelings are difficult to define and nearly impossible to predict, what is needed is a straightforward recognition that policy is at play. Only when we recognize that a policy decision is being made, can we set the parameters for making that decision.

b. The Current Status of the EMVR

Perhaps not unexpectedly, the current status of the EMVR is confused. Courts continue to hold the EMVR permits damages based on the value of an entire apparatus, even though only one feature may be patented and directly

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purpose of the patent law to redress competitive damages resulting from an infringement of the patent, but there is no basis for extending that recovery to include damages for items that are neither competitive with nor function with the patented invention.

Id.

[349] King Instruments Corp. v. Perego, 65 F.3d 941 (Fed. Cir. 1995).

[350] *Id.* at 956.

[351] *Id.* at 957.

[352] *Id.* at 959 (Nies, J., dissenting).

infringed.[353] Importantly, the Federal Circuit clarified definitions under this rule,[354] and it continues to be applied to both lost profits and reasonable royalty base remedies.[355] However, the new "functional unit" test pronounced by *Rite-Hite* actually has received limited and confusing application.[356] Courts continue to cite pre-*Rite-Hite* "basis for demand" test[357] and the

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[353] *See, e.g.*, Tec Air, Inc. v. Denso Mfg. Mich. Inc., 192 F.3d 1353, 1362 (Fed. Cir. 1999) ("The jury awarded damages based on the entire market value rule, 'which permits recovery of damages based on the value of the entire apparatus containing several features, where the patent related feature is the basis for customer demand.'") (citing State Industries, Inc. v. Mor Flo, Inc., 883 F.2d 1573, 1585 (Fed. Cir. 1989), *cert. denied*, 493 U.S. 1022 (1990); Fonar Corp. v. General Elec. Co., 107 F.3d 1543, 1552 (Fed. Cir. 1997), *cert. denied*, 522 U.S. 908 (1997) ("'[The EMVR] allows for the recovery of damages based on the value of an entire apparatus containing several features, even though only one feature is patented.'") (quoting Paper Converting Mach. Co. v. Magna-Graphics Corp., 745 F.2d 11, 22 (Fed. Cir. 1984); *see also* Karen D. McDaniel & Gregory Ansems, *Damages in the Post Rite-Hite Era: Convoyed Sales Illustrate the Dichotomy in Current Damages Law*, 78 J. PAT. & TRADEMARK OFF. SOC'Y 461, 467 (1996). McDaniel and Ansems note:

> Terminology in this area of the law is confusing. There are several different terms the courts use to convey similar concepts, including: 'the entire market value rule,' 'accessories', 'collateral sales', and 'apportionment.' The 'entire market value rule' often refers to the situation where the patented and unpatented components are somehow connected, or comprise an apparatus. *Id.*

[354] Carborundum Co. v. Molten Metal Equipment Innovations, Inc., 72 F.3d 872, 881 n.8 (Fed. Cir. 1995) ("The expression 'convoyed sales' should preferably be limited to sales made simultaneously with a basic item; the spare parts here should be called 'derivative sales.'") (citation omitted); Morgan Chu &Tami K. Lefko, *Beyond Lost Profits: Maximizing Patent Damges (Part I)*, COMPUTER LAW, Jan. 1998; McDaniel & Ansems, *supra* note 354 at 462, 467.

[355] *See* Code-Alarm, Inc. v. Electromotive Technologies Corp., 114 F.3d 1206 (Fed. Cir. 1997). The court discussed use of the EMVR in calculating a royalty base and concluded that:

> A trial court may include non-infringing sales . . . when the infringing components are the basis for customer demand for the entire machine . . . when the components are physically separate but are sold together so that they constitute a functional unit or are parts of a complete machine or single assembly of parts . . . and when the components are analogous to a single functioning unit.

Id.; *see also* Tec Air, Inc. 192 F.3d at 1362 (discussing the functional unit test).

[356] *See* Tec Air, Inc., 192 F.3d at 1362 (Apparently coupling the EMVR, the "basis for customer demand test," and the "functional unit test"); Bose Corp. v. JBL Inc., 274 F.3d 1354, 1361 (Fed. Cir. 2001) (citing *Rite-Hite* for the proposition that the EMVR permits recovery of damages based on the value of a patentee's entire apparatus when the patented feature is the basis for customer demand in calculating the royalty base, but making no reference to the "functional unit test."). *But see* McDaniel, *supra* note 353, at 462 (discussing *Rite-Hite's* rejection of the "economic" test and adoption of the "formulaic" test requiring goods to be "functionally related.").

