TAMING PATENT: SIX STEPS FOR SURVIVING SCARY PATENT CASES

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This Article mainly is for federal district judges, who keenly appreciate how modern patent law challenges their competence. The Supreme Court's 1996 Markman *decision requires district judges to make highly scientific and technological decisions in patent cases. But these judges typically have no background in science or technology at all. This Article surveys six concrete steps judges should consider for coping with this stressful situation—steps that the parties may not disclose, because it may not be in their interest to do so. (1) Maximize the value of adversarial education by considering educational vehicles that other judges have praised. (2) Respect ethical limits on judicial education options. (3) Consider court-appointed experts under Rule 706 of the Federal Rules of Evidence, an option 80 percent of judges have never tried but one that is effective according to the judges who have. (4) Consider court-appointed technical advisors, especially now that the Federal Circuit's 2002* TechSearch *decision has given guidance about this uncommon but promising alternative. (5) Consider a patent special master: a way to hire an experienced patent law expert to supplement the court's regular law clerks. (6) Recite and obey the* Vitronics *mantra to avoid a pitfall created by the Federal Circuit.*

This Article also is for federal appellate judges. In the wake of the 2002 TechSearch *decision, this Article contributes to the national conversation about how appellate courts should think about the little-used procedural office of the technical advisor.*

INTRODUCTION 1414
I. MAXIMIZE THE VALUE OF TRADITIONAL ADVERSARIAL EDUCATION 1421
II. AVOID ETHICAL PROBLEMS 1423
III. CONSIDER COURT-APPOINTED EXPERTS 1425
A. Compensation 1428
B. Judicial Propriety 1429

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C. Neutrality ... 1430
D. Locating the Right Expert ... 1432
E. Timing ... 1434
F. Ex Parte Communication ... 1435
G. Conclusion About Court Experts ... 1437
IV. CONSIDER COURT-APPOINTED TECHNICAL ADVISORS ... 1438
A. What Is a "Technical Advisor?" ... 1438
B. *TechSearch* ... 1439
1. *TechSearch* Procedures ... 1441
a. Document the "Exceptional" Need ... 1441
b. Conduct a "Fair and Open" Selection Process ... 1441
c. Use Affidavits to Enforce Limits on the Technical Advisor's Duties ... 1443
d. Make the Advisor's Tutelage Explicit ... 1445
e. Tax the Advisor's Fee to the Parties ... 1446
2. *TechSearch* Procedures Evaluated ... 1447
a. Praise ... 1448
b. Questions ... 1451
(1) Improper Summary Judgment Decisions? ... 1453
(2) Inappropriate Deference? ... 1453
(3) Advisor Bias? ... 1458
3. Are Ex Parte Contacts with Technical Advisors Ethical? ... 1459
C. Conclusion About Technical Advisors ... 1461
V. CONSIDER PATENT SPECIAL MASTERS ... 1461
A. Practical Contours of the Role ... 1461
B. Evolution of Special Master Practice ... 1463
C. The Success of an Informal System ... 1465
D. Impending Rule 53 Revisions ... 1466
E. Are Patent Special Masters Ethical? ... 1470
F. Conclusions About Patent Special Masters ... 1473
VI. RECALL THE *VITRONICS* MANTRA ... 1473
CONCLUSION ... 1475
APPENDIX A ... 1477
APPENDIX B ... 1482

INTRODUCTION

Modern patent law challenges judicial competence in a very serious way. Our federal judiciary enjoys a wonderful reputation for experience and the right motivation, but no one counts on our federal judges to be scientific and technological experts. Yet today's patent doctrine requires that they make highly technical and scientific decisions. This situation creates a predicament. Nothing about this predicament should embarrass district judges, who certainly did not create the situation. Their best response is to acknowledge and surmount

the challenge. This Article aims to help. I describe six specific points district judges should consider as soon as a large and thorny patent case appears on their docket:

1. Maximize the value of traditional adversarial education.
2. Respect ethical limits on other options for judicial education.
3. Consider court-appointed experts.
4. Consider court-appointed technical advisors.
5. Consider patent special masters.
6. Recall the *Vitronics* mantra.

