

“REFORM” ARRIVES IN PATENT ENFORCEMENT: THE BIG PICTURE

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ABSTRACT

A quarter century of extraordinarily strong U.S. patent protection has come to an end. That remarkable period began in the early 1980s, when the U.S. Court of Appeals for the Federal Circuit undertook to fix half a century of patent weakness. Recently, that same court has moved forcefully in the opposite direction under pressure from the business community, scholarly studies, Supreme Court pronouncements, and threats of Congressional action. Without legislative changes, it has ratcheted patent enforcement down—unevenly but in a remarkably wide variety of ways. This Article explores the specifics of these developments and considers their consequences for U.S. patent protection and for U.S. producing companies.

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INTRODUCTION

“Patent reform” efforts in Congress, a hot topic for the last seven years, stemmed largely from concerns about excesses in patent enforcement and litigation.¹ Those efforts failed in each of the last three Congresses. Recently, the legislative sponsors cut back their enforcement-oriented proposals and the full Senate then stripped those that remained from the leading “reform” bill after hearing testimony on the remarkable developments described in this article.² Whatever “reform” legislation may pass both houses of the 112th Congress will do almost nothing to address the enforcement-oriented concerns that drove initial reform efforts. Nor will it make much difference to the strength or availability of U.S. patent protection or the rights of patent holders vis-à-vis infringers.³

Nevertheless, far reaching “reform” has come to U.S. patent enforcement in the last few years. It has transformed patent litigation and ended the

¹ See *infra* note 2. Other early objectives of patent reform efforts were widely-proposed administrative changes to our patent system to “harmonize” it with the patent systems of other leading patent-granting countries and implement other recommendations made in two extensive studies and reports on the U.S. patent system released in 2002-2004. Those studies are identified in note 4, below.

² In view of the judicially driven retrenchment in enforcement discussed in this article and to counter continuing political opposition, the sponsors of reform legislation cut back the litigation-related reform provisions in 2010. Nevertheless, the then-pending reform bills died at the end of the 111th Congress in December, 2010. New reform proposals introduced in January, 2011 included the reduced litigation-oriented provisions. After hearing testimony on the continuing judicial developments described in this article, the Senate stripped-out those remaining litigation-oriented provisions and then approved the amended bill, S. 23, on March 8, 2011. See *Senate Approves S. 23 Patent Reform Bill*, 81 PTCJ (BNA) 593, 593 (March 11, 2011), available at http://news.bna.com/ptln/display/alpha.adp?mode=topics&letter=P&frag_id=19970895&item=B88A6B4044F8927302EA6C569C6E3C12&prod=ptln. That article began, “The U.S. Senate voted 95-5 March 8 to approve a patent reform bill, S. 23, with significant changes to operations and patent challenges at the Patent and Trademark Office but virtually no litigation reform—the original impetus for bills first introduced in 2005. The last vestiges of modifications to infringement proceedings in district courts—rules on determining damages, willfulness, and venue transfer—were eliminated from S. 23 prior to the vote.” *Id.*

³ A bill similar to S. 23, H.R. 1249, is pending in the House of Representatives. These bills would make conceptually significant changes to the U.S. patent system such as substitution of a modified first-to-file priority system and expanded procedures for administrative challenges to patents at the U.S. Patent and Trademark Office before or shortly after issuance. Overall, however, their economic and business consequences would be modest. The final section of this article describes some aspects of this evolution.

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period of uniquely strong and increasing patent protection we have known for more than two decades.

The recent "reform" is the product of many recent court decisions. Together, those decisions have accomplished most of the big-dollar objectives of legislative reform and have gone beyond them in multiple respects. Otherwise unrelated, they show one dominant theme: reversing enhancements of patent strength achieved during the recent strong-patents era.

The recent changes may reduce the rewards for innovation, and the values of many existing patents have declined. But they promise benefits as well; and substantial, though lessened, U.S. patent protection will survive the retrenchment. Impossible to quantify, the positives and negatives of this "reform" may net out to overall benefits for the U.S. economy.

The following pages first note the surge of U.S. patent protection in the last quarter century and some of the criticism it generated. The body of this article then summarizes more than a dozen facets of patent enforcement where recent decisions have reversed that pro-patent surge. The concluding section summarizes the consequences of this recent transformation and the prospects for further judicial "reform."

A. *The Last Three Decades—Strength Follows Weakness*

Cycles of strength and weakness have long characterized U.S. patent protection.⁴ In the last century, a period of weak U.S. patents persisted, in varying degrees, from the 1920s into the 1980s. Several factors contributed to this weak-patents regime, including anti-monopoly sentiment, judicial hostility to patents, doubt that the patent examination process effectively weeded-out non-deserving applications, and inconsistency among the various federal appellate circuits. Patents were routinely invalidated, some important remedies for infringement were difficult to obtain, and rampant forum shopping made patent protection even weaker in practice than it seemed in theory.

⁴ See, e.g., 1 DONALD S. CHISUM, CHISUM ON PATENTS, Overview § 1-OV 5 (Matthew Bender & Co., Inc. 2011) (noting the repeated swings in the U.S. Supreme Court's attitude toward patents from pro-patent to anti-patent and back again); see also COMM. ON INTELLECTUAL PROP. RIGHTS IN THE KNOWLEDGE-BASED ECON., A PATENT SYSTEM FOR THE 21ST CENTURY, 31–38 (Stephen A. Merrill, Richard C. Levin & Mark Myers, eds., The Nat'l Acads. Press 2004) (2001), available at <http://www.nap.edu/html/patentsystem/0309089107.pdf> (last visited Jan. 22, 2011) [hereinafter NAS STUDY]; FTC, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY 14–23 (2003), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf> [hereinafter FTC STUDY].

In the 1970s and '80s, the U.S. seemed to be falling behind other countries in product innovation, and foreign companies often out-competed U.S. businesses in exploiting inventions made here.⁵ For many business and political leaders, stronger U.S. patent protection promised both stimulus for U.S. technical innovation and a degree of protection against foreign competitors in the exploitation of inventions.⁶ These economic and political factors led to statutory changes designed to iron-out the inconsistencies in patent enforcement and strengthen the protection afforded by U.S. patents. The importance of these changes became clear as the U.S. Court of Appeals for the Federal Circuit (the "Federal Circuit"), created in 1982, took up its mandate.

Congress created that new court from two predecessor courts⁷ and gave it exclusive jurisdiction over appeals in nearly all patent cases from the federal trial courts across the country and from rulings by the U.S. Patent and Trademark Office (the "Patent Office" or "PTO").⁸ No longer would appeals in infringement cases go to the twelve regional circuit courts of appeals, each with authority to interpret patent law as it chose subject only to occasional intervention by the U.S. Supreme Court. The legislative history called for this new court to bring clarity and uniformity to the inconsistent patent rulings of the various regional circuits.⁹ Less express, but widely understood, was the expectation that it would strengthen patent protection by eliminating remaining hostility to patents, eliminating forum shopping, and finding more patents valid and enforceable.

The Federal Circuit promptly began to bring order to inconsistent patent case law and to strengthen patent protection generally. It made patents harder to defeat, gave patent holders multiple procedural advantages in litigation, increased remedies against infringers, and made patents available for a wider

⁵ NAS STUDY, *supra* note 4, at 18.

⁶ While treaties assured non-U.S. inventors equal treatment in obtaining U.S. patents for their inventions wherever made, the large majority of U.S. patents had long been issued to U.S. entities. For example, according to statistics from the U.S. Patent and Trademark Office, foreign inventors accounted for only about *twenty percent* of the U.S. patents granted in the mid-1960s and even fewer in earlier periods. By 1980, their share had increased to just under 40% of the patents being issued. See Patent Office Statistics, available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst_utlh.htm. The percentage of outstanding U.S. patents owned by foreigners, of course, grew more slowly. See *infra* note 10 regarding the dissipation in recent years of the former protectionist tendencies of strong U.S. patents.

⁷ The U.S. Court of Customs and Patent Appeals and the appellate division of the U.S. Court of Claims.

⁸ 28 U.S.C. § 1295 (2003).

⁹ S. REP. NO. 97-275, at 2 (1981).

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range of inventions. Its numerous pro-patent rulings shifted the balance of power substantially in favor of patent holders. U.S. patents became more valuable assets—and more potent weapons—in business. We describe many of the Federal Circuit's patent-strengthening initiatives below.

B. Criticism, Complaints, and Studies

Gradually, strong patents cast a harsh light on imperfections in our patent system. At the same time, rapid technological advances made patents more numerous and important, and the burden of strong patents heavier, in the U.S. economy.¹⁰ A new range of patent problems was widely discussed. Business executives, scholars, Congressmen, and Supreme Court Justices criticized perceived excesses. Extensive studies, numerous articles, and some entire books proposed changes to alleviate perceived problems.¹¹ The recommendations favored moderating the strong-patents environment, improving practices at the PTO, and reducing the costs of patent litigation. Criticism was also directed at a few matters that favored accused infringers while contributing to the complexity and expense of patent litigation.¹²

C. The Tide Turns

After a quarter century of increasing patent strength, the legal tide turned in 2005-2006. Then and since, the Supreme Court, and especially the Federal Circuit, have narrowed U.S. patent protection in a wide variety of ways, and federal trial courts have extended those rulings. The numerous decisions

¹⁰ At the same time, foreign entities rapidly increased their percentage ownership of U.S. patents, dissipating the former protectionist tendencies of strong U.S. patents. For more than a decade now, the percentage of U.S. utility patents issued to foreign inventors has been in the mid or high 40s or higher; and in every year since 2007, foreign inventors have accounted for *more than half* of all the U.S. patents issued—a big change relative to the figures set forth in note 6, *supra*. See the statistics published by the PTO at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst_utlh.htm.

¹¹ See, e.g., NAS STUDY, *supra* note 4; FTC STUDY, *supra* note 4. Numerous other studies were prepared and published by, for example, the Congressional Research Service and various private institutions. See generally ADAM B. JAFFE & JOSH LERNER, *INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT* (Princeton Univ. Press 2004).

¹² These included use of the inequitable conduct doctrine and the “best mode” requirement. Depending on the intent of the patent applicant and other circumstances, each of these can create a defense to charges of infringement. Critics of these defenses say their focus on the subjective intent of the patent applicant complicates patent litigation and makes it less predictable.

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have overturned a variety of pro-patentee rules in litigation, facilitated patent invalidation, reduced patent coverage and the availability of important remedies for infringement, cut the power of juries in patent cases, and more. They have substantially, but unevenly, reduced the power and value of patents. The result is a rapid and wide-ranging retrenchment—essentially “patent reform” without Congressional participation.

The following sections of this article describe many facets of patent protection that gained strength through rulings by the Federal Circuit in 1982 and since but have suffered recent dramatic reversals. We discuss them below in the order previewed here:

Subject	Preview
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I. “Courthouse Rules” in Patent Cases

Affirmative Duty to Avoid Infringement	Created but recently eliminated
Treble Damages for Willful Infringement	Extended but now cut back
Privilege, Waiver, and Adverse Inference	Pro-patentee rules adopted but now eliminated
<i>Whether</i> and <i>When</i> Patents Can Be Enforced or Challenged	Pro-patentee rules increased but now cut back
<i>Where</i> Infringement Suits and Patent Challenges Can Be Brought	Patentee favoritism increased but now dialed- back

II. Infringement Remedies

Permanent Injunctions Barring Infringement	Made automatic but now highly conditional
Preliminary Injunctions	Encouraged but now very hard to get
Infringement Damages	Recoveries inflated but now reined in
U.S. Damages Awards for “Foreign Infringement”	Carelessly extended but now cut back

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III. Patent Scope and Strength

Patentable Subject Matter	Dramatically expanded but now cut back
Non-Obviousness Requirement and Presumption of Validity	Strong patent validators adopted but now undercut
Claim Construction	Take-over, anti-patent shift, “fix” and its rejection
Other Validity Requirements	Patent-friendly environment grown hostile
Patent Exhaustion	Patent-friendly loopholes expanded but now closed
Doctrine of Equivalents	Patent-extending doctrine choked-off
Inequitable Conduct	Downs, ups, and inconsistencies in a difficult doctrine
Changes at the Patent Office	Clamp-down on patent allowances and end of the “customer service” paradigm

We then summarize—to the extent possible—the consequences and likely future of this wide-ranging retrenchment.

I. COURTHOUSE RULES IN PATENT CASES—THE FEDERAL CIRCUIT’S “NOBLE PROCEDURAL EXPERIMENT”

For many years before the creation of the Federal Circuit, U.S. patents were widely recognized as weak and often ineffective. Shortly after its creation, the Federal Circuit began what might be called a “noble experiment” to address these problems. As described below, it shifted many procedural rules in favor of patent holders with the aim of strengthening patent protection generally and making patent enforcement feasible for small entity patentees. In combination, the changes tilted the litigation playing field substantially in favor of patent holders and against accused infringers. Recently, the Federal Circuit *abandoned* its patentee-friendly courthouse rules. This retreat has substantially reduced

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patentee power, especially for small entity patent holders. We review those developments here.¹³

A. Pro-Patentee Rules on Duty to Avoid Infringement, Willfulness, Treble Damages

Before its first birthday, the Federal Circuit announced the first step in its “noble experiment”: making awards of increased damages for willful infringement easier for patent holders to obtain and more of a threat to accused infringers.¹⁴ On facts suggesting the disrespect in which patents were held,¹⁵ the Federal Circuit ruled:

- Persons who know of, or should know of, a patent they might be infringing or about to infringe have an “affirmative duty” of “due care” to avoid such infringement;
- This duty includes the obligation to seek and obtain competent legal advice from counsel before beginning activities that might infringe; and
- Failure to obtain such advice, or reliance on insufficient legal

¹³ Though not addressed in this section, the statutory presumption of patent validity and the related evidentiary burden to overcome that presumption in litigation can also be viewed as “courthouse” rules substantially affecting patent enforcement. As described in Parts II.A.2 and III.B, below, the Federal Circuit has managed an evolution of those rules similar in some respects to the evolution of the courthouse rules discussed here except that the reversal of the recent pro-patent-holder phase of that evolution has not gone as far, and apparently will not go as far, as the reversal of the rules discussed here. See *infra* notes 85 & 207–211 and accompanying text.

¹⁴ The U.S. Patent Act authorizes judges to increase damages awards for infringement to “up to three times” the patentee’s actual damages. 35 U.S.C. § 284 (2006).

¹⁵ *Underwater Devices Inc. v. Morrison-Knudsen Co.*, 717 F.2d 1380, 1388–89 (Fed. Cir. 1983). There the accused infringer was a construction company that bid for and won a large construction contract. It was well aware of patents on devices and methods it needed to use in the project. The patent holder was demanding royalties of about \$200,000 for a license to use the claimed inventions on the project. *Id.* at 1384. The construction company consulted its in-house attorney in an effort to avoid paying the royalties. From him it received brief and sketchy legal advice suggesting possible invalidity plus statements reflecting the weak state of patent enforcement and compliance in the U.S. at the time: Statistics showing that courts were invalidating eighty percent of U.S. patents asserted in infringement actions. *Id.* at 1385. The implication was that infringers need not worry much about patent compliance. The attorney continued, “I would recommend we continue to refuse to even discuss the payment of a royalty with Underwater Devices. Underwater Devices must recognize that, if they sue us, they might kill the goose that lays the golden eggs.” *Id.*

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advice, can support a finding that any resulting infringement was willfully committed, which could justify an award of increased damages.

This duty of "due care" created a test akin to mere negligence for willful infringement and enhanced damages. It also led to revised, pro-patentee jury instructions and shifted some of the trial emphasis from the neutral question of whether the accused party had infringed the patent to the *patentee-friendly* subject of whether the accused party had tried adequately to avoid its infringement. The consequences were yet greater in view of other changes the Federal Circuit would soon make.

B. Related Pro-Patentee Rules of Privilege, Waiver, and Inference

Further patent-strengthening steps addressed the rules of privilege, waiver, and inference. Under long established law, most advice a party receives from its attorneys is within the attorney-client privilege and therefore can be withheld from the other side, the judge, and the jury in litigation. In a 1986 case, *Kloster Speedsteel AB v. Crucible Inc.*,¹⁶ the Federal Circuit imposed a steep price on accused infringers for use of the privilege.

There, the accused infringer had been aware of a possibly applicable patent but, in litigation, invoked its privilege and declined to state whether it had sought or obtained an opinion of counsel on it.¹⁷ The Federal Circuit ruled that this use of the privilege justified an inference that the company either (i) had not obtained any advice of counsel or (ii) had obtained advice that it was infringing, or about to infringe, the patent.¹⁸ The Federal Circuit reinforced this holding in 1988, stating that "a court must be free to infer that either no opinion was obtained or, if an opinion [was] obtained, it was contrary to the infringer's desire to initiate or continue its use of the patentee's invention."¹⁹ With the recently recognized duties discussed just above, jury instructions explaining these permissible inferences could be very damaging to accused infringers on the issue of whether any infringement they had committed was willful. The instructions could also prejudice a jury simultaneously deciding the underlying issue of infringement.

¹⁶ 793 F.2d 1565 (Fed. Cir. 1986).

¹⁷ *Id.* at 1580.

¹⁸ *Id.*

¹⁹ *Fromson v. Western Litho Plate & Supply Co.*, 853 F.2d 1568, 1572–73 (Fed. Cir. 1988).

Of course, if the accused infringer had obtained favorable legal advice, it could use that advice to contest charges of willfulness. But use of any such evidence would waive both attorney-client privilege and work product protection. Moreover, the waivers could not be limited to a single legal opinion or piece of advice. Often they would extend to essentially all communications between the accused party and any attorney relating to the patent and to a wide range of other documents on the case in the files of the accused infringer's counsel. Indeed, depending on the facts, the waivers could cover—and make discoverable—advice or materials dated well after the favorable advice, quite possibly including documents or communications revealing estimated litigation risks and trial strategy.

C. *Retrenchment on Treble Damages, Willfulness, Privilege, Waiver, and Inference*

Many observers criticized these new rules, blaming them for a variety of burdens and undesirable practices.²⁰ Recently, the Federal Circuit abandoned these pro-patentee rules in a series of important decisions. In 2004, the Federal Circuit overruled its prior decisions permitting adverse inferences based on invocation of the attorney-client privilege by an accused infringer.²¹ In 2006, the Federal Circuit rejected the broad formulation of waiver to the extent it would reach attorney work product that had not been communicated to the client.²²

²⁰ See, e.g., *Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp.*, 383 F.3d 1337, 1351–52 (Fed. Cir. 2004). There, Judge Dyk, concurring, identified the following as among the adverse results of the *Underwater Devices* due care requirement and related doctrines: “foster[ing] a reluctance to review patents for fear that the mere knowledge of a patent will lead to a finding of lack of due care . . . ; [promoting] a cottage industry of window-dressing legal opinions by third party counsel designed to protect the real decision-making process between litigating counsel and the company’s executives . . . impos[ing] . . . substantial legal costs on companies seeking to introduce innovative products . . . ; and . . . enhance[ing the] ability of holders of dubious patents to force competitors’ products off of the market through the threat of enhanced damages.” These concerns, he said, had led a Federal Trade Commission working group and a committee of the National Academies to urge the Federal Circuit to reconsider its willfulness jurisprudence. *Id.*

²¹ *Id.* at 1351 (recognizing the wide criticism its rule on inferences had received and the absence of a similar rule in non-patent cases).

²² *In re Echostar Commc’ns Corp.*, 448 F.3d 1294, 1304 (Fed. Cir. 2006) (the waiver, from introducing evidence of advice of counsel, will be limited to privilege and work product protection for communications or documents discussing communications between an attorney and the client).

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Finally, in 2007, the Federal Circuit overruled several remaining pro-patentee rules in its *en banc* decision in *In re Seagate Technology, LLC*.²³

In *Seagate*, the accused infringer revealed in discovery that it would rely on the three legal opinions it had obtained.²⁴ Taking advantage of the resulting waiver, the patentee sought broad discovery of matters otherwise covered by the attorney-client privilege and work product protection, including documents and deposition testimony from both the accused party's opinion counsel and its trial counsel.²⁵ The district court agreed a broad waiver had occurred and ordered full document production and depositions of both sets of counsel on broad issues of validity, enforceability, and infringement.²⁶ The court's ruling allowed almost no protection for materials that would disclose the accused infringer's trial strategy. The Federal Circuit granted mandamus to block these mandated disclosures and proceeded to destroy several elements of its former patentee favoritism. It announced:

- the affirmative duty of care to avoid infringing a known patent no longer exists, and there is no longer any obligation to obtain legal advice on potentially applicable patents;²⁷
- findings of willful patent infringement, sufficient to support enhancement of damages require clear and convincing evidence of "objective recklessness" by the accused infringer, including that it knew of, or clearly should have known of, the relevant facts,²⁸ and
- if an accused infringer's trial counsel acted independently of its opinion counsel and only after suit was filed, introduction of the opinion counsel's favorable advice normally waives protection only as to that counsel and not as to documents or communications with the trial counsel.²⁹

This combination of rulings was a remarkable and serious setback for patent holders. But more setbacks were still to come.

²³ 497 F.3d 1360 (Fed. Cir. 2007) (en banc).

²⁴ *Id.* at 1366.

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.* at 1376.

²⁸ *Id.*

²⁹ *In re Seagate Tech., LLC*, 497 F.3d 1360, 1376 (Fed. Cir. 2007) (en banc).

D. Procedural Ups and Downs of Asserting and Challenging Patents—Whether, When, and Where

Separate parts of the “noble experiment” addressed *whether*, *when*, and *where* patents can be asserted—or challenged—in court. Some years ago, the Federal Circuit adopted more pro-patentee rules in these areas, allowing patent holders, in nearly all cases, to choose both a favorable time and a favorable location for any litigation regarding the relevant patents while precluding possible infringers from challenging the patents unless essentially invited to do so by the patentee. The same rules gave patent holders a highly favorable method by which they could put pressure on putative infringers to buy licenses while remaining safe from challenges to their patents and optimizing their positions for possible litigation.³⁰ Recent Federal Circuit decisions have eroded this pro-patentee landscape.

1. Whether and When Patents Can Be Enforced or Challenged—The Pro-Patentee Days

No significant restrictions limit when or whether patent holders can sue actual or likely infringers.³¹ In marked contrast, the Federal Circuit adopted very pro-patentee rules sharply restricting *whether* and *when* infringers can sue to challenge relevant patents. It did so by its interpretations of the “actual controversy” requirement for declaratory judgment suits and the discretionary aspects of such suits. Recent changes to these rules are our focus here.

Under the U.S. Constitution and the federal Declaratory Judgment Act, federal courts can hear suits for declaratory judgments only if the suits are based on an “actual controversy.”³² For suits challenging patents, the Federal Circuit developed a very restrictive definition of “actual controversy,” unique to patent litigation. That definition required the challenger to make two main showings in order for the challenge to be heard: (i) that the challenger was actually producing a product possibly covered by the patent or had at least taken meaningful, concrete steps to begin such production; and (ii) that the challenger had a *rea-*

³⁰ See *infra* text accompanying and following notes 370–71.

³¹ As soon as a patent issues, the patentee can sue possible infringers for the following: (i) to stop such infringement as may be occurring; (ii) to prevent threatened infringement even if the accused party is not yet infringing; (iii) to obtain damages, and perhaps enhanced damages, costs, and attorney fees for any infringement; and/or (iv) in some cases, for a “reasonable royalty” award for some pre-issuance use by others of the claimed invention. 35 U.S.C. §§ 154(d), 281, 283–84 (2010).

³² U.S. CONST. Art. III, § 2, cl. 1; Declaratory Judgment Act of 1934, 28 U.S.C. § 2201 (2006).

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sonably based apprehension that it would soon be sued by the patent holder for infringement.³³ In most situations such “reasonable apprehension” would not exist unless and until the patent holder actually threatened to sue the potential infringer on the patent.

As a result, producing companies usually could not test the validity or reach of a known patent even if, for example, they would have to make, or had made, a large, early investment in plant, equipment, marketing, etc., to produce and sell the possibly infringing product. They had to pay for a license or risk large losses because a later infringement action might find the patent valid and infringed—perhaps willfully infringed. Other hardships for producers also grew out of this requirement for a “reasonable apprehension of imminent suit” by the patent holder.³⁴

A further procedural twist also worked against patent challengers. Even where an “actual controversy” existed, the district court could refuse to hear the declaratory judgment case in its discretion. Moreover, one recognized basis for such a discretionary refusal was that the parties were in licensing negotiations so that pendency of a challenge to the patent could tip the balance of power in those negotiations against the patent holder. Further, when a district court exercised its discretion to block a patent challenge, the Federal Circuit seldom overturned that decision.

2. Infringer-Friendly Retrenchment

Recently, a number of decisions have stripped patent holders of much of the control they formerly had over assertions of, and challenges to, their patents. The Supreme Court’s ruling in *MedImmune, Inc. v. Genentech, Inc.*³⁵ liberalized the “actual controversy” requirement for a declaratory judgment action and undermined the “reasonable apprehension of imminent suit” requirement. The Court, however, expressly declined to address the effective limitations on declaratory judgment suits.³⁶ Like its ruling in *eBay*, discussed in Part III, below,

³³ *Gen-Probe Inc. v. Vysis, Inc.*, 359 F.3d 1376, 1380 (Fed. Cir. 2004) (citing *BP Chem. Ltd. v. Union Carbide Corp.*, 4 F.3d 975, 978 (Fed. Cir. 1993)).

³⁴ *See, e.g., Microchip Tech. Inc. v. Chamberlain Grp., Inc.*, 441 F.3d 936 (Fed. Cir. 2006).

³⁵ 549 U.S. 118 (2007).

³⁶ It stated in a footnote: (i) that the Federal Circuit’s “reasonable apprehension of imminent suit” requirement was inconsistent with some of the Supreme Court’s earlier holdings on declaratory judgment, and (ii) that the “actual controversy” requirement for declaratory judgment jurisdiction was satisfied in the circumstances of that case. *Id.* at 132 n.11. It declined, however, to address “whether the District Court [in that case] should, or must, decline to issue the requested declaratory relief.” *Id.* at 136. It “[left] the equitable, prudential, and poli-

the Supreme Court decision here granted the lower courts broad latitude to shape the new rules.

In *Sandisk Corp. v. STMicroelectronics, Inc.*,³⁷ the Federal Circuit resisted the temptation to read *MedImmune* narrowly. It allowed a patent challenge based on rather extreme facts in licensing discussions but no actual threat of an infringement suit.³⁸ Moreover, it barred the district court from using policy considerations or its discretion to reject the challenge.³⁹ A concurring Federal Circuit Judge said the ruling would necessarily extend beyond the unusual facts of the case and would allow infringers to institute declaratory judgment suits whenever possible licensing between the parties was mentioned—or very shortly thereafter.⁴⁰ This, he said, would destroy the “safe haven” the Federal Circuit had created for patentees who were trying to license their patents but were not willing or able to undergo expensive litigation to defend them in challenges initiated by possible infringers.⁴¹

Several subsequent Federal Circuit decisions have confirmed the substantial, though not complete, elimination of restrictions on declaratory judgment patent challenges.⁴² Of particular note, a recent Federal Circuit ruling carried these decisions to an extreme in large part because the patent holder there was a “patent troll”⁴³ trying to pressure producing companies to pay for licenses

cy arguments in favor of such a discretionary dismissal for the lower courts’ consideration on remand . . . [along with] all merits-based arguments for denial of declaratory relief.” *Id.* at 137.

³⁷ 480 F.3d 1372 (Fed. Cir. 2007)

³⁸ *Id.* at 1383.

³⁹ *Id.*

⁴⁰ *Id.* at 1384 (Bryson, J., concurring).

⁴¹ *Id.*

⁴² *Sony Elecs., Inc. v. Guardian Media Techs., Ltd.*, 497 F.3d 1271, 1282, 1286 (Fed. Cir. 2007) (holding that detailed letters describing the apparent infringement and the patent holder’s damages were sufficient affirmative action to establish declaratory judgment jurisdiction despite patent holder’s argument that the letters “were simply part of [its] efforts to license its patents” and that it was “at all times willing to negotiate a business resolution to the dispute”); *Teva Pharm. USA, Inc. v. Novartis Pharm. Corp.*, 482 F.3d 1330, 1339 (Fed. Cir. 2007).

⁴³ The term “patent troll” is sometimes used broadly as meaning a non-practicing entity or NPE, *i.e.*, an entity that owns the patent in question but does not make or sell the claimed product. Significantly different equities, however, often distinguish NPEs that conducted or funded the inventive efforts that led to the patent from those that merely bought the patent years later for purposes of enforcing it against companies then practicing the technology. Intermediate circumstances can give rise to intermediate equities. Accordingly, the clearest category of “trolls,” and those for which injunctions are most clearly unavailable, are entities that neither practice the invention nor conducted nor supported the inventive efforts that led

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without triggering their ability to challenge the patent in declaratory judgment actions. For the “troll” context, the court destroyed the “safe haven” it had created for patent holders trying to license their inventions without exposing themselves to suit.⁴⁴

The more favorable climate for patent challenges extends to the Hatch-Waxman drug regulatory context,⁴⁵ where producers of brand-name drugs list the patents protecting those drugs in the FDA’s “Orange Book” and prospective makers of generic counterparts hope to challenge the patents’ validity and/or coverage. Changing its earlier rulings, the Federal Circuit recently identified the statutory scheme and the special delays it can impose on the introduction of generic drugs as a basis for allowing the prospective generic competitor to challenge the patent by a declaratory judgment suit even though the patent holder did little more than list the patent as covering the branded drug and even where the patent holder had forfeited normal means of enforcing the patent.⁴⁶

to the patent(s) in question and that are not substantially owned by anyone that did. *See infra* notes 80–81 and accompanying text.