[357] *See* Tekmax, Inc. v. Exide Corp., 215 F.3d 1339 (Fed. Cir. 1999) (unpublished opinion) ("The entire market value rule provides for recovery of damages based on sales for an entire apparatus having several features, but only one patented feature, 'when the

"normally anticipated test."[358] Courts discuss treatment of unpatented products,[359] spare parts,[360] and situations where the patent holder was not using the invention.[361] Some have suggested litigants may want to avoid the EMVR, instead relying on the more liberal "reasonable foreseeability" test.[362]

3. Deterrence vs. Compensation

Courts and commentators have focused on the use of the term "adequate to compensate" in the statute. In evaluating damage awards, courts are looking at the distinction between "compensation" damages and "deterrent" damages. Increasingly, the Federal Circuit has moved away from a deterrent model of damages and toward a compensatory model.[363] This trend is most readily seen

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patented feature is the basis for customer demand for the entire machine.'") (citing Fonar Corp. v. General Elec. Co., 107 F.3d 1543, 1552 (Fed. Cir. 1997); Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1549, *cert denied*, 516 U.S. 867 (1995).

[358] *See* National Research Laboratories, 104 F. Supp. 2d 851, 862 (S.D. Ohio 2000) (referencing the "functional unit" test, allowing recovery on sales "normally anticipated" and limiting damages on other grounds).

[359] *See* Stryker Corp. v. Intermedics Orthopedics, Inc., 96 F.3d 1409, 1416 (Fed. Cir. 1996) (analyzing the manner in which products incorporating the patented invention were sold and used and allowing sales on all products, not just sales resulting in actual use of the patented invention); *see also supra* text accompany notes 302-306; *National Research Laboratories*, 104 F. Supp. 2d at 861, 863 (discussing the frequency with which unpatented products were sold with the patented product to establish damages); Promega Corp. v. Lifecodes, Corp., 1999 WL 1427829 (D. Utah Oct. 27, 1999) (analyzing how the patented product and related unpatented products were sold and ultimately limiting the patentee's recovery); Heidelberger Druckmaschinen Ag v. Hantscho Commercial Products, Inc. No. 87C1V4522 (LMM), 1995 WL 693170, at *2 (S.D.N.Y. Nov. 22, 1995) (analyzing the patented invention, its role in the sale of the entire (unpatented) machine and concluding that the patented invention played a more limited role in sales than alleged by the patentee).

[360] *See* Carborundrum Co. v. Molten Metal Equipment Innovations, Inc., 72 F.3d 872, 881-82 (Fed. Cir. 1995) (analyzing patentee's right to an injunction precluding the sale of spare parts).

[361] *See* BIC Corp. v. Thai Merry Co., Ltd., No. 98 CIV. 2113 (DLC), 1999 WL 893134, at *5 (S.D.N.Y. Oct. 18, 1999), *appeal dism'd*, 230 F.3d 1373 (Fed. Cir. 1999) (allowing an injunction to issue where the patentee is not practicing the invention).

[362] McDaniel & Ansems, *supra* note 354, at 476. McDaniels and Ansems state:

> In framing the claim for lost profits on convoyed goods, a patent holder would do well to avoid an analysis under the 'entire market value rule' and instead rely on the 'but for/reasonably foreseeable' test. If the result in *King* and the economic analysis of damages becomes the prevailing view, many patent holders may prevail on lost profits claims on convoyed goods by avoiding the 'entire market value rule,' and riding the coattails of the 'but for' analysis. By a strict application of the 'entire market value rule,' as described by the Court in *Rite-Hite*, the claim in *King* for convoyed sales should not have succeeded.

Id.

[363] *See* Rader, *supra* note 190. Judge Rader opened his remarks, by stating that, "The subject [of damages] that we're going to discuss would promise to bring more efficiency and uniformity and predictability than any other potential reform, any other potential

in *Pall, Oiness, Grain Processing* and *Minco.*[364] In effect, the compensatory model is a statutorily ordained legal limit on causation.

4. Designing Around a Patent

Finally, "the patent law encourages competitors to design or invent around existing patents."[365] This seemingly benign practice has recently taken

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revision, any other potential decision in patent law." *Id.*

In framing his topic, Judge Rader said:

> I'd like to discuss this [damages] less as a participant and more as a student of the Court of Appeals for the Federal Circuit and discuss . . . what I see as the dynamic models that are most affecting damages law at the Court of Appeals for the Federal Circuit. Those models really fall into two basic categories. There is the deterrence model which has often been responsible for quite high damage awards and often receives great attention from patent practitioners and participants in the system alike [and a compensatory model].