The general goal here is to narrow the gap between the skills judges possess and the work judges must do. Some of these steps may appeal to litigants, but many will not. This Article lays out options that district judges cannot count on parties to present.

To understand the basic challenge to judicial competence, one must know a bit about patents and patent law. The Patent and Trademark Office (PTO) awards patents to inventors to promote investment in research and development. A patent gives the inventor the exclusive right to that invention for twenty years. Anyone else who makes, uses, or sells that invention infringes the patent, and can be made to answer as an infringer in a federal lawsuit.

An issued patent is the document that defines the invention. The claims are the guts of the patent for the legal purpose of deciding whether someone is an infringer. The claims make up the final portion of the patent document. A claim states precisely what it is that the inventor owns. There need only be one claim, but patent drafters commonly include many. If the patent owner believes another person is infringing the patent, one must resolve this issue by comparing the language of the claim with the features of the suspect thing. The key legal rule is that the suspect thing—sometimes called the "accused device"—must embody every element set forth in the patent claim for there to be infringement.

For example, imagine a patent covering an idea proposed by Steve Martin: the fur sink. After this patent describes what a fur sink is and so on, the document would conclude with a claim that might read as follows:

I, Steve Martin, claim:

A wash basin lined with fur.

Suppose that after having obtained this patent from the PTO, Mr. Martin hears of a company that has launched a new product that is a wash basin lined with synthetic fur. The company has not asked Mr. Martin for a license. It refuses his demand that it take one. Should this dispute devolve into litigation, the federal court would analyze the suit by listing the elements in the Martin patent claim and comparing the accused device against that

list. A logical interpretation of the Martin claim would find two elements: the accused device must be (1) a "wash basin" (2) lined with "fur." But does "fur" mean natural fur only or fur of any sort, natural as well as synthetic? The legal system must resolve this ambiguity through the authoritative process of interpreting the patent claim.

On this common and fundamental issue, there are two crucial legal rules. The first rule is the long-established principle that the patent claim is to be interpreted from the standpoint, not of a lay person, but of one with "skill in the art."[1] The second rule, the *Markman* doctrine, puts real bite into the first. Established in 1996 by the landmark decision in *Markman v. Westview Instruments, Inc.*,[2] this young doctrine holds that the job of claim interpretation squarely belongs to the district judge and not to the jury. This recent development puts district judges on the spot. Before, they could simply submit the whole dispute to the jury, which would eventually deliver a verdict for either the plaintiff or the defendant. The jury logically would have had to embrace some authoritative interpretation of disputed patent claims, but claim interpretation was their problem and not a question that district judges had to answer. *Markman* changed all that. Now a district judge must write down on a piece of paper whether "fur" means natural fur only or fur of any sort, including synthetic fur.

This *Markman* duty does not seem challenging with fur sinks, but consider some more realistic settings:

- Use of incident laser radiation for coplanarity inspection of package or substrate warpage for ball grid arrays, column arrays, and similar structures.[3]
- A process wherein the polyolefin surface is treated with a corona discharge, primed with a solution containing ethyl silicate, ethyl orthosilicate, and tetra butyl titanate, bonded to an uncured elastomer, and cured by application of heat while applying pressure to the laminate.[4]

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1. *E.g.*, Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1332 (Fed. Cir. 2001) ("Throughout the construction process, it is important to bear in mind that the viewing glass through which the claims are construed is that of a person skilled in the art."); Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 1580 (Fed. Cir. 1995) (stating that the language of the claim is to be given its ordinary meaning to a person having ordinary skill in the relevant art).
2. 517 U.S. 370 (1996).
3. *See* Robotic Vision Sys., Inc. v. View Eng'g, Inc., 189 F.3d 1370, 1371 (Fed. Cir. 1999).
4. *See* Canton Bio Med., Inc. v. Integrated Liner Techs., Inc., 216 F.3d 1367, 1369–70 (Fed. Cir. 2000).