⁴⁴ In *Hewlett-Packard Co. v. Acceleron LLC*, 587 F.3d 1358 (Fed. Cir. 2009), the patent holder “troll” used the formerly safe approach of sending Hewlett-Packard a carefully written letter identifying the patent, suggesting its “relevance” to HP’s lines of business, and offering to provide additional information. *Id.* at 1360. It requested a commitment from HP that nothing it provided would be used as a basis for a declaratory judgment suit against it. *Id.* HP indicated interest in the information and discussions, declined the requested commitment, but proposed, in its place, a mutual 120-day stand-still agreement on litigation. *Id.* The patentee declined to give such an agreement. *Id.* HP then sued, in its favored venue, to invalidate the patent. *Id.* at 1361. The district court dismissed the suit because the patent holder-troll had not used any actual threats or given other traditional indications that it was about to sue for infringement. *Id.* at 1363. The Federal Circuit, however, reversed and remanded the case for a declaratory judgment trial. *Id.* at 1364. Of particular importance, it repeatedly noted the patent holder’s status as a troll. Since the only business of trolls is enforcing patents, the court said, trolls seeking license fees are more likely than other types of patent holders to institute suit unless companies practicing the claimed invention(s) agree to pay for a license. *Id.*

⁴⁵ 21 U.S.C. § 355 (2006).

⁴⁶ *Caraco Pharm. Labs., Ltd. v. Forest Labs., Inc.*, 527 F.3d 1278, 1285 (Fed. Cir. 2008); *Teva Pharm. USA, Inc. v. Novartis Pharm. Corp.*, 482 F.3d 1330, 1340–42 (Fed. Cir. 2007). Regarding the complexities of declaratory judgment jurisdiction in the Hatch-Waxman context, see generally, *Teva Pharmaceuticals USA, Inc. v. Eisai Co.*, 2009 U.S. Dist. Lexis 82102 (D.N.J., Sept. 9, 2009), *rev’d*, 620 F.3d 134 (Fed. Cir. 2010).

3. Where Infringement Suits and Patent Challenges Can Be Brought—Early Shift Favoring Patentees

Where patent-based suits can be brought depends on rules of personal jurisdiction over patent holders or putative infringers and rules governing venue for infringement suits and declaratory judgment actions. Rules governing declaratory judgment jurisdiction and case transfer also play a role. The resulting scheme can strongly influence the practicalities and prospects in patent enforcement.⁴⁷ Recent Federal Circuit rulings have dialed-back the very strong pro-patentee slant of the rules in this area that the same court built up just a few years ago.

From its early years, the Federal Circuit developed very liberal rules for where patent holders can sue possible infringers. For example, adopting a broad view of the “stream of commerce” doctrine, it found personal jurisdiction over a U.S. or foreign manufacturer in most or all states where products of that manufacturer are delivered and sold.⁴⁸ Further, changing the interpretation of an old statutory provision on venue, the Federal Circuit ruled that no additional venue limitations apply when a patent holder sues a corporation for infringement. In other words, venue in an infringement suit against a corporation is proper *whenever* personal jurisdiction exists over that corporation.⁴⁹ Thus, a patent holder can usually sue a corporate manufacturer of possibly infringing products—even a foreign manufacturer not conducting any business in the U.S. or a domestic company whose presence and activities were limited to a single state—in *any judicial district in the U.S.*

⁴⁷ Ability to choose the forum for litigation allows a party (i) to minimize its litigation costs but, often more importantly, (ii) to choose a district where jurors are likely to be favorably disposed toward its business and unlikely to be hostile to it or favorably disposed toward its opponent and (iii) likely, or not, to favor patent holders or award large amounts of damages. *See infra* notes 50 & 51 and accompanying text.

⁴⁸ *See, e.g.,* Beverly Hills Fan Co. v. Royal Sovereign Corp., 21 F.3d 1558, 1565–66 (Fed. Cir. 1994) (giving broad play to the stream of commerce theory for jurisdiction so as to allow a suit in federal court in Virginia against a fan manufacturer in China whose products ended up in Virginia *via* an arguably “established distribution channel”).

⁴⁹ In *VE Holding Corp. v. Johnson Gas Appliance Co.*, 917 F.2d 1574 (Fed. Cir. 1990), the Federal Circuit made 28 U.S.C. § 1400(b) (governing venue in actions for patent infringement) operate in a pro-patentee manner by changing the interpretation of § 1391(c). Thus, no additional venue limitations restrict where corporate defendants can be sued for patent infringement. In contrast, venue in declaratory judgment actions challenging patents is governed by the general venue provision, § 1391(b), not by § 1400(b), even though it is a mirror-image of a patent infringement suit.

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Further, once a patent holder sued an infringer in its chosen court, transfers of the case to a more convenient state or district at the request of the defendant were disfavored, and the decision as to whether to make a requested transfer was heavily within the discretion of the district court chosen by the plaintiff patent holder. A few district courts made a practice of attracting patent cases and refusing to transfer them away, apparently because increased local litigation would benefit local law firms and other businesses.⁵⁰ This made the patent holder's choice of courts essentially final despite federal rules allowing transfers based on convenience factors, and this remained true even in cases where the defendant's location and other factors clearly favored a different venue. Using this broad discretion plus a reputation for plaintiff-friendly juries and fast schedules for discovery and trial, the Eastern District of Texas, which previously handled very few patent cases, became in just a few years, "*the preeminent* [U.S.] venue for patentees looking to enforce their rights."⁵¹

In sharp contrast, the rules on personal jurisdiction and venue are much less favorable to patent challengers. Unless the patent holder itself or its exclusive licensee has activities elsewhere, such suits can usually be brought only in

⁵⁰ See, e.g., Julie Creswell, *So Small a Town, So Many Patent Suits*, N.Y. TIMES, Sept. 24, 2006, § 3 (Business), at 1; see also *infra* note 51. From earlier products liability litigation, the jury pool in the Eastern District of Texas had a widespread reputation of (i) hostility to corporate defendants, especially corporations located out-of-state, and (ii) a related inclination to award large damages against such non-local entities. Using this reputation and instituting fast-track scheduling in patent suits—which is often difficult for unprepared infringement defendants to handle—the Eastern District of Texas, and especially the Marshall Division, jumped from complete obscurity to be the number one court in the country for patent infringement suits and the court with the highest patentee win rate, at least among courts handling a substantial number of patent suits. In an amicus curiae brief the American Intellectual Property Law Association noted that the number of new patent cases filed in the Eastern District of Texas in 2000 was only 23 but that, by 2007, the number had jumped to 368, which was more than the next leading districts in 2007, Central California (308) or Northern California (148). Brief for Am. Intellectual Prop. Law Ass'n as Amici Curiae Supporting Petitioners, *In re Volkswagen of Am.*, 545 F.3d 304 (5th Cir. 2008) (No. 07-40058), 2008 WL 7789554, at *2 n.3.

⁵¹ Joseph Casino & David Boag, *Transferring Cases Out of Eastern District of Texas*, LAW360, Oct. 15, 2008 (emphasis added); see also John Gutkoski & Debra Nye, *Texas Eastern District: IP Equipoise?*, LAW360, Jan. 5, 2009 (noting the reputation of the Eastern District of Texas for: pro-plaintiff juries; fast, plaintiff-favorable trial scheduling; no-nonsense discovery; low likelihood of cases being transferred away; extremely rare rulings of patent invalidity; disinclination to end or narrow patent cases via summary judgment rulings; and intimidation of infringement defendants into frequent, lucrative settlements). Since most patent cases are brought by patent holders for infringement rather than by putative infringers to challenge patent validity or reach, these patent-friendly attributes attracted huge numbers of patent cases to that district.

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certain courts located in the patent holder's home state. Moreover, this limitation applies even though the patent rights are applicable nation-wide and even if, for example, the patent holder has sent "cease-and-desist" letters to the putative infringer and its customers in their separate home state(s) threatening to sue them if they continue their activities.⁵² Much of this favoritism was expressly based on pro-patentee policy choices by the Federal Circuit.⁵³ Given the practicalities and expense of patent enforcement, such location considerations can be very important, especially where the patent holder has limited resources to support its enforcement efforts.⁵⁴

⁵² Regarding cease-and-desist letters, see *infra* note 53 and *Radio Sys. Corp. v. Accession, Inc.*, 2011 U.S. App. LEXIS 8465 (Fed. Cir. April 25, 2011). The patentee-friendly rules begin with the stream-of-commerce theory, which often provides jurisdiction over the putative infringing manufacturer but does not provide jurisdiction over patent holders. *Radio Systems Corp.*, 2011 U.S. App. LEXIS 8465; *Avocent Huntsville Corp. v. Aten Int'l Co.*, 552 F.3d 1324, 1337 (Fed. Cir. 2008). Separately, *VE Holding Corp. v. Johnson Gas Appliance Co.*, 917 F.2d 1574, 1584 (Fed. Cir. 1990), does not operate on declaratory judgment challenges to patents in the same venue-promoting way it operates on infringement suits brought by patentees. See *supra* note 49 and accompanying text.

⁵³ For example, the Federal Circuit recently stated:

[W]e have held that, based on "policy considerations unique to the patent context, letters threatening suit for patent infringement sent to the alleged infringer by themselves 'do not suffice to create personal jurisdiction.'" . . . "Principles of fair play and substantial justice afford a patentee sufficient latitude to inform others of its patent rights without subjecting itself to jurisdiction in a foreign forum. A patentee should not subject itself to personal jurisdiction in a forum solely by informing a party who happens to be located there of suspected infringement." . . . "[T]here must be 'other activities' directed at the forum and related to the cause of action besides the letters threatening an infringement suit."

Avocent Huntsville Corp., 552 F.3d at 1333 (citations omitted); see also *Silent Drive, Inc. v. Strong Indus., Inc.*, 326 F.3d 1194, 1200–02 (Fed. Cir. 2003); *Red Wing Shoe Co. v. Hockerson-Halberstadt, Inc.*, 148 F.3d 1355, 1361 (Fed. Cir. 1998). In *Avocent Huntsville Corp.*, the Federal Circuit rejected language in *Viam Corp. v. Iowa Export-Import Trading Co.*, 84 F.3d 424 (Fed. Cir. 1996), finding the "stream of commerce" theory applicable in declaratory judgment cases in some circumstances and indicating that the standards for personal jurisdiction and venue should be the same, as between a patent holder and a putative infringer, regardless of whether the controversy is brought as an infringement suit or as a declaratory judgment action challenging the patent. 552 F.3d at 1330–31, 1332.

⁵⁴ See *supra* note 47.

4. Recent Changes Favoring Accused Infringers

In recent rulings, the Federal Circuit has dialed-back the choice-of-forum advantages of patent holders. For one thing, the Federal Circuit has taken a more circumspect approach to the “stream of commerce” theory than it used in earlier years, potentially limiting patentees’ choices.⁵⁵ Conversely, while sending infringement letters into a putative infringer’s home state still will not expose a patent holder or its patent to a declaratory judgment challenge there, a few cases have recognized relatively modest additional activities by the patentee or its distributor in that state as sufficient to allow a declaratory judgment suit there.⁵⁶ Infringers are still vulnerable to suit in many more locations than most patent holders, but the difference may be smaller than it was a few years ago.

Further, the new, more liberal rules governing declaratory judgment jurisdiction discussed above are giving putative infringers more forum selection opportunities. In 2008, the Federal Circuit said that, because of those new rules, putative infringers seeking to challenge patents held by broadly active companies will often have choice-of-forum rights approaching those of the patentees. Accordingly, it said, the formerly strict limits on transfers of patent cases should give way to more liberal rules based on the convenience of the parties and witnesses in the case. It also tried to limit both (i) the discretion of judges to refuse to hear declaratory judgment patent challenges, and (ii) the ability of patent holders to block transfers of their suits by adding parties, patents, and/or causes of action to their complaints that would be difficult to include in a related declaratory judgment suit in a different federal district. Applying these considerations, it ordered a patent dispute to be heard by the Northern District of Califor-

⁵⁵ In cases subsequent to *Beverly Hills Fan Co.*, *supra* note 48, the Federal Circuit has recognized a narrower view of the scope of the stream of commerce doctrine. *See, e.g.*, *Commissariat à l’Energie Atomique v. Chi Mei Optoelectronics Corp.*, 395 F.3d 1315, 1323 (Fed Cir. 2005). Importantly, the Supreme Court has agreed to review the stream of commerce doctrine in two pending non-patent cases, *Brown v. Meter*, 681 S.E.2d 382 (N.C. Ct. App. 2009), *cert. granted sub nom. Goodyear Luxembourg Tires, S.A. v. Brown*, 131 S. Ct. 63 (U.S. 2010) and *Nicastro v. McIntyre Mach. Am., Ltd.*, 987 A.2d 575 (N.J. 2010), *cert. granted*, 131 S. Ct. 62 (U.S. 2010).

⁵⁶ *See e.g.*, the discussion of “other activities” beyond merely sending infringement letters into a putative infringer’s state and a possible watering-down the formerly more stringent requirement in *Avocent Huntsville Corp.*, 552 F.3d at 1331–32 and in *Autogenomics, Inc. v. Oxford Gene Tech. Ltd.*, 566 F.3d 1012, 1019 (Fed. Cir. 2009) (collecting cases); *see also* *Genetic Implant Sys., Inc. v. Core-Vent Corp.*, 123 F.3d 1455, 1459 (Fed. Cir. 1997) (analogizing activity of patent holder’s exclusive distributor in the declaratory judgment plaintiff’s chosen forum state to that of an exclusive licensee so as to create personal jurisdiction over the patent holder there); *cf.* *Radio Sys. Corp. v. Accession, Inc.*, 2011 U.S. App. LEXIS 8465 (Fed. Cir. April 25, 2011).

nia, where the accused infringer had challenged the patent, rather than by the pro-patent Eastern District of Texas, where the patent holder had sued for infringement.⁵⁷ More recently, the Federal Circuit applied extremely liberal declaratory judgment standards in favor of the accused infringer—largely because the patent holder was a patent “troll.” This allowed the accused infringer to avoid suit in the Eastern District of Texas and to have the dispute decided in Delaware.⁵⁸

Similarly, a number of recent *mandamus* rulings have reduced the ability of patent holders and district court judges to resist motions by accused infringers to transfer infringement suits to judicial districts with which they are more closely connected. Making use of a 2008 *en banc* ruling by the Fifth Circuit,⁵⁹ the Federal Circuit recently issued writs of *mandamus* to the Eastern District of Texas in a number of patent cases requiring the transfers of the suits to other federal courts as requested by the accused infringers. These rulings rejected most of the make-weight arguments against transfer that are typically advanced by patent holder-plaintiffs in cases lacking substantial connections to their chosen *fora*.⁶⁰

The changes discussed above have made a real difference in where some patents will be asserted or challenged. But disproportionate, tactically-motivated selection of the Eastern District of Texas by patent holders, especially “trolls,” continues; and revision of the venue statute—which is no longer part of the pending legislative “reform” proposals, may be needed to rein it in.⁶¹

⁵⁷ Micron Tech., Inc v. Mosaid Techs., Inc., 518 F.3d 897, 905 (Fed. Cir. 2008).

⁵⁸ Hewlett-Packard Co. v. Acceleron, LLC, 587 F.3d 1358, 1361 (Fed. Cir. 2009); *see supra* notes 43 & 44 regarding that case and regarding the term “patent troll.”

⁵⁹ *In re Volkswagen of Am., Inc.*, 545 F.3d 304 (5th Cir. 2008) (*en banc*). There the Fifth Circuit issued a writ of *mandamus* to the Eastern District of Texas, Marshall Division (Judge Ward), requiring that court to transfer a non-patent case to a different division of the same district as the defendant had requested. *Id.* at 309. Ten of the Fifth Circuit’s seventeen judges sharply rebuked the Marshall Division’s reasoning in denying the motion for transfer and rejected most of the make-weight arguments plaintiffs can mouth against transfer when their cases have little actual connection to their chosen forum but which the Eastern District of Texas had often held sufficient to block transfers of patent cases in the past. *Id.* at 316–18.

⁶⁰ *See, e.g., In re Acer Am. Corp.*, 626 F.3d 1252, 1256 (Fed. Cir. 2010); *In re Zimmer Holdings, Inc.*, 609 F.3d 1378, 1382 (Fed. Cir. 2010); *In re Nintendo Co.*, 589 F.3d 1194, 1200 (Fed. Cir. 2009); *In re Hoffman-LaRoche Inc.*, 587 F.3d 1333, 1338 (Fed. Cir. 2009); *In re Genentech, Inc.*, 566 F.3d 1338, 1348 (Fed. Cir. 2009); *In re TS Tech USA Corp.*, 551 F.3d 1315, 1321–22 (Fed. Cir. 2008).

⁶¹ *See, e.g., James Pistorino, Concentration of Patent Cases in Eastern District of Texas Increases in 2010*, 81 PTCJ (BNA) 803 (April 15, 2011).

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As we discuss in the final section of this article, the roll-back of patentee-friendly courthouse rules makes patent enforcement more difficult for many patent holders. Licensing efforts also tend to be less successful, and they expose patent holders to increased risks that their patents will be challenged at unfavorable times and in unfavorable locations. Small entity patent holders, including individual inventors, facing established infringers suffer the most from the roll-back. Without doubt, more holders of valid and infringed patents will lose deserved license revenues, settlements, and awards. On the other hand, the roll-back has leveled the playing field, and it may reduce assertions of meritless patents and help rein-in arguably abusive tactics of patent trolls. The net of these opposing tendencies remains to be seen.

II. INFRINGEMENT REMEDIES

A. *Injunctions—Permanent and Preliminary—Encouraged but Now Harder to Get*

Injunctions against infringement are harsh, but traditional, remedies in patent enforcement. Two varieties are important: (i) “permanent” injunctions, which are often granted after trial in favor of patent holders who prevailed there and usually last until the expiration of the patent in question and (ii) preliminary injunctions, which can be entered before trial to halt apparently infringing activities prior to judgment. Both types can have drastic effects: halting or disrupting a going business of the defendant and imposing large losses. Both varieties gained strength in the recent “strong patents” era. Recently one has suffered a major cut-back. The other has been wounded and is fighting to preserve some of its strength against continuing attack.

1. Permanent Injunctions

U.S. patents confer on their holders “the right to *exclude others* from making, using . . . or selling” an infringing product in the U.S. while the patent remains in force.⁶² That right seems to invite issuance of an injunction, after adjudicated infringement, to effect such an exclusion. Accordingly, “permanent” injunctions against continued infringement have long been traditional remedies where patent holders are successful on the merits at trial. But this remedy was not automatic even after such success. Older case law allowed trial

⁶² 35 U.S.C. § 154(a)(1) (2006) (emphasis added).

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judges some discretion on whether to grant a requested injunction and what terms to include.⁶³

Over the last twenty-five years, the Federal Circuit reduced trial judges' already modest discretion not to enjoin continuing infringement to a theoretical sliver. While extraordinary public interest considerations could theoretically block entry of an injunction after the patent holder was successful at trial, that essentially never happened. Reflecting reality, the Federal Circuit ceased even referring to the traditional equity test that governs injunctions in most non-patent contexts.⁶⁴ Thus it became irrelevant:

- whether or not the patent holder was making or selling the patented product—and therefore likely, or not, to lose business or profits from continuing infringement;
- whether an award of continuing damages—without an injunction—would remedy the patent holder's apparent losses from any continuing infringement; and/or
- whether the infringer's business had been created innocently and would be devastated by the injunction whereas refusing to enter an injunction would cause no similar harm to the patentee.

Further, depending on the circumstances, a small infringing element in a large, complex product might result in an injunction effectively preventing production or sale of the entire combination.

This rule of automatic injunctions gave patent holders extraordinary leverage over accused infringers. Together with the increased difficulty of invalidating patents, discussed in Part VI, below, it meant that essentially any issued patent that had not expired or been adjudicated invalid posed a genuine risk of shutting down, or at least requiring immediate modifications to, any U.S. business it might be read as reaching. Changes in what might be called the patent enforcement “marketplace” demonstrated the economic importance of this and other developments that strengthened the bargaining power of patent holders.⁶⁵

⁶³ See, e.g., *Roche Prods., Inc. v. Bolar Pharm. Co.*, 733 F.2d 858, 865–67 (Fed. Cir. 1984).

⁶⁴ That four-factor test is stated in note 70, *infra*.

⁶⁵ These include the new willingness of large, established law firms to take patent infringement cases on a contingent fee basis; the development of a new category of businesses intended solely to acquire issued but dormant patents that can be read as covering activities in the marketplace and use them to sue the arguably infringing companies for economic gain; and the willingness of venture capital funds and others to provide funding for these new entities after reviewing their business plans.

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All this recently changed for a substantial percentage of cases. The catalyst for change was the Supreme Court's 2006 ruling in *eBay, Inc. v. MercExchange L.L.C.*,⁶⁶ although lower court decisions were needed to clarify its importance. The patent in *eBay* claimed a business method for Internet sales. It was held by a company not practicing the claimed invention but licensing it non-exclusively to others. When licensing negotiations with eBay broke down, the patent holder sued and won on validity and infringement.⁶⁷ After further review of the facts, though, the district court declined to enter an injunction and opted instead to award continuing damages for any on-going infringement.⁶⁸ On appeal, the Federal Circuit reversed and applied its "automatic injunctions" rule.⁶⁹ The Supreme Court, however, granted review and reversed again.

The Court's short, unanimous opinion in *eBay* rejected the "automatic injunctions" rule in favor of the traditional but vague four-factor test that governs injunctions in most non-patent contexts.⁷⁰ Cryptically, though, it said very little about how the four-factor test should apply in patent cases, sent the case back to the lower court for further review, and left unclear whether the decision would significantly affect patent enforcement. Two concurring opinions revealed a big disagreement among the Justices.⁷¹

One concurring opinion, subscribed by three Justices, said entry of a permanent injunction makes good sense when a patent holder prevails on infringement and validity, because the patent right is the right to "exclude others" from practicing the invention.⁷² Its implication was that permanent injunctions should continue to be entered almost routinely when patentees prevail on the merits in infringement suits, although it agreed that somewhat more attention should be given to the circumstances and equities of the case than the Federal Circuit had allowed.⁷³

⁶⁶ 547 U.S. 388 (2006).

⁶⁷ *Id.* at 390–91.

⁶⁸ *Id.* at 391.

⁶⁹ *Id.* at 388.

⁷⁰ *Id.* at 394. As stated by the Court, the four-factor test requires the plaintiff seeking an injunction to demonstrate: "(1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) the public interest would not be disserved by a permanent injunction." *Id.* at 391.

⁷¹ *eBay, Inc. v. MercExchange L.L.C.*, 547 U.S. 388, 394–97 (2006).

⁷² *Id.* at 395 (Roberts, J., concurring).

⁷³ *Id.*

In contrast, four Justices joined in a separate concurring opinion emphasizing the changes that had taken place in the use of patents in recent years.⁷⁴ Patents, they said, were intended to reward invention *and commercialization* of new technology by protecting its commercial introduction and sale from infringing competition.⁷⁵ Recently, however, entities that neither invented the claimed technology nor commercialized or supply it have become prominent patent enforcers.⁷⁶ They buy existing patents from unrelated parties not to use them as originally intended but merely to sue companies producing the claimed products.⁷⁷ In this context, or when the patented item is only a small part of a much larger product, these Justices said, an injunction serves not the patent's intended purpose but merely enhances the patent holder's leverage to extract excessive licensing fees by threatening to shut-down the commercializing business.⁷⁸ In such cases, the opinion suggested, courts should often deny an injunction against continuing infringement and limit the patent holder's remedy to continuing damages.⁷⁹

Experience since 2006 seems to follow the four-Justice concurrence in that the availability of injunctive relief seems heavily dependent on the patent holder's economic vulnerability, *vel non*, to competition from the infringing product(s). Where meaningful vulnerability exists, injunctions are routinely granted.⁸⁰ In contrast, denials of injunctions have been common where such competition does not exist, and particularly where the patent holders were not practicing the subject inventions but were licensing them non-exclusively to multiple licensees. Based on the decisions, a hierarchy of entitlement to injunc-

⁷⁴ *Id.* at 396–97 (Kennedy, J., concurring).

⁷⁵ *See id.*

⁷⁶ *Id.* at 396.

⁷⁷ *eBay, Inc. v. MercExchange L.L.C.*, 547 U.S. 388, 396 (2006) (Kennedy, J., concurring).

⁷⁸ *Id.*

⁷⁹ *Id.* at 396–97.

⁸⁰ One tabulation found trial courts had granted post-trial injunctions in 26 or more out of 28 cases where they had been requested by patent holders that were actually practicing the claimed inventions and were competing, or likely to compete, with the adjudicated infringers. See discussion in *Amgen, Inc. v. Hoffman-La Roche Ltd.*, 581 F. Supp. 2d 160, 181 (D. Mass. 2008).

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tive relief seems to exist keyed mainly to the patent holder's activities and background and the market for the invention.⁸¹

Given the flexibility and equitable nature of the four-factor test, other facts can be important, and unusual circumstances can produce unusual results. Nevertheless many patent owners now have little chance of requiring a halt to on-going infringement. These are the ones that neither produce nor sell the patented product and are not gearing-up to do so, especially if they did not conduct or fund the work that led to the patent. These patent holders now usually lack the strongest traditional lever for obtaining substantial royalty payments by negotiation prior to or during infringement litigation. These and related effects of the new regime are discussed in the concluding section of this article.

2. Preliminary Injunctions

In stark contrast with permanent injunctions, pre-trial preliminary injunctions were traditionally less common and much harder to get in patent cases than in non-patent litigation. Several widely recognized factors explained this.⁸² Requests for preliminary injunctions in patent cases were subjected to "unusually stringent" standards: Many courts required that the requesting party show not just a "likelihood of success" at trial on infringement and validity—which would correspond to a main part of the test for preliminary injunctions in non-

⁸¹ The main factors influencing the prospects for an injunction seem to be:

Injunction Probable	Injunction Unlikely
The patent owner is producing and/or selling the patented product, or preparing to do so, so that continued infringing competition would likely reduce the patent owner's market share or business success.	The patent owner is not practicing the invention but is licensing it (or attempting to license it) non-exclusively to others.
The patent owner is the inventor or an entity that supported the work that led to the invention.	The patent owner had no positive connection or involvement with the work that led to the invention.

⁸² Among others, two of the most important were attitudes of trial and appellate judges, particularly their "distrust of and unfamiliarity with patent issues" and their common "belief that the . . . examination [of patent applications] by the Patent . . . Office [was] inherently unreliable" so that the patent(s) at issue might well be found invalid as the litigation proceeded. *Smith Int'l, Inc. v. Hughes Tool Co.*, 718 F.2d 1573, 1578 (Fed. Cir. 1983) (summarizing decisions, to that date, on applications for preliminary injunctions in patent cases); *see supra* note 15 and accompanying text.

patent cases—but “that the patent [be] *beyond question valid and infringed*.”⁸³ This often required a showing that the patent had been adjudicated valid in prior litigation or that it had been widely recognized and accepted as valid by participants in the relevant industry. Further, many courts refused to find the necessary irreparable harm to the patentee, even after a strong showing of likely validity and infringement, if the accused infringer was solvent and would be able to pay money damages as compensation for the infringement during litigation if the patentee prevailed at trial.⁸⁴

Shortly after its birth, the Federal Circuit changed these rules and made preliminary injunctions much easier to get. To this end it:

- strengthened the statutory presumption that issued patents are valid and enforceable⁸⁵ and emphasized its applicability at all stages of litigation including the early stages when preliminary injunctions can be entered; and
- rejected the view that receipt of monetary damages for infringement through the litigation would preclude the showing of irreparable harm to the patentee for that period⁸⁶—and actually solidified a contrary presumption.⁸⁷

These steps produced a far more patentee-friendly test for preliminary injunctions.⁸⁸ Moreover, as discussed below, the Federal Circuit was simulta-

⁸³ *Smith Int'l*, 718 F.2d at 1573.

⁸⁴ *Id.*; see also *H.H. Robertson Co. v. United Steel Deck, Inc.*, 820 F.2d 384, 390–91 (Fed. Cir. 1987); *Atlas Powder Co. v. Ireco Chems.*, 773 F.2d 1230, 1233 (Fed. Cir. 1985).

⁸⁵ 35 U.S.C. § 282 (2006). The Federal Circuit, in its early years, strengthened that presumption substantially and raised the level of evidence needed to overcome it. See *infra* Part III. B and notes 207–11 and accompanying text.

⁸⁶ To the contrary, it ruled that the nature of patent rights and their limited duration generally made damages inadequate as compensation. See, e.g., *Polymer Techs., Inc. v. Bridwell*, 103 F.3d 970, 974–75 (Fed Cir. 1996); *Smith Int'l*, 718 F.2d at 1577–78, 1580–81.