Id. Judge Rader's suggested solution is one

> that was suggested by Supreme Court cases of the prior century and . . . would be to use [the infringer's sales price] as the price by which . . . the quantity of sales [is multiplied] to get the compensatory damages. That's what the market actually paid for the identical product that was sold. Notice that this is more compensatory which is in line with what the statutory language is, "adequate to compensate for the infringement." It is harder to prove, less ease of supplying the proof. It is also harder to fully deter infringement because it is less punitive.

Id. In commenting on the divergence between the two models, Judge Rader observed that, "The court is becoming increasingly aware of its obligation under the statute to give damages 'adequate to compensate.' That compensation suggests . . . a different model." *Id.*

In summarizing his thoughts on the importance of damages, he stated,

> Damages really have the potential of providing more predictability, certainty, and efficiency in patent law than any other kind of reform or change. If indeed we have the proper economic evidence with sloping demand curves, we can really ascertain the value of an invention. And, by the value of an invention, I mean the price that the market would pay for that added feature, for that improvement. Not for the whole context of the invention. . . But what the market would pay for that actual invention and improvement. When we can tie down that value, then . . . attorneys can quickly reach agreements as to licensing, the efficiencies of the economic model are clearer. You can reach settlements. We don't have to worry so much about doctrines of equivalents and prosecution history estoppels. You can ascertain what actually would compensate for the infringement. The infringement, once established, can be efficiently calculated, and under a compensatory model we don't have to worry about how much deterrence, how much punitive damage reconsideration has to be given in an infringement situation. . . . The court is looking at compensatory models. This may be a great key to regularizing and improving patent law administration.

Id. Finally, Judge Rader, without suggesting specifics, suggested that there might be "something more" than the types of damages currently available in infringement cases. *Id.*

[364] Grain Processing Corp. v. American Maize-Products Co., 185 F.3d 1341 (Fed. Cir. 1999); Minco, Inc. v. Combustion Engineering, Inc., 95 F.3d 1109, 1118 (Fed. Cir. 1996); Oiness v. Walgreen Co., 88 F.3d 1025, 1030 (Fed. Cir. 1996); Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1222 (Fed. Cir. 1995).

[365] *See* WMS Gaming, Inc. v. International Game Technology, 184 F.3d 1339, 1355 (Fed. Cir. 1999) ("When the district court reconsiders its finding of willful infringement, it should

on added dimensions. First, some have suggested that the actual period of market exclusivity due to patent protection has decreased dramatically over the past decade because new and non-infringing competitive products are entering the market at a more rapid rate than ever before. Second, *Grain Processing* teaches that non-infringing products that can be brought quickly to market, even if they are not currently on the market, are acceptable noninfringing substitutes for purposes of considering the availability of lost profit damages.[366] Thus, the already shrinking period of patent exclusivity may shrink even more rapidly, thus restricting a patentee's right to lost profits. Finally, when we restrict a patentee's right to rely on the doctrine of equivalents under prosecution history estoppel,[367] the pertinent question becomes whether lost profit damages will or can continue to exist in any meaningful way.

IV. PROXIMATE CAUSATION LIMITS IN INFRINGEMENT CASES – THE CONSTITUTIONAL MANDATE

The Supreme Court in *McCready* exhorts us to look, in particular, "to the relationship of the injury alleged to the forms of injury Congress was likely to have been concerned with in passing the statute."[368] As we have seen, our study of patent infringement case law reveals scant discussion by the courts of the fundamental laws defining patent rights and permitting infringement remedies. Rather, the courts readily rely upon precedential and tort-based "but for" case law to award infringement damages compensation. Yet, there may be better ways to repair patent usurpation losses, if the Constitutional and its legislative directives are brought into sharper and more immediate focus.[369]

A. The Constitutional Mandate

Article I, Section 8, Clause 8, of the Constitution provides, "The Congress shall have Power . . . To Promote the Progress of Science and useful Arts, by securing for limited times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."

Numerous cases discuss the Constitutional language and have set out a specific understanding of the Constitutional purpose. As a preface, the

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bear in mind that the patent law encourages competitors to design or invest around existing patents.") (citing Westvaco Corp. v. International Paper Co., 991 F.2d 735, 745 (Fed. Cir. 1993)).

[366] *Grain Processing Corp.*, 185 F.3d at 1354-55.

[367] Festo Corporation v. Shoketsu Kinzoku Kogyo Kabushiki Co., 122 S. Ct. 1831 (2002) (reversing the Federal Circuit's restrictive holding for a complete bar to all infringement claims arising under the doctrine of equivalents in cases in which the patent claim at issue was narrowed by amendment during prosecution in favor of the flexible bar for such instances consistent with the rulings of the Supreme Court in *Warner-Jenkinson Co.*); Warner-Jenkinson Co. v. Hilton Davis Chemical Co., 520 U.S. 17 (1997).

