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## The Court of Appeals for the Federal Circuit, After Three Decades

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*United States Court of Appeals for the Federal Circuit*

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# The Court of Appeals for the Federal Circuit, After Three Decades

The Honorable Pauline Newman\*

THE EARLY YEARS OF THE FEDERAL CIRCUIT .....	556
THE PRESUMPTION OF VALIDITY .....	558
THE DETERMINATION OF “OBVIOUSNESS” .....	560
PATENT-ELIGIBLE SUBJECT MATTER.....	562
SEQUEL TO THE DOCTRINE OF EQUIVALENTS .....	563
CHARGES OF “INEQUITABLE CONDUCT” .....	564
REMEDIES .....	565
PATENT CLAIM CONSTRUCTION.....	566
AFTER THIRTY YEARS .....	567

This volume celebrates the twentieth anniversary of the Fordham IP Institute, a visionary program of national and international scholarship, inaugurated at the inception of an era dominated by the relation between the law and advances in technology. There is new force to the laws designed to “promote the progress of science and useful arts,”<sup>1</sup> and there is a critical need for scholarly attention to these laws and their application by the courts. The Fordham program continues to meet that need with distinction.

The Court of Appeals for the Federal Circuit is a product of that technology-inspired era. The Federal Circuit arose from a government-initiated study of “industrial innovation,” a theme that

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\* United States Court of Appeals for the Federal Circuit.

<sup>1</sup> U.S. CONST. art. I, § 8.

combines scientific advance with technologic development and industrial investment.<sup>2</sup> The goal of that study was to revive the nation's technology-based industry, at a time of severe economic recession—attributed to the aftermath of the Vietnam War, the politics of Watergate, the pressures of the cold war, and changing trade patterns. The recession of the late 1970s was manifested in high unemployment, plant closings, bank failures, and extreme inflation. And it was understood that the nation's economic strength was the foundation of our leadership of the free world and in the cold war—which was heating up.

The healthiest component of the economy was those industries that were technology-based—but they too were faltering, with retrenchment in research and development, diminished exports, lagging productivity, and failures of competition. The industrial community was concerned about the inadequacy of many aspects of United States law, in statute, regulation, and as evolving in the courts, to serve industrial development and to support the nation's traditional ingenuity and initiative.

In this environment, in 1977 President Carter initiated a major project to enhance the nation's industry, with the focus on incentives for development of new products and improved productivity, based on advances in science and technology. An intensive study was organized, led by the President and the Secretary of Commerce, and directed to all of the areas in which government action might affect industrial activity. The study, called a Domestic Policy Review, was conducted by an Advisory Committee, divided into subcommittees to focus on specific areas of concern, that included the areas of economic and trade policy; environmental, health, and safety regulations; industry structure and competition policy; procurement policy; federal support of research and development policy; labor policy; and patent and information policy. The Committee members were selected to provide optimum representation, understanding, and initiative, from the private and public sectors.

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<sup>2</sup> U.S. DEP'T OF COMMERCE, FINAL REPORT, ADVISORY COMMITTEE ON INDUSTRIAL INNOVATION (1979).

Much has been written about this project, and about its deliberations, hearings, and recommendations. I here concentrate on the formation of the United States Court of Appeals for the Federal Circuit, for I measure the ensuing three decades of this court's jurisprudence in light of the purpose of this judicial restructure in the context of its origin.

The proposal to reorganize the federal judicial structure arose not from abstraction or ideology, but from the practical urgency of recovering the incentive that can be provided by an effective patent system. In the depressed economy of that era the strongest performer was technology-based industry, yet this industry was particularly affected by the increasing inadequacy of the patent system, much of which was attributed to judicial misunderstanding of the law and of industry. The need for uniform and reliable law was vivid. The Committee's proposal of a single national court for patent appeals was grounded in the belief that a court experienced in the patent law and the policy underlying the law could overcome these obstacles and provide effective support to industrial innovation.