⁸⁷ *Polymer Techs.*, 103 F.3d at 973; *Smith Int'l, Inc. v. Hughes Tool Co.*, 718 F.2d 1573, 1578 (Fed. Cir. 1983). The contrary presumption became that the irreparable harm and public interest elements of the four-factor test were satisfied, before trial, if the patent holder made a “clear showing” then of likely validity and apparent infringement.

⁸⁸ As to likely patent validity, the test became: “whether the [patent holder seeking the injunction] had demonstrated a reasonable likelihood that [the accused infringers] would fail to meet their burden at trial of proving, by clear and convincing evidence, that the . . . patent claims were invalid.” *H.H. Robertson*, 820 F.2d at 387. There the Federal Circuit emphasized that the Patent Act “immutabl[y] allocate[s] to the challenger the burden of proving invalidity.” *Id.* at 388.

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neously making it much harder to invalidate patents as obvious. This increased the impact of the new preliminary injunction standard.

Recently though, the Federal Circuit's patentee-friendly standard has been heavily attacked, with a number of decisions asserting a less pro-patentee way of assessing the patent's likely validity in the preliminary injunction context.⁸⁹ The facts of most of these cases made the differences in the test immaterial. But the precise standard was important in *Abbott Laboratories v. Sandoz, Inc.*⁹⁰ There, Sandoz opposed Abbott's motion for a preliminary injunction with evidence of possible invalidity and unenforceability, and Abbott responded with contrary evidence.⁹¹ Abbott's pro-injunction (pro-validity and pro-enforceability) showing seemed somewhat stronger than Sandoz's contrary presentation, but some uncertainty as to validity/enforceability remained.

In this context, Federal Circuit Judge Newman, with the concurrence of Judge Archer on the result, affirmed the district court's grant of a preliminary injunction.⁹² She argued for a slightly softened version of the Federal Circuit's recent pro-patentee standard set forth above.⁹³ Vigorously dissenting, Judge Gajarsa cited recent Federal Circuit decisions applying an infringer-friendly "substantial question" test regarding the patent's apparent validity. Under this standard, Gajarsa said, Sandoz had raised a substantial question as to obviousness and inequitable conduct, which Abbott had not eliminated.⁹⁴ Accordingly, he maintained, the preliminary injunction was improper.⁹⁵ His position might

⁸⁹ See *infra* note 95; see also *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1359 (Fed. Cir. 2001) (vacating preliminary injunction because of closely analogous prior art; opinion supports a less patentee-friendly standard); *cf. In re Seagate Tech., LLC*, 497 F.3d 1360, 1374 (Fed. Cir. 2007) (showing essentially the same less patentee-favorable test, although it was not crucial to the decision in that case); *Genentech, Inc. v. Novo Nordisk A/S*, 108 F.3d 1361, 1364 (Fed. Cir. 1997) (stating a less patentee-friendly standard).

⁹⁰ 544 F.3d 1341 (Fed. Cir. 2008).

⁹¹ *Id.* at 1351.

⁹² *Id.* at 1343.

⁹³ See *supra* note 88 and accompanying text. In *Abbott Laboratories*, Judge Newman soft-pedaled the "clear and convincing" requirement for the type of evidence that can undercut patent validity but otherwise restated the strongly pro-patent test. 544 F.3d at 1353.

⁹⁴ *Id.* at 1371.

⁹⁵ According to Judge Gajarsa, the actual standard in recent years has been:

If the defendant "raises a substantial question concerning either infringement or validity, *i.e.*, asserts an infringement or validity defense that the patentee cannot prove 'lacks substantial merit,' the preliminary injunction should not issue." . . . In resisting a preliminary injunction, one need not make out a case of actual invalidity. Vulnerability is the issue at the preliminary injunction stage, while validity is the issue at trial. The showing of a substantial question

again require outside validation of a patent in order for it to support a preliminary injunction in the common circumstances where an accused infringer introduces some indication of possible invalidity.⁹⁶

Separately, *eBay* may raise the bar for preliminary injunctive relief in a different way. In *eBay*, the Supreme Court imposed the four-factor test for entry of an injunction in the post-trial context of a patent holder who had actually prevailed on validity and infringement.⁹⁷ This is arguably inconsistent with the Federal Court's rebuttable presumption that the irreparable harm and public interest forks of the similar test for preliminary injunctions are satisfied if the patent holder, at the outset of litigation, makes a "clear showing" of likely success on validity and infringement.⁹⁸ Accordingly, parties in several recent Federal Circuit cases have argued that *eBay* requires abandonment of that presumption. In several recent panel decisions, the Federal Circuit avoided deciding that question while, in another, it agreed the presumption was gone but did so in a non-precedential ruling.⁹⁹ A recent copyright decision by the Second Circuit based on *eBay* further undermines the pro-patent holder presumption.¹⁰⁰

as to invalidity thus requires less proof than the clear and convincing showing necessary to establish invalidity itself.

544 F.3d at 1371–72 (Gajarsa, J., dissenting). Judge Newman responded vigorously. *Id.* at 1363–64 (Newman, J., majority). Yet more recently, Judge Gajarsa and Judge Newman tried to reconcile their positions, restating the preliminary injunction standards in terms that seem close to what Judge Newman has often favored. *See generally* *AstraZeneca LP v. Apotex, Inc.*, No. 2009-1381, 2010 WL 4286284 (Fed. Cir. Nov. 1, 2010); *Titan Tire Corp. v. Case New Holland, Inc.*, 566 F.3d 1372 (Fed. Cir. 2009) (design patent case); *Altana Pharma AG v. Teva Pharmaceuticals USA, Inc.*, 566 F.3d 999 (Fed. Cir. 2009) (attempting reconciliation but not resolving the controversy). While the contrary opinions in *AstraZeneca* did not expressly dispute the test for entry of a preliminary injunction, they stressed different parts of the partially reconciled formulation and came to opposing conclusions in the case.

⁹⁶ *See supra* text following note 83.

⁹⁷ *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391 (2006).

⁹⁸ *See supra* note 87.

⁹⁹ *See Sanofi-Synthelabo v. Apotex, Inc.*, 430 F.3d 1368, 1383 n.9 (Fed. Cir. 2006) (noting but avoiding the question); *see also* *Abbott Laboratories v. Sandoz, Inc.*, 544 F.3d 1341, 1363 (Fed. Cir. 2008); *cf.* *Broadcom Corp. v. Qualcomm, Inc.*, 543 F.3d 683, 702 (Fed. Cir. 2008); *Amado v. Microsoft Corp.*, 517 F.3d 1353, 1359 n.1 (Fed. Cir. 2008); *Automated Merch. Sys. v. Crane Co.*, 357 Fed. App'x 297, 301 (Fed. Cir. 2009) (non-precedential).

¹⁰⁰ *Salinger v. Colting*, 607 F.3d 68, 79 (2d Cir. 2010).

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As a result of these developments, one patent commentator recently said: "Contrary to popular opinion, it's still possible to obtain a preliminary injunction in a patent case—it's just very difficult."¹⁰¹

* * * *

The importance of these limitations on "permanent" and "preliminary" injunctive relief is hard to overestimate. They have substantially reduced the harshness of the patent system in circumstances where such harshness is not essential to what the four-Justice concurrence in *eBay* considered the real objectives of our patent system. At the same time, they have further complicated patent litigation by introducing a number of new and often difficult issues, which are now important to whether injunctive relief should be granted. They have also diminished the settlement or licensing value of many patents, particularly those not directly protecting the businesses of commercializing patent holders. We address some of these trade-offs in the final section of this article.

B. Infringement Damages—Reining-in Inflated Awards

Sky-high damages awards for patent infringement sparked intense controversy in recent years. Critics faulted juries and the courts for over-assessing damages, particularly where the patent in question covered only one feature of a complex device such as a computer system or large software product. Recently, under threat of legislative action, the Federal Circuit has been reining-in runaway jury awards—and doing so with vigor. This is especially true as to awards assessed as "reasonable royalties" via loose applications of (i) the so-called "entire market value rule" or (ii) the "25% rule of thumb." Uncertainties remain as to the specifics of acceptable evidence. But infringers now have powerful ammunition to block or challenge large "reasonable royalty" awards. At the same time, many patent holders will face difficulties and added expense clearing the new hurdles for proof of damages.

1. Reasonable Royalties, the Entire Market Value Rule, and the 25% Rule of Thumb

Section 284 of the Patent Act sets the measure of damages for patent infringement: the patent holder's *actual loss* from the infringement "*but [not] less than a reasonable royalty* for the use made of the invention by the infringer,

¹⁰¹ Jason Rantanen, *AstraZeneca v. Apotex: Affirmance of a Preliminary Injunction*, PATENTLY-O (Nov. 4, 2010), <http://www.patentlyo.com/patent/2010/11/astrazeneca-v-apotex-affirmance-of-a-preliminary-injunction.html>.

together with interest and costs as fixed by the court.” When supportable, awards of lost profits are sometimes larger than awards based on a “reasonable royalty.” But lost profits awards are generally *not available* to patent holders who are not making or selling the claimed invention. Plaintiffs in this category, and some others as well, seek “reasonable royalty” awards. Recent experience shows these can be extremely large too.

For nearly four decades, a broad set of considerations—the “*Georgia Pacific* factors”—has guided determinations of “reasonable royalty” damages.¹⁰² Their generality has allowed juries to consider a wide range of evidence, including considerations that suggest an award at—or beyond—the bounds of reason. One factor in particular lead to large jury awards by enlarging the royalty base to include sales of unpatented components of a product that includes the claimed invention. Known as the “entire market value rule,” that factor can allow “the recovery of damages based on the value of an entire apparatus containing multiple features, even though only one feature is patented.”¹⁰³

Early cases applied a “market demand approach” with this rule—allowing its use only where the patentee showed that the entire value of the whole machine, as a marketable article, was “properly and legally attributable” to the patented feature or that the patented feature “was of such paramount importance that it substantially created the value of [all of] the component parts.”¹⁰⁴ Even when held to these limitations, the rule promoted large awards. Moreover, many decisions allowed inclusion of the rule in jury instructions as an available basis for determining damages in a much broader range of cases, substantially increasing recoveries.

For example, under the “market demand approach,” courts often required only thin and ambiguous evidence to allow the jury to conclude that the patented feature was “the basis” for customer demand and then apply the rule in determining damages.¹⁰⁵ Other cases used the less demanding “single function

¹⁰² These factors were enunciated in *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116 (S.D.N.Y. 1970).

¹⁰³ *Paper Converting Mach. Co. v. Magna-Graphics Corp.*, 745 F.2d 11, 22 (Fed. Cir. 1984); see also *Rite-Hite Corp. v. Kelley Co., Inc.*, 56 F.3d 1538, 1549–50 (Fed. Cir. 1995) (entire market rule allows royalty base to include “unpatented components of a device when the unpatented and patented components are physically part of the same machine”).

¹⁰⁴ *Marconi Wireless Tel. Co. v. United States*, 53 U.S.P.Q. 246, 250 (Ct. Cl. 1942), *aff’d in part and vacated in part*, 320 U.S. 1 (1943); see also *Rite Hite*, 56 F.3d at 1549 (citing cases).

¹⁰⁵ See, e.g., *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 1580 (Fed. Cir. 1989), *cert. denied*, 493 U.S. 1022 (1990); *Fonar Corp. v. Gen. Elec. Co.*, 107 F.3d 1543, 1552–53 (1997); see also *Immonex Servs., Inc. v. W.H. Munzprufer Dietmar Trenner GMBH*, 408 F.3d 1374, 1380–81 (Fed. Cir. 2005); *Bose Corp. v. JBL, Inc.*, 274 F.3d 1354, 1360 (Fed. Cir. 2001).

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approach," which required only a showing that the patented and unpatented components make up a single assembly, a complete machine, or a functional unit.¹⁰⁶ Finally, some decisions applied the very broad "marketing dependence approach," allowing use of the rule as to unpatented components if they were "normally sold with" patented components.¹⁰⁷

The varying tests together with the breadth of the *Georgia Pacific* factors left district courts with little guidance—and juries with great freedom—in determining "reasonable royalty" amounts when patentees sought damages based on sales of complex products. Further, some patentees seemed to draft claims to take undeserved advantage of the entire market value rule.¹⁰⁸

Separately, in a generous simplification of patent holders' evidentiary burdens, many courts in recent decades accepted expert testimony broadly supporting a "baseline" royalty rate of 25% of the infringer's profits on the infringing product. Sometimes subject to adjustment in accordance with the remaining *Georgia Pacific* factors, this "25% rule of thumb" gained acceptance in the 1970s and thereafter. It was arguably justified by empirical studies showing that, for a number of industries, license agreements tended to allocate patent holders approximately 25% of the licensees' expected profit margins.¹⁰⁹ Untethered to the facts of the case, however, this rule produced royalty rates largely unrelated to the importance of the patented invention to the product(s) made or sold by the infringer, the availability or economics of non-infringing substitutes,

¹⁰⁶ See *Rite-Hite*, 56 F.3d at 1550 (listing cases applying this approach); *Velo-Bind, Inc. v. Minn. Mining & Mfg. Co.*, 647 F.2d 965 (9th Cir.), *cert. denied*, 454 U.S. 1093 (1981).

¹⁰⁷ See *Paper Converting Mach. Co. v. Magna-Graphics Corp.*, 745 F.2d 11, 23 (Fed. Cir. 1984). In *Rite-Hite*, the Federal Circuit later stated that marketing dependence is an appropriate factor to consider only where all of the components together are considered to be a single assembly, *Rite-Hite*, 56 F.3d at 1550; but some decisions have approved awards based on sales of unpatented components where it was merely reasonably foreseeable that such components would be sold and used with the infringing product. *Micro Chem., Inc. v. Lextron, Inc.*, 318 F.3d 1119, 1125–26 (Fed. Cir. 2003); *Minco, Inc. v. Combustion Eng'g, Inc.*, 95 F.3d 1109, 1118 (Fed. Cir. 1996). Recently though, a district court bucked the trend and required that, for application of the entire market value rule, *all three* of these tests must be satisfied. *Cornell Univ. v. Hewlett-Packard Co.*, 609 F. Supp. 2d 279, 286–87 (N.D.N.Y. 2009).

¹⁰⁸ For example, an improvement claim for one component of a computer networking system may refer to other components of the system in such ways as later to support an argument that the royalty base should include the other components. See Amy L. Landers, *Let the Games Begin: Incentives to Innovation in the New Economy of Intellectual Property Law*, 46 SANTA CLARA L. REV. 307, 360–61 (2006); see also *Eolas Techs., Inc. v. Microsoft Corp.*, 274 F. Supp. 2d 972 (N.D. Ill. 2003), *rev'd on other grounds*, 399 F.3d 1325 (Fed. Cir. 2005). The effectiveness of such attempted "gaming" of the system is unclear.

¹⁰⁹ Robert Goldscheider, John Jarosz & Carla Mulhern, *Use Of The 25 Per Cent Rule in Valuing IP*, 37 LES NOUVELLES 123, 123–24, 132 (Dec. 2002).

the needs or opportunities of the patent holder or the infringer, or other factors that would have influenced actual royalty negotiations.

Underscoring these problems, exceptionally high “reasonable royalty” awards in recent years boosted criticism of the entire market value rule and the 25% rule of thumb. In 2004, a patentee won a \$520 million jury award against Microsoft.¹¹⁰ In 2007 and 2008, juries awarded Lucent Technologies over \$1.5 billion and \$365 million, respectively, following trials against Microsoft and Gateway.¹¹¹ In 2009, a jury awarded damages of \$1.67 billion (\$504 million of which was a reasonable royalty) against Abbott Laboratories,¹¹² and juries awarded plaintiffs suing Microsoft \$338 million in one case¹¹³ and \$240 million in another.¹¹⁴ In the latter case, Microsoft challenged application of the 25% rule of thumb, but the Federal Circuit found that Microsoft had failed to preserve this issue for appeal.¹¹⁵

While some of these awards were later reduced or reversed, they gave the impression that finders-of-fact are loose cannons on damages, in need of judicial guidance and restraint. Terms like “lottery atmosphere” were used to describe damages assessments, and infringement defendants said the awards far exceeded any amounts that could have emerged from actual licensing negotiations on the claimed inventions.¹¹⁶

¹¹⁰ Eolas Techs, Inc. v. Microsoft Corp., 70 U.S.P.Q.2d 1939 (N.D. Ill. 2004), *vacated in part on other grounds*, 399 F.3d 1325 (Fed. Cir. 2005).

¹¹¹ Lucent Techs., Inc. v. Gateway, Inc., 580 F. Supp. 2d 1016 (S.D. Cal. 2008), *aff’d in part, vacated in part, and remanded*, 580 F.3d 1301 (Fed. Cir. 2009); Lucent Techs, Inc. v. Gateway, Inc., 509 F. Supp. 2d 912 (S.D. Cal. 2007) (JMOL vacating jury award), *aff’d*, 543 F.3d 710 (Fed. Cir. 2008).

¹¹² Centocor Ortho Biotech, Inc. v. Abbott Labs., No. 2:07-CV-139-TJW, 2009 WL 5248493 (E.D. Tex. June 29, 2009).

¹¹³ See Uniloc USA, Inc. v. Microsoft Corp., 640 F. Supp. 2d 150 (D.R.I. 2009).

¹¹⁴ i4i Ltd. P’ship v. Microsoft Corp., 598 F.3d 831, 856 (Fed. Cir. 2010), *cert. granted*, 131 S.Ct. 647 (U.S. Nov. 29, 2010).

¹¹⁵ As in the *i4i* case, the “25% rule of thumb” played a leading role in the assessment of damages in *Paice LLC v. Toyota Motor Corp.*, 609 F. Supp. 2d 620, 629–30 (E.D. Tx. 2009) (court applied 25% Rule of Thumb to Toyota’s profit margin as one part of its calculation of an on-going royalty of ninety-eight dollars per vehicle sold).

¹¹⁶ In a letter supporting legislative patent reform, Secretary of Commerce Gary Locke said the median jury award for patent damages increased greatly from 1991 to 2005 and that a “lottery atmosphere” surrounds the calculation of reasonable royalty damages. Letter from Gary Locke, Sec’y of Commerce, to the Comm. on the Judiciary (Oct. 5, 2009), *available at* <http://judiciary.senate.gov/resources/documents/111Documents.cfm> (follow the “single file” hyperlink).

2. Recent Cutbacks and the Future of Reasonable Royalty Awards

"Patent reform" bills in Congress since 2005 included provisions to address "excessive" damages awards and associated industry complaints. Those provisions called for "apportionment" of damages between a patented invention and the non-infringing remainder of the larger product or process in which it was incorporated. They also attempted to codify and strengthen the judge's role as the "gatekeeper" for which theories and what evidence on damages could be presented to a jury. The 2005 and 2007 proposals died at the end of the respective Congressional terms. Similar provisions were introduced in 2009 but were considerably watered-down by amendments to the main reform bill that subsequently died with the 111th Congress in late 2010.¹¹⁷ Controversy continued as to similar watered-down provisions that were originally included in the stripped-down reform bill, S.23, introduced in the Senate in January 2011 but soon thereafter were deleted from the bill.¹¹⁸

When a legislative "fix" seemed likely, then Chief Judge Michel of the Federal Circuit took notice of the complaints and promised the Federal Circuit would clarify fuzzy language in its damages jurisprudence.¹¹⁹ He got that opportunity in 2009 when the Federal Circuit vacated the \$358 million damages award in *Lucent Technologies, Inc. v. Gateway, Inc.*¹²⁰ Writing for the court, Judge Michel began the heavy lifting required to give lower courts and litigants more guidance on when application of the entire market value rule is proper.

Endorsing the "market demand" approach as now the *sole possible basis* for applying the entire market value rule, *Lucent* rejected application of that

¹¹⁷ Introduced in March 2009, S. 515 originally resembled the 2007 proposals in many respects. Its damages provisions were later scaled-back substantially in the Senate Judiciary Committee to follow an agreement between representatives of various industries. As voted out of committee, the damages provisions would have required the trial judge to determine the methodologies and factors relevant to damages calculations in each particular case, but the bill no longer tried to define the circumstances under which the entire market value rule could be applied.

¹¹⁸ As introduced in January, 2011, S.23 contained watered-down provisions similar to those in S.515 at the end of the 111th Congress. To minimize continuing opposition and in view of the developments described in this article—including those described just below—those provisions, along with other litigation-related "reforms" were *removed from S.23* by amendments on the Senate floor before passage of that bill by the Senate on March 4, 2011.

¹¹⁹ Tony Dutra, *AIPLA Meeting Panelists Call for Scaled Back Patent Reform Bills in 111th Congress*, BNA's Patent, Trademark & Copyright Journal News, Feb. 6, 2009 (on file with author).

¹²⁰ 580 F.3d 1301 (Fed. Cir. 2009).

rule on the facts presented.¹²¹ The court faulted Lucent, as plaintiff, for failing to show that the minor user interface feature its patent claimed was “*the* basis—or even a substantial basis—of the consumer demand” for the large computer programs referenced in the damages calculations. More broadly, Judge Michel said, the parties must present evidence that truly supports their positions on damages, and trial courts must be more vigilant in ensuring (i) that the jury’s award approximates what the parties would have negotiated had they entered into a license agreement for the patented technology and (ii) that the result is “economically justified.”¹²² The opinion laid much of the gatekeeping responsibility at the feet of the litigants, stating that “[t]he responsibility for objecting to evidence . . . remains firmly with the parties.” Nevertheless, on post-trial motions for judgment as a matter of law, district court judges must “scrutinize the evidence carefully” to ensure that there is substantial evidence for the calculated royalty.¹²³ Other recent rulings have extended these constraints on use of the entire market value rule.¹²⁴

In a separate recent decision, *Uniloc USA, Inc. v. Microsoft Corp.*,¹²⁵ the Federal Circuit spoke strongly in throwing out the 25% rule of thumb as a basis for determining reasonable royalties. In a broad ruling, the court condemned

¹²¹ *Id.* at 1336; *see supra* notes 104–07 and accompanying text regarding the “market demand approach” and the other approaches prior decisions had approved but whose continuing validity is now doubtful.

¹²² In *Lucent*, neither party presented evidence of the value of the claimed method to consumers, nor had they shown that the other license fee agreements they introduced addressed comparable circumstances or were otherwise relevant on the facts presented.

¹²³ *Id.* at 1327–39.

¹²⁴ See the Federal Circuit’s recent *ResQNet.com* and *Wordtech Systems* cases, discussed in note 130, *infra*. In an interesting ruling entered just after the Federal Circuit’s *Lucent* decision, Judge Smith of the district court in Rhode Island granted a new trial on damages in part because the patent holder’s expert had testified about the \$19 billion total sales of Microsoft’s Windows and Office programs, of which the patented invention was a very small part. The expert said he was identifying the total sales only as a “check” on his separately derived “reasonable royalty” calculations for the small patented invention. Purportedly as part of the “check,” he displayed a chart showing the small relationship his proffered damages amount bore to those total sales (about three percent). He also noted that Microsoft’s much smaller estimate of the damages was only 0.000035% of the \$19 billion total sales. Judge Smith viewed these comparisons, though offered merely as a “check” on the separately based calculations, as getting the entire market value rule before the jury “by the back door” and influencing its determination improperly. *Uniloc USA, Inc., v. Microsoft Corp.*, 640 F. Supp. 2d 150, 183–85. On appeal, the Federal Circuit agreed, noting that the “\$19 Billion cat was never put back in the bag” despite instructions that tried to accomplish that. *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1312 (Fed. Cir. 2011).

¹²⁵ 632 F.3d 1292 (Fed. Cir. 2011).

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that rule as “a fundamentally flawed tool for determining a baseline royalty rate in a hypothetical negotiation” because it fails to tie proof of damages to the particular facts of the case.¹²⁶ Under the Supreme Court’s *Daubert v. Merrell Dow Pharmaceuticals, Inc.*¹²⁷ standard and the Federal Rules of Evidence, the court explained, expert testimony must pertain to scientific, technical, or other specialized knowledge and be based on a firm scientific or technical grounding.¹²⁸ As a general matter, the 25% rule of thumb, it said, falls well short of this requirement; and evidence using it is no longer admissible. The court also reiterated its recent insistence that any evidence supporting a “reasonable royalty” rate, such as other license fee arrangements, be truly comparable to the facts before the court, *e.g.*, as to the subject inventions and their importance in the products sold, the measure of payments (*e.g.*, lump sum or running royalties), the parties and their interests, and other relevant circumstances.¹²⁹

Lucent, Uniloc, and other recent cases¹³⁰ impose far higher requirements for proof of damages than those enforced in recent years. The burdens of this new rigor fall squarely on patent holders. They apparently can no longer rely on shortcuts or on transactions reflecting circumstances not truly comparable to those before the court. They must develop specific evidence bearing on the invention in question and other facts of the case and, in most cases, relate it cogently to the hypothetical negotiation they would have conducted with their infringers and to resulting dollar amounts. Uncertainties remain as to just what evidence will meet the new requirements. In some cases, sufficiently relevant facts may be hard to find; and the costs to patent holders for the economic analysis are likely to be high. On the other hand, the recent rulings provide powerful bases for preventing or reversing runaway damages awards, obviating the blunter remedy of legislative action.

¹²⁶ *Id.* at 1315.

¹²⁷ 509 U.S. 589 (1993).

¹²⁸ *Uniloc*, 632 F.3d at 1315; FED. R. EVID. 702.

¹²⁹ 632 F.3d at 1316–18.

¹³⁰ *ResQNet.com v. Lansa, Inc.*, 594 F.3d 860 (Fed. Cir. 2010) (reversing damages award because license agreements covering the invention in question *along with* other technology were introduced as evidence and tended to increase the damages award; Judge Newman dissented, saying that, while not wholly comparable, the agreements were properly admissible); *Wordtech Sys., Inc. v. Integrated Networks Solutions, Inc.*, 609 F.3d 1308 (Fed. Cir. 2010) (Federal Circuit orders new trial on damages, rejecting thirteen license agreements introduced by patentee as support for the substantial jury award as insufficiently comparable to the circumstances of the case, even though the licenses were issued by the patentee-plaintiff and addressed “some or all of the patents in suit”).

In 1999, the Federal Circuit stressed that “sound economic proof” is necessary to support a reasonable royalty and “prevent the hypothetical from lapsing into pure speculation.”¹³¹ Recent decisions state that precept with more force and specificity. They should promote more careful and less generous applications of the *Georgia-Pacific* factors, including the entire market value rule, industry practices, and evidence of other supposedly comparable license fee arrangements.

**C. Awards of U.S. Damages for “Foreign Infringement”—
§ 271(f)**

Among many patent-strengthening steps in the 1980s, the strangest was enactment of § 271(f) of the Patent Act.¹³² Unlike the patent laws of any foreign country, § 271(f) created a non-traditional type of patent infringement under the U.S. patent laws reaching foreign sales of certain types of *unpatented* components—yet it could be applied only against U.S. producer-exporters. That section made it an act of U.S. patent infringement to export from the U.S. non-patented components for combination abroad with other components (wherever made and by whomever supplied) for sale and use of the combination abroad if the combination would have infringed a U.S. patent if made, used, or sold here. This provision has been described, charitably, as “ill-conceived.”¹³³

Section 271(f) was infrequently used until recent years. Then, however, its potentially extreme effects became apparent. Panels of the Federal Circuit enthusiastically extended the section’s coverage in 2005–2006, and it was the basis for huge awards of damages against U.S. producers. We briefly review those extensions—and the recent severe cut-backs of § 271(f).

¹³¹ Grain Processing Corp. v. American Maize-Products Co., 185 F.3d 1341, 1350 (Fed. Cir. 1999).

¹³² 35 U.S.C. § 271(f) (2006).

¹³³ Professor Chisum, for example, stated:

Assessed in terms of economic policy, section 271(f) is ill-conceived. It was presumably an attempt to close a loophole created by *Deepsouth*, but its most immediate effect is to create one more incentive for U.S. companies [that] compete in foreign markets to move their manufacturing facilities abroad.

Donald .S. Chisum, *Extraterritorial Application of U.S. Intellectual Property Law: Comment: Normative and Empirical Territoriality in Intellectual Property: Lessons from Patent Law*, 37 VA. J. INT’L L. 603, 607 (1997). For an extensive discussion of the origins, interpretation, and effects of § 271(f), see also James R. Farrand, *Territoriality and Incentives Under the Patent Laws: Overreaching Harms U.S. Economic and Technological Interests*, 21 BERKELEY TECH. L. J. 1215 (2006).