[368] Blue Shield of Va. v. McCready, 457 U.S. 465, 478 (1982).

[369] *Id.* at 478.

promotion of progress in the useful arts is the interest and policy of every enlightened government.[370] The source of this policy is in the Constitution: "The true policy and ends of the patent laws enacted under this Government are disclosed in . . . the Constitution, the source of all these laws . . ."[371]

In every patent grant, there are "two interests involved, that of the public, who are the grantors, and that of the patentee."[372] From the public's perspective, "The aim of the patent laws is not only that members of the public shall be free to manufacture the product or employ the process disclosed by the expired patent, but also that the consuming public at large shall receive the benefits of the unrestricted exploitation, by other, of its disclosures."[373]

From the patentee's perspective, the exclusive right granted for the relevant time period "is the reward stipulated for the advantages for the exertions of the individual, and is intended as a stimulus to those exertions."[374] But, the exclusive right granted to inventors was "never designed for their exclusive benefit or advantage."[375] Rather, "the benefit to the public or community at large was another and doubtless the primary object in granting and securing that monopoly."[376] As Justice Douglas wrote,

> The grant of a patent is the grant of a special privilege "to promote the Progress of Science and useful Arts." Const., Art. I, Sec. 8. It carries, of course, a right to be free from competition in the practice of the invention. But the limits of the patent are narrowly and strictly confined to the precise terms of the grant. . . . It is the public interest which is dominant in the patent system. . . . It is the protection of the public in a system of free enterprise which alike nullifies a patent where any part of it is invalid . . . and denies to the patentee after issuance the power to use it in such a way as to acquire a monopoly which is not plainly within the terms of the grant.[377]

Thus, "The grant of an exclusive right to an invention was the creation of society – at odds with the inherent free nature of disclosed ideas – and was not to be freely given."[378]

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[370] Grant v. Raymond, 31 U.S. 218, 241 (1832).

[371] Kendall v. Winsor, 62 U.S. 322, 328 (1858).

[372] Butterworth v. Hoe 112 U.S. 50, 59 (1884).

[373] Scott Paper Co. v. Marcalus Co., 326 U.S. 249, 255; *see also* Anderson's Black Rock v. Pavement Salvage Co., 396 U.S. 57 (1969) (recognizing that the public benefit requirement is Constitutionally based).

[374] Grant v. Raymond, 31 U.S. 218, 241-42 (1832).

[375] *Kendall*, 62 U.S. at 327; Graham v. John Deere Co., 383 U.S. 1, 9 (1965) ("The patent monopoly was not designed to secure to the inventor his natural right in his discoveries. Rather, it was a reward, an inducement, to bring forth new knowledge.") (discussing Jefferson's philosophy regarding patents).

[376] *Kendall*, 62 U.S. at 328.

[377] Mercoid Corp. v. Mid-Continent Co., 320 U.S. 661, 665-66 (1944).

[378] *Graham*, 383 U.S. at 9 (reciting Jefferson's position on patents and later describing the "embarrassment of an exclusive patent").

The Supreme Court is also clear on the means by which this balance of interests is to be accomplished. In *Mazer v. Stein*, the Court eloquently stated this purpose,

> The economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors in "Science and useful Arts." Sacrificial days devoted to such creative activities deserve rewards commensurate with the services rendered.[379]

While inventors "are bound to diligence and fairness in their dealings with the public, with reference to their discoveries on the other hand, they are by obligations equally strong entitled to protection against frauds or wrongs practiced to pirate from them the results of thought and labor, in which nearly a lifetime may have been exhausted . . . "[380]

B. The Enabling Patent Statute

"The Constitutional provision is not self-executing. It empowers but does not command the Congress to grant patent rights, and the source of any specific patent right is the statute which defines the nature and extent of the patent right granted."[381] Thus, "Congress, having created the monopoly, may put such limitations upon it as it pleases."[382] Or, phrased another way, "The right to a patent is purely statutory, and Congress has full power to prescribe to whom and upon what terms and conditions a patent shall issue."[383] Within the limits of the Constitutional grant, Congress may implement the framers' purpose by selecting the policy which it judges best effectuates the Constitutional aim.[384]

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[379] Mazer v. Stein, 347 U.S. 201, 219; *see also* Butterworth v. Hoe, 112 U.S. 50, 59 (1884) ("The legislation based on this provision [of the Constitution] regards the right of property in the inventor as the medium of the public advantage derived from his invention . . . "); Scott Paper Co. v. Marcalus, Co., 326 U.S. 249, 255 (1945) ("As has been many times pointed out, the means adopted by Congress of promoting the progress of science and the arts is the limited grant of the patent monopoly in return for the full disclosure of the patented invention and its dedication to the public on the expiration of the patent."). This reflects Jefferson's rejection of a natural-rights theory of intellectual property and clearly recognizes the social and economic rationale of the patent system. *Graham*, 383 U.S. at 8-9.