The implementation of this judicial restructure is a long story, for strong voices objected to this departure from entrenched tradition, and were skeptical of its prospects. But for the urgency of that long-lasting economic recession, this change would surely not have occurred. A turning point in the debate was the assurance that the court would not be "specialized," by providing it with highly diverse areas of jurisdiction. Thus the new court was assigned national jurisdiction of appeals from the Court of International Trade, the Court of Federal Claims, the several Boards of Contract Appeals, the International Trade Commission, the Merit Systems Protection Board, the Patent and Trademark Office tribunals, and a few other areas, as well as appeals from the district courts in patent cases and contract-based claims against the government. Additional jurisdictions have since been added, including appeals from the Court of Appeals for Veterans Claims and appeals of vaccine injury compensation cases.

With the new Federal Circuit as a national court, patent litigation and the court's precedent became a dominant path for adjusting the patent law, and the court's jurisprudence became

significant to commercial activity. Over these three decades the court's body of precedent has enlarged and matured, and patent rights have become a foundation of research, of investment, and of competition. New issues are constantly arising, for scientific and technological developments present new factual situations that do not readily fit into precedent, such as definitions of patent-eligible subject matter, or the relation of scientific research to patent-based restraints, or new ways of developing and exploiting patents. Such issues reach the court when disputes arise; as the courts try to implement the law in accordance with statute or precedent; and as the courts seek to balance practical economics and fairness. With each judicial decision, precedent adds its weight to one or another competing policy, for there are many facets to the theory and practice of intellectual property.

Patent law has taken on increased importance in the context of today's powerful new technologies, and the commensurate power of their legal framework. Traditional economic factors such as labor productivity and capital markets have been dwarfed by the effects of technology-based industry on economic growth. Added to these effects are the influences on popular culture and the conveniences of modern life, the leisure and prosperity flowing from the products embodying these technologic advances. The extraordinary promise and impact of these advances is what led to the interest in patent law and its judicial application.

#### THE EARLY YEARS OF THE FEDERAL CIRCUIT

The Federal Circuit succeeded to the jurisdictions of the Court of Claims and the Court of Customs and Patent Appeals, providing the opportunity to bring the same statutory interpretation and the same judge-made law to patent issues arising in the district courts, the Patent and Trademark Office, the International Trade Commission, and the Court of Federal Claims. This was an important foundation, for there had been marked differences in law and policy among the Federal Circuit's predecessor tribunals and the regional circuit courts, contributing to the unreliability of the patent grant. The consolidation of appeals from all tribunals, including the district courts of the nation, put an immediate end to

the forum shopping that had existed in patent litigation, for the differences among the circuits was so extreme that the choice of forum often decided the case.

The Federal Circuit early in its existence established uniformity in a wide range of issues, procedural and substantive, and together of far-reaching impact. I list some rulings in the early years of the court's activity, in areas where there had been markedly inconsistent circuit positions, and that together reflected a shift in judicial implementation of the patent law:

- The new court held that patents are presumed valid upon examination and issuance by the Patent and Trademark Office;
- The new court held that proof of inequitable conduct in patent prosecution requires proof of both materiality and deceptive intent;
- The new court held that injunctions are available in patent cases on the same equitable criteria as in other fields of law;
- The new court held that consent judgments and settlement agreements in patent cases are not contrary to public policy;
- The new court held that an assignor can be estopped from challenging the validity of the assigned patent, as others are estopped who transfer property for value;
- The new court held that summary judgment is available in patent cases as in other litigation;
- The new court held that patent infringement is a wrong, not a public service;
- The new court held that the measure of damages is to make the injured party whole, as for other torts;
- The new court held that "synergism" is not required for new combinations of elements, but that the invention is reviewed as a whole;
- The new court held that obviousness is a question of law, and is controlled by the same standards in the Patent Office and in litigation;

- The new court established uniform application of the placement and burdens of proof during litigation.