- Computer chips for converting analog input voltage information into a binary digital format using a delta-sigma modulator and a digital decimation filter.[5]
- A method of identifying compounds that modulate cell surface protein-mediated activity by detecting intracellular transduction of a signal generated upon interaction of the compound with the cell surface protein.[6]

You get the idea. If these descriptions do not seem scarily forbidding or alien to you, you must be some sort of technologist. We cannot depend on district judges to have such training. There are no science prerequisites in Article III. Nothing in the process of selecting federal judges screens for technologists. We therefore may fairly picture the average district judge as a smart, accomplished, and legally sophisticated person who is technologically ignorant: an able and successful lawyer before appointment, but a person who might have been a history or English major and who may never have taken a course in calculus or in any basic science at all. Exceptions no doubt exist, but they simply prove the rule. Moreover, this technologically ignorant person must understand, not just *some* science and technology, but developments at the cutting edge of worldwide human technological achievement. Beyond the challenge of understanding the newest high technology, *Markman* forces judges into the very heart of darkness: the ambiguities in the claims, which center disputes not on the easy aspects of the technology, but rather on technologically forbidding material at its most obscure. In short, our present law expects technologically uninformed judges to answer questions of high technological sophistication. This dilemma is serious.

Reversal rates tend to confirm this view. One Federal Circuit judge offers the disputed estimate that the Federal Circuit has reversed 37.3 percent of district court claim constructions.[7] This rate is perilously close to the results of flipping a nickel.

There is more to enliven the plight of district judges interpreting patent claims. First, "[c]laim construction is a matter of law and is reviewed *de novo* on appeal."[8] The Federal Circuit does not give the district court's interpretation

5. *See* Crystal Semiconductor Corp. v. TriTech Microelectronics Int'l, Inc., 246 F.3d 1336, 1343–44 (Fed. Cir. 2001).

6. *See* Sibia Neurosciences, Inc. v. Cadus Pharm. Corp., 225 F.3d 1349 (Fed. Cir. 2000).

7. *See* Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1476 n.4 (Fed. Cir. 1998) (en banc) (Rader, J., dissenting); *cf.* Christian A. Chu, *Empirical Analysis of the Federal Circuit's Claim Construction Trends*, 16 BERKELEY TECH. L.J. 1075 (2001).

8. Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001); *see also* Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 807 (Fed. Cir. 2002) ("Claim construction is a question of law, which this court reviews without deference."); Cybor Corp., 138 F.3d at 1455–56 ("[W]e review claim construction *de novo* on appeal.").

the benefit of the more deferential abuse of discretion standard. District judges get no slack here.

Review by the Federal Circuit carries a second implication that is practical rather than doctrinal. Review by a national court reduces the practical deference that can come from a district judge's good but regional reputation. Every experienced circuit judge in a regional circuit has some opinion about each district judge in that circuit. District judges are aware of this reality. A district judge with a fine local reputation can gain confidence that this de facto prestige will insulate a decision that might be inspected more closely had it been issued by a judge who is less respected by the local circuit. In contrast, such de facto protection is far less likely to insulate district court decisionmaking in patent cases, which all are appealed to the Federal Circuit. The Federal Circuit reviews decisions not from a regional circuit neighborhood, but from a national sea of district judges. For instance, the eleven active circuit judges of the Court of Appeals for the Sixth Circuit review the work of only fifty-seven active district judges, while the eleven active circuit judges of the Federal Circuit can review the work of the roughly six hundred active district judges in the nation.[9] The circuit judges of the Federal Circuit obviously have far less of an idea of the reputation of a particular Ohio district judge, for instance, than do the circuit judges of the Sixth Circuit. In sum, district judges know that their *Markman* interpretations will receive searching review from inquiring strangers, not the more friendly assessment that can come from a group that knows and respects the district judge's reputation.