[380] *Kendall*, 62 U.S. at 329. *But see* Grant v. Raymond, 31 U.S. 218, 242 (1832) ("The public yields nothing which it has not agreed to yield; it receives all which it contracted to receive.").

[381] Cali v. Japan Airlines, Inc., 380 F. Supp. 1120, 1124 (E.D.N.Y. 1974) (citing Deepsouth Packing Co. v. Laitram Corp., 406 U.S. 518, 525-26 (1971)).

[382] Mast, Foos & Co. v. Stover Mfg. Co., 177 U.S. 485, 494 (1900).

[383] Owen v. Heimann, 12 F.2d 173,174 (D.C. Cir. 1926).

[384] Graham v. John Deere Co., 383 U.S. 1, 6 (cited in Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560) (Fed. Cir. 1988)); *accord* U.S. v. Dublier Condenser Corp., 289 U.S. 178, 189 (1933).

There have been several patent statutes stretching back to 1793 and the first Congress.[385] The current statute 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.[386]

Prior to 1946, the statute governing damages in infringement cases provided that, "the complainant shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained. . . ."[387] This provision reflected the law as it had been since 1870.[388] In light of the quoted language, courts were often required to determine the profits which may have been made by the infringer as well as compensatory damages.[389] Cases were frequently assigned to masters for this determination.[390] The difficulty in accounting for an infringer's profits frequently led to "interminable" delays.[391] In addition, delay and expense resulted from attempts by the court-appointed masters to apportion profits resulting from the infringement relating to a small improvement on a complex machine.[392] Dissatisfaction with the delay and expense involved in patent infringement cases led to the 1946 amendments.[393]

In 1946, Congress enacted the following language relating to damages: "Upon a judgment being rendered in any case for an infringement the complainant shall be entitled to recover general damages which shall be due compensation for making, using, or selling the invention, not less than a

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[385] For two decisions reviewing the history of U.S. patent statutes *see* Nike, Inc. v.Wal-Mart Stores, Inc., 138 F.3d 1437, 1440-43 (providing a concise history of patent statutes); Georgia-Pacific Corp v. U.S. Plywood Corp., 243 F. Supp. 500, 516-33 (providing an exhaustive analysis of provisions and statutory remedies in successive patent statutes).

[386] 35 U.S.C. § 284 (2000).

[387] Act of Feb. 18, 1922, ch. 58, sec. 8, 42 Stat. 392.

[388] Act of July 8, 1870, ch. 230, sec. 55, 16 Stat. 206, as amended, ch. 391, sec. 6, 29 Stat. 694 (1897).

[389] 92 Cong. Record 9188 (1946) (remarks of Senator Pepper). It appears Senator Pepper incorrectly assumed a patentee had to establish the infringer's profits. *See* Note, *Recovery in Patent Infringement Suits,* 60 COLUM. L. REV. 840, 842 n.19 (1960).

[390] *Recovery in Patent Infringement Suits, supra* note 390, at 842 n.12.

[391] 92 Cong. Record 9188 (1946) (remarks of Senator Pepper); *see also* S. Rep. No. 1503, 79th Cong., 2d Sess. 2 [1387] (1946) ("The evil attendant upon 'the law's delay' and the difficulty of adducing convincing proof of necessary facts is peculiarly exemplified in patent-infringement litigation."); Hearings on H.R. 5231 before the House Committee on Patents, 79th Cong., 2d Sess. at 3, 7-8, 10-12 (1946).

[392] S. Rep. No. 1503, 79th Cong., 2d Sess. 2 [1387] (1946); Hearings on H.R. 5231 Before the House Committee on Patents, 79th Cong., 2d Sess., 7-8 (1946).

[393] H.R. Rep. No. 1787, 79th Cong., 2d Sess. 1 (1946); S. Rep. No. 1503, 7 Cong., 2d Sess. 3 [1387] (1946); 92 Cong. Rec. 9188 (1946) (remarks of Senator Pepper).

reasonable royalty."[394] In 1952, the patent statute was again amended and the current language of section 284 adopted.[395] Although there were minor changes in the language, there were no substantive changes in the damages provision.[396] Thus, the legislative history relating to the 1946 amendments is appropriate for our consideration.