The court's early decisions were aimed at uniformity, clarity, and predictability, by providing consistency in procedural law and in application of substantive law. It was an era of scientific vigor in chemistry, biology, and physics, as advances after several wars reached practical fruition, and opportunities for industrial application. The Federal Circuit sought not to change the law, but to apply the statute consistently and wisely, in accordance with the precedent of its predecessor courts and the Supreme Court, and adapting the best reasoning of the regional circuits. I marveled at the rapidity with which industrial and entrepreneurial activity responded to the stability achieved by this new judicial structure.

The early Federal Circuit, with each new case, resolved circuit differences. Over these three decades the court has built a large body of precedent, and has considered complex new issues. The questions that today reach the court reflect not only the need for stable application of law and precedent, but the ongoing need to consider application of the law to new technology and new situations. Today's appeals generally reside at the boundaries of the law, in the grey areas where competing policies abut and there are sound arguments on both sides. With such close questions, diversity of judicial viewpoint can arise, producing the "percolation" that scholars feared would be lost to a single national circuit court. However, it is no less important to reach a consistent position on which the technology communities can rely.

Following are some of the early and ongoing procedural decisions that contribute to a stable and predictable law, and brief mention of some areas of current evolution.

#### THE PRESUMPTION OF VALIDITY

One of the first rulings of the early Federal Circuit was to rehabilitate the statutory presumption of validity, by placing the burden of proof on the attacker of the patent, and requiring clear

and convincing evidence of invalidity.<sup>3</sup> This has been called the court's most important decision, and I agree. It redirected the policy-driven trend in the regional circuits, and fostered investment reliance on the patent grant as a vehicle for development and commercial activity. This presumption was the foundation of the "new strength" of patents, and received much early publicity.

However, as technology-based business became a dominating force in the industrial economy, competitors and copiers increasingly challenged the protective role of patents. It was argued that the overloaded patent examining function could not produce patents that warranted the traditional presumption of correctness based on the presumption of agency expertise. The issue eventually garnered the attention of the Supreme Court, and in *Microsoft Corp. v. i4i Ltd. Partnership*<sup>4</sup> the Court sustained the Federal Circuit's position that patent invalidity must be established by clear and convincing evidence.

Concerns about the quality of patent examination have always been critical to the concern for a reliable patent grant. This issue was present during the Committee deliberations that led to the Federal Circuit, and led to the concurrent recommendation for a system of patent reexamination, in order to facilitate challenge to and correctness of issued patents by action within the administrative agency, and thereby to add reliability to the agency's product. The purpose was to provide an inexpensive way to limit or eliminate patents that were improperly granted, and also to provide a mechanism whereby the patentee could remedy flaws in the examination. The goal was to achieve, through the administrative process, a patent that could be a reliable foundation for commercial activity.

The idea of reexamination of issued patents wasn't universally favored, for it is plainly subject to abuse. Initially, only limited grounds for reexamination were authorized. Various statutory changes enlarged the forms of reexamination, and today extensive post-grant review procedures are planned. I await these

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<sup>3</sup> *Lindemann Maschinenfabrik GMBH v. Am. Hoist & Derrick Co.*, 730 F.2d 1452, 1459 (Fed. Cir. 1984).

<sup>4</sup> 131 S. Ct. 2238 (2011).



new arrangements with optimism and hope, for I strongly favor strengthening the agency participation and drawing on its expertise, as well as the potential avoidance of litigation costs and delay, in service to innovation and competition.

I remark that the efforts that led to the America Invents Act are reminiscent of our work thirty years ago, as industry and government collaborated to adjust to the realities and complexities of changes in technology, industry, and commerce.