Third, Federal Circuit review of claim interpretation is not limited to the interpretations that parties offer to the district court. The plaintiff may tell the district judge that a patent claim means A, the defendant may say B, and the Federal Circuit may rule that the right reading is C. In *Mantech Environmental Corp. v. Hudson Environmental Services, Inc.*,[10] for example, the disputed term was "well." Plaintiff Mantech's expert said a "well" was "a device that provides access to groundwater."[11] Defendant Hudson's expert said that as used in the patent "well" meant instead a "dual-purpose well" that both injects and monitors groundwater.[12] The district court adopted the defendant's proposed definition and ruled that the patent term "well" meant "a structure used for both monitoring and injecting the groundwater."[13] Based on this claim interpretation, the district court granted summary judgment of

9. *Compare* 244 F.3d X and XIV *with* 133 F. Supp. 2d VII–XXV.
10. 152 F.3d 1368 (Fed. Cir. 1998).
11. *Id.* at 1370.
12. *See id.*
13. *Id.*

noninfringement to the defendant.[14] On appeal (and then only at the stage of oral argument[15]), plaintiff Mantech adopted a new "fallback"[16] interpretation of the word "well," which the Federal Circuit then adopted as authoritative: "We thus hold that the meaning of the claim term "well" in the patents in suit is a structure that enables *either* monitoring *or* injecting of groundwater, *or both*."[17] Under this interpretation, the Federal Circuit vacated the district court's grant of summary judgment. The Federal Circuit did not estop the plaintiff's change in definition or even remark on the tactic. The lesson is plain: District courts must select the right definition from the alternatives offered by the parties, as well as from other potential definitions that now may be unimagined but that may develop later on. This job of interpretation is not just hard; it is *very* hard.

Perhaps the *Mantech* decision is a sport. In a later en banc decision, the Federal Circuit declared that the waiver doctrine "has been applied to preclude a party from adopting a new claim construction on appeal."[18] The court applied the doctrine in that case to preclude a party "from proffering a claim construction on appeal that changes the scope of any of the claim construction positions that it advanced in its binding report [to the district court]."[19] The Federal Circuit also applied the doctrine of judicial estoppel to preclude a party "from changing its claim construction position on appeal from any position that it *successfully* advanced at the district court."[20] The Federal Circuit cited precedent from before and after *Mantech* during this discussion, but it did not mention the *Mantech* case itself. Perhaps *Mantech* then is simply an outlier. District courts, however, cannot be certain that their own interpretations will escape the *Mantech* treatment in some future review. The dilemma of the district court remains acute.

This dilemma is especially acute because, as a matter of practice, interlocutory Federal Circuit review is unavailable. One sensible district court response to the prospect of a difficult and uncertain matter of interpretation would be to certify the issue for immediate review by the Federal Circuit. The Federal Circuit, however, apparently never accepts *Markman* matters for interlocutory appeal. The district court and parties thus must endure the completion of very costly proceedings based on a claim interpretation with a considerable chance of being found incorrect.

14. *See id.* at 1371.
15. *See id.* at 1371–72.
16. *Id.* at 1371.
17. *Id.* at 1375 (last emphasis added).
18. Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1346 (Fed. Cir. 2001).
19. *Id.* at 1347.
20. *Id.* at 1349 (emphasis added).

Does this apparent dilemma truly matter? In some situations, the importance of having *some* decision outweighs the importance that the decision be "right." One implication of the Coase Theorem is that parties will bargain to the efficient outcome where transactions costs are low, whatever the initial assignment of property rights. Under this view, perhaps the key thing is for the judge simply to decide what the patent means, as swiftly and cheaply as possible, so the two parties can then transact to an efficient outcome.

This view is unappealing here. Very few judges are willing to render decisions just to decide. Most judges want to do and to be "right," as a matter of craft, self-perception, and self-respect. Second, scientifically and technologically informed *Markman* decisions are likely to facilitate settlement, which is good. Informed decisions usually are easier to forecast than uninformed decisions, which may seem merely arbitrary to litigants. It is easier to settle a case when both sides share the same prediction about the odds of the judge's decision than otherwise.[21] Third, efficiency is not the only or primary goal that federal judges serve. There is also the notion of justice. It can offend a sense of justice to believe that an uninformed and objectively baseless mechanism resolves large suits. Fourth, a view that federal judges are akin to uninformed random number generators can damage the reputation of the federal judiciary. The rule of law is a precious American resource. It forms a stable foundation for a great deal that we take for granted. As one surveys wobbling national economies and governments throughout the world, we should not ever take our exceptional national success for granted. Cynicism about the validity of basic federal property rights assignments is a force that can corrode more than just the attitude of some patent litigation professionals across the country. For these reasons, I proceed on the premise that judicial technology decisions should be technologically informed.