C. The Legislative History

Although the legislative history has been characterized as "sparse," "contradictory" and "approved without adequate consideration or understanding,"[397] it provides interesting insights into Congressional intent. The legislative intent is far more attuned to providing a wide-range of damages and deterring and punishing infringers than is suggested in recent cases. The House Report states, "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 . . ."[398]

Senate Report No. 1503 echos this sentiment.[399] In a Senate speech, Senator Pepper stated,

> [T]he basis laid down by this bill is general compensatory damages which the plaintiff in the suit sustains. Of course, that may include profits [of the alleged infringer], but is not limited to profits; and it is not necessary to prove profits, if the plaintiff does not find it appropriate to do so.[400]

In a hearing before the House Committee on Patents, participants were even less reserved. During debate on a Department of Justice suggestion that the language of the bill should limit recoveries only to a reasonable royalty, the Chairman of the Committee was asked, "What elements other than a reasonable royalty are contemplated?" He replied, "The trouble and time, and everything else in the world."[401]

Members of the House Committee on Patents exhibited no sympathy for infringers. At another point earlier in the same debate, the Chairman and a representative of the Department of Justice were discussing a hypothetical innocent infringer who had invested in the infringing activity, the following colloquy occurred:

> Mr. Stedman [Department of Justice]: . . . If he [the infringer] had a situation where he has investments tied up, a situation of that sort –

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[394] Act of Aug. 1, 1946, ch. 726, 60 Stat. 778.

[395] 35 U.S.C. § 284 (2000).

[396] *Recovery in Patent Infringement Suits*, *supra* note 390, at 842 n.17.

[397] *Id.* at 842.

[398] H. R. Report. No. 1587, 79th Cong., 2d Sess. 1 (1946), adopted by S. Rep. No. 1503, 79th Cong., 2d Sess. 2 (1946).

[399] S. Rep. No. 1503, 79th Cong., 2d Sess. 2 (1946).

[400] 92 Cong. Rec. 9188 (1946) (remarks of Senator Pepper).

[401] Hearings on H.R. 5231 Before the House Committee on Patents, 79th Cong., 2d Sess., 19 (1946) (statement by Rep. Frank W. Boykin, Alabama, Chairman).

> The Chairman (interposing): He has no business investing if it is somebody else's goods.
>
> Mr. Stedman: He does not know for sure that he is infringing.
>
> The Chairman: Let us give him the mischief and put him in jail and hang him like they used to do for stealing horses. I do not agree with you at all. You are trying to help a crook. We want to help the honest man. . . .
>
> Mr. Lanham [Rep. Texas]: . . . We do not want to punish an innocent infringer beyond what we should.[402]

A colloquy on the House floor also provides insight. There, in describing damages available under the Act, Congressman Lanham stated, ". . . the object of the bill is to make the basis of recovery in patent-infringement suits general damages; that is, any damages a complainant can prove, not less than a reasonable royalty. . . ."[403]

The legislative history appears to contemplate a compensation scheme predicated on notions of deterring would-be infringers and providing compensation for a wide range of potential injuries, up to "everything else in the world." How then do we square the apparently broad remedial intent of Congress with what would appear to be a much more restrictive view of

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[402] *Id.* 18-19. During the same hearing, the Committee heard testimony from, Conder C. Henry, an Assistant Commissioner of Patents. *Id.* at 4-10. Mr. Henry offered a thoughtful history of the problems leading to the proposed legislation. As a part of his remarks, he made the following observations: "What are damages? Damages in a legal sense means the compensation which the law will award to an injury done. Damages in an infringement suit can be proved by any relevant and competent evidence just as they can be proved in an action for tort." *Id.* at 9.

Mr. Henry went on to say,

> Whoever wrote the bill did it cleverly, because it pins right down to the point that the compensation shall be, for what? For making, using, or selling the invention. The author of the bill made the words 'damages' and 'compensation' almost synonymous – that the damages will be the compensation for infringing the rights inherent in the patent itself. That is what the bill is concerned with, in my judgment.

Id. at 9.

At that point, Congressman Lanham stated, "How could that be stated more clearly than it is on page 2 beginning with line 3 – 'shall be entitled to recover general damages which shall be due compensation for making, using, or selling the invention.' I do not see how it could be made any clearer." *Id.* at 11.