#### THE DETERMINATION OF “OBVIOUSNESS”

Most litigation concerning patent validity starts with a challenge to the obviousness of the patented subject matter. The new Federal Circuit sought to bring objective standards to this determination. The purpose was to add rigor and objectivity to the decision, both in the examination process and in the courts. Thus the court, early in its existence, established that that for a new combination of elements or steps to be unpatentable on the ground of obviousness, there must be some known teaching, suggestion, or motivation to combine the components to form the new combination. The court explained that such a disciplined analysis would help to control judicial hindsight, wherein knowledge of the inventor’s achievement tended to influence the judicial view of whether the achievement was obvious as a matter of law.

This new analytic criterion served to strengthen the granted patent against attack. However, it was persistently challenged by defendants in infringement actions, and in due time the Supreme Court entered the debate. In *KSR International, Inc. v. Teleflex, Inc.*<sup>5</sup> the Court decided that this criterion was too rigorous, and gave inadequate recognition to the “common sense” of a person of ordinary skill in the subject matter. I cannot fault recourse to common sense. There was extensive commentary at the time of the *KSR* ruling, but I have seen no subsequent analysis of its effect. Has innovation been slowed, or encouraged, by this more flexible standard? Are modifications more readily designed and implemented; is competition enhanced; or are minor improvements

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<sup>5</sup> 550 U.S. 398 (2007).

simply not moved into commerce? I have seen no study of the impact of the Court's ruling on the grant of patents in the Patent and Trademark Office, or on scientific or industrial activity, or on judicial decision.

In connection with the factual criteria by which obviousness is analyzed, the early Federal Circuit stressed fidelity to the Supreme Court's analysis in *Graham v. John Deere Co.*<sup>6</sup> Particular attention was given to the fourth *Graham* factor, the objective indicia or "secondary considerations" of obviousness. The Court had recognized that evidence of factors such as commercial success, long-felt need, and copying is useful in determination of patentability, for such evidence serves to place the invention in the context of its time, based on contemporaneous market response rather than judicial hindsight. Precedent has become inconsistent with respect to the procedural posture of this analysis; that is, are the objective indicia appropriately included in initially determining whether the challenger has presented a prima facie case of obviousness, or is the prima facie case determined without consideration of this factor, moving it into the patentee's burden of rebuttal. I have observed this procedural distinction in litigation, and on occasion that it has affected the result. It is not surprising that in the heavily fact-dependent questions of patenting, conflicts occasionally creep into the court's precedent. Our rule is that in such cases the earlier ruling prevails, unless overturned by the court acting en banc.

It would also be interesting to know whether there is greater recourse to trade secrecy, for technologies that may not meet rigorous standards of patentability; for the trend is toward rigor. An uncertain patent right is a direct path to commercial secrecy—where secrecy is feasible. In turn, tensions arise with the role of a system of patents in making known information that might otherwise be unavailable. Much scientific and technological information appears only in patent documents. The purpose of the statutory requirements of written description and enablement is to add usefully to the body of knowledge, which is then available for study, understanding, research, and improvement. I take note that

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<sup>6</sup> 383 U.S. 1 (1966).

some Federal Circuit decisions may have clouded the public's right to use the scientific and technologic information in patent documents; some clarification ensued, as in *Merck KGaA v. Integra Lifesciences I, Ltd.*,<sup>7</sup> for it is fundamental that the information content of the patent is part of the service to science and the useful arts.

#### PATENT-ELIGIBLE SUBJECT MATTER

The recognition that not all subject matter is eligible to participate in the patent system is not new. It has long been understood that discoveries of natural phenomena, fundamental truths, and abstract ideas are not appropriate for patenting. However, new fields of scientific activity and new forms of practical applications have challenged the simplicity and scope of these terms.