1. Expansion of § 271(f)—“Components . . . Supplied from the U.S.”—Chemicals, Software, etc.; Machine vs. Method Inventions

Section 271(f) was enacted to reverse a 1972 Supreme Court decision that addressed tangible components of a machine invention.¹³⁴ Until recently, courts and scholars deemed the section incapable of reaching methods/processes claims, and it was unclear whether anything intangible could be a “component” for purposes of that section.¹³⁵

In the 1990s and early 2000s, a number of cases sought to apply § 271(f) to U.S. exports of unpatented computer software. In these cases, no physical object from the U.S. was included in any of the foreign-assembled programmed computers which, when assembled and loaded with software abroad, would have infringed a U.S. patent if made or sold here. Further, some of the patent claims asserted were method claims, to which earlier decisions had deemed § 271(f) inapplicable. Nevertheless, in a late burst of patent-expansive enthusiasm, the Federal Circuit extended § 271(f) to exports of unpatented intangible software, no matter how the software was sent abroad, and to method claims without considering whether the software or other “component” supplied from the U.S. somehow resembled a *step* in the claimed method or was merely a *tangible or intangible item used in one or more of the method’s steps*.¹³⁶

¹³⁴ *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 532 (1972); see Farrand, *supra* note 133 at 1219–31.

¹³⁵ The section’s legislative history discussed machine inventions and tangible components extensively but contains essentially no mention of intangible components or method/process inventions. More important, the “steps” or “acts” of which method inventions are made do not seem to be “components” in the ordinary sense, and it is difficult to conceptualize such “steps” being “supplied from the U.S.” for combination at a foreign location. See *Standard Havens Prods. Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360, 1374 (Fed. Cir. 1991); Farrand, *supra* note 133, at 1291 n.39.

¹³⁶ *Microsoft Corp. v. AT&T Corp.*, 550 U.S. 437, 442 (2007); *Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co.*, 425 F.3d 1366, 1379 (Fed. Cir. 2005); *Eolas Techs. Inc. v. Microsoft Corp.*, 399 F.3d 1325 (Fed. Cir. 2004). The *Eolas* and *AT&T* panels deliberately chose expansive, “non-technical” interpretations of § 271(f) in order to extend its operation to areas of new technology where its wording and original intent seemed technically not to reach. Several Federal Circuit judges later disagreed with these determinations in their dissent from denial of rehearing and rehearing en banc in *Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co.*, 434 F.3d 1357, 1358 (Fed. Cir. 2006) (Lourie, J., dissenting).

These extensions of § 271(f) had huge financial impacts on U.S. producers, particularly Microsoft.¹³⁷ They also increased the discriminatory impact of § 271(f) against U.S. producers *vis-à-vis* their non-U.S. competitors.

2. Cutting-Back § 271(f)

a. Software: “Components” and “Combination”

The expansion of § 271(f) ended in 2007 with the Supreme Court’s firm, but intellectually weak, decision in *Microsoft Corp. v. AT&T Corp.*¹³⁸ In contrast to the Federal Circuit, the Supreme Court approached § 271(f) with reluctance to extend its reach. Using a questionable rationale, the Court barred application of § 271(f) with apparatus claims to reach exports of unpatented intangible software.¹³⁹ It left open, however, the possibility of reaching such exports via § 271(f) under method claims, and it declined to rule on the Federal Circuit’s recent extension of § 271(f) to method claims generally.¹⁴⁰

b. Method Claims and § 271(f)

In 2009, by an 11-1 majority, the full Federal Circuit abandoned its three-year-old method claims extension of § 271(f) in *Cardiac Pacemakers, Inc.*

¹³⁷ In several of the cases, the foreign sales were approximately twice as large as total U.S. sales of the infringing combinations. When infringement was found both as to combinations made and sold here and, under § 271(f), as to combinations made and sold abroad, application of that section to reach the foreign sales roughly tripled the damages award.

¹³⁸ 550 U.S. 437 (2007).

¹³⁹ *Id.* at 449. The Court acknowledged that a computer-readable physical object bearing an operative copy of software can be a § 271(f) “component” which, if made in the U.S., sent abroad, and physically included as a part of a combination product made abroad could infringe, under § 271(f), machine claims in a U.S. patent covering the combination. It held, however, that the intangible form of software, which was at issue in the case, cannot infringe via § 271(f) if the invention is claimed as a machine. That’s because, the Court said, intangible software is inherently not “combinable” with machine components. *Id.* This was a strange pronouncement. When software is recorded onto a hard-disk, for example, it is transformed into electrical signals representing the intangible underlying instructions which are then “combined” with the magnetizable disk material to produce a new pattern of magnetization representing the abstract instructions and capable of being “read” again from the disk electrically. Later, the electrical “read” signals are sent to the computer processor to govern its operation. The court majority did not explain why this process is not a “combination” of the abstract instructions with the tangible, magnetizable hard disk material. *Id.*

¹⁴⁰ *Id.* at 452 n.13.

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*v. St. Jude Medical, Inc.*¹⁴¹ More satisfying intellectually than the Supreme Court's reasoning in *Microsoft*, the decision relied on the history and context of § 271(f) and on the logical difficulties of applying its wording to method claims.¹⁴² It was also influenced by the Supreme Court's insistence in *Microsoft* on not extending U.S. patent law beyond U.S. borders any more broadly than Congress had clearly mandated. Unstated, but surely also important, was the new climate in patent law: moderation and retrenchment, not expansion of patent rights and remedies, was the order of the day.

The en banc reversal in *Cardiac Pacemakers* confirms protection of U.S. software producers against U.S. patent liability for foreign sales of their non-patented software. It also gives U.S. producer-exporters of other unpatented goods a sliver of protection, but not more.¹⁴³ Those U.S. producers are still exposed to awards of world-wide damages in U.S. courts under U.S. apparatus claims for foreign sales of their unpatented components—a type of risk not confronting their foreign competitors.

Of interest for present purposes is the familiar pattern at the Federal Circuit. As in other areas, that court broke precedent and aggressively expanded patent protection under § 271(f) a few years ago. But then, after a partial rejection of its initiative and in a cooler patent enforcement climate, it changed its approach and abandoned what remained of its recent expansion.

III. PATENT SCOPE AND STRENGTH

A. Patentable Subject Matter—No Longer Wide-Open

Not all creations can be patented, even if they are new, useful, and non-obvious. The Patent Act defines patentable subject matter as “any new and useful *process, machine, manufacture or composition of matter*, or any new and useful improvement thereof.”¹⁴⁴ Similarly vague terms like “laws of nature,”

¹⁴¹ 576 F.3d 1348, 1352 (Fed. Cir. 2009) (addressing exports of U.S.-made cardiac defibrillators that practiced a U.S.-patented method when implanted in patients).

¹⁴² *Id.* at 1365–66.

¹⁴³ These other U.S. companies are safe from U.S. awards of damages for foreign sales of their unpatented components as to method claims only. Under modern claiming practice, however, most inventions can be claimed both: (i) as a product, machine, apparatus, or composition; and (ii) as a method/process. Many U.S. patents include both types of claims for basically the same invention. Accordingly, protection limited to method/process claims reduces exposure only slightly.

¹⁴⁴ 35 U.S.C. § 101 (2006) (emphasis added).

“physical phenomena,” and “abstract ideas” characterize the areas traditionally off-limits for patenting.¹⁴⁵ Pinning these concepts down is maddeningly difficult.

The Federal Circuit vastly expanded patentable subject matter in the 1990s, introducing a decade of what could be called “wide-open” patent eligibility. Recently, the same court reversed its course and significantly narrowed eligible subject matter. The Supreme Court recently affirmed a main Federal Circuit ruling along this line without fully endorsing its rationale or test and without providing any meaningful guidance. The result is narrower patent eligibility than we have known for more than a decade but plentiful uncertainty obscuring its new bounds.

1. The Federal Circuit’s Early Years

In the decade before creation of the Federal Circuit, the Supreme Court gave conflicting signals on patentable subject matter. Limiting patentability, the Court twice disallowed patents on formula-driven computer processes aimed at achieving specified but broadly applicable results.¹⁴⁶ Shortly thereafter, though, it approved, on a 5-4 vote, a patent on a genetically modified bacterium, with the five-Justice majority using strong language encouraging broad patent eligibility.¹⁴⁷ And a year after that, another 5-4 majority approved a patent for a formula-driven, computer and software-implemented process for determining the proper cure time for batches of synthetic rubber in a mold, with the majority opinion using the same expansive, pro-patentability language.¹⁴⁸

¹⁴⁵ See, e.g., *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980). Discoveries in these areas are often deemed not to be inventions of man but are considered “fundamental truth[s],” “basic tools of scientific and technological work,” *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (internal quotation marks omitted) (citation omitted), and/or part of the “storehouse of knowledge of all men. . . . [Those qualities being] free to all . . . and reserved exclusively to none,” *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948). For a broad discussion of patent eligibility, see CHISUM, *supra* note 3, at § 1.

¹⁴⁶ It did so mainly because computer software consists of logical or mathematical procedures or “algorithms,” which the Supreme Court deemed non-patentable as akin to abstract ideas or mental steps. *Gottschalk*, 409 U.S. at 67–68; *Parker v. Flook*, 437 U.S. 584, 588–89 (1978).

¹⁴⁷ *Chakrabarty*, 447 U.S. at 309–10 (holding living, genetically-altered bacterium patentable as a “manufacture” or “composition of matter”); see *infra* note 148 regarding criticism of the use made of a quotation from a 1952 legislative committee report.

¹⁴⁸ *Diamond v. Diehr*, 450 U.S. 175, 182 (1981) (“[I]n order to determine [the] meaning [of the statutory terms] we may not be unmindful of the Committee Reports accompanying the 1952 Act which inform us that Congress intended statutory subject matter to ‘include anything under the sun that is made by man.’”). Recently, some judges have questioned the applicability of the statement in the committee reports to a claimed “process” under any circumstances because: (i) in context, the quotation refers not to processes or methods but only to the other

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The Federal Circuit made few changes to patent eligibility in its first decade of existence but gradually expanded it from 1990 on.¹⁴⁹ By 1995, this expansion led the Patent Office to drop its opposition to patents on common, prior art, computer-readable media—such as floppy disks—carrying new computer programs.¹⁵⁰ Though not initially approved by the courts, this change rendered large amounts of software effectively patentable. But the Federal Circuit continued to bar patenting of business methods even when they were claimed with computer technology.¹⁵¹

2. Exploding Patent Eligibility

In 1998 and 1999, however, the Federal Circuit changed course, demolished several traditional limitations, and vastly expanded patent eligibility. In *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*,¹⁵² it approved patentability for a broadly claimed data-processing system for financial and tax accounting for multiple entities investing proportionately in shared investments.¹⁵³ The system was made of well-known computer equipment and software calling for simple calculations and proportional allocations.¹⁵⁴ The court's opinion created a single, liberal test for patentable subject matter, namely whether the claimed invention produced a "useful, concrete and tangible re-

main types of patentable inventions, namely "machines or manufactures"; and (ii) even in that context it does not generally affirm patentability. See, e.g., *In re Bilski*, 545 F.3d 943, 1000 (Fed. Cir. 2008) (Mayer, J., concurring on the result).

¹⁴⁹ See, e.g., *In re Alappat*, 33 F.3d 1526 (Fed. Cir. 1994) (en banc); *Arrhythmia Research Tech., Inc. v. Corazonix Corp.*, 958 F.2d 1053 (Fed. Cir. 1992).

¹⁵⁰ *In re Beauregard*, 53 F.3d 1583 (Fed. Cir. 1995) (vacating decision of Board of Patent Appeals & Interferences and dismissing appeal for lack of a case or controversy where the Patent Commissioner, during the pendency of the appeal, "state[d] that he agrees with [the applicant-appellant's] position on appeal that the printed-matter doctrine is not applicable" and that "computer programs embodied in a tangible medium, such as floppy diskettes, are patentable subject matter").

¹⁵¹ *In re Schrader*, 22 F.3d 290, 291 (Fed. Cir. 1994) (method for conducting auctions and bidding on a plurality of items). See also the court's comments on two earlier business methods cases in *Alappat*, stating: "We . . . note that *Maucorps* [609 F.2d 481 (C.C.P.A. 1979)] dealt with a business methodology for deciding how salesmen should best handle respective customers and *Meyer* [688 F.2d 789 (C.C.P.A. 1982)] involved a 'system' for aiding a neurologist in diagnosing patients. Clearly, neither of the alleged 'inventions' in those cases falls within any . . . category [of patentable subject matter]." *Alappat*, 33 F.3d at 1541.

¹⁵² 149 F.3d 1368 (Fed. Cir. 1998).

¹⁵³ *Id.* at 1370.

¹⁵⁴ *Id.* at 1371.

sult.”¹⁵⁵ Moreover, the facts made clear that the “concrete and tangible” part of that liberal test required essentially nothing.¹⁵⁶ The ruling approved patenting of business methods, most software inventions, and other previously non-patentable creations.¹⁵⁷

Less than a year later, the Federal Circuit applied that liberal new test to method patents in *AT&T Corp. v. Excel Communications, Inc.*¹⁵⁸ The resulting decision confirmed the patentability of business methods and put the recent developments in context. Speaking generally, the court acknowledged its efforts to expand patentability to keep up with new technologies, including the “process of manipulation of numbers, [which] is a fundamental part of computer technology.”¹⁵⁹ With candor, it characterized its expansion of eligible subject matter as “a sea change” in the law.¹⁶⁰

The Supreme Court denied review of *State Street* and *AT&T*. Many voices criticized the expansion of patentability but had no legal effect. The PTO tried to impose a “technological arts” requirement, demanding some significant technological aspects in process/method claims in order to render them patent eligible, but that limitation seemed inconsistent with the Federal Circuit’s new regime and was largely discarded.¹⁶¹ Concurrently, the PTO allowed patenting of gene sequences—even though the subject matter was naturally occurring, albeit artificially separated and concentrated—and medical diagnostic procedures—even though they reflected little more than natural phenomena combined

¹⁵⁵ *Id.* at 1373 (quoting *In re Alappat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994) (en banc)) (internal quotation marks omitted).

¹⁵⁶ *See id.* at 1375. The decision held such *abstract and intangible* things as numbers representing profit, loss, tax deductions and obligations, and share prices to be sufficiently “concrete and tangible” to satisfy its new test. *Id.* This seemed to reduce the test to the single element of *usefulness* in any activity, including simply making or allocating money or credits/debits. *Id.*

¹⁵⁷ *State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1375–77 (Fed. Cir. 1998).

¹⁵⁸ 172 F.3d 1352 (Fed. Cir. 1999).

¹⁵⁹ *Id.* at 1356.

¹⁶⁰ *Id.* at 1356, 1359–60. There the court termed the new liberal test from *Alappat* and *State Street* “the ultimate issue” as to patentable subject matter and applied it to method claims. *Id.* at 1359. Its opinion disparaged three of the same court’s decisions from 1989–1994 that had followed the more traditional and restrictive view of patentability for computer-based inventions. *Id.* at 1360.

¹⁶¹ *Ex Parte Lundgren*, 76 U.S.P.Q.2d 1385, 1387 (B.P.A.I. 2005) (precedential decision).

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with steps carried out in doctors' minds.¹⁶² Patentable subject matter seemed to have no meaningful limits.

Some commentators urged a return to narrower rules of patent eligibility, and some silly—or worse—patents were held up to ridicule. The growing backlog of unprocessed applications at the PTO and deficiencies in the PTO's assessments of prior art were blamed partly on the expanded range of patentability and the PTO's limited resources in fields where patents had not previously been granted. In two U.S. Supreme Court cases in 2006, groups of three (in one case) and four (in the other) Supreme Court Justices criticized patents on marginal subject matter, particularly business methods, and attacked the *State Street* decision.¹⁶³

3. Course Reversal— Patent Eligibility Cut Back

Stung by this criticism, the Federal Circuit reversed its course in 2006 and 2007. Several cases raised patent eligibility issues shortly after the criticism of business method patents and the *State Street* decision by Supreme Court Justices noted just above. In two 2007 decisions, Federal Circuit panels announced a new, more restrictive approach even though they could have decided the cases the same way on narrower grounds. These decisions rejected as not patent eligible (i) a method and system for conducting mandatory arbitrations of business disputes¹⁶⁴ and (ii) a special type of artificially created transitory propagating physical signal.¹⁶⁵

¹⁶² See, e.g., *Prometheus Labs., Inc. v. Mayo Collaborative Servs.*, 581 F.3d 1336 (Fed. Cir. 2009); *Classen Immunotherapies, Inc. v. Biogen Idec*, 304 Fed. App'x 866 (Fed. Cir. 2008); *Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc.*, 548 U.S. 124 (2006) (per curiam); see also *infra* notes 174 & 181.

¹⁶³ *Lab. Corp.*, 548 U.S. 124, 136 (Breyer, J., Stevens, J., and Souter, J., dissenting); *eBay Inc. v. MercExchange L.L.C.*, 547 U.S. 388, 396–97 (2006) (Kennedy, J., Stevens, J., Souter, J., and Breyer, J., concurring).

¹⁶⁴ In *In re Comiskey*, 499 F.3d 1365 (Fed. Cir. 2007), *revised and superseded*, 554 F.3d 967 (Fed. Cir. 2009), the panel reached out to attack the patent eligibility of method and system claims, which the Patent Office had rejected as merely obvious. The panel's initial decision significantly narrowed patent eligibility for business method claims. 499 F.3d at 1381. The subsequent revised opinion, permitted by a ruling of the full court, was yet more limiting. 554 F.3d at 973, 981.

¹⁶⁵ *In re Nuijten*, 500 F.3d 1346 (Fed. Cir. 2007), *cert. denied sub nom. Nuijten v. Dudas*, 129 S. Ct. 70 (U.S. 2008) (holding signal is not patent eligible because it was not within any of the statutory categories: process, machine, manufacture, or composition of matter; forceful dissents underscored how dramatically this ruling contrasted with the Federal Circuit's recent expansive approach on patent eligibility).

Then in late 2008, the Federal Circuit confirmed the course reversal, particularly for inventions claimed as methods/processes, in its major en banc decision, *In re Bilski*.¹⁶⁶ The claims in question covered a simple, broadly defined method of using an intermediary to hedge price risks in commodities trading; and they did not require any technological elements.¹⁶⁷ On appeal, the full Federal Circuit went out of its way to rule those claims non-patent eligible as quickly and definitively as possible.¹⁶⁸ Its order for full-court review invited briefing on whether the court should overturn its earlier *State Street* and *AT&T* decisions.

The resulting majority decision, reflecting the views of nine of the twelve participating Federal Circuit judges, held the claims not patent eligible and substantially narrowed the patent eligibility of method/process inventions generally.¹⁶⁹ Two of the other three participating judges would likewise have held the claims not patent eligible, one on an even more patent-limiting rationale.¹⁷⁰ The nine judge opinion of the court abandoned its expansive *State Street* test for patent eligibility and substituted a much narrower “machine or transformation” test for process/method claims.¹⁷¹ That test had been suggested, but not adopted, by the Supreme Court decisions in 1972 and 1980.¹⁷² It seemed

¹⁶⁶ 545 F.3d 943 (Fed. Cir. 2008) (en banc).

¹⁶⁷ *Id.* at 949.

¹⁶⁸ The full court voted to interrupt the normal panel review process, have the case re-briefed and re-argued to the entire court, and decide the case en banc. *Id.*

¹⁶⁹ *Id.* at 966.

¹⁷⁰ The three participating Federal Circuit judges who did not join the majority opinion were Judges Newman, Mayer, and Rader. Of these, Judges Mayer and Rader would have found the claimed invention not patent eligible under § 101 of the Patent Act. Judge Mayer reached that conclusion because, like other business method inventions, it was not within the technological arts and therefore was outside the intended scope of patentable inventions. *Id.* at 998–1011. Judge Rader reached the same conclusion by deeming the claimed invention to be merely an abstract idea. *Id.* at 1011–15. Only Judge Newman would have found the claimed invention patent eligible. *Id.* at 976–98.

¹⁷¹ *Id.* at 959–60.

¹⁷² The new test allowed patenting of processes/methods only if the claimed method (i) was expressly “tied to a particular machine or apparatus” or (ii) operated to “transform[] a particular article into a different state or thing.” *In re Bilski*, 545 F.3d 943, 954 (Fed. Cir. 2008) (en banc) (citation omitted). Moreover a “tie” to the machine or the “transformation,” whichever applied, had to place meaningful limitations on the scope of the claim. *Id.* at 961 (citation omitted). Legal obligations, commercial relationships, business risks or benefits, or the like, could not qualify as the “articles” subject to the “transformation,” regardless of whether they were represented by documents or other tangible items. *Id.* at 963. Statements favorably noting, but not adopting, a similar test but also referring to possibly more liberal patent eligibility appeared in *Gottschalk v. Benson*, 409 U.S. 63, 256 (1972), and in some

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to preclude patenting of most or all business methods, especially those lacking strong "ties" to particular hardware/technology, and many other practices that could be deemed "processes" in the non-technical sense of that term.

Following the Federal Circuit's *Bilski* ruling, some Federal Circuit and district court decisions combined the recent rulings to extend the cut-back of patent eligibility, including applying a similar rationale to machine claims, and the PTO's Board of Patent Appeals and Interferences took a generally similar approach.¹⁷³ But even the seemingly clear "machine or transformation" test produced significant uncertainties and led to apparently contradictory decisions by the Federal Circuit panels.¹⁷⁴

Having granted review in *Bilski* against the recommendation of the U.S. Solicitor General, the Supreme Court recently eliminated whatever clarity the Federal Circuit's "machine or transformation test" might have provided. The Court's June 2010 decision¹⁷⁵ affirmed the judgment of non-patentability for the

earlier and later Supreme Court decisions, including the more patent-friendly 1981 ruling in *Diamond v. Diehr*, 450 U.S. 175, 184 (1981).

¹⁷³ See, e.g., *In re Ferguson*, 558 F.3d 1359, 1361, 1366 (Fed. Cir. 2009) (holding claims for both a "method" and a "paradigm" for profitably organizing and using a shared marketing not patent eligible subject matter); *Dealertrack, Inc. v. Huber*, 92 U.S.P.Q.2d 1689, 1691 (C.D. Cal. July 7, 2009) (general purpose computer without detailed programming did not qualify as a specific machine that would validate method claim); *Cybersource Corp. v. Retail Decisions, Inc.*, 620 F. Supp. 2d 1068, 1070–71, 1079 (N.D. Cal. 2009) (extensive opinion applying *Bilski*, *Nuijten*, and other cases aggressively to invalidate both "method" and "system" claims for detecting fraud in credit card transactions over the Internet, concluding that "[t]he closing bell may be ringing for business method patents, and their patentees may find they have become bagholders"); see also *Ex Parte Gutta*, 93 U.S.P.Q.2d 1025, 1030 (B.P.A.I. 2009).

¹⁷⁴ *Compare Prometheus Labs., Inc. v. Mayo Collaborative Servs.*, 581 F.3d 1336, 1345–47 (Fed. Cir. 2009), *cert. granted, vacated*, 130 S. Ct. 3543 (2010) (holding method of testing proper dosage of thiopurine drugs for treating autoimmune diseases patent eligible under a very generous view of the "transformation" prong of the Federal Circuit's *Bilski* test), with *Classen Immunotherapies, Inc. v. Biogen Idec*, 304 Fed. App'x 866, 867 (Fed. Cir. 2008), *cert. granted, vacated*, 130 S. Ct. 3541 (2010) (holding method of testing to determine whether an immunization schedule is effective in treating a chronic immune-related disorder not patent eligible because it was "not tied to a particular machine or apparatus" and did not "transform a particular article into a different state or thing"). The Supreme Court vacated these rulings and remanded both cases to the Federal Circuit for further review in view of the *Bilski* ruling. Following that remand, the Federal Circuit again affirmed patentability in *Prometheus*. In late 2010, the Federal Circuit had not reheard the *Classen* decision, and Mayo has filed a petition for further Supreme Court review in *Prometheus*. See *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 628 F.3d 1347 (Fed. Cir. 2010), *petition for cert. filed*, 79 U.S.L.W. 3554 (U.S. May 17, 2011) (No. 10-1150).

¹⁷⁵ *Bilski v. Kappos*, 130 S. Ct. 3218 (U.S. 2010).

Bilski claims at issue and gave support to the “machine or transformation test” but refused to adopt it as the “sole test” of patent eligibility.¹⁷⁶ The Court split badly on the related issue of whether business methods can ever be patented. Five justices refused to rule out the possibility of patents on some (unstated) kinds of business methods, while suggesting that many such claims are non-patentable under the vague exclusion for “abstract ideas.”¹⁷⁷ These Justices emphasized the narrowness of their ruling and disclaimed any intent to expand patent eligibility.¹⁷⁸ Four other Justices would have barred all patents claiming a “method of doing business” or a “general method of engaging in business transactions.”¹⁷⁹ None of the Justices supported the wide-open test for patent eligibility from *State Street* and *AT&T*.

The Court’s opinion discouraged broad new categorical exclusions from patentability. At the same time, it urged caution and suggested broad applications of the indistinct traditional exclusions for “laws of nature,” “physical phenomena” and “abstract ideas” via related concepts of uncertain scope.¹⁸⁰ Leaving non-technological business methods with little hope of patent eligibility, the Court took no position on patent eligibility for software, gene sequences, medical diagnostics, etc. In sum, the Supreme Court thrust patent eligibility back into the hands of the Federal Circuit with little or no new guidance while depriving that court of any “test” beyond reference to the vague traditional exclusions.

Currently, several interesting cases on patent eligibility are pending in the courts. They will require the Federal Circuit to apply meaningful limitations on patent eligibility in a number of contexts—a process that has been largely

¹⁷⁶ All the justices supported the “machine-or-transformation” test as “reliable in most cases,” “an important and useful tool,” or “a useful and important clue, an investigative tool, for determining [patent eligibility for a claimed method/process].” *Id.* at 3227, 3232.

¹⁷⁷ *Id.* at 3229. In a segment joined by only four of the five Justices, the same opinion suggested that the Federal Circuit might “defin[e] a narrower category or class of patent applications that claim to instruct how business should be conducted, and then rule that the category is unpatentable because, for instance, it represents an attempt to patent abstract ideas.” *Id.*

¹⁷⁸ *Id.* at 3249–50.

¹⁷⁹ *Id.* at 3232.

¹⁸⁰ *Id.* at 3238–39. The Court applied a broad version of the “abstract ideas” exclusion and apparently approved the traditional approach of refusing to rehabilitate many types of claims involving one of the traditional exclusions despite the presence in those claims of limitations that seemed to narrow them to adequately concrete applications. *Id.* at 3231. Rulings following this approach typically dismiss such limitations as mere “field-of-use limitations,” “data gathering steps,” “insignificant post-solution [or “extra-solution”] activity,” or otherwise inadequately meaningful.

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unnecessary for a dozen years.¹⁸¹ Crucial to future developments will be: (i) how the Federal Circuit uses the Supreme Court's modestly limiting but directionless *Bilski* decision; and (ii) the positions, if any, advocated by the United States as amicus curiae in appellate cases addressing patentable subject matter.

At one extreme, the Federal Circuit might use the Supreme Court's *Bilski* ruling to stop the trend toward narrower patent eligibility. Some advocates of strong patents along with one recent panel decision have suggested this result.¹⁸² Alternatively, the court might interpret *Bilski* as approving that trend and, perhaps, helping it along.¹⁸³ The position stated by the United States in a recent, controversial *amicus curiae* brief somewhat favors the latter alternative. Contrary to the long-established practice at the PTO and to the views of the biotech industry and most patent practitioners, the U.S. argues there that artificially isolated but naturally occurring segments of DNA are not patent eligible.¹⁸⁴

¹⁸¹ These areas include: (a) two challenges to patents on drug therapy test methods that rely prominently on natural phenomena and human judgment and on which the Supreme Court granted review, vacated the Federal Circuit's earlier decisions, and remanded for further consideration in light of *Bilski* (e.g., *Prometheus*, *Classen*); (b) naturally occurring gene sequences taken from natural cell structures and purified using prior art methods (*Ass'n of Molecular Pathology v. U.S. Patent & Trademark Office*, 702 F.Supp.2d 181,185 (S.D.N.Y. 2010)); and (c) methods of benchmarking jobs by consulting experts and taking surveys to identify key skills, compiling a composite report, and interviewing candidates appropriately regarding those key skills (*In re Bonnsetter*, 393 Fed. App'x 712, 712 (Fed. Cir. 2010)). With regard to gene patents, see Judge Dyk's separate comments in *Intervet Inc. v. Merial Ltd.*, 617 F.3d 1282, 1292–96 (Fed. Cir. 2010) and the Brief for the United States as Amicus Curiae, *Ass'n of Molecular Pathology v. U.S. Patent & Trademark Office*, 702 F. Supp. 2d 181 (S.D.N.Y. 2010) (No. 2010-1406), available at <http://graphics8.nytimes.com/packages/pdf/business/genepatents-USamicusbrief.pdf>.

¹⁸² *Research Corp. Techs. Inc. v. Microsoft Corp.*, 627 F.3d 859, 868 (Fed. Cir. 2010) (holding that to be found not-patent eligible, an invention's abstractness must "exhibit itself so manifestly as to override the broad statutory categories" of patent eligibility). Judges Newman and Rader, the two dissenters in the Federal Circuit's en banc *Bilski* ruling, were members of this three-judge panel.

¹⁸³ The Supreme Court gave substantial approval for the "machine or transformation" test, indicating that it can often play a large part in holding marginal claims ineligible for patenting. In addition, it applied the "abstract ideas" exclusion broadly and rehabilitated the often criticized approach of disregarding various types of claim limitations that might, under a different approach, confer patent eligibility on claims that make use of a "law of nature," a "physical phenomenon," or an "abstract idea." See *supra* note 180 and accompanying text. See also *supra* note 177 and accompanying text (referring to the suggestion by four of the five Justices who refused to rule out all business method patents that the Federal Circuit might be able to define a broad range of business method claims, though not all such conceivable claims, as patent ineligible).