If judges do not begin with specialized knowledge but must make difficult scientific and technical decisions, what is to be done? Plainly they must gain a scientific and technical education if they are to perform their work with competence. I propose six concrete steps:

1. Maximize the value of traditional adversarial education.
2. Respect ethical limits on other options for judicial education.
3. Consider court-appointed experts.
4. Consider court-appointed technical advisors.
5. Consider patent special masters.
6. Recall the *Vitronics* mantra.

21. *See generally* George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1 (1984).

These options are the most important, and the most plausible, to explore in commercially significant cases in which stakes are high. Many of these options raise litigation costs. They are akin to judicial user fees. Many expensive options are inapt for cases of limited financial significance or of sharply disproportionate budget resources. In a hefty matter where both parties have litigation budgets in the range of seven or eight figures, however, the scale of the case can make costly options more attractive to consider. With that qualification, I offer six concrete steps a district judge may wish to consider when confronted with a challenging patent infringement suit.

I. MAXIMIZE THE VALUE OF TRADITIONAL ADVERSARIAL EDUCATION

Excellent lawyers should offer a trial judge an excellent education in the subject of the litigation. The most passive form of judicial education will come through witness testimony, in connection with a *Markman* hearing and/or trial. If the lawyers are not delivering to the district judge's satisfaction, the judge should not be bashful about demanding more and better help. This judicial education can take many forms. Very early in the litigation, the district judge may wish to discuss with counsel just how to structure this educational process. Experienced counsel will have informed opinions.

District Judge Howard Matz offers this overview:

> "Tutorials" are a relatively recent method that judges and lawyers are using with increasing frequency, especially in patent cases. They are designed to impart an understanding of the basic scientific principles or fundamental technologies before any in-court hearings are conducted. In general, they consist of an informal, usually off-the-record, presentation to the trial court. The parties and the court agree on the format, which can vary widely. Typically, each side first submits a written statement (containing as much "plain language" as possible) about how the technology or device, etc. was designed (or functions or differs from the other side's, etc.). . . . Usually, the parties exchange these submissions in advance.[22]

Judge Matz recounts that parties commonly follow these submissions with a live presentation, in varying formats. He comments that it is "essential" that the parties agree, in writing, that all statements made during the tutorial be off limits for later and other use in the litigation.[23]

22. A. Howard Matz, *Who Can Understand This Stuff? How American Courts Attempt to Educate Judges and Juries About Science and Technology* 14 (prepared for the International Conference on the Rights of Intellectual Property in Cyberspace, May 2001).

23. *Id.* at 15.

Here are some more ideas for discussion with counsel. I take these points from sessions I have conducted on behalf of the Federal Judicial Center (FJC) with district judges in districts around the nation, from 1995 through the present. These meetings typically have been small and seminar-like, in which district judges interact with me and with each other about their experiences in this area.

One possible teaching vehicle is a computer slide show tutorial, given by lawyers or their experts. The parties may be able to agree on one technology teacher, but for advocacy reasons it may be more common that each side would like the court to hear from its own lawyers or experts. These technology teachers may appear as "guest lecturers" in open court, with the court reporter transcribing the talk. Alternatively, the court may prefer (and the parties may assent to) off the record show and tell sessions with the experts, preferably with physical models or samples of the gizmos. Some judges may prefer the informality and interchange that an in-chambers forum may encourage, if counsel are agreeable. Judges may also feel more comfortable if the student-teacher relationship is less overt. At least one judge prefers to frame the session as an educational session for the court's judicial law clerks, with the clerks asking most of the questions and the judge watching and participating as she or he finds useful.