Such challenges have appeared particularly in the new fields of biological and electronic sciences. The Federal Circuit was born while the Supreme Court was considering the patentability of biological modifications in *Diamond v. Chakrabarty*,<sup>8</sup> and of computer-implemented processes in *Diamond v. Diehr*.<sup>9</sup> The Court's rulings in those cases were critical to the industrial development of new biologic and electronic technologies. The Court has continued to review the boundaries of patent-eligibility, and in *Bilski v. Kappos*<sup>10</sup> the Court held that although business-method patents continue to viable, a computerized method of hedging commodities was an abstract idea and for that reason ineligible subject matter. The boundary between an ineligible computer-implemented method and one that survives into patent eligibility has invited litigation as well as discourse. The Court has also considered the patentability of developments in the biological sciences, and recently the Federal Circuit reviewed the issues presented in *Association for Molecular Pathology v. USPTO*.<sup>11</sup>

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<sup>7</sup> See *Merck KGaA v. Integra Lifesciences I, Ltd.*, 545 U.S. 193, 195 (2005).

<sup>8</sup> 447 U.S. 303 (1980).

<sup>9</sup> 450 U.S. 175 (1981).

<sup>10</sup> *Bilski v. Kappos*, 130 S.Ct. 3218, 3231 (2010).

<sup>11</sup> *Ass'n for Molecular Pathology v. USPTO*, 689 F.3d 1303, 1308 (Fed. Cir. 2010).

The Court has also considered the patentability of developments in the biological sciences, and recently the Federal Circuit reviewed the issues presented in *Association for Molecular Pathology v. Myriad Genetics, Inc.*,<sup>12</sup> after the Court held in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*<sup>13</sup> that the diagnostic procedure there at issue was not patentable subject matter. Evolving scientific capabilities raise questions of widespread public and private interest, and judicial resolution invokes policy concerns as well as objective law. I doubt that the final chapter has been written, as experience tests adjustments in patent-eligibility against public benefit and the needs of industry.

It may be that the development of some new technologies warrants a more effective form of accommodation than is available through traditional patent law. Three decades ago we considered whether some burgeoning technologies were adequately served by the standard rules of patenting. A resulting technology-specific law was the Semiconductor Chip Protection Act<sup>14</sup>—a 1984 statute directed to protection of mask works, and rendered obsolete by further advances in chip technology. Still, I wonder whether the time is ripe for consideration of fundamental principles, in the search for an optimum system of incentive and support for science and industry.

#### SEQUEL TO THE DOCTRINE OF EQUIVALENTS

Early rulings of the Federal Circuit applied this doctrine generously, at a time of critical need for enhanced incentive to patentees. Revitalization of the doctrine of equivalents was part of the “new strength” of patents, for access to equivalency weighs on the side of the patentee. With time, and with pressures for precision in patenting and predictability in enforcement, the court’s viewpoint shifted, and access to equivalency has given way to the rigor of the “notice” function of patent claims. Although the principle of a doctrine of equivalents was preserved by the Court in

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<sup>12</sup> 2012 WL 3518509 (Fed. Cir. 2012).

<sup>13</sup> *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1294 (2012).

<sup>14</sup> Semiconductor Chip Protection Act of 1984, 17 U.S.C. §§ 901–914 (2012).

*Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*,<sup>15</sup> it is rare to see a successful infringement action based on equivalency.

Uncertainty as to the rights of not only patentees but also competitors caused the demise of the doctrine of equivalents. I am told that the patent-concerned communities seek to compensate for loss of this equitable recourse, by presenting broader descriptive texts and otherwise to secure sufficient literal scope to support commercial activity. The issues are complex, for with the need for early patent filing, with the effect of early publication, and the high cost of participation in patent systems, we need to be concerned lest the patent incentive law entails more obstacle than accommodation.

#### CHARGES OF “INEQUITABLE CONDUCT”

The Federal Circuit early in its existence took on the issue of “inequitable conduct,” for in the complexity of the patenting process, virtually any choice made by patent attorneys and inventors was fodder for this challenge. When this aspect of patent litigation was observed by Judge Nichols when he came to the Federal Circuit from the United States Court of Claims, he called it a “plague.”