¹⁸⁴ See Brief for the United States as Amicus Curiae, *Ass'n of Molecular Pathology v. U.S. Patent & Trademark Office*, 702 F. Supp. 2d 181 (S.D.N.Y. 2010) (No. 2010-1406).

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In this context, only a few things seem clear. First, the “wide open” patent eligibility regime of *State Street* and *AT&T* is over, and general, non-technological business methods will have a hard time winning patent protection. Second, § 101 patent eligibility will again be a serious issue as to significant numbers of patents and patent applications, requiring difficult judgments that the PTO and the courts have seldom faced for the last dozen years. Indeed, the vague new approach has already weakened or invalidated many outstanding business method patents. Third, the increased legal uncertainty as to patent eligibility will probably last for an extended period, although wide swings in the basic eligibility rules, like those we have recently seen, or a new period of “wide-open” patenting, are unlikely to recur. On the positive side, the more restrictive eligibility rules may reduce the burdens of non-technological or other marginal patents on our economy.

Stepping back from the detail, the Federal Circuit’s spectacular, decade-long expansion of patent eligibility produced large numbers of non-traditional patents, imposed significant costs and business consequences, and created huge operational burdens for the PTO. In retrospect, it seems that expansion went too far in some areas while failing to draw sufficiently careful lines in others. To prognosticate amidst the uncertainty, the former areas seem to include non-technological business method “inventions,” which now seem largely off-limits for patenting. The latter may include software creations medical diagnostic patents.

B. Obviousness and the Presumption of Validity—Revival of a Debilitated Statutory Requirement

In addition to being new and useful, an invention must be “non-obvious” to a person skilled in the relevant art in order to merit a patent.¹⁸⁵ Assessing “obviousness” may be the most difficult task in patent examination and patent enforcement.

Obviousness invalidations took a horrible toll on issued patents before creation of the Federal Circuit. One of the Federal Circuit’s most important measures in strengthening patent protection was to rein-in easy applications of the obviousness defense. In the view of many observers, however, the central pillar of this Federal Circuit initiative went too far. It seriously weakened the non-obviousness requirement and largely de-activated it in many cases.¹⁸⁶ This

¹⁸⁵ 35 U.S.C. § 103 (2006).

¹⁸⁶ Careful observers noted serious questions as to the apparently excessive weakening of the non-obviousness requirement. See, e.g., FTC STUDY, *supra* note 4, at 15; NAS STUDY, *supra*

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made it hard for patent examiners to reject non-meritorious applications and made the resulting patents more serious threats to U.S. producers. In 2007, the Supreme Court largely destroyed that pillar in *KSR International Co. v. Teleflex Inc.*¹⁸⁷

Most inventions are combinations of previously known elements. If such a combination produces no unpredictable result, it risks being deemed “obvious” and any associated patent invalid. To counter such easy attacks, the Federal Circuit developed its “teaching, suggestion or motivation” (“TSM”) test.¹⁸⁸ Even for combinations of previously known elements each operating in its known and predictable way, that test allowed a conclusion of obviousness only if the prior art, the nature of the problem, or the knowledge of a person skilled in the art taught, suggested or motivated the combination.¹⁸⁹

Often, this test was applied rigidly, requiring the patent examiner or infringement defendant to find prior art that suggested the likely success of the combination of old elements in the claimed new way.¹⁹⁰ In addition, the Federal Circuit often said the prior art teaching had to have been aimed at solving the same “problem” as motivated the subsequent patent application in order to support a finding of obviousness.¹⁹¹ Depending on the circumstances, this test could vastly weaken the non-obviousness requirement.

One highly pro-patent decision along these lines was the Federal Circuit’s 2005 ruling in *Teleflex, Inc. v. KSR International Co.*¹⁹² The patent at issue there claimed a simple combination of well known electro-mechanical elements in the crowded art of adjustable brake pedals.¹⁹³ The defendant moved for a summary judgment of obviousness.¹⁹⁴ Applying a moderate version of the TSM test, the trial court granted the motion.¹⁹⁵ The Federal Circuit, however, applied its TSM test rigorously, reversed the summary judgment, and sent the

note 4, at 87. More outspoken observers condemned the weakening of the requirement in strong terms. JAFFE & LERNER, *supra* note 11 at 119-123 and *passim*.

¹⁸⁷ 550 U.S. 398 (2007).

¹⁸⁸ *Al-Site Corp. v. VSI Int’l, Inc.*, 174 F.3d 1308, 1323–24 (Fed. Cir. 1999).

¹⁸⁹ *See, e.g., id.*

¹⁹⁰ *See, e.g., Sakraida v. Ag Pro, Inc.* 425 U.S. 273, 280–81 (1976).

¹⁹¹ *See, e.g., id.*

¹⁹² 119 Fed. App’x 282, 290 (Fed. Cir. 2005) (non-precedential).

¹⁹³ *Teleflex Inc. v. KSR Int’l Co.*, 298 F. Supp. 2d 581, 584 (E.D. Mich. 2003).

¹⁹⁴ *Id.*

¹⁹⁵ *Id.* at 596.

case back for trial.¹⁹⁶ This exposed the TSM test to Supreme Court review on unfavorable facts.

The Court granted review, reversed, and reinstated the summary judgment of invalidity.¹⁹⁷ Its opinion broadly rejected the Federal Circuit's TSM standard as a test for obviousness. While TSM reasoning might be useful, along with other considerations, in assessing obviousness in some cases, the Court said, neither TSM nor any other mechanical standard can block a conclusion of obviousness where "common sense" requires it.¹⁹⁸ Several additional aspects of the *KSR* decision made the ruling yet more important.

First, the Supreme Court rejected any "same problem" requirement for assessments of the prior art and emphasized a high standard for patentability.¹⁹⁹ Prior art ideas motivated by objectives different from those underlying the invention in question, it said, must be considered, along with any similarly motivated prior art, in assessing obviousness.²⁰⁰ Further, business needs or market demand often lead to advances that are new and beneficial but *not* sufficiently innovative to merit a patent; and these advances must be rejected as obvious.²⁰¹ Federal Circuit case law never emphasized similarly high hurdles for validity.

Separately, in discussing its own precedents, the Supreme Court implied that inventions made up of prior-art elements "each performing the same function it had been known to perform and yield[ing] no more than one would expect from such an arrangement" are probably obvious and therefore non-patentable.²⁰² Out of touch with more than two decades of Federal Circuit precedent, this statement is now regularly highlighted in challenges to patent validity. The Court also rejected the Federal Circuit's frequently stated position that a patent claim cannot be proved obvious merely by showing that the claimed combination of prior art elements was "obvious to try."²⁰³ It said that "obvious to try" may well demonstrate obviousness where a recognized problem exists, there are a limited number of identifiable potential solutions having some predictability, and one of those proves successful.²⁰⁴

¹⁹⁶ 119 Fed. App'x at 290.

¹⁹⁷ *See generally* *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 427–28 (2007).

¹⁹⁸ *Id.* at 420.

¹⁹⁹ *Id.* at 402.

²⁰⁰ *Id.* at 419.

²⁰¹ *Id.* at 421.

²⁰² *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

²⁰³ *Id.* at 421.

²⁰⁴ *Id.*

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Finally, an off-handed comment in the Court's opinion called into question the Federal Circuit's strong version of the presumption of validity for issued patents and presaged Supreme Court review in the area. Shortly after its creation, the Federal Circuit buttressed that statutory presumption²⁰⁵ in several ways.²⁰⁶ Among other things, it: (i) insisted, as some prior decisions had, that "clear and convincing" evidence of invalidity is necessary to overcome the presumption; but (ii) rejected earlier federal court rulings that the presumption is weakened or completely inapplicable if the patent examiner missed significant prior art that is later presented in a challenge to the patent.²⁰⁷ The latter point remained a matter of occasional controversy, which the facts in *KSR* reignited.

In *KSR*, the accused infringer found and introduced at trial a highly relevant prior-art patent that had escaped the patent examiner's attention.²⁰⁸ Based on this "new" prior art, the accused infringer argued that only a weak presumption of validity, or none at all, should apply and that clear and convincing evidence should not be required to support invalidation. The Supreme Court ruled for the accused infringer without relying on this issue, but it gratuitously expressed agreement with the accused infringer's logic.²⁰⁹

With that encouragement, Microsoft recently raised the same controversy in challenging a different patent in an unrelated case. Microsoft lost in the district court and the Federal Circuit but the Supreme Court again granted review. Surprisingly, in view of its statement in *KSR* and its decision to review the ruling below, the Court upheld the presumption of validity and the clear and convincing evidence requirement even though significant "new" prior art had been discovered and introduced at trial.²¹⁰ The Court did, however, go to unusu-

²⁰⁵ 35 U.S.C. § 282 (2006) (setting forth the presumption).

²⁰⁶ See *supra* notes 13, 85–88 and accompanying text.

²⁰⁷ 35 U.S.C. § 282. The statute makes no mention of a requirement for "clear and convincing" evidence to overcome the presumption and many similar statutory presumptions are not strengthened by a similarly high evidentiary hurdle. See also Dennis Crouch, *Challenging the Clear and Convincing Standard of Proof for Invalidating Patents in Court*, PATENTLY-O (Sept. 30, 2010), <http://www.patentlyo.com/patent/2010/09/challenging-the-clear-and-convincing-standard-of-proof-for-invalidating-patents-in-court.html>.

²⁰⁸ *Teleflex Inc. v. KSR Int'l Co.*, 298 F. Supp. 2d 581, 595 (E.D. Mich. 2003).

²⁰⁹ The Court said: "We need not reach the question . . . [but we] think it appropriate to note that the rationale underlying the presumption [of validity]—that the PTO, in its expertise, has approved the claim—seems much diminished here." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 426 (2007).

²¹⁰ *Microsoft Corp v. i4i Limited Partnership*, No. 10-290, slip op. at 7–18 (U.S. Apr. 18, 2011). The Court's ruling seemed to reflect not only its own pre-1952 case law but also the practical problems it thought would confront implementation of a "variable" evidentiary burden for proving invalidity. *Id.* at 16 n.10.

al lengths to require trial judges, if so requested, to give special jury instructions enhancing the weight that should be given to “new” prior art, discounting the significance of the PTO’s decision to grant the patent in such cases, and indicating that the challenger’s burden of persuasion may be easier to sustain when it can present such evidence.²¹¹

KSR has not returned us to the days of rampant invalidations by facile findings of obviousness, and such a return does not seem likely. The *KSR* Court largely accepted the Federal Circuit’s repeated insistence that findings of obviousness be well explained and supported.²¹² In addition, some recent decisions suggest reluctance on the part of the Federal Circuit to apply *KSR*’s high standards of non-obviousness as fully as the Supreme Court’s words suggest.²¹³ Nevertheless, *KSR* has shifted the tipping point significantly in obviousness assessments in PTO examinations and in infringement litigation. This has weakened many existing U.S. patents and has shifted the balance of power between patent holders and putative infringers in many patent disputes. As we discuss in the final section of this article, this change is greatest as to inventions in what are termed the “predictable arts.”

Unfortunately, the recent changes seem to have made obviousness determinations even more complex and less predictable than they were under the “TSM” test. On the other hand, *KSR* has revived the non-obviousness requirement, a necessary part of any patent system but one that had grown very weak in the U.S. in recent years. We can hope this revitalization will both promote a higher standard of merit in patent examination and issuance and reduce the burdens of weak patents on our economy.

²¹¹ *Id.* at 17–18.

²¹² In many decisions, the Federal Circuit has reversed examiner rejections of patent applications and district court judgments invalidating issued patents for obviousness where the obviousness determination was conclusory rather than a well-explained assessment based on specific facts the Federal Circuit judged relevant. Consistent with this, the Supreme Court in *KSR* assessed at length and in detail the facts and implications relevant to obviousness there.

²¹³ *See, e.g.*, *TriMed, Inc. v. Stryker Corp.*, 608 F.3d 1333 (Fed. Cir. 2010); *Ortho-McNeil Pharm., Inc. v. Teva Pharms.*, 344 Fed. App’x 595 (Fed. Cir. 2009) (non-precedential); *cf.* *Western Union Co. v. MoneyGram Payment Sys., Inc.*, 626 F.3d 1361 (Fed. Cir. 2010); *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318 (Fed. Cir. 2008); *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157 (Fed. Cir. 2007).

C. Claim Construction—Markman, Phillips, and Other Patent-Narrowing Developments

Claim construction (interpretation) is often the key to patent enforcement. Unfortunately, it has long been plagued by inconsistency. More than a decade ago, the Federal Circuit took complete charge of claim construction. It ousted juries from the process, sharply restricted expert testimony, demanded that trial judges provide explicit interpretations of any disputed meanings, set some new standards for the process, and reserved for itself the right to re-do the entire process on appeal. In 2005, it rejected a high profile proposed “fix” to claim construction methodology that was intended to reduce confusion and stop unwarranted narrowing of patent coverage. It has also cut back on means-plus-function claims and the doctrine of equivalents in ways that magnify, rather than mitigate, these claim-narrowing developments.

The result is a substantial narrowing of the role of juries in patent enforcement and narrower, but not noticeably more predictable, claim interpretations. The narrower interpretations can occasionally preserve a patent’s validity by preventing it from covering prior art. Far more often, they simply reduce patent coverage and prevent findings of infringement. Thus, while the Federal Circuit initiatives on claim construction began earlier than most of its other recent initiatives discussed in this article, they have had a similar effect: limiting patent enforcement. We summarize these developments.

1. “Takeover” of Claim Construction—Juries & Judges, Evidence, and *De Novo* Review

Until the latter part of the twentieth century, the large majority of patent cases were tried to judges, not juries. If a party demanded a jury trial, however, interpretation of the key patent claims was effectively left to the jury, subject to generalized instructions given by the judge. Thus, in these relatively unusual cases, the jury’s power to decide infringement effectively included the power to interpret the claims. Handled this way, the interpretations themselves often remained merely implicit in the juries’ findings on infringement. That and the respect traditionally given to jury findings protected the interpretations from intense scrutiny on review.

In the last fifty years, patent holders increasingly recognized juries as more likely than judges to be impressed by patents, sympathetic to inventors, and generous in awarding infringement damages. Accordingly, patent holders began to demand jury trials in more and more infringement suits. For many years now, juries have dominated fact finding in patent cases. As a conse-

quence, any weaknesses of the jury process came to infect claim construction in the large majority of infringement suits. And weaknesses did seem evident.²¹⁴

In 1995, the Federal Circuit took claim construction away from juries.²¹⁵ It held that judges alone must construe patent claims even in cases otherwise tried to a jury.²¹⁶ The judge must give explicit written interpretations deciding any contested meanings, and those written interpretations must be relied upon in other parts of the case.²¹⁷ The U.S. Supreme Court upheld this takeover despite assertions that it violated the parties' rights to trial by jury in infringement suits.²¹⁸

Reassigning the process to judges and making claim interpretations explicit in every case gave the interpretations far more clarity and importance in patent cases. It also enhanced the role of trial judges in infringement cases and reduced the power of juries. At the same time, it exposed the newly explicit claim interpretations to far more intense scrutiny on appeal.²¹⁹

Related rulings by the Federal Circuit ratcheted-up the intensity of appellate review to even higher levels. For one thing, the Federal Circuit has characterized claim construction as purely a matter of law and refused to acknowledge any factual aspects in the process.²²⁰ It largely barred actual reliance on expert testimony and some other forms of "extrinsic" evidence in interpreting claims.²²¹ These steps let the court subject claim interpretations to the

²¹⁴ Most juries have little if any technical sophistication and are not experienced in interpreting stilted legal language, of which patent claims are extraordinary examples. Jury decision-making, though hidden in the deliberation process, seemed excessively influenced by the testimony of biased expert witnesses, and unpredictability was rampant. Juries could readily gloss-over technical issues of claim interpretation. Sympathy for one side—often the patent holder—seemed to play a large role in jury verdicts, and appellate review of verdicts was limited and difficult.

²¹⁵ *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970–71 (Fed. Cir. 1995).

²¹⁶ *Id.*

²¹⁷ *Id.* at 979.

²¹⁸ *Markman v. Westview Instruments, Inc.*, 517 U.S. 372 (1996).

²¹⁹ *Markman*, 52 F.3d at 975.

²²⁰ *E.g.*, *Arlington Indus., Inc. v. Bridgeport Fittings, Inc.*, 632 F.3d 1246, 1252–53 (Fed. Cir. 2011) (citing *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc)).

²²¹ *See, e.g.*, *Vitronics Corp v. Conceptronic, Inc.*, 90 F.3d 1576, 1583–85 (Fed. Cir. 1996) ("In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in the disputed claim term. In such circumstances, it is *improper* to rely on extrinsic evidence. . . . The claims, specification, and file history, rather than extrinsic evidence, constitute the public record of the patentee's claim, a record on which the public is entitled to rely Allowing the public record to be altered or changed by extrinsic evidence introduced at trial, such as expert testimony, would make this right meaningless. . . . Had the district court relied on the

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severe “*de novo*” form of review, that is, to complete redetermination of claim meanings by the Federal Circuit on appeal without giving any deference to the reasoning or determinations of the trial judge.²²²

Intended to increase accuracy and predictability, these changes made claim interpretations a frequent target in appeals, and reversal rates soared.²²³ Retrials of patent cases required by new claim interpretations announced on appeal became common, multiplying the inefficiency and expenses in patent litigation.²²⁴ Some of the Federal Circuit judges, as well as many commentators, criticized the new process and its results in strong terms.²²⁵

expert testimony and other extrinsic evidence solely to help it understand the underlying technology, we could not say the district court was in error. But testimony on the technology is far different from other expert testimony . . . on the proper construction of a disputed claim term, relied on by the district court in this case. . . . [Cases where reliance may be placed on expert testimony] will rarely, if ever, occur.”); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317–19 (Fed. Cir. 2005) (en banc) (“[W]hile extrinsic evidence ‘can shed useful light on the relevant art,’ we have explained that it is ‘less significant than the intrinsic record in determining the legally operative meaning of claim language’ We have also held that extrinsic evidence in the form of expert testimony can be useful to a court for a variety of purposes, such as to provide background on the technology at issue, to explain how an invention works However, . . . [w]e have viewed extrinsic evidence in general as less reliable than the patent and its prosecution history in determining how to read claim terms, for several reasons. . . . Third, extrinsic evidence consisting of expert reports and testimony is generated at the time of, and for the purpose of, litigation and thus can suffer from bias that is not present in intrinsic evidence. . . . ‘Expert evidence can be both powerful and quite misleading’ [U]ndue reliance on extrinsic evidence poses the risk that it will be used to change the meaning of claims in derogation of the ‘indisputable public records consisting of the claims, the specification and the prosecution history,’ thereby undermining the public notice function of patents.”)

²²² *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc).

²²³ The Federal Circuit’s reversal rate when district court claim construction rulings were appealed approximated forty percent according to Judge Rader, concurring in a 1998 opinion. *Cybor*, 138 F.3d at 1476 (Rader, J., dissenting in part, joining in part, concurring in the judgment). That figure was approximately double the typical federal appellate reversal rate. Note, however, that the close and difficult questions and suspect trial court rulings are likely to be heavily over-represented among cases where claim construction orders are appealed. Moreover, statistics showing frequent reversals of claim construction rulings by trial judges under the new regime may reflect the greater visibility and accessibility on appeal of errors that were previously hidden within the jury verdicts and shielded from scrutiny.

²²⁴ The Federal Circuit consistently refuses to accept interlocutory appeals of claim construction rulings, allowing trial judges’ determinations on claim interpretation to be tested only after a full trial and judgment. Thus a reversal on claim construction often requires a full new trial.

²²⁵ For example, in his dissent in the *Phillips* case discussed below, Judge Mayer, with whom Judge Newman joined, said:

We are not aware of statistics showing how strongly these changes favor accused infringers over patent holders. It seems clear though that, on average, they have narrowed claim scope and reduced patent holder success rates in infringement suits.²²⁶

2. Attempted Fix; Rejection of “Systematic Overbreadth”

One apparent reason for the surprisingly high reversal rates on claim construction seemed to be the nature of the “canons” (*i.e.*, precepts) that guide claim interpretation. Those precepts are multiple, vague, and often contradictory in their teachings.

Long simmering, one key contradiction²²⁷ led panels of the Federal Circuit to announce a revised approach to claim construction in decisions in 2002 and thereafter. Those decisions sought to reduce the uncertainty in claim construction and stop the narrowing of patent coverage that results from reliance on the patent’s specification. Uncertainties in the claim terms, they said, should be resolved mainly by use of the definitions—even multiple definitions—of the claim terms provided by dictionaries or similar sources. These decisions heavily downgraded the significance of any implications from the patent’s specification.²²⁸

Now more than ever I am convinced of the futility, indeed the absurdity, of this court’s persistence in adhering to the falsehood that claim construction is a matter of law devoid of any factual component. . . . In our quest to elevate our importance, we have . . . disregarded our role as an appellate court; the resulting mayhem has seriously undermined the legitimacy of the process, if not the integrity of the institution.

Phillips v. AWH Corp., 415 F.3d 1303, 1330 (Fed. Cir. 2005) (en banc) (Mayer, J., dissenting).

²²⁶ The new procedures isolate in easily-challenged form, the trial courts’ claim interpretations in essentially all patent cases and limit the importance of the often patentee-friendly jury verdicts. They also provide more numerous opportunities and easier standards for challenges to claim interpretations. A noticeable shift in the defense strategy in infringement cases has taken place since the *Markman* decision, increasing the use of summary judgment motions asserting non-infringement filed after, and relying on, the judge’s claim construction rulings.

²²⁷ On the one hand, a patent’s coverage is determined solely by its claims. Accordingly, characteristics of the invention described in the patent’s specification should not limit the coverage of the patent. At the same time, the claims, including the meanings of the terms they use, must be read and understood “in light of” the specification. Thus the specification can influence and limit the meaning of the claims.

²²⁸ See, e.g., *Texas Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1204–05 (Fed. Cir. 2002). When dictionaries give multiple definitions for individual words, these decisions rec-

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In 2005, the full Federal Circuit rejected this dictionary-based fix in *Phillips v. AWH Corp.*²²⁹ The “main problem” with that approach, the court said, is that dictionaries and similar references present all the possible meanings of claim terms *in the abstract* but give no indication of which meaning was intended or is appropriate *in the context of the invention*.²³⁰ Thus, the court said, the fix would promote “systematic overbreadth” in patent coverage.²³¹ It acknowledged the confusion and claim-narrowing tendency of reliance on the specification.²³² But addressing that confusion in the context of each patent, it said, is more likely than any “magic formula” to capture the true scope of the claimed invention.²³³

This logic has genuine appeal, but we are left with a troubling result. The many traditional precepts for claim construction remain available in litigation, with all their conflicts. And those conflicts, along with the potentially confusing importance of the specification, undermine the clarity-promoting objective, and narrow the breadth, of the statutorily-mandated claims. Uncertainty is preserved and “panel roulette” can continue in claim construction.²³⁴ Accused infringers are most often the beneficiaries because specification-based limitations on claim coverage are confirmed as proper without confinement to the few circumstances where they have long met general acceptance.²³⁵

ommended acceptance of all the stated meanings and use of them all in interpreting the claims. Only if the patent’s specification or prosecution history made it really clear that some of the definitions were not applicable would those particular meanings be rejected.

²²⁹ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1322 (Fed. Cir. 2005) (en banc).

²³⁰ *Id.* at 1321.

²³¹ *Id.* at 1312, 1316, 1317, 1321. Instead, the en banc court confirmed the special importance of the patent’s specification in guiding claim construction. Importantly, it did not confine that special importance to the limited circumstances where the specification had long been recognized as influential, such as where the specification: (i) clearly gives a narrow definition of one or more terms used in the claims or (ii) includes a clear disavowal of coverage for a particular variant of the claimed invention. *Id.* at 1312.

²³² *See id.* at 1316.

²³³ *Id.* at 1324.

²³⁴ *See, e.g.,* *Kinetic Concepts, Inc. v. Blue Sky Med. Group, Inc.*, 554 F.3d 1010, 1025–26 (Fed. Cir. 2009) (Dyk, J., dissenting) (demonstrating stark and determinative disagreement over whether illustrations in the patent’s specification of only one type of wound—without any wording contrasting or excluding other types of wounds—should be read as limiting the meaning of “wound” as used in the claims).

²³⁵ *See supra* note 231.

3. Magnification Not Mitigation

Related developments from the Federal Circuit have magnified, rather than mitigated, the narrowing of patent coverage described above. Two such developments are the narrowing of means-plus-function claims and the decimation of the formerly powerful doctrine of equivalents.

The means-plus-function claim format, expressly approved by the Patent Act,²³⁶ was widely used during the Federal Circuit's first fifteen years and, to a lesser extent, since. Consistent with the statute, patent practitioners understood a means-plus-function clause would cover: (i) the structure disclosed in the patent's specification as performing the function referred to in that clause; and (ii) "equivalents" of that structure. Most practitioners believed, however, that equivalence would extend to a range of structures that performed the same function, in a roughly similar way, as the structure described there. Case law on "equivalence" supported this belief.²³⁷

Over the years, however, the Federal Circuit adopted a considerably narrower range of "equivalence" in assessing means-plus-function claims than had applied under the well-known "doctrine of equivalents."²³⁸ Gradually, practitioners recognized that means-plus-function elements are defined by a narrow and severe version of the "insubstantial changes" test.²³⁹ This development significantly narrowed the scope of vast numbers of patent claims.

²³⁶ 35 U.S.C. § 112, ¶ 6 (2006).

²³⁷ See *infra* Part III.F.

²³⁸ The doctrine of equivalents is the subject of a later chapter of this article. See *infra* Part X. As early as 1993, a Federal Circuit panel had recognized, but rejected, the common use of means-plus-function clauses to cover anything that performed the stated function more-or-less as the feature described in the specification. *Valmont Indus., Inc., v. Reinke Mfg. Co., Inc.*, 983 F.2d 1039, 1044, 1045 (Fed. Cir. 1993). Over subsequent years, more and more Federal Circuit decisions followed this narrowing approach, establishing a very narrow scope for means-plus-function claims.

²³⁹ The widely understood test of equivalence had long been the "function-way-result" test of *Graver Tank & Manufacturing Co. v. Linde Air Products Co.*, 339 U.S. 605, 608 (1950). The *Valmont* panel, however, framed the equivalents question under § 112, ¶ 6 as follows:

Section 112 and the doctrine of equivalents have something in common. The word "equivalent" in § 112 invokes the familiar concept of an insubstantial change which adds nothing of significance. In the context of § 112, however, an equivalent results from an insubstantial change which adds nothing of significance to the structure, material, or acts disclosed in the patent specification. A determination of § 112 equivalence does not involve the equitable tripartite test of the doctrine of equivalents. As this court has stated, "the sole question" under § 112 involves comparison of the structure in the accused device which performs the claimed function to the structure in the specification.

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A separate scope-limiting development took place in the patent-extending doctrine of equivalents itself. That doctrine was a powerful force that frequently extended the reach of patent claims to cover structures outside the claim language if they performed substantially the same task as what was claimed and did it in substantially the same way to achieve substantially the same result. Despite Supreme Court support for that doctrine, however, the Federal Circuit gradually imposed more and more limitations on its operation, largely eliminating its effectiveness. We discuss that process in Part III.F, below.

* * * *

In combination, these developments have heavy consequences. Many patentees now have difficulty proving infringement against anyone other than a simple knock-off artist. Such a narrowing of claim scope substantially reduces the value of the patent right.

D. Further Tightening of the Validity Rules

The Federal Circuit's formerly patent-friendly environment likewise turned harsh as to enablement and the definiteness of claims, particularly claims using the means-plus-function format.

1. "Full Scope Enablement"

Under the Patent Act, each patent must contain a sufficiently clear and complete description of the claimed invention as "to enable any person skilled in the art . . . to make and use [that invention]."²⁴⁰ Recently, the Federal Circuit has been applying a stringent version of this requirement, sometimes called the "full scope enablement" doctrine. This doctrine insists that the patent specification, supplemented only to a very limited extent by the knowledge of a person skilled in the art, must enable every embodiment of the invention that fits within a claim in order for that claim to be valid at all.²⁴¹ If any embodiment of the invention within the claim is not enabled, the whole claim is held entirely invalid, even as to embodiments that are fully enabled. This stringent requirement threatens the validity of many broad patent claims.

Valmont, 983 F.2d at 1043.

²⁴⁰ 35 U.S.C. § 112, ¶ 1 (2006).

²⁴¹ See *Liebel-Flarsheim Co. v. Medrad, Inc.*, 481 F.3d 1371, 1379–80 (Fed. Cir. 2007); Sean B. Seymore, *Rethinking Novelty in Patent Law*, 60 DUKE L.J. 919, 966 n.219 (2011).