[403] 92 Cong. Rec. 1857 (1946). In response to questions, Congressman Lanham said the purpose of the bill was to make a reasonable royalty the measure of minimum damages for any patent infringement and thereby simplify the case of an aggrieved party in proving damages. *Id.* In response to concerns about compulsory licenses, Congressman Lanham said, "The inventor is not limited merely to collecting the royalty, I would say that in the case of an innocent infringer who had infringed without notice and without knowledge that it would be unreasonable to collect from him more than the reasonable royalty. . . . But if there has been a willful infringement, then the damages as set out in the bill can be collected." *Id.*

damages which has developed in the courts?

V. FORMULATING AN UPDATED TEST FOR CAUSATION

A fresh look at damage causation issues in infringement cases will help us identify underlying principles, articulate a new rule and analyze the components of that rule.

A. The Guiding Principle

In approaching causation in infringement cases, the guiding principle is protection of the Constitutional purpose of promoting science and the useful arts through enforcement of the patent statute. Congress and the courts have pinpointed the economic incentive to invent as the primary method of accomplishing that purpose. Thus, the fundamental goal in awarding patent infringement damages is to ensure the incentive to invent. Damages in infringement cases must adequately compensate for financial incentives lost to infringement — either innocent or willful.

In awarding damages, the public purpose of promoting science and the useful arts is paramount. By protecting the patent holder's financial incentive, the public's interest is inherently protected. There is little support for ensuring the proven infringer avoids paying damages.

Rules for awarding damages must reflect the tort nature of infringement and retain enough flexibility to adapt to unique factual situations. Yet, the rules must provide clarity and predictability.

B. Suggested Elements of A Test for Infringement Damages

Against this backdrop, consider the following test for analyzing the availability of damages in infringement cases:

A patent holder will be entitled to damages when he proves:

1. Losses from economic injury to the economic incentive to invent;
2. Including losses:
   a. incurred directly in one or more relevant product markets; or
   b. as a consequence of or incidental to the infringement; and
3. Which losses would not have been incurred but for the infringement.

This test suggests the following questions: (1) What types of economic losses are recoverable?; (2) How is the relevant market determined?; (3) What types of consequential or incidental damages are recoverable?; (4) How is "but for" causation determined?

Note there is no "reasonable foreseeability" test of legal causation. The policy underlying the patent statute is the economic incentive to invent and it is injury to that incentive which is compensable. There is no need or room for *ad hoc* policy determinations of what damages can be recovered like those made in *Rite-Hite.* Instead, the determination of legal causation is subsumed in the determination of whether damages sought by a particular patentee are the result of economic injury to the economic incentive to invent. Tort based policies of

foreseeability simply have no place in this analytical calculus.

C. Types of Damages Recoverable

The legislative intent was to allow recovery of "any damages a complainant can prove." Given our guiding principle of protecting the economic incentive to invent, direct (or actual), incidental and consequential damages, may be recovered. The critical factor is that the loss be related to the incentive to invent. The inquiries are "What financial rewards did the patentee reasonably anticipate reaping from the patent?" "Did the infringement limit the financial rewards?" Injured plaintiffs may recover any type of economic losses relating to the incentive to invent they can prove. Plaintiffs must prove damages with a reasonable degree of probability, but such damages cannot be the result of speculation.

Because the incentive is an economic one, only economic losses are recoverable. Damages allegedly resulting from personal injuries, even if caused by the infringement, are not recoverable. Damages from emotional distress or any other physical malady, even if resulting directly from the infringement, are not recoverable, because recovery of such damages is unrelated to the economic incentive behind the statute. Of course, if the infringing conduct is egregious enough, actions in tort may be available.

Similarly, indirect economic losses resulting from infringement are not recoverable. The most prominent example is a claim by a shareholder of a corporate patentee for the diminished value of stock due to infringement. Because the patentee corporation can recover the lost economic incentive in whatever form it may take, the value of what was lost by the company may be recouped. Allowing a shareholder to sue would result in a double recovery. For the same reason, decreases in the market value of a company because of diminished market share are not recoverable.

D. Direct Damages and the Relevant Market

Proof of relevant markets is the cornerstone for proof of direct damages. Direct or actual damages include damages for lost net profits, price erosion, added costs associated with the infringement, and other injuries to the economic incentives underlying patent law, all of which are recoverable. Thus, this list is suggestive rather than exclusive.

Given the economic nature of the incentive to invent, direct damages will most often result from the disruption of competition caused by infringement. In order to assess the economic impact of the disruption, relevant markets must be identified. There may be more than one relevant market. For example, if a patented product or technology competes with the infringing product in one market, lost sales resulting from the infringement in that market can be recovered. If the same patented product or technology is sold in another market, competitive economic injuries (such as product disparagement or market disruption) can also be recovered if the infringing conduct affected the patentee's participation in that market.