The Federal Circuit undertook to stem the tide, and ruled that to sustain a charge of inequitable conduct, there must have been both a material misrepresentation to the Patent Office, and intent to deceive or mislead. The court held that both components of the charge must be established by clear and convincing evidence. For a while this slowed the barrage, but precedent became inconsistent, and the court resolved conflict with its en banc decision in *Therasense, Inc. v. Becton, Dickinson and Company*.<sup>16</sup>

I don't know if this will slow the accusations, for the charge is apparently used as a tactic to personalize the attack, to divert the attorney who must defend his integrity through his conduct of the patenting process, and to divert the judge into suspicion of all concerned. Recently a district court saw through a specious charge

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<sup>15</sup> *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 40 (1997).

<sup>16</sup> 649 F.3d 1276 (Fed. Cir. 2011) (en banc).

of inequitable conduct and awarded attorney fees to the defender—but but that’s a rare event. Thus far, it seems still to be a plague.

#### REMEDIES

Other changes wrought by the early Federal Circuit related to equitable relief and the measure of damages, bringing these remedies back into the mainstream of commercial litigation. For example, a preliminary injunction was rarely granted in patent cases, enabling the infringer to skim the cream of the invention and, if the patentee eventually prevailed, pay damages of no more than a “reasonable royalty.” The court’s establishment of the availability of preliminary relief during litigation, when the criteria for such relief were met, was viewed as part of the “new strength” of patents. And in *eBay, Inc. v. MercExchange, L.L.C.*<sup>17</sup> the Court observed that issuance of an injunction to the successful patentee is not automatic, but depends on the traditional equitable factors for injunctive relief. In cases in which the patentee is not itself practicing the invention, the courts have so recognized in assessing damages for past infringement and a license extending into the future.

The Federal Circuit adapted to patent damages the tort-law criteria of making the injured party whole, when injury and fault have been established. This was a shift in the trend for patent cases, for on occasion the damages award was limited to a modest royalty, whatever the circumstances of the infringement and the extent of the commercial injury. The return to the award of lost profits, when such were warranted, was another contribution to restoration of the value of patents. Three decades of precedent have provided refinements, generally in the direction of implementing the statutory remedies for infringement in the contest of the common law of tort remedy.

Enhanced damages for “willful infringement” are authorized by statute, and have been implemented in accordance with common law principles for deliberate disregard of law. The Federal Circuit has added rigor to the criteria for award of

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<sup>17</sup> 547 U.S. 388 (2006).

enhanced damages, requiring a showing of reckless disregard of known patent rights, and that willful infringement is a question of law for the judge, not the jury.<sup>18</sup> This area, too, is undergoing evolution.

#### PATENT CLAIM CONSTRUCTION

The early Federal Circuit concentrated on the assignment of imparting precision, uniformity, and predictability to the judicial treatment of patent issues. To this end the court adjusted the roles of judge and jury in the trials of patent issues, for the vagaries of juries, in the context of the often complex technology embodied in patents, were believed to contribute to the unreliability of the patent grant, flowing from uncertainty of outcome of patent litigation. To change this pattern, the Federal Circuit held that “claim construction” is a matter of law, not a question of fact, and thus for the judge, not the jury.<sup>19</sup> The Supreme Court affirmed this approach in *Markman v. Westview Instruments, Inc.*<sup>20</sup> The consensus is that this decision has had a larger effect on patent litigation, and the resolution of patent disputes, than any other judicial action.

The correct decision of complex issues and technology-based disputes is a challenge to the institution of justice—and is not unique to patent cases. We sometimes even see *Daubert*<sup>21</sup> hearings at the trial of patent cases—a pretrial screening of the reliability of scientific and technical information offered by the expert witnesses. The Court’s *Daubert* ruling preceded the Court’s *Markman* decision by three years, but they move in the same direction in that they tend to remove technical issues from the jury.