In *Liebel-Flarsheim Co. v. Medrad, Inc.*,²⁴² Liebel's patents were for front-loading fluid injectors with replaceable syringes for injecting fluid into patients at high pressure. The claims in the application as originally filed recited use of a pressure jacket to help support the sides of the syringe against the high pressure.²⁴³ During prosecution, however, the applicant broadened the claims by omitting all reference to a pressure jacket.²⁴⁴ Accordingly, the claims could include fluid injectors with or without pressure jackets.²⁴⁵ Because the patent specification was adequate to enable only those fluid injectors used with pressure jackets, the Federal Circuit found the claims entirely invalid because they were not enabled to their full scope.²⁴⁶

The facts in *Liebel-Flarsheim* might have limited its applicability. The opinion, however, did not suggest that, and other cases have applied the full scope enablement requirement well beyond any special facts. In *Automotive Technologies International, Inc. v. BMW of North America, Inc.*,²⁴⁷ for example, the claims for a velocity-type automotive side-impact crash sensor covered the use of a mechanical or an electronic impact switch, but the specification enabled only the mechanical switch.²⁴⁸ The court found the patent invalid even as to mechanical switches and even though nothing suggested that changing to the non-enabled electronic embodiment was beyond the skill of an ordinary practitioner of the art.²⁴⁹

In *Sitrick v. Dreamworks, LLC*,²⁵⁰ the invention was technology for integrating a user's audio signal or visual image into a pre-existing video game or movie. The patent contained enabling disclosure for use of the technology with video games but not for using it with movies, which have a different recording format.²⁵¹ Accordingly, a claim that covered both video games and movies was not adequately enabled.²⁵² Once again, because every possible embodiment was

²⁴² 481 F.3d 1371 (Fed. Cir. 2007).

²⁴³ *Id.* at 1374.

²⁴⁴ *Id.* at 1378.

²⁴⁵ *Id.*

²⁴⁶ *Liebel-Flarsheim*, 481 F.3d at 1383.

²⁴⁷ 501 F.3d 1274 (Fed. Cir. 2007).

²⁴⁸ *Id.* at 1285.

²⁴⁹ In the court's words, "in order to fulfill the enablement requirement, the specification must enable the full scope of the claims that includes both electronic and mechanical side impact sensors, which the specification fails to do." *Id.*

²⁵⁰ 516 F.3d 993 (Fed. Cir. 2008).

²⁵¹ *Id.* at 1000.

²⁵² *Id.*

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not enabled, the claim was struck down. Other cases have confirmed the doctrine in a variety of other circumstances.²⁵³

These cases led one practitioner to circulate a client newsletter article entitled "'Full Scope' Enablement—An Invalidity Bonanza."²⁵⁴ The doctrine can invalidate many existing broad patent claims, particularly if it continues to be applied as broadly as it is being stated.²⁵⁵ Patent prosecutors must now take care to avoid broad claims—or back them up with narrower claims—or be at risk that a non-enabled and possibly unforeseen embodiment will invalidate the patent. And patent litigators must take care in seeking broad constructions of their patent claims lest a non-enabled embodiment lurk in the shadows. Some patent owners will find themselves whipsawed in the "heads I lose—tails you win" position of *Liebel*, where they must choose between a narrow claim construction not infringed by the accused product and a broad construction that now could be invalid under the full scope enablement doctrine.

²⁵³ *E.g.*, *AK Steel Corp. v. Sollac*, 344 F.3d 1234, 1244 (Fed. Cir. 2003) ("[A]s part of the *quid pro quo* of the patent bargain, the applicant's specification must enable one of ordinary skill in the art to practice the full scope of the claimed invention."); *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1346 (Fed. Cir. 2005) ("[T]he description of one method for creating a seamless [discrete wavelet transform] does not entitle the inventor of the '835 patent to claim any and all means for achieving that objective."). In his concurrence with an opinion that was vacated and reheard en banc by the Federal Circuit for other reasons, Judge Linn suggested the full scope enablement doctrine may invalidate all "claims written broadly enough to cover any method for achieving a particular result" since the "specification cannot enable unknown methods." *Ariad Pharms, Inc. v. Eli Lilly & Co.*, 560 F.3d 1366, 1381 (Fed. Cir. 2009).

²⁵⁴ See generally Warner Delaune, "Full Scope" Enablement—An Invalidity Bonanza, (Aug. 26, 2008), http://www.martindale.com/construction/article_Baker-Donelson-Bearman-Caldwell_490318.htm.

²⁵⁵ The Federal Circuit's formulation of the doctrine raises considerable uncertainty. For example, patent claims for an apparatus that use the common transition language "comprising" generally encompass structures that include any number of possible additional elements beyond those identified in the claim, usually including many that are not enabled by the specification. Likewise, many patent claims can include versions of the claimed invention that also include later devised improvements not enabled by the specification. It seems unlikely that the Federal Circuit's stringent statement of the full scope enablement doctrine will be held to invalidate claims of these types, where the additional elements or improvements are not referred to in the patent or prosecution history. But the line between insufficient enablement and adequate disclosure is not currently clear. Consider, for example, a claim by the Wright brothers to an airplane comprising an engine and other components. Would their claim be totally invalid if their disclosure enabled piston engines but not jet engines?

2. Means-Plus-Function Claims—Harsh Test for Adequate Definiteness

Separately from the scope limitations discussed in Part IV.C. 3, above, the Federal Circuit recently subjected means-plus-function claims to new and stringent validity standards. In one series of cases, the Federal Circuit has applied a harsher “definiteness” requirement than it used for means-plus-function elements a few years ago—and harsher than it currently uses for claim elements in other formats.²⁵⁶ The result is to invalidate claims in means-plus-function form where very similar claims not using that format could achieve broad and similarly indefinite coverage without sacrificing validity.²⁵⁷ For example, in the area of computers and software, the court has required means-plus-function claims not only to disclose a general purpose computer processor programmed to achieve a stated result but also to disclose the software algorithm(s) used to achieve that result. And this has been true even where a person of ordinary skill in the art would know how to devise and code an appropriate algorithm.

For example, in *Aristocrat Technologies Australia Pty Ltd. v. International Gaming Technology*,²⁵⁸ the technology at issue was an electronic slot machine that allows a player to select winning combinations of symbols. Depicted here in Figure 1 is a pattern to be played, and Figure 2 shows a winning combination for that pattern. The claim in question was in means-plus-function form, and the patent’s specification disclosed the relevant corresponding structure as “a general purpose, programmable microprocessor.”²⁵⁹ It did not disclose any step-by-step algorithm to program the

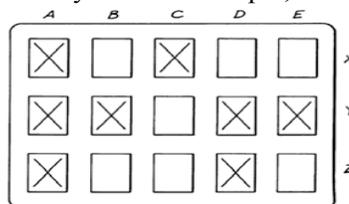


Fig. 1

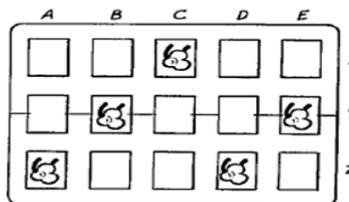


Fig. 2

²⁵⁶ 35 U.S.C. § 112 (2006). The definiteness requirement comes in large part from the second paragraph, which provides: “[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” See *infra* notes 257 & 270–72.

²⁵⁷ The patent-friendly liberality of the definiteness requirement *outside* the “means-plus-function” claim context was recently criticized by Judge Plager and characterized in stark terms in a petition to the Supreme Court for a writ of certiorari. See *infra* notes 270–72 and accompanying text.

²⁵⁸ 521 F.3d 1328 (Fed. Cir. 2008).

²⁵⁹ *Id.* at 1332.

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microprocessor to display and operate the patterns and selections.²⁶⁰ The Federal Circuit held the patent invalid for failing to disclose such an algorithm, even though a novice software developer could have created such an algorithm without difficulty.²⁶¹

In *Finisar Corp. v. The DirecTV Group, Inc.*,²⁶² the patent claimed systems and methods for scheduling transmission of database tiers upon specific demand or at specific times and rates of repetition. The invention would send customers of a service like satellite television programming in database tiers meant to anticipate which programs they would choose.²⁶³ At issue on appeal was whether certain of the software claims in means-plus-function form were sufficiently definite.²⁶⁴ The court cited and reaffirmed its *Aristocrat* decision in holding seven claims invalid for indefiniteness.²⁶⁵ It referred to an earlier case also cited in *Aristocrat*, stating “[f]or computer-implemented means-plus-function claims where the disclosed structure is a computer programmed to implement an algorithm, ‘the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.’”²⁶⁶ The court concluded the patent must disclose “enough of an algorithm to provide the necessary structure.”²⁶⁷

Other Federal Circuit decisions have extended this very stringent requirement for means-plus-function claims, particularly with regard to software elements, regardless of the ease with which a person of ordinary skill in the art could have supplied the missing structural specifics.²⁶⁸ These decisions confirm

²⁶⁰ *Id.*

²⁶¹ *Id.* at 1336.

²⁶² 523 F.3d 1323 (Fed. Cir. 2008).

²⁶³ *Id.*

²⁶⁴ *Id.* at 1340.

²⁶⁵ *Id.* at 1341.

²⁶⁶ *Id.* at 1340 (quoting *WMS Gaming, Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999)).

²⁶⁷ *Id.*

²⁶⁸ *Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1383, 1385 (Fed. Cir. 2009) (holding claim of course management software invalid because the description of the “access control structure” was “essentially a black box that performs a recited function . . . [b]ut how it does so is left undisclosed. . . . [a] patentee cannot avoid providing specificity as to structure simply because someone of ordinary skill in the art would be able to devise a means to perform the claimed function”); *Net MoneyIn, Inc. v. Verisign, Inc.*, 545 F.3d 1359, 1367 (Fed. Cir. 2008) (holding claim entirely invalid because specification failed to disclose an algorithm by which a general purpose bank computer “generat[es] authorization indicia,” as claimed); *Biomedino, LLC v. Waters Techs. Corp.*, 490 F.3d 946, 949–50 (Fed. Cir. 2007) (claims directed at a biochemical separation device; fact that known technology is referenced as to the

a “gotcha” infringement defense almost regardless of the importance of the omitted structural details. Along with their narrowed scope discussed in Part VII, above, this recently established weakness of the means-plus-function claim format may be a contributing factor to the steep, continuing decline in use of such claims.²⁶⁹

Interesting recent developments suggest a possible extension of stiffer definiteness requirements beyond the means-plus-function claim context. Federal Circuit Judge Plager recently proposed that in dissenting from denial of rehearing *en banc* in *Enzo Biochem, Inc. v. Applera Corp.*²⁷⁰ A petition for Supreme Court review of that question is currently pending, and a request recently made by the Supreme Court suggests serious interest in that possibility on the part of the Justices.²⁷¹ If imposed generally, stiffer definiteness requirements could invalidate many broad claims and narrow the protection that some patents seem to provide.²⁷²

means-plus-function element is not enough to validate it even though a person of skill in the art would know what it is and even where the lack of more specific structural explication is not on a point of novelty).

²⁶⁹ *Patently-O Bits and Bytes No. 91*, PATENTLY-O (Feb. 9, 2009), <http://www.patentlyo.com/patent/2009/02/patently-o-bits-and-bytes.html> (noting that only twelve percent of the patents issued in early 2009 included a “means for” clause in the claim language compared to twenty-four percent a decade earlier and a full forty percent two decades before).

²⁷⁰ 599 F.3d 1325 (Fed. Cir. 2010), *rehearing and rehearing en banc denied*, 605 F.3d 1347, *petition for cert. filed*, 131 S. Ct. 847 (Sept. 23, 2010) (No. 10-426). Judge Plager suggested that the Federal Circuit should require more definite and specific claims regardless of the claim format and referred to recent initiatives by the PTO to increase its requirements for definiteness during patent examination. Clearer and more definite claims, he said, would give the public better notice of what technology is reserved to patent holders and take some of the stress off of claim construction in patent litigation. 605 F.3d at 1348–49.

²⁷¹ Before the Supreme Court, the Petitioner attacks the Federal Circuit’s generally lax standard of definiteness, which usually requires only that the claim or claims at issue be “amenable to construction” or not “insolubly ambiguous.” *E.g.*, *Haemonetics Corp. v. Baxter Healthcare Corp.*, 607 F.3d 776, 783 (Fed. Cir. 2010). Recently, the Supreme Court requested the views of the United States, via the Solicitor General, on whether review should be granted in that case. Such a request is generally interpreted as indicating serious interest in the matter and a strong possibility that review will be granted.

²⁷² See Judge Plager’s observation that “broad, to the point of inherently ambiguous, claim drafting is not just a matter of poor drafting skills on the part of some lawyers who prosecute patent applications. On the contrary, the art of broad claim drafting is a prized talent . . . [which] clients are openly urged to use . . .” 605 F.3d at 1348 n.2.

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E. Patent Exhaustion—Post-Sale Restraints on Patented Products

Sometimes called the “first sale doctrine,” patent exhaustion is a long recognized, but recently uncertain, limitation on patent holder rights. This doctrine held that the first authorized sale of a patented product—whether by the patentee or by its licensee—terminates all patent restrictions on the item sold. Thereafter, the use, resale, etc. of that particular item were free from any patent-based restraints or obligations. Weakened by Federal Circuit decisions some years ago, this patent-limiting doctrine recently regained vitality from rulings since 2008, and it again cuts-back strongly on the rights of patent holders.

1. Uncertain Doctrine and the *Quanta* Case

Uncertainties long limited exhaustion’s operation. For one thing, exhaustion might not limit method claims because method inventions are not physically “sold” to purchasers. Separately, many types of products largely embody, or enable performance of, claimed inventions without duplicating or performing the invention fully or by themselves. Sale of such items might not exhaust the corresponding patent.

Equally important, beginning in 1992 if not earlier, the Federal Circuit embraced what might be called a “deregulatory” or “freedom-of-contract” view of exhaustion, further sapping its strength. This approach emphasized both an implied contract theory as the basis for exhaustion and a requirement that the sale in question be wholly unconditional in order to trigger exhaustion.²⁷³ It allowed patent holders to put special terms in their sale or licensing agreements and thereby block exhaustion as to the items sold by disaffirming the normal understanding that patent rights on such items end with the sale. The continuing patent protection could enforce a variety of post-sale restrictions on use or disposition of the subject items much more effectively than mere contractual restraints.

In *Quanta Computer, Inc. v. LG Electronics, Inc.*,²⁷⁴ the Supreme Court wiped away some uncertainties that had limited the exhaustion doctrine and, without addressing them, called others into question. Subsequently, a Federal Circuit decision and a significant district court decision have extended exhaustion’s reach substantially beyond the Supreme Court ruling.

²⁷³ See, e.g., *LG Elecs., Inc. v. Bizcom Elecs., Inc.*, 453 F.3d 1364, 1369–70 (Fed. Cir. 2006), *rev’d sub nom.* *Quanta Computer, Inc. v. LG Elecs., Inc.*, 553 U.S. 617 (2008).

²⁷⁴ 553 U.S. 617 (2008).

In *Quanta*, the patented inventions were methods for improving computer hardware performance.²⁷⁵ LG owned the patents and licensed them to Intel subject to special limiting terms in the license.²⁷⁶ Those terms said the license would not confer any “downstream” usage rights for the patented methods as carried out in any computer in which licensed parts made by Intel were combined with other parts not made by Intel.²⁷⁷ Related terms required Intel to advise parts purchasers of this limitation in its license from LG.²⁷⁸ Unless exhaustion applied, the assembly, sale, and subsequent use of the computers containing the Intel parts and parts from other manufacturers would infringe (or induce infringement of) LG’s patents.

Quanta and other computer manufacturers nevertheless combined the Intel microprocessors with non-Intel parts (memory chips, busses, etc.) in the computers they made and sold, and LG sued them for inducing infringement of its patents.²⁷⁹ Applying its narrow view of exhaustion, the Federal Circuit held the doctrine inapplicable for several reasons: (i) the limiting statements in the license precluded any inference it was intended to benefit the computer makers or exhaust the patent rights; (ii) the same terms made the sales of the Intel parts “conditional” and therefore ineffective in triggering exhaustion; and (iii) exhaustion could not apply to method claims.²⁸⁰ The Supreme Court, however, took the case and reversed. The Court’s opinion was narrowly written but its logic suggested broader consequences.

The Court first held method claims fully subject to exhaustion by the sale of parts designed to perform the claimed methods.²⁸¹ It then held that substantial, though not complete, embodiment of the patented inventions by the item(s) sold is sufficient to trigger exhaustion; the Intel products “constitute[d] a material part of the patented invention and all but completely practice[d] the patent.”²⁸² This, the Court said, was enough.²⁸³

²⁷⁵ *Id.* at 621.

²⁷⁶ *Id.* at 623.

²⁷⁷ *Id.* at 630.

²⁷⁸ *Id.* at 623–24.

²⁷⁹ *Id.* at 637.

²⁸⁰ *LG Elecs, Inc. v. Bizcom Elecs., Inc.*, 453 F.3d 1364, 1369, 1370 (Fed. Cir. 2006).

²⁸¹ *Quanta*, 553 U.S. at 628–29.

²⁸² *Id.* at 633.

²⁸³ *Id.* The Court repeatedly emphasized that the Intel parts “had no reasonable noninfringing use and included all the inventive aspects of the patented methods.” *Id.* at 638.

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The Court also rejected LG's arguments that the sales by Intel to the computer makers were not "authorized."²⁸⁴ The license agreement granted Intel the right to "sell" the subject parts and did not expressly limit that right based on how those parts would be combined.²⁸⁵ Despite several factors that LG argued negated authorization,²⁸⁶ this permission to "sell" was enough for exhaustion purposes.

2. *Quanta's* Silence and Subsequent Extensions

The Court made no mention of whether the sales in question were "unconditional" or whether that is a requirement for exhaustion. This was surprising in view of the importance of conditionality in the Federal Circuit's earlier case law²⁸⁷ and in its ruling below. Ignored by the Supreme Court, conditionality lost much of its importance as a test for exhaustion.

Likewise, *Quanta* did not address the Federal Circuit's pro-patentee, exhaustion-limiting implied contract theory. The Court's statements, however, seemed inconsistent with that theory.²⁸⁸ Recently, a Federal Circuit decision²⁸⁹

²⁸⁴ *Id.*

²⁸⁵ *Id.* at 636.

²⁸⁶ The Federal Circuit had combined the license limitations and related notices to purchasers with the restrictions in federal patent law and state law provisions arguably incorporating provisions of general law into private contracts in holding the sales "conditional" for purposes of exhaustion. In the Supreme Court, LG argued the same points in asserting the sales were not "authorized."

²⁸⁷ Each of the Federal Circuit's leading exhaustion decisions had offered the requirement for an "unconditional" sale as a key to whether exhaustion applied. *LG Elecs., Inc. v. Bizcom Elecs., Inc.*, 453 F.3d 1364, 1370 (Fed. Cir. 2006); *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1426 (Fed. Cir. 1997); *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 706 (Fed. Cir. 1992); *see also* *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 516 (1917) (using the term "single unconditional sale" in stating to the trigger for exhaustion).

²⁸⁸ For example, they characterized exhaustion as an inherent and automatic limit on patent protection that operates regardless of the intent of the patent holder or parties to the sale of the patented product. *Quanta*, 553 U.S. at 637.

²⁸⁹ *TransCore, LP v. Elec. Transaction Consultants Corp.*, 563 F.3d 1271, 1274 (Fed. Cir. 2009). *TransCore* followed *Quanta's* pro-exhaustion approach as to a covenant not to sue and despite the contrary intent of the parties to the covenant. First, it said, the patent holder's narrow covenant not to sue was sufficient to "authorize" the sale of the patented products by the covenant beneficiary, so that the sale would trigger exhaustion. More interesting, the patent holder had refused, during negotiation of the covenant, to include terms requested by the covenant beneficiary that would have extended the covenant's protection to purchasers of the patented products from the beneficiary. Recognizing *Quanta's* implications, the Federal Cir-

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and a separate district court decision²⁹⁰ followed *Quanta's* implications, rejected the implied contract theory and largely eliminated the ability of patent holders and licensees to limit exhaustion by including special terms in their agreements.

* * * *

Quanta and these subsequent decisions have greatly strengthened the exhaustion doctrine. Uncertainties remain at the margins.²⁹¹ But patent holders now are much less able to arrange for royalties from multiple parties who make, sell, use, combine, modify, and/or recondition the patented items. And patent holders now have difficulty selling meaningful licenses without extending unlimited rights to purchasers of the items sold. Whether restrictions in license or sale agreements can preserve economically useful patent-law-based restraints as to the items made and distributed remains uncertain. In any event, the room for such restraints is much narrower than it was under the crippled, pro-patentee version of exhaustion created by the Federal Circuit before *Quanta*.

cuit held that evidence on the parties' intent was irrelevant to exhaustion and affirmed the district court's exhaustion ruling despite the parties' contrary intent. *Id.* at 1277.

²⁹⁰ *Static Control Components, Inc. v. Lexmark Int'l, Inc.*, 615 F. Supp. 2d 575 (E.D. Ky. 2009). Lexmark had sold its patented printer cartridges under special "single-use" agreements with purchasers that allowed them to pay less than the usual price for the cartridges. In return, the purchasers agreed to return the spent cartridges to Lexmark rather than selling them to re-conditioners for service, refilling, and resale in the market. When the spent cartridges were nevertheless sold to re-conditioners, Lexmark sued them for patent infringement. An earlier ruling in the same case had rejected their exhaustion defense. After *Quanta*, Judge Van Tatenhove reconsidered and reversed that ruling. The Supreme Court, he concluded, had re-asserted a broad view of exhaustion "in the face of Federal Circuit case law that had narrowed the scope of the doctrine . . . [and had] been followed as binding precedent by the district courts." *Id.* at 582–83. Under that newly broadened view, exhaustion applied despite the single-use-and-return provisions in the sales agreement and despite the lower price paid by purchasers who agreed to those restrictions. Patent law could not be used to enforce the restrictive commitments the purchasers had made.

²⁹¹ For example, in the licensed manufacturer context, limiting terms in the license agreement may raise questions as to whether the sale of products to particular purchasers for particular uses was "authorized." Likewise, if the patentee or its licensee manufactures the products and then distributes them as "licensed" for use rather than "sold," questions arise as to whether exhaustion has been triggered. Another question in the area concerns "international exhaustion," *i.e.*, whether a sale in a different country of a product patented in the U.S., if made or authorized by the holder of the U.S. patent, exhausts the U.S. patent right as to the item sold even though the sale was not constrained by the U.S. patent laws. The U.S. Supreme Court recently split 4-4 on a similar question under copyright law. *See Costco Wholesale Corp. v. Omega, S.A.*, 131 S. Ct. 565 (U.S. 2010) (*per curiam*).

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F. Doctrine of Equivalents

The Doctrine of Equivalents ("DOE") is a long-established, but peculiar, part of U.S. patent law. Repeatedly reaffirmed by the courts, the DOE unsettles the primacy of patent "claims" in determining patent coverage. Its recent evolution is another chapter in the up-and-down enforcement of patents by the U.S. courts over the last quarter century.

Since the mid-1800s, U.S. patent statutes have required every patent application to include not only a good "description" of the subject invention but also precise claims stating the outer limits of the requested patent protection.²⁹² Patent examination centers on the claims; and a patent's coverage is what falls within these statutorily mandated claims—as finally agreed on by the applicant and the examiner—and nothing more.²⁹³

The DOE upsets this logic. In infringement litigation, the DOE can extend a patent's coverage beyond the claims to reach products or methods that differ only "insubstantially" from what was claimed. Put another way, a deviation of an accused product from what was claimed in a patent may not protect that product from infringing if it satisfies the three-way "FWR" test, *i.e.*, if it accomplishes substantially the same *function* in substantially the same *way* to achieve substantially the same *result* as what was claimed.²⁹⁴

Ignoring all details, the Federal Circuit's treatment of the DOE has been similar to its treatment of the other patent enforcement doctrines discussed in this article: That court was patent-expansive (*i.e.*, pro-DOE) in its early years, but it then became patent-limiting (*i.e.*, anti-DOE). A closer look, however, reveals much more texture in this progression:

- Even in its early pro-DOE period, the Federal Circuit was divided and ambivalent about that doctrine;
- The Federal Circuit turned against the DOE well before it turned patent-limiting in most of the other areas discussed in this article;

²⁹² 35 U.S.C. § 112 (2006) (requiring that the description of the invention "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention"). Many patent cases have analogized the patent claims to the "metes and bounds" used in many real estate deeds to define the edges of a property owner's right to keep others off his land. *See, e.g.*, *Regents of Univ. of N.M. v. Knight*, 321 F.3d 1111, 1122 (Fed. Cir. 2003) (citing *In re Papesch*, 315 F.2d 381, 391 (C.C.P.A. 1963)).

²⁹³ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc).

²⁹⁴ *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 732–33 (2002); *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 24 (1997); *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608 (1950).

- Twice in the last fourteen years, the Supreme Court upheld the DOE and its continued vitality against serious attacks, although it noted some dangers in the doctrine and encouraged restraint; and
- Time after time in recent years, the Federal Circuit has ratcheted-up old limitations on the DOE or created new ones. In combination, the many additional limitations have strangled the doctrine. Thus, what was a very important part of patent enforcement a few years ago has lost most of its importance.

The fall of this recently important doctrine despite two favorable Supreme Court decisions within seven years of each other is remarkable, and the effect on patent enforcement is substantial. The following paragraphs note the major steps in this surprising evolution.

1. The Federal Circuit's Early Years

Soon after its creation, the Federal Circuit gave a broad and expansive application to the DOE in the first of its several rulings in *Hughes Aircraft Co. v. United States*.²⁹⁵ Relying on earlier case law including Supreme Court authority from 1950,²⁹⁶ it applied a loose and generous test for “equivalence.” The proper standard, it said, was an expansive comparison of the accused product *as a whole* with the claimed invention *as a whole*. This approach de-emphasized scrutiny of the differences between the particular elements in the claim and the separate corresponding features of the accused product. Under this approach, the DOE was a potential alternative route for proving infringement in a large number of cases where literal infringement was uncertain or absent.

In two decisions just three years later, however, the Federal Circuit cut back this expansive approach. The first of these decisions rejected equivalence where it seemed present on the facts and used strong language to denounce broad applications of the DOE.²⁹⁷ The second was the important en banc deci-

²⁹⁵ 717 F.2d 1351 (Fed. Cir. 1983).

²⁹⁶ The most recent Supreme Court authority on the DOE was the fractured but very expansive pro-DOE decision in *Graver Tank*, 339 U.S. 605 (1950).

²⁹⁷ *Perkin-Elmer Corp. v. Westinghouse Elec. Corp.*, 822 F.2d 1528 (Fed. Cir. 1987). There a split Federal Circuit panel affirmed the trial court's refusal to apply the DOE to the accused tuned radio-frequency impedance matching transformer and radiator that differed in what seemed to be only an immaterial way from the patented RF transformer-radiator. The panel majority said: “[A] court may not, under the guise of applying the doctrine of equivalents, erase a plethora of meaningful structural and functional limitations of the claim on which the public is entitled to rely in avoiding infringement.” *Id.* at 1532.

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sion in *Pennwalt Corp. v. Durand-Wayland, Inc.*²⁹⁸ There, a split decision by the whole Federal Circuit mandated a narrower method of applying the DOE often termed the "all elements rule."²⁹⁹ In contrast to the *Hughes Aircraft* "as-a-whole" comparison, this method carefully examines each limitation in the relevant patent claim separately and requires a *specific, acceptable* "equivalent" in the accused product for each limitation not literally satisfied by the accused product.³⁰⁰ The facts in *Pennwalt* made application of the DOE difficult in any event, and some Federal Circuit judges said the *Pennwalt* ruling was consistent with *Hughes Aircraft*.³⁰¹ Nevertheless, depending on the type and level of equivalence required as to each non-satisfied limitation, this approach could greatly cut-back application of the doctrine of equivalents. The DOE's continuing strength hung in the balance for several years.

2. *Hilton-Davis v. Warner-Jenkinson, Federal Circuit Qualms, Festo*

Important further stages of DOE evolution occurred in the *Hilton-Davis v. Warner-Jenkinson* litigation in the mid-1990s and the *Festo* litigation in the late '90s and early 2000s. Both of those controversies led to en banc decisions by the Federal Circuit and then to Supreme Court decisions upholding the DOE. The Federal Circuit judges, however, were growing more wary of the doctrine. Gradually, they created or enhanced a series of limitations that sapped most of its strength.

A high-water mark for the DOE was the 1995 en banc decision by the Federal Circuit in *Hilton Davis Chemical Co. v. Warner-Jenkinson Co.*,³⁰² supplemented by the Supreme Court's ruling confirming that decision.³⁰³ These rulings upheld the DOE against strenuous attacks and extended the doctrine. The Supreme Court did acknowledge the DOE's unsettling and potentially

²⁹⁸ 833 F.2d 931 (Fed. Cir. 1987) (en banc).

²⁹⁹ *Id.* at 939, 949 (Nies, J., concurring).

³⁰⁰ *Id.* at 939; *see also id.* at 949 (Nies, J., concurring); *id.* at 939 (Bennett, J., dissenting in part); *id.* at 954 (Newman, J., "commentary"); *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 24, 29–30 (1997) (discussing Judge Nies' statements of the all elements rule in her dissenting opinion below at the Federal Circuit).