Suggested parameters for proof of a relevant market include:

• Plaintiff bears the burden of providing reliable economic proof of the relevant market that establishes an accurate context for determining damages.

• Elements of the relevant market inquiry include: (1) the number and identity of competing products; (2) the level of competition based on price; (2) the level of competition based on product features and characteristics; (3) the number, identity and requirements of customers; (4) the cross-elasticity of demand (based on price and supply) for the patented product and other products in the relevant market; (5) the existence of licenses to make or sell the patented product into the relevant market; and (6) the number of competitors and their share of the relevant market. Other elements of the relevant market analysis may be gleaned from antitrust law.[404]

• To prove damages, plaintiff must establish the following regarding the relevant market using reliable economic data: (1) the market which existed prior to the infringement; (2) the market as it actually is as the result of the infringement; (3) the market as it would currently be but for the infringement. Direct damages will be the difference between the market as it is and as it would have been "but for" the infringement. Patent holders seeking lost future damages must prove: (1) the market projected into the future reflecting the effect of the infringement; (2) the market projected into the future assuming the infringement had not occurred.

E. Incidental and Consequential Damages

Plaintiffs may recover consequential losses resulting directly from injury to the incentive to invent. A non-exclusive list of such damages includes: (1) lost future profits including damages resulting from market disruption and reduced market share caused by the infringement; (2) losses resulting from future price erosion caused by the infringement; (3) commercial disparagement or loss of reputation; and (4) losses resulting from future added costs. Indirect consequential damages are not recoverable.

Incidental damages, though likely not large, are recoverable. Such damages might include costs incurred by the patentee to detect the infringement through testing or other means.

F. "But For" Causation

A suggested framework for proof of causation-in-fact follows:

• "But for" causation provides the basis for the analysis. A patentee must prove that "but for" the infringement he would not have suffered the damages about which he complains. Infringers may show the alleged injury would have occurred without the infringement. As anticipated in *Grain Processing*, proof will center around the market as it is and as it would have been "but for" the infringement.

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[404] *See* Alan J. Cox, *Intellectual Property Market Definition and Antitrust in High Technology Industries*, 566 PLI PATENTS 117, at *124 (1999) (discussing the procedure for defining markets utilizing various antitrust guidelines issued by the Department of Justice and the Federal Trade Commission).

• The *Panduit* test for "but for" causation is no longer used. Instead, analysis of the factors defining the relevant market and proof of the effect infringement had on that market will establish "but for" causation. Some of the factors courts should take into account include: customer demand for the patented product or feature; the "cross-elasticity" of demand for the patented product and the infringing product; the identity and activities of other competitors; the nature and market impact of other competitive (non-infringing products) products whether they are actually for sale in the market or available under the *Grain Processing* case; the ability of the patentee to market, manufacture and distribute the patented product. By considering and balancing these factors, and others which may be relevant in a given case, courts will be able to determine whether an alleged injury was caused, in-fact, by the infringer.

• In direct damage cases, proof of the relevant market and economic injury in that market resulting from the infringement will suffice to show "but for" causation.

• In two-competitor markets, absent substantial evidence to the contrary, all sales made by the infringer will be presumed to be sales lost by the patentee.

• In multi-competitor markets, absent substantial evidence suggesting another approach, the patentee will be entitled to a presumption that it lost sales made by the infringer in the same proportion as the patentee's share of the relevant market prior to the infringement.

• In incidental and consequential loss cases, the patentee must provide clear and convincing evidence that the damages would not have been incurred absent the infringement. Proof must not be speculative. This higher standard of proof protects against claims for damages which are, by their nature, more prone to be speculative.

• Given the policy of compensating for injury to the incentive to invent, the EMVR is no longer used. A patentee may recover damages for the value of an entire apparatus where less than all features are patented (or infringed) only when the financial and marketing dependence on the patented item underlies the sale of the apparatus and plaintiff proves that, in all reasonable probability, it would have made the sale absent the infringement. The patented feature and the apparatus need not be a functional unit so long as the loss associated with the anticipated sale of the apparatus in the relevant market was, in effect, a part of the underlying economic incentive related to the invention. The test is a market based, economic one, and not one of proximity or use. Where this test cannot be met, the court must apportion between the value of the apparatus associated with the patented feature and award damages based on that value.

• Damages from lost sales of any "unpatented" (*e.g.*, tag-along, convoyed) product may be recovered only when, given the nature of the relevant market, the sale would have been made but for the infringement and the loss, therefore, was a part of the underlying economic incentive.

These rules fulfill the fundamental purpose of the patent statute and provide courts, patent owners and infringers with straightforward tools to obtain fairness, certainty and predictability regarding causation issues in infringement

cases.