In accordance with the *Markman* decision, the judge first decides what the patent covers, by “construing” the patent claims. The judge reviews the claims in light of what was previously known and what is described in the patent, as well as what was

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<sup>18</sup> *Bard Peripheral Vascular Inc. v. W.L. Gore & Assocs.*, 682 F.3d 1003, 1008 (Fed. Cir. 2012).

<sup>19</sup> *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970–71 (Fed. Cir. 1995).

<sup>20</sup> 517 U.S. 370, 390 (1996).

<sup>21</sup> *See Daubert v. Merrell Dow Pharm. Inc.*, 509 U.S. 579 (1993).

discussed with the patent examiner. The judge then resolves any disputes about the meaning, scope and limits of the terms that define the patented invention. Often with an eye to specific issues of the litigation, the judge may restate the claims in plainer technical language or greater technical detail. This procedure often results in a “claim construction” that either embraces, or excludes, the accused technology.

Experience with the *Markman* protocol demonstrates that it is indeed more favorable to stability and predictability of patent decisions. However, the removal of scientific and technologic questions from the jury has also served to remove them from the trial judge, for they receive de novo determination on appeal to the Federal Circuit. Many patent appeals reach the Federal Circuit on summary judgment or preliminary injunction granted after claim construction. According to many critics, this places the final decision prematurely in the wrong hands, for unlike the district court we have not experienced the hearing and argument, and received the exhaustive exposition of the patent claims. That is, of course, true.

The interpretation and understanding of the technology is the most demanding aspect of patent litigation, and the correct application of the law to technical issues is critical to confidence in the judicial system. From the earliest days of the nation, there was concern about the complexity of the subject matter of patents. At the time of the 1790 Patent Act,<sup>22</sup> Congress debated a proposal that patent disputes be tried not by the regular judiciary but by three “men of science;” the report said “there will be a much greater probability of justice done.” In this ongoing concern, the next phase is arising under the America Invents Act<sup>23</sup> and its systems of expert review. Again, I am optimistic and I am hopeful.

#### AFTER THIRTY YEARS

When the Federal Circuit was young, the court undertook to restore the system of patents to its statutory incentive role, in

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<sup>22</sup> Patent Act of 1790, ch. 7, 1 Stat. 109–12 (1790).

<sup>23</sup> Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011).



straightforward decisions that drew on the best reasoning of the regional circuits, and the experience of the courts that were absorbed into the Federal Circuit. The impact was immediate. Then, as new technologies raised new issues of scientific fact and technological application, the Federal Circuit undertook new and thoughtful application of patent principles.

Over these three decades, most of the evolution in the substantive law has arisen from new fields of science and technology. But even in areas where the law is mature, with extensive Federal Circuit precedent and Supreme Court elaboration, the aspects in dispute often are very close on their facts and their relationship to the law, and they take the court to the edges of conflicting policies.

The overarching consideration in the development of patent jurisprudence is the national interest, attuning the patent law to technologic advance and industrial growth, to the public benefits of the law and the economic policies of the nation. Over the twenty-eight years in which I have been privileged to serve the Federal Circuit, the nation's technology-based industries have become of dominant economic importance. The patent system is a critical tool of these industries, and the effect of the patent law on not only technologic advance but the relationships of industrial incentive, risk, and competition, is omnipresent in the evolution of the law and its application.

When I look at the state of industrial innovation when the court was created, I'm heartened by the role of the Federal Circuit. However, the cost of participation in the patent system has greatly increased, and the cost of litigation is boundless. Let us not lose sight of the commercial and societal and philosophical foundations of patent law, as we relish this age of excitement in new and advancing science and technology. Over the thirty years of the court, there's been an immense flowering of entrepreneurial energy. I'm certain that we as a nation would not have come as far under the judicial regime of the past.

The work of the Federal Circuit is not over, and many weighty questions require attention. We must resolve internal conflicts, and evolve the law in optimum direction. The court must be

2013]      *THE FEDERAL CIRCUIT AFTER THREE DECADES*      569

vigilant to its constitutional charge, as we confront the challenges of the present and the future.