³⁰¹ *Pennwalt*, 833 F.2d at 953–54 (Nies, J., concurring).

³⁰² 62 F.3d 1512 (Fed. Cir. 1995) (en banc).

³⁰³ *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17 (1997).

negative consequences.³⁰⁴ To limit these, it encouraged trial judges to apply the previously recognized limitations on the DOE, and further limitations that might be developed in the future, *themselves*, rather than relying on jury instructions and hoping juries would apply those limitations adequately. The Court expressed confidence in the ability of the Federal Circuit to further refine and limit the doctrine.³⁰⁵

Criticism of the DOE had been mounting for years before the *Hilton Davis / Warner-Jenkinson* litigation. Many observers decried the routine use of the DOE as a second chance to assert infringement and the difficulty of appellate review of questionable jury findings of equivalence.³⁰⁶ Critics and supporters alike recognized the DOE's prominence and importance in patent enforcement. In retrospect, it seems that some Federal Circuit judges were frightened by the expansion of the DOE in the *Hilton Davis* litigation.³⁰⁷

Following up on the Supreme Court's suggestion of additional restrictions on the DOE, the Federal Circuit hit the brakes hard in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*³⁰⁸ There, the Federal Circuit greatly extended the long recognized anti-DOE doctrine of prosecution history estoppel.³⁰⁹ The Supreme Court granted review and reversed the harsh aspects of the Federal Circuit's ruling, approving only a small additional limitation on the

³⁰⁴ *Id.* at 28–29. Thus, the Court said, when the DOE goes too far and “take[s] on a life of its own,” it can cause uncertainty as to the coverage of the relevant patent and lead to findings of infringement with little reference to the patent's supposedly unambiguous claims. *Id.*

³⁰⁵ *Id.* at 40.

³⁰⁶ *See* *Litton Sys, Inc. v. Honeywell, Inc.*, 87 F.3d 1559, 1580 (Fed. Cir. 1996) (Bryson, J., dissenting). Judge Bryson approved one of the two applications of the DOE in that case, dissented from the other as extending “equivalence” to systems quite different from what was claimed, criticized the routine use of the DOE as a second theory of infringement, and emphasized that the doctrine could often be “a virtually uncontrolled and unreviewable license to juries to find infringement if they so choose.” *Id.*

³⁰⁷ Judge Plager stated: “There is perhaps no question more important to the health of patents than the scope and application of the judicially-created doctrine of equivalents. It permeates the entire fabric of patent law, and appears in virtually every case involving patent enforcement.” *Litton Sys. Inc., v. Honeywell, Inc.*, 145 F.3d 1472, 1472 (Fed. Cir. 1998) (Plager, J., dissenting).

³⁰⁸ 234 F.3d 558 (Fed. Cir. 2000) (en banc).

³⁰⁹ For many years, the courts had used a flexible version of that doctrine to prevent use of the DOE to recapture, in litigation, patent scope the applicant had surrendered by narrowing his claims during prosecution. In its *en banc Festo* ruling, the Federal Circuit turned this traditional limitation into a far more limiting “complete bar” to any equivalents for vast numbers of patent claims. *Id.* at 569.

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DOE.³¹⁰ The Court's opinion again endorsed the continuing vitality of the DOE and its substantial policy-based underpinnings.³¹¹

3. Death by a Thousand Cuts

By the time of the Supreme Court's *Festo* ruling in 2002, the Federal Circuit had so tightened the legal limitations on the DOE as to render it only a shadow of its former self. And the Federal Circuit has only increased those restrictions since. Some of the restrictions date from well before the creation of the Federal Circuit but have been applied in a more rigorous fashion recently as judges' concerns about the doctrine has grown. Operating together as matters of law, these restrictions became far more limiting than the occasional findings of non-equivalence, as a factual matter, in earlier case law. The following list identifies the main limitations that now confine the DOE to a very small domain:

- a. All Elements Rule: Requires: (i) careful limitation-by-limitation application of the DOE; and (ii) the existence in the accused product of an identifiable and acceptable—and sometimes extremely close—equivalent for each and every claim element not literally present.³¹²
- b. Prosecution History Estoppel: Bars patent holders from using the DOE to recapture subject matter coverage they surrendered by amending claims during patent prosecution.³¹³
- c. No Vitiating Rule: Insists—vaguely—that the DOE never operates to “vitate” any claim element.³¹⁴
- d. Express Exclusion Rule: States that a possible equivalent must not have been “expressly excluded” from coverage by restrictive claim language—while sometimes finding “express exclusions” by impli-

³¹⁰ *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 737–38 (2002).

³¹¹ *Id.*

³¹² See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 21 (1997); *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 949 (Fed. Cir. 1987) (Nies, J., concurring).

³¹³ See *Festo Corp.*, 535 U.S. at 737–38 (2002); *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 591 (Fed. Cir. 2000); *Pharmacia & Upjohn Co. v. Mylan Pharms., Inc.*, 170 F.3d 1373, 1376 (Fed. Cir. 1999); *Charles Greiner & Co. v. Mari-Med Mfg., Inc.*, 962 F.2d 1031, 1036 (Fed. Cir. 1992).

³¹⁴ See *Warner-Jenkinson*, 520 U.S. at 29–30 (1997); *SciMed Life Sys. v. Advanced Cardiovascular Sys.*, 242 F.3d 1337, 1346–47 (Fed. Cir. 2001).

cation in ambiguous language.³¹⁵

- e. Disavowal or Disclaimer Rule: Holds that no potential equivalent can be recognized if it was effectively “disavowed” or “disclaimed” in the patent’s specification or prosecution history—while sometimes finding disavowals by implication.³¹⁶
- f. Dedication Rule: Holds that an alternative structure or process described in the patent’s written description but not claimed in the patent is “dedicated to the public” and therefore out of reach by the patent holder via application of the DOE.³¹⁷
- g. Must Not Ensnare Prior Art: Blocks a patent holder from obtaining coverage in litigation that, because of related prior art, was unavailable by direct claiming in a patent application.³¹⁸
- h. All Advantages Rule: Holds that an equivalent must achieve essentially *every advantage* asserted for the claimed invention in the patent specification or prosecution history, whether or not the asserted advantage is meaningful in fact.³¹⁹

These limitations reflect reasonable objectives, but they can easily conflict with the objectives underlying the DOE, which the Supreme Court has repeatedly upheld. Judges usually state these limitations in absolute terms, but several lack clear indicators of when they should apply, and depending on their application, can block the DOE in almost any situation.³²⁰

³¹⁵ See *SciMed Life*, 242 F.3d at 1341–42 (Fed. Cir. 2001); *Dolly, Inc. v. Spalding & Evenflo Cos.*, 16 F.3d 394, 400 (Fed. Cir. 1994).

³¹⁶ *J & M Corp. v. Harley-Davidson, Inc.*, 269 F.3d 1360, 1368–69 (Fed. Cir. 2001); *Dawn Equip. Co. v. Kentucky Farms, Inc.*, 140 F.3d 1009, 1016 (Fed. Cir. 1998).

³¹⁷ *Johnson & Johnston Assocs., Inc. v. R.E. Serv. Co.*, 285 F.3d 1046, 1051 (Fed. Cir. 2002).

³¹⁸ *Key Mfg. Grp., Inc. v. Microdot, Inc.*, 925 F.2d 1444, 1449 (Fed. Cir. 1991); *Wilson Sporting Goods Co. v. David Geoffrey & Assocs.*, 904 F.2d 677, 683 (Fed. Cir. 1990).

³¹⁹ *Vehicular Techs. Corp. v. Titan Wheel Int’l, Inc.*, 141 F.3d 1084, 1090 (Fed. Cir. 1998).

³²⁰ For example, rule 3, above, is difficult to apply without wiping out the DOE entirely, because finding infringement where any claim element is not literally present arguably vitiates that element. Likewise, the application of rule 4 rests on an elusive distinction between claim language that merely excludes the proposed equivalent and language that might be deemed to exclude it more strongly. Rule 1 routinely requires a fundamentally subjective judgment of whether an alternative structure or step present in the accused invention constitutes a satisfactory equivalent for the missing claim element. Finally, the proper scope of an estoppel under rule 2 is often unclear, and rule 8 both departs from the long-recognized factual nature of the DOE and tends to limit potentially desirable disclosures about the claimed invention by applicants who would like to preserve potential recourse to the DOE.

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The power of these rules lies partly in their number and breadth, but even more in how they operate: As *matters of law*, these rules are applied by judges regardless of how the jury ruled or might rule on infringement under the DOE, and they are reviewable *de novo* on appeal. Thus, they give both trial judges and the Federal Circuit easy means to reject jury findings of infringement by equivalents.

Despite all these limitations, the DOE is not completely dead. Occasionally trial courts find infringement under the DOE, and occasionally the Federal Circuit affirms those rulings.³²¹ Nevertheless, the multiple limitations have had an extraordinary effect. Despite two Supreme Court decisions within a recent period of seven years that reaffirmed the DOE's continuing vitality and the soundness of its underpinnings, these restrictions have greatly weakened—essentially de-fanged—that recently powerful doctrine.

G. *Inequitable Conduct—Pro-Patent Developments Undercut but Being Restored*

For many years, courts have denied enforcement of patents procured by “fraud” or “inequitable conduct.”³²² The usual type of inequitable conduct, though far from the only one, is failure to disclose known relevant prior art to the PTO during patent prosecution.³²³

Over the last two decades, the Federal Circuit has molded the inequitable conduct doctrine, but with remarkable inconsistency and little or no overall direction. Recently, it shifted its approach again—this time very much in favor of patentees. In its inconsistency and the direction of its most recent changes, the Federal Circuit's shaping of the inequitable conduct doctrine is at odds with the other trends discussed in this article. One point of commonality is that the court's recent changes seem to have resulted, in substantial part, from broad criticism of the Federal Circuit's case law and from threats of legislation that

³²¹ See *Depuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1340 (Fed. Cir. 2009) (upholding an award of \$149.1 million based on infringement under the DOE on appeal); *Paice LLC v. Toyota Motor Corp.*, 504 F.3d 1293, 1302, 1316 (Fed. Cir. 2007) (affirming an award of over \$4 million and remanding for determination of ongoing royalty based on the DOE).

³²² See *Digital Control Inc. v. Charles Mach. Works*, 437 F.3d 1309, 1315 (Fed. Cir. 2006) (describing Supreme Court decisions from the 1930s and '40s, which denied enforcement of patents procured by actual fraud and the more recent appellate decisions that have extended the doctrine to less egregious misconduct).

³²³ See, e.g., *Cargill, Inc. v. Canbra Foods, Ltd.*, 476 F.3d 1359, 1364 (Fed. Cir. 2007) (providing a more general statement of the inequitable conduct doctrine).

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would have effected radical change. In any event, the court's evolving jurisprudence on inequitable conduct casts further light on its practices and role in shaping patent enforcement and deserves attention here.

1. Background

Findings of inequitable conduct do not automatically render the associated patent unenforceable, but that is the usual result.³²⁴ Unenforceability usually follows, even if the improper conduct touched only a small part of the patent in question, or only an up-stream patent application. Moreover, until very recently, complete unenforceability was the usual result even though a fair and accurate presentation of the omitted or misstated information would not have prevented issuance of the patent and even though the correct information itself did not render the patent invalid.³²⁵

During the 1980s, accused infringers alleged inequitable conduct as a defense with ever-greater frequency. In 1988 and thereafter, the Federal Circuit referred to the “absolute plague” of inequitable conduct charges which, it said, were habitually asserted in major patent cases.³²⁶ The Federal Circuit then took one step, and the PTO took another, that held promise of cutting-back the proliferating charges of inequitable conduct and correspondingly simplifying and strengthening patent protection. Many developments, however, stood in the way of this result.

2. Initiatives to Rein-in Claims of Inequitable Conduct

In late 1988, the Federal Circuit addressed inequitable conduct en banc in *Kingsdown Medical Consultants, Ltd. v. Hollister Inc.*³²⁷ The resulting unanimous decision tried to discourage routine allegations of misconduct by raising

³²⁴ See, e.g., *Molins PLC v. Textron, Inc.*, 48 F.3d 1172, 1182 (Fed. Cir. 1995).

³²⁵ See, e.g., *Agfa Corp. v. Creo Products, Inc.*, 451 F.3d 1366, 1379 (Fed. Cir. 2006); *Li Second Family Ltd. P'ship v. Toshiba Corp.*, 231 F.3d 1373, 1380 (Fed. Cir. 2000). Dissenting in *Aventis Pharma S.A. v. Amphastar Pharmaceuticals, Inc.*, 525 F.3d 1334, 1349 (Fed. Cir. 2008), Judge Rader referred to the serious consequences of inequitable conduct “with its ‘atomic bomb’ remedy of [complete] unenforceability.” See also *infra* note 333 and accompanying text. Recently, however, the en banc Federal Circuit reversed this long established rule and adopted a “but for” materiality requirement for the types of information that can render a patent unenforceable if deliberately withheld from the PTO.

³²⁶ See *Burlington Indus., Inc. v. Dayco Corp.*, 849 F.2d 1418, 1422 (Fed. Cir. 1988); *Kingsdown Med. Consultants, Ltd. v. Hollister Inc.*, 863 F.2d 867, 876 n.15 (Fed. Cir. 1988).

³²⁷ 863 F.2d 867 (Fed. Cir. 1988) (en banc in relevant part).

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the level of proof an accused infringer must present to trigger possible unenforceability.³²⁸ It emphasized that clear and convincing evidence of actual intent to deceive the Patent Office regarding the subject patent must be presented, along with the omission or misrepresentation of material information, to justify a finding of inequitable conduct.³²⁹ Contrary to some earlier cases, it held that a grossly negligent misstatement or failure to disclose falls short of the necessary culpability.³³⁰

Second, shortly after *Kingsdown*, the PTO instituted rulemaking proceedings to clarify just what information patent applicants must disclose during patent prosecution. For many years, the PTO rules had required the applicant to present all "material" information he/she had,³³¹ and they defined information as material by the vague and liberal "reasonable examiner" test.³³² The courts had adopted this loose PTO standard of materiality for purposes of the inequitable conduct doctrine and unenforceability. Broad and vague, it clearly did not require that information suggest unpatentability in order to be material and subject to mandatory disclosure.³³³

Effective in 1992, the PTO adopted a clearer and narrower definition of materiality. Under this rule, to be material, information must either:

[E]stablish[], by itself or in combination with other information, a *prima facie* case of unpatentability of a claim; or

[R]efute[], or . . . [be] inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the [Patent] Office, or

³²⁸ *Id.* at 873.

³²⁹ *Id.*

³³⁰ *Id.* at 872–73.

³³¹ Information that was otherwise "material" still did not need to be disclosed to the PTO if it was merely cumulative of other information provided to the PTO. This qualification remains in effect.

³³² Information was material if there was "a substantial likelihood that a reasonable examiner would consider it important in deciding whether to allow the application to issue as a patent." 37 C.F.R. § 1.56(a) (1990); *see also* *Rentrop v. Spectranetics Corp.*, 550 F.3d 1112, 1119–20 (Fed. Cir. 2008).

³³³ *See* *Digital Control, Inc. v. Charles Mach. Works*, 437 F.3d 1309, 1318 (Fed. Cir. 2006); *Bristol-Myers Squibb Co. v. Rhone-Poulenc Rorer, Inc.*, 326 F.3d 1226, 1237 (Fed. Cir. 2003); *Hoffman-La Roche, Inc. v. Promega Corp.*, 323 F.3d 1354, 1367–68 (Fed. Cir. 2003); *PerSeptive Biosystems, Inc. v. Pharmacia Biotech, Inc.*, 225 F.3d 1315, 1322 (Fed. Cir. 2000); *see also* *Agfa Corp. v. Creo Products, Inc.*, 451 F.3d 1366, 1379 (Fed. Cir. 2006); *Li Second Family Ltd. P'ship v. Toshiba Corp.*, 231 F.3d 1373, 1380 (Fed. Cir. 2000).

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(ii) Asserting an argument of patentability.³³⁴

The revised rule defines a “*prima facie* case of unpatentability” in narrow terms³³⁵ and expressly rejects any duty to provide information not meeting the new, heightened test for materiality.³³⁶ These narrower standards for what the PTO wants disclosed seemed correspondingly to narrow the kinds of undisclosed information that could trigger findings of inequitable conduct. How could it be improper to fail to present to the Patent Office information that office had formally determined need not be presented?

3. Opportunities Squandered

Early Federal Circuit decisions addressing the PTO’s 1992 rule change deemed it important in assessing inequitable conduct. At least one decision accepted the new and narrower standard of materiality as having replaced the old “reasonable examiner” standard for that purpose.³³⁷ In 2006, however, a Federal Circuit panel addressed the effects of the 1992 rule change at greater length and refused to follow the PTO’s revised rule.³³⁸ Emphasizing the judicial origins of the inequitable conduct doctrine, it downplayed the PTO’s role in the area.³³⁹ Resisting any limitation on the inequitable conduct doctrine, it held that information meeting *either* the vague old reasonable examiner standard *or* the new, narrower PTO standard is material for purposes of the doctrine.³⁴⁰ Subsequent Federal Circuit decisions have tended to follow this 2006 panel decision.³⁴¹

Separately, a number of Federal Circuit decisions diverged from *Kingsdown*’s high standards of proof and requirement for actual deceptive in-

³³⁴ 37 C.F.R. § 1.56(b).

³³⁵ *Id.*

³³⁶ The revised rule states: “There is no duty to submit information which is not material [under the new definition] to the patentability of any existing [*i.e.*, still pending or allowed] claim.” *Id.* § 1.56(a).

³³⁷ In *Bruno Independent Living Aids, Inc. v. Acorn Stairlifts, Inc.*, 394 F.3d 1348 (Fed. Cir. 2005), the Federal Circuit applied the new rule instead of the former definition of materiality in assessing charges of inequitable conduct, explaining that approach as giving proper “deference” to the PTO rulemaking. *Id.* at 1353.

³³⁸ *Digital Control*, 437 F.3d at 1314–15.

³³⁹ *Id.* at 1315.

³⁴⁰ *Id.* at 1316.

³⁴¹ *E.g.*, *Golden Hour Med. Sys., Inc. v. emsCharts, Inc.*, 614 F.3d 1367, 1373 (Fed. Cir. 2010); *McKesson Info. Solutions, Inc. v. Bridge Med.*, 487 F.3d 897, 913 (Fed. Cir. 2007).

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tent. Though occasional opinions restated *Kingsdown's* teachings,³⁴² others accepted inconclusive evidence of materiality and/or inferred the necessary degree of culpable intent from little more than the materiality of the information in question.³⁴³ These decisions suggested effective abandonment of high standards of proof for inequitable conduct.³⁴⁴

As a result, the recent case law offered something for everyone on inequitable conduct and frequently left patents vulnerable to unenforceability.³⁴⁵ When that happened, all claims fell and related downstream patents were infected as well. Moreover, assertions of inequitable conduct tended to undermine respect for patent protection and the effectiveness of our patent system.

4. New Initiatives

In the last few years, many patent practitioners and commentators, and a number of Federal Circuit judges, criticized that court's departure from *Kingsdown's* stringent requirements, and several of the court's judges called for a new en banc examination of inequitable conduct to reinforce stiffer standards.³⁴⁶ Taking more radical positions, some of the recent proposals for "patent reform" legislation would have drastically curtailed the inequitable conduct doc-

³⁴² See *Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 537 F.3d 1357, 1366 (Fed. Cir. 2008); *Ferring B.V. v. Barr Labs., Inc.*, 437 F.3d 1181, 1202–03 (Fed. Cir. 2006) (Newman, J., dissenting) (citing cases following the ruling in *Kingsdown*).

³⁴³ See, e.g., *Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1313–14 (Fed. Cir. 2008); *Pfizer, Inc. v. Teva Pharms. USA, Inc.*, 518 F.3d 1353, 1367 (Fed. Cir. 2008); *Ferring*, 437 F.3d at 1191; *Ferring*, 437 F.3d at 1196 (Newman, J., dissenting).

³⁴⁴ For example, in *Ferring B.V. v. Barr Laboratories, Inc.*, 437 F.3d 1181, 1194 (Fed. Cir. 2006), the Federal Circuit affirmed a summary judgment of unenforceability based on inequitable conduct where the evidence of culpable intent and the evidence of a material omission were both inconclusive. See Judge Newman's critique of the panel majority decision there. *Id.* at 1195–1205 (Newman, J., dissenting).

³⁴⁵ A recent article summarized the frustration of many patent practitioners who had thought the Federal Circuit was readopting relatively high standards of proof for inequitable conduct, as demonstrated by its ruling in *Star Scientific Inc. v. R.J. Reynolds Tobacco Co.*, 537 F.3d 1357 (Fed. Cir. 2008), when the court returned to low standards of proof just a month later in *Praxair, Inc. v. ATMI Inc.*, 543 F.3d 1306 (Fed. Cir. 2008). Cameron Weiffenbach, *Implications of Praxair v. ATMI*, IP LAW 360 (Jan. 14, 2009.), http://www.law360.com/print_article/79672?section=ip.

³⁴⁶ See *Larson Mfg. Co. of S.D., Inc. v. Aluminart Prods. Ltd.*, 559 F.3d 1317, 1342, 1343 (Fed. Cir. 2009) (Linn, J., concurring); *Aventis Pharma S.A. v. Amphastar Pharms., Inc.*, 525 F.3d 1334, 1350 (Fed. Cir. 2008) (Rader, J., dissenting); *Praxair*, 543 F.3d at 1329 (Fed. Cir. 2008) (Lourie, J., dissenting); *Ferring*, 437 F.3d 1195, 1196 (Fed. Cir. 2006) (Newman, J., dissenting).

trine as a defense to infringement claims.³⁴⁷ Probably in response, Federal Circuit recently undertook two initiatives that have changed the inequitable conduct landscape—in favor of patent holders.

First, in 2009, a Federal Circuit panel took a novel approach to cutting-back questionable charges of inequitable conduct: sharply increasing the pleading requirements for such charges based on Federal Rule of Civil Procedure 9(b).³⁴⁸ In *Exergen Corp. v. Wal-Mart Stores, Inc.*,³⁴⁹ the panel applied that rule with unusual stringency. As a result, the inequitable conduct allegations had to include a substantial range of detailed and specific facts regarding the patent holder's claimed misconduct. Most alleged infringers are unlikely to have such detailed facts early in infringement litigation even if they have a basis for thinking inequitable conduct occurred in prosecution of the patent in suit. If *Exergen's* tough pleading requirements are consistently applied, inequitable conduct could become substantially more difficult to assert in many cases.³⁵⁰

Second, amid the widespread criticism in 2010, the Federal Circuit granted en banc review of a split panel ruling that upheld findings of inequitable conduct.³⁵¹ The en banc order requested briefing on a wide range of issues relating to the doctrine, including whether the test of materiality should follow the PTO's rules, the applicable standard of fraud or inequity, and how intent should be determined and factored into the analysis.³⁵² In its subsequent en banc ruling, the court reversed the finding of inequitable conduct and tightened substantially

³⁴⁷ Some such proposals, for example, would have allowed judicial inquiry into inequitable conduct only after the patent had already been ruled invalid and, then, only to the extent based on information underlying the invalidation. Other proposals would have limited assertions of inequitable conduct to proceedings before the PTO. Regarding these and similar proposals, see the March 7, 2008 letter from Harry F. Maneck, Jr., former Commissioner of the Patents and Trademarks Office, to Senators Leahy and Specter, recommending against such changes because they would "eviscerate the doctrine" of inequitable conduct.

³⁴⁸ Federal Rule of Civil Procedure 8 sets out the easy and brief notice pleading generally applicable in federal civil litigation. FED. R. CIV. P. 8. Rule 9(b) requires much more specific factual assertions in allegations of "fraud or mistake," although it allows that "malice, intent, knowledge, and other conditions of a person's mind may be alleged generally." FED. R. CIV. P. 9(b).

³⁴⁹ 575 F.3d 1312 (Fed. Cir. 2009).

³⁵⁰ If those requirements are consistently applied, their importance will depend largely on whether accused infringers are allowed broad discovery to learn the kinds of facts now needed to plead inequitable conduct or whether the initial inadequacy, or absence, of such specifics will limit access to such discovery and doom the defense.

³⁵¹ *Therasense, Inc. v. Becton, Dickinson & Co.*, 593 F.3d 1289 (Fed. Cir. 2010), *rehearing en banc granted*, 2010 U.S. App. LEXIS 9549 (Fed. Cir. 2010).

³⁵² *Id.*

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the materiality requirements for information that can render a patent unenforceable if deliberately misstated or withheld from the PTO during patent prosecution. In particular, the court held that, absent affirmative, egregious misconduct by the patent applicant, the information must be of such importance that, if it had been properly disclosed to the PTO, the patent would not have been allowed.³⁵³

It seems likely that the *Exergen* approach and the en banc ruling in *Therasense*³⁵⁴ will cut allegations of inequitable conduct significantly and, where such allegations are made, facilitate summary adjudication of some of them in favor of the patent holders. Conceivably, the recent changes may reduce both (i) the unfortunate incentives for patent prosecutors to overload their disclosures of prior art in order to minimize the chances of subsequent inequitable conduct allegations and (ii) the desirable incentives spurring them to exercise care and candor in dealing with the PTO.

We must reserve judgment as to the likely consequences of *Exergen* and *Therasense*. Dishonest conduct comes in an infinite variety of forms in the complex field of patent procurement. Such conduct is often hard to ignore but even harder to assess with confidence or on any useful scale. Reasonable consistency and a meaningful reduction of inequitable conduct claims while preserving the incentives for candor and good faith in patent procurement lie near, and perhaps beyond, the limits of our judicial system.

H. Big Changes at the Patent Office—End of the “Customer Service” Paradigm?

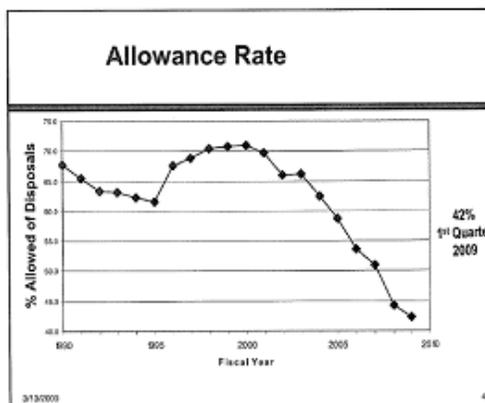
In recent years, many observers criticized the Patent Office for issuing patents that never should have been allowed. In part, the Office seemed to be following a customer service paradigm that viewed patent applicants as the PTO’s customers without adequately recognizing the interests of the public. That changed in 2006-2007 as the PTO took a number of steps to enhance patent quality. Those steps resulted in a higher bar to issuance of new patents and much greater delays in the examination of patent applications. Subsequently, the Obama Administration seems to have reversed course, undoing some of the Bush Administration changes and moving, to some extent, in the other direction.

³⁵³ *Therasense, Inc. v. Becton, Dickinson & Co.*, No. 2008-1511, -1512, -1513, -1514, -1595, Slip op. at 27–30 (Fed. Cir., May, 25, 2011) (en banc).

³⁵⁴ See *supra* note 349 and accompanying text.

In 2007 and since, the PTO declared patent quality a top goal.³⁵⁵ It hired more examiners, added more training, and instituted enhanced reviews of allowed patent applications in selected technologies. Many patent practitioners, however, saw the emphasis on patent quality as code-words for granting fewer patents. Patent examiners certainly took a harder line on many applications, as evidenced by the increase in the number of appeals filed from 3349 in Fiscal Year 2006 to 4639 in Fiscal Year 2007 to 6385 in Fiscal Year 2008.³⁵⁶ At the same time, the rate of allowances plummeted, as shown in the accompanying table from a 2009 presentation by the PTO's general counsel.³⁵⁷

The PTO also increased procedural hurdles, such as the use of restriction requirements;³⁵⁸ and it proposed a number of rule changes that would have further hindered inventors in achieving desired patent protection.³⁵⁹ Subsequently, the Obama Administration's PTO Director Kappos withdrew those proposed rule changes³⁶⁰ in response to heavy



³⁵⁵ 2007 Annual Report of the USPTO, http://www.uspto.gov/go/com/annual/2007/30202_sg1perfrm.html (last visited Feb. 7, 2011); 2008 Annual Report of the USPTO, http://www.uspto.gov/go/com/annual/2008/mda_02_02.html (last visited Feb. 7, 2011).

³⁵⁶ United States Patent and Trademark Office Board of Patent Appeals and Interferences Statistics., <http://www.uspto.gov/web/offices/dcom/bpai/docs/receipts/index.htm> (follow "Receipts and Dispositions by Technology Center FY 2006 [2007, 2008]" hyperlink).

³⁵⁷ James A. Toupin, General Counsel U.S. Patent and Trademark Office, U.S.C. Gould School of Law 2009 Intellectual Property Institute, Slide 4 (Mar. 2009) (on file with author).

³⁵⁸ In an article he co-authored since his return to private practice, Bush Administration PTO Director Jon Dudas writes: "As the USPTO has increasingly relied upon restriction practice to reduce the workload of overtaxed examiners and to deal with increasing pendency (by reducing time spent per application), more and more divisionals are being filed, many unnecessarily." Shine S. Tu, Stephen B. Maebius, & Jonathan W. Dudas, *Squeezing More Patent Protection from a Smaller Budget Without Compromising Quality*, 2 *Landslide* 2, (2009). The article cites as an example that "there has been a growth from only 1.5% of patents receiving restriction requirements to over 50% of patents receiving restriction requirements in the biotech practice group." *Id.*

³⁵⁹ The proposed rules included significant limits on the ability to file continuations (Rule 114), and would have required applicants who file more than five independent claims or twenty-five total claims to carry out substantially more work and provide the examiner with substan-

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criticism and court challenge.³⁶¹ Director Kappos has also worked to counteract the anti-patent perception,³⁶² with some success,³⁶³ and to decrease the backlog and the delays in obtaining patent protection.³⁶⁴ A small decrease in backlog was reported in late 2010, apparently as a result of a significant increase in the allowance rate.³⁶⁵

tially more information, via an examination support document or "ESD," than has traditionally been required for patent applications (Rule 75).

³⁶⁰ Press Release, USPTO, *USPTO Rescinds Controversial Patent Regulations Package Proposed by Previous Administration*, (Oct. 8, 2009), available at http://www.uspto.gov/news/09_21.jsp.

³⁶¹ Several of the critical rules were challenged in, and their enforcement enjoined by, the U.S. District Court for the District of Columbia. A Federal Circuit panel reversed that ruling as to all but one rule and remanded for further proceedings. *Tafas v. Doll*, 559 F.3d 1345, 1364 (Fed. Cir. 2009). A petition for en banc rehearing was granted July 6, 2009, before the rules were withdrawn, leading to the appeal being dismissed on November 13, 2009. *Tafas v. Kappos*, 586 F.3d 1369, 1371 (Fed. Cir. 2009).

³⁶² "[T]here has been speculation in the IP community that examiners are being encouraged to reject applications because a lower allowance rate equals higher quality. Let's be clear: patent quality does not equal rejection." Director Kappos: *Patent quality equals granting those claims the applicant is entitled to under our laws*, PATENTLY-O (Aug. 25, 2009), <http://www.patentlyo.com/patent/2009/08/director-kappos-patent-quality-equals-granting-those-claims-the-applicant-is-entitled-to-under-our-laws.html>.

³⁶³ Patent grant numbers in 2010 have hit an all-time high pace. *USPTO Patent Grant Numbers*, PATENTLY-O (Aug. 19, 2010), <http://www.patentlyo.com/patent/2010/08/uspto-patent-grant-numbers.html>.

³⁶⁴ Press Release, USPTO, *USPTO and UKIPO Announce Action Plan to Reduce Global Patent Backlogs*, (Mar. 10, 2010), available at http://www.uspto.gov/news/pr/2010/10_09.jsp; Press Release, USPTO, *USPTO Opens Application Exch. Program to All Applicants to Reduce Patent Backlog*, (May 17, 2010), available at http://www.uspto.gov/news/pr/2010/10_17.jsp; Press Release, USPTO, *Commerce Secretary Locke Visits the U.S. Patent and Trademark Office to Thank Employees for Their Work in Support of Innovation and the U.S. Economy*, (Oct. 7, 2010), available at http://www.uspto.gov/news/pr/2010/10_47.jsp.

³⁶⁵ See *supra* notes 362–63. Recent estimates are that the PTO has achieved a reduction in the range of seven percent in the number of applications for which it has not provided any response (*i.e.*, has not sent out a first office action) from the peak number of over 760,000 in January 2009, but that there has not been any corresponding reduction of the total number of applications pending, which is more than 1,200,000. See *Despite Efforts to Improve, U.S. Patent Approvals Move More Slowly*, TECH. TRANSFER BLOG, (Jan. 26, 2011), <http://www.technologytransfertactics.com/content/2011/01/26/despite-efforts-to-improve-us-patent-approvals-move-more-slowly/>; see also John Schmid, *Despite Efforts to Improve, U.S. Patent Approvals Move Slower*, MILWAUKEE J. SENTINEL WATCHDOG REPORTS, (Jan. 16, 2011), <http://www.jsonline.com/watchdog/watchdogreports/113830084.html>.

440 **IDEA—The Intellectual Property Law Review****IV. OBSERVATIONS**

The recent retrenchment is diverse in its specifics but broad in scope. Its elements include many adjustments to patent enforcement having independent origins and operation but a unifying theme. The adjustments have pervasively, though unevenly, ratcheted-back advances in patentee power achieved in the recent strong-patents era.

The recent changes affect, more or less strongly, most U.S. patent applications, most licensing initiatives by holders of U.S. patents, and most cases in which U.S. patents are asserted or challenged. Many licensing initiatives and disputes are reaching less patentee-favorable outcomes than they would have achieved without the retrenchment. Many U.S. producers face substantially reduced risks from allegations of patent infringement. The core of patent protection is largely unchanged, and big-dollar judgments and settlements can still eventuate in infringement suits. The practicalities and risks in most cases, however, have changed significantly—in favor of accused infringers. The following paragraphs summarize the main changes.

A. Many Patents Weakened

Invalidation or narrower scope looms as a larger risk for many issued patents.³⁶⁶ Frequently, the increased risk of invalidation influences bargaining power, licensing negotiations, litigation decisions, and settlement proposals. Compounding the enhanced down-side risks of invalidation are less favorable enforcement rules and the reduced up-side rewards for successful patentee plaintiffs. The litigation rules no longer substantially favor patentees, claim scope is narrower and seldom supplemented by the DOE, many patentees are unlikely to qualify for injunctive relief, and the new limitations on damages will often reduce the cash jackpots for victorious patentees. In all these respects, patentees have lost power *vis-à-vis* their putative infringers.

B. “Patent Trolls” Weakened—IT and Other Industries Get a Break

The retrenchment has weakened “patent trolls,”³⁶⁷ reducing their bargaining power *vis-à-vis* the producing/commercializing companies they target.

³⁶⁶ These include those addressed in Parts III.A (patentable subject matter), III.B (obviousness standards), III.C (scope of patent rights), III.D (other increased validity requirements), and III.F (doctrine of equivalents), above.

³⁶⁷ See *supra* note 43.

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Until recently, trolls were especially dangerous. If successful at trial, they could shut-down the operations of a target business or at least force immediate changes there, by obtaining an injunction against continuing infringement. Moreover, lacking any business operations other than acquiring and enforcing patents, trolls were immune to counterclaims of infringement of patents held by the technology companies they often sued. Accordingly such counterclaims, and the cross-licensing settlement approach often used to resolve patent disputes between producing entities, were useless against them.

Now, injunctions are usually unavailable to trolls, and the revised declaratory judgment rules are allowing their likely targets greater opportunities to challenge the subject patents preemptively and to do so at times and in locations less favorable to the trolls.³⁶⁸ Accordingly, trolls have lost a substantial part of their bargaining power. Recent settlement amounts in infringement suits brought by trolls, though confidential, are probably small on average, and trolls seem to be having less success in their licensing efforts generally.³⁶⁹ The beneficiaries of these changes are producing/commercializing companies, especially

³⁶⁸ See, e.g., *supra* notes 44 & 58, and accompanying text.

³⁶⁹ Anecdotal information suggests that settlement amounts are usually small—often less, for each defendant, than the expected costs of litigating the respective infringement suit. See note 369, *infra*, regarding the responses of some major technology companies to notice letters from trolls. Separately, one NPE and apparent troll recently sued several telecommunications companies alleging anti-trust violations in the form of a “devaluation conspiracy” among the technology companies against fifty NPEs and included allegations that the conspiracy was responsible for an eighty-four percent drop in the plaintiff’s successful licensing efforts from March 2007 to March 2010. Complaint at 1, 8, *Siti-Sites.com v. Verizon Commc’ns*, No. 10 Civ. 3751, 2010 WL 5392927 (S.D.N.Y. Dec. 29, 2010). It seems likely that factors other than the alleged conspiracy contributed to that drop. Yet separately, another large and well established apparent troll, this one publicly traded, includes the following as the first “Risk Factor” listed in its securities offering prospectus recently filed with the Securities and Exchange Commission:

We have a history of losses and will probably incur additional losses in the future. We have sustained substantial losses since our inception. Although we achieved profitability for the fiscal year ended December 31, 2010, we have not been profitable in any other year and may not be able to sustain profitability in the future. As of December 31, 2010, our accumulated deficit was \$86.2 million. . . . We expect to continue incurring significant legal, marketing and general and administrative expenses in connection with our operations. As a result, we anticipate that we will continue to incur losses for the foreseeable future.

Supplement dated March 24, 2011 to Prospectus of Acacia Research Corporation, *available at* <http://www.sec.gov/Archives/edgar/data/934549/000095012311029730/d59051e424b5.htm#D59051204>.

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those in the information technology (computer hardware, software, and accessories—collectively, “IT”), e-commerce, telecommunications, and general electronics industries, which have been trolls’ prime targets.³⁷⁰

C. Patent Assertion—Small Patent Holders Face Big Obstacles

As discussed repeatedly above, the Federal Circuit in past years tilted many substantive and procedural rules in favor of patent holders and against accused infringers. This tilt was intended, in substantial part, to mitigate the difficulties patent holders, particularly individual and small entity holders, face in enforcing their patent rights.

As just one example, the Federal Circuit’s “safe haven” and related rules for patent assertion gave patent holders multiple important tactical advantages.³⁷¹ If one or more companies seemed to be infringing a patent, the holder could send out appropriately worded notice letters and thereby: (i) invite licensing negotiations; (ii) trigger possible findings of willfulness and trebling of damages for any continuing infringement; (iii) mitigate any failure on their part to have complied with the marking statute; and (iv) weaken any possible defense of equitable estoppel.³⁷² Despite these acts, the patent holder would (a) remain safe from debilitating court challenges to the subject patent(s) by putative infringers and (b) retain the exclusive right to determine *whether*, *when*, and *where* any litigation regarding the patent would take place. Producing companies receiving such notice letters faced the possibility of enhanced damages awards for willful infringement, at least for periods after receipt of the letters, and injunctions but generally could not initiate proceedings to test the relevant patent(s). This patentee favoritism helped many small patent holders negotiate licensing agreements and thereby realize returns on their inventions.

The current retrenchment has wiped away these and other pro-patentee rules. The result, particularly for small patent holders, is increased difficulty

³⁷⁰ Over the last decade, trolls have imposed significant costs on IT and e-commerce companies. According to statements by in-house counsel for some companies in these industries, non-practicing entities (possibly including some that are not within the clearest category of trolls under the definition given in note 43, above) accounted for well over fifty percent of the demand letters and threats of infringement suits received. The same sources described their companies’ serious concerns about those threats in the recent past and their now-reduced level of concern as a result of the recent adjustments in patent enforcement.

³⁷¹ See *supra* text accompanying notes 40–44.

³⁷² The patent marking statute limits recovery of damages for infringement of patents for items also made/sold by the patent holder or licensee if they fail to mark those items with the number of the relevant patent. 35 U.S.C. § 287 (2006).

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and risk in licensing and enforcing their patents. Putative infringers assessing their enhanced litigation prospects and reduced risks, may offer less for a license, decide that on-going infringement with the possibility of being sued is more attractive economically than patent compliance, or, as now allowed in an increased number of cases, initiate preemptive challenges to the relevant patents. More inventors, investors, and licensees will lose their deserved rewards, and compliance with issued patents will probably decline. Whether this will reduce the incentives or funding for innovation to a significant degree is hard to predict.

D. Patent Procurement—a Swinging Pendulum

The Bush Administration's departure from its previous customer service paradigm, combined with the heightened requirements for validity, made it harder, slower, and more expensive to get patents issued. Despite the PTO's recent acceleration of processing, its backlog of pending applications remains vast and has been cut only microscopically.³⁷³ The long wait times and the moving target of patent allowance still take a heavy toll, particularly in areas of technology where product lifecycles are short: the commercial utility of an invention may expire before a window of patent issuance opens. Smaller inventors suffer disproportionately because of the increased costs and because they do not have a steady pipeline of patent filings to take advantage of the open windows.

E. Pharmaceuticals and Other "Unpredictable Arts" Less Affected

The recent retrenchment is having lesser effects on patents for pharmaceutical and biotech inventions and other inventions in the "unpredictable arts" than on patents in other prominent fields such as IT (computers and software), telecommunications, general electronics, mechanics, etc. For one thing, the new and harsher obviousness assessments are less likely to invalidate patents in the unpredictable arts than in other areas.³⁷⁴ For another, the new limitations on

³⁷³ See *supra* notes 361–64 and accompanying text.

³⁷⁴ The "predictable arts" are disciplines where the results of combining known elements or steps can generally be predicted using engineering principles. Those include electronics, mechanics, computer and software development, telecommunications, etc. The "unpredictable arts" are disciplines where combinations of known elements often produce unexpected and unpredictable results. Those include, particularly, biology, biochemistry, pharmacology, and genetics. Because of the unpredictability in the latter disciplines, combinations of known elements to achieve a desirable new result there are less likely to be held "obvious" under *KSR*

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injunctive relief seem likely to affect a smaller percentage of patents in those areas than in IT, e-commerce, etc.³⁷⁵ Finally, pharmaceutical, biotech, and similar inventions seem to have longer product life-cycles than products in IT, e-commerce, electronics, etc.; and patents for the former types of inventions are often held by cash-rich companies. These factors should mitigate, for many holders of pharmaceutical, biotech, etc. patents, the less favorable substantive rules, the reduced pro-patentee slant of the litigation playing field, and the delays and increased costs in patent examination and issuance. Thus, the heavy reliance pharmaceutical, biotech, and similar companies place on the U.S. patent system should not be seriously undercut.

F. *Mitigating Strategy for Applicants and Patentees—Yet a Bigger Premium on Care*

Modified techniques in patent drafting, prosecution, and enforcement can mitigate a few of the recent patent-weakening developments. *Pro se* inventor-applicants and those represented by less competent counsel may lose out. Briefly, some opportunities are:

For Patent Applicants:

1. Reduce Exposure to the Legal Limitations on the DOE—by added care in crafting the written description and prosecution history as well as the claims.
2. Reduce Reliance on Means-Plus-Function Claim Elements—and take special care when they are used.
3. Beware of Full Scope Enablement and the New Requirements as to Definiteness—*e.g.*, by matching the enabling disclosure to claim breadth and including narrower and clearer claims.

than such combinations in the predictable arts. For further discussion see paragraph following note 187, above; text at note 204, above; and text following note 213, above. *See also* Ortho-McNeil Pharm, Inc. v. Mylan Labs., Inc., 520 F.3d 1358, 1366–67 (Fed. Cir. 2008); *In re Deuel*, 51 F.3d 1552, 1560 (Fed. Cir. 1995); *cf. In re Kubin*, 561 F. 3d 1351, 1361 (Fed. Cir. 2009).

³⁷⁵ In the pharmaceutical industry, patents are usually essential to recouping the costs of drug development, clinical trials for safety and effectiveness, and other regulatory approval efforts. Accordingly, patent applications are made in a high percentage of development work in that area, and issued patents are likely to be held by companies that developed the technology and/or subsequently practice it. This makes injunctive relief likely available for infringement.

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4. Craft and Supplement Method Claims—to help assure validity while maintaining reasonable scope.³⁷⁶
5. Craft Claims to Minimize the Need for Active Inducement and Joint Infringement—pro-patent doctrines recently narrowed by the Federal Circuit.³⁷⁷

For Patentees:

1. Modify the Initial Steps in Patent Assertion—including the notice letter approach—to recognize the loss of most of the safe haven for patent holders' licensing efforts and communications.³⁷⁸
2. Develop Better Proof of Damages—to satisfy the increasing requirements for economically persuasive support for damages awards.
3. Use Care and Moderation in Claim Construction—to avoid invalidation under the full scope enablement doctrine.

G. *Juries' Powers Cabined—Different Emphasis in Trying Patent Cases*

Federal Circuit initiatives have ratcheted back jury power in patent cases and modified the way patent cases must be tried. One initiative is discussed in Part III.C, above, in connection with the ouster of juries and expert testimony from claim construction and the heavy new emphasis on interpretations made by trial and appellate judges. Other recent developments work to the same end: (ii) the heavier legal limitations on the DOE have decimated juries' powers to extend claim coverage and findings of infringement; (iii) the new restrictions on

³⁷⁶ Among other things, method claims seem to be subject to harsher rules of patentable subject matter, apply more narrowly where some aspects of a claimed invention are outside the United States, are less amenable to application of the patent extending doctrine of joint infringement, can no longer trigger application of 35 U.S.C. § 271(f), and are now fully subject to exhaustion.

³⁷⁷ Active inducement of infringement is identified in the Patent Act, 35 U.S.C. § 271(b). The en banc Federal Circuit narrowed that doctrine in 2006 in *DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1304 (en banc in relevant part). In October, 2010, the Supreme Court granted review of *SEB S.A. v. Montgomery Ward*, 594 F.3d 1360 (Fed. Cir. 2010), *cert. granted*, 131 S. Ct. 458 (2010), a decision arguably inconsistent with the holding in *DSU Medical*. Joint infringement is a common law doctrine which the Federal Circuit narrowed in *BMC Res., Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1380 (2007); *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1329 (2008); and *McKesson Techs. Inc. v. Epic Sys. Corp.*, 2011 U.S. App. LEXIS 7531 (Fed. Cir., April 12, 2011).

³⁷⁸ See *supra* notes 370–71.

use of the entire market value rule, the “25% rule of thumb,” and proof of damages generally restrain jury power over monetary awards, enhance the role of judges on damages issues, and require patent holders to obtain and present more definitive evidence on damages; and (iv) the heightened evidentiary requirements and limitations of permissible inferences restrict juries’ ability to find infringement willful. As a result, jury appeal and jury sympathy for patentees have lost some of their importance. Correspondingly, judges have greater roles but also greater exposure to reversal on appeal. Parties and counsel must conduct more rigorous trial preparation and motions practice, develop more rigorous evidence, and address more of their arguments to the judge as opposed to the jury.

H. “Big Dollar” Threats Addressed—“Academic” and “Small Dollar” Goals Fade

The recent judicial retrenchment has addressed some of the stated goals of legislative patent reform,³⁷⁹ but has done nothing for others. Interestingly, a pattern stands out: The judicial reform, thus far, has addressed most of the goals that were based on big-dollar threats to U.S. producers. In contrast, it has bypassed many of the academic or small-dollar goals.

1. Big-Dollar Threats

The big-dollar risks to U.S. producers from infringement suits centered on matters the recent retrenchment has now alleviated: (i) potentially devastating injunctions; (ii) huge domestic damages awards; (iii) low, pro-patentee standards for patent validity; (iv) the formerly substantial pro-patentee slant of litigation rules; and (v) for some producers, awards of huge world-wide damages in U.S. courts under U.S. patents. Because these issues have been substan-

³⁷⁹ Different participants and commentators in the lengthy debate on patent reform have stated differing goals, but many prominent goals were articulated in two major academic studies of the U.S. patent system completed in 2002 and 2003 and in the early reform bills introduced in Congress shortly thereafter. See FTC STUDY and NAS STUDY, *supra* note 4. Agreement on goals among politically powerful industries proved difficult to achieve. Late in the 111th Congress, the only bill with any prospect of passage was S. 515, which then contained a considerably stripped-down set of big-dollar reforms, omitting some of the earlier reform goals and retaining others in watered-down form. Like the earlier reform bills, that bill died with the end of the 111th Congress. The “reform” legislation introduced in the 112th Congress in January 2011 contained few of the “big dollar” provisions that originally motivated legislative patent reform efforts, and what few there were stripped out before passage of that legislation by the Senate in March, 2011. See *supra* notes 1, 2, and 3.

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tially addressed, the intensity of support for legislative patent reform has declined, and the litigation-oriented changes originally central to reform proposals, were recently *deleted* from the pending patent reform bills.

2. Academic and Small-Dollar Items

A number of other goals of legislative patent reform did not reflect big-dollar threats for U.S. businesses and remain to be addressed. These include:

- a. Harmonization and first-to-file (changing the priority between different independent inventors of the same invention from the current U.S. system, favoring the first to invent, to a modified first-to-file system more like that used in other countries);
- b. Reducing the complexity, uncertainties, and costs of patent enforcement (litigation);
- c. Expanding pre- and post-grant administrative procedures for challenging pending or issued patents;
- d. Better and more reliable PTO examinations of patent applications; and
- e. Increased PTO fee-setting and rulemaking authority.

Some of these goals are unattainable judicially because the associated procedures are mandated by statute, while practical or political problems confront others. In any event, the only one on which arguable progress has been made in the recent retrenchment is increasing the care and quality of patent examinations at the PTO.

I. Patent Litigation More Complex—Not More Predictable

Not only has the retrenchment bypassed some goals of legislative reform, it has actually worked against one of them, namely the goal of reducing the complexity and cost of patent litigation and making outcomes more predictable. Indeed, the recent changes have *expanded* the issues likely to be important in patent disputes. This is likely to make trials more complex and expand discovery, motions practice, expert preparation and presentations, and appeals. Multiple factors account for these results:

- a. Injunctions: Making injunctions dependent on the four-factor equity test, and no longer automatic, adds some often complex and judgmental issues to patent infringement suits.

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- b. Damages: Requiring more definitive evidence to support damages awards increases the care and expense that claimants must devote to the damages aspect of infringement litigation and will expand discovery, motions *in limine*, expert preparation and costs, trials, and appeals.
- c. Obviousness: Rejection of the TSM test for obviousness and emphasizing careful analysis under a vague common sense approach tends to expand the scope of inquiry and evidence on obviousness and to increase the associated uncertainty.
- d. Claim Construction: The exposure of interpretations in explicit form to intense review on appeal causes more frequent reversals and re-adjudications of infringement and other issues, increasing costs and delay.
- e. Intent: Initial reform proposals included de-emphasis of intent issues in patent law and litigation to make patent enforcement cheaper and more predictable.³⁸⁰ The recent retrenchment, however, has maintained intent as a key issue and actually increased the importance of intent in proving matters such as willfulness sufficient to support enhanced damages.
- f. Patentable Subject Matter: The recent wide-open regime of patentable subject matter eliminated patent eligibility as an issue in infringement suits. The more recent rejection of that regime and re-imposition of meaningful eligibility limits have reintroduced this often difficult issue in a significant number of disputes.

One may question whether substantial simplification is a realistic goal for big-dollar litigation in a complex field like patent enforcement. Also, by reducing the strength of patent protection and the advantages patent holders formerly held in litigation, the retrenchment might reduce the average rewards of suing for infringement and the number of cases filed. Further, some of the added complexity may be necessary for a fairer and less arbitrary system of patent protection. Still, it is unfortunate that the recent changes tend to increase, rather than decrease, the complexity of patent enforcement.

³⁸⁰ See *supra* note 12 and accompanying text.

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**J. Pressure for Further Retrenchment Dissipated—Continued
Weakening of Patents Unlikely**

Will the courts continue to weaken enforcement of U.S. patents? Some further cut-backs of patent and patentee strength are certainly possible, as can be seen from some currently pending cases. Rulings within the next year or two will involve: (i) Federal Circuit rulings on, and possible further Supreme Court review of, patent eligibility, including for naturally occurring nucleotide sequences, "thin" medical diagnostic or testing practices, and semi-technological business methods³⁸¹ and (ii) possible Supreme Court review of the Federal Circuit's permissive test for sufficient definiteness in patent claims,³⁸² etc.

Individual rulings are impossible to predict. But a continuing trend toward weaker patent enforcement seems unlikely. The recently powerful motivators for cut-backs in patent and patentee strength no longer carry much force. Judicial reform has quieted most industry complaints about unfairness in patent enforcement. Recent congressional testimony, actions by the sponsors of "reform" legislation, and the full Senate's deletion of enforcement-oriented provisions from the pending "reform" bills demonstrate the absence of political pressure for further big cut-backs and the lack of prospects for substantial legislative changes to patent enforcement.³⁸³ The Supreme Court seems less intent than before on reversing excessively pro-patent case law from the Federal Circuit if it retains any such intent at all.³⁸⁴ And the concern among the Federal Circuit judges about further reversals of that court's rulings by the Supreme Court or about unwise legislative reforms, which seems to have motivated some of the recent cut-backs, has necessarily dissipated. Some problems that contributed to pressure for reform remain, and great uncertainty still exists as to some of the

³⁸¹ See *supra* note 181 and accompanying text.

³⁸² See *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325 (Fed. Cir. 2010), *petition for cert. filed*, 131 S. Ct. 847 (Sept. 23, 2010) (No. 10-426).

³⁸³ See *supra* note 378 and accompanying text.

³⁸⁴ Compare the recent relatively pro-patent rulings by a five-Justice majority in *Bilski v. Kappos*, *supra* notes 175-80 and in *Microsoft Corp. v. i4i Limited Partnership*, *supra* note 210, with discussion of the following cases, *supra*: the patent restricting unanimous opinion of the Court in *KSR International Co. v. Teleflex Inc.*, *supra* notes 187 *et seq.*, the Court's patent restrictive ruling and strongly patent limiting plurality concurrence in *eBay, Inc. v. MercExchange LLC*, *supra* notes 66-79, and the strongly patent limiting statements on the merits by Justices Breyer, Stevens, and Souter in *Laboratory Corp. of America Holdings v. Metabolute Labs., Inc.*, *supra* note 163. Of course, the Supreme court could impose further cut-backs of patent strength in, *e.g.*, *Enzo Biochem, Inc. v. Applera Corp.*, or elsewhere. But there no longer seems to be a Supreme Court agenda of weakening patent enforcement as there seemed to be recently.

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areas affected by the recent retrenchment.³⁸⁵ But judicial solutions, if any, are likely to be narrow and unlikely to fit into any further trend of retrenchment.³⁸⁶

K. Climate Change and a Bottom Line

A unifying truth of recent developments is climate change: Global cooling has come to U.S. patent protection and has swept away the recent era of exceptionally strong and increasing patent protection. The changes affect patent availability, validity, coverage/scope, rules and procedures for enforcement, remedies, and the practicality of patent enforcement generally. No longer do most of the Federal Circuit judges lean consistently in favor of stronger patent protection. Many of them seem to agree with Justices Breyer, Stevens, and Souter that sometimes stronger patents can impede innovation.³⁸⁷

The recent changes originated from business clamor and complaints, scholarly studies and writing, Supreme Court rulings and pronouncements, and threats of Congressional action. The main agent of change, however, has been the Federal Circuit. Under fire, that court reversed its quarter-century patent-strengthening orientation and moved to a position of moderation. Overall, the common law approach of legal evolution seems to be working to fix at least some of the perceived problems in an old and important area of law. Substantial problems and challenges remain for our patent system. Now, however, a focus on the difficult task of the PTO in examining applications and deciding what

³⁸⁵ For example, undue concentration of infringement cases in the Eastern District of Texas, though addressed to some extent, is still (i) substantial in relation to the fundamentals that should determine case distribution such as the levels of economic activity, innovation, or infringing activity among judicial districts and (ii) driven mainly by perceived tactical and strategic advantages of patentees in that venue. *See, e.g., supra* notes 50, 51 & 61. Likewise, few commentators think that the quality and dependability of patent examinations by the PTO have improved greatly or no longer constitute significant problems. *See also infra*, note 388 (explaining the uncertainty and political pressure regarding patent eligibility for genetic discoveries and inventions).

³⁸⁶ The potentially big-dollar issue of patentability for human and other genes presents an interesting example here. The question is highly controversial, but the dispute may not be as weighty and consequential as many critics of the recent district court decision in the *Myriad* case say. *See supra* notes 181 & 184. The United States, as amicus curiae, recently argued that naturally occurring but isolated and purified gene sequences are *not* patentable but that many aspects of gene science and engineering, including all the necessary biochemical constructs used in gene identification, separation, engineering, delivery, etc., are patent eligible. *See* Brief for the United States as Amici Curiae, *Ass'n of Molecular Pathology v. U.S. Patent & Trademark Office*, 702 F. Supp. 181 (S.D.N.Y. 2010) (No. 2010-1406), *available at* <http://graphics8.nytimes.com/packages/pdf/business/genepatents-USamicusbrief.pdf>.

³⁸⁷ *See* *Lab. Corp. v. Metabolite Labs., Inc.*, 548 U.S. 124, 127 (2006) (Breyer, J., dissenting).

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patent protection to grant seems more pressing than further efforts to revise patent enforcement.

The trade-offs behind the recent retrenchment are numerous and difficult to assess. Nevertheless, the benefits may outweigh the costs. Some parts of the retrenchment, for example, affect mainly situations where patents created little in the way of desirable economic incentives but could disrupt U.S. production and commerce, impose costs, and/or put U.S. producers/employers at a disadvantage relative to their foreign competitors.³⁸⁸ Other recent changes have re-balanced what had become very pro-patentee litigation or substantive rules. Thus, while the new regime is frustrating enforcement of some meritorious patents and leaving some inventors and investors without deserved rewards, the recent retrenchment may turn out to be good for our overall economy.

³⁸⁸ See the discussion of the recently powerful §271(f) of the Patent Act in Part II.C, above; the discussion of recently automatic permanent injunctions in Part II.A.1, above; the discussion of recently very weak standards of non-obviousness in Part III.B, above; the discussion of the recently strong DOE in Part III.F, above; etc.