Another popular option is the video tutorial. The quality and information value in a thirty-minute video can be impressive. Some students are visual learners, and any given district judge may well find that a picture truly is worth a thousand words. Another advantage of a video is that judges can watch it at their leisure, in private, over and over again, without ever feeling bashful about hitting replay. (Judges also may wish to ask for an audio version as well for listening in the car or in other settings.) One knowledgeable Los Angeles patent litigator told me in 2001 that a thirty-minute trainer video "can easily cost $100,000, depending on how good you want it to be."[24] This cost sounds impressive, but would be a small fraction of the total litigation budget for a large case, and can be instrumental in helping a judge to understand the central technical issues. Many district judges have a high opinion of the value of a carefully planned and focused trainer video. It may be desirable if the parties can agree to produce a single video, but it is also possible and perhaps faster for each side to produce its own video. I have heard experienced judges speak to both sides of this issue: Some prefer the coherence and economy of a single video that both sides cooperatively author, while others fear that forcing parties jointly to produce a single video can dumb down or dilute the result.

These training techniques can be sound investments for cases that already are very expensive. But one may wonder whether the adversary system works

24. Telephone interview with a lawyer who requested anonymity.

well enough here. There certainly are many complaints about the quality of scientific decisions made through the process of litigation. A central problem is that judges may share suspicions about the reliability of technical experts retained by self-interested parties. District judges striving to do excellent work may want more than what this version of the adversarial process delivers. If so, these judges can consider additional steps.

II. AVOID ETHICAL PROBLEMS

When judges want help understanding something outside their field, an abiding instinct is to contact an independent expert for help. The behind-the-scenes judicial decisionmaking in the classic copyright case of *Arnstein v. Porter*[25] illustrates the point. The action occurred long before the American Bar Association promulgated its influential Model Code of Judicial Ethics in 1972.[26] In that case, plaintiff Arnstein sued famed composer Cole Porter, claiming that Porter's song *Begin the Beguine* plagiarized Arnstein's composition.[27] On appeal, renowned Circuit Judge Clark studied the sheet music to determine whether the songs were the "same," then checked his conclusion against the reactions of his secretary and his law clerk. Then the judge spent a Sunday afternoon with his old friend Professor Luther Noss, the organist at Yale. Clark reported Noss's conclusion, which was that Arnstein's claim of copying was "fantastic," to the rest of the panel, with Clark's suggestion that they "do the same thing with a really good musician."[28] Judge Frank blasted this conduct in a court memorandum. Clark later wrote that he "did not think the criticism well taken."[29] I know from personal experience that this judicial instinct to call a professor for help in a technical area survives today.

There is a problem with this instinct. "[E]xcept as authorized by law," Canon 3(A)(4) of the *Code Of Conduct For United States Judges* bars "*ex parte* communications on the merits, or procedures affecting the merits, of a pending

25. 154 F.2d 464 (2d Cir. 1946).

26. JEFFREY M. SHAMAN ET AL., JUDICIAL CONDUCT AND ETHICS § 1.02, at 3–4 (3d ed. 2000).

27. The decision sketched some background to this suit:

> Plaintiff said that defendant "had stooges right along to follow me, watch me, and live in the same apartment with me," and that plaintiff's room had been ransacked on several occasions. Asked how he knew that defendant had anything to do with any of these "burglaries," plaintiff said, "I don't know that he had to do with it, but I only know that he could have." . . . Plaintiff, not a lawyer, appeared pro se below and on this appeal.

Arnstein, 154 F.2d, at 467–68.

28. MARVIN SCHICK, LEARNED HAND'S COURT 127 & n.8 (1970); *see also* Schick, *Judicial Relations on the Second Circuit, 1941–1951*, 44 N.Y.U. L. REV. 939, 941–47 (1969) [hereinafter Schick, *Judicial Relations*].

29. Schick, *Judicial Relations*, *supra* note 28 at 129.

or impending proceeding."[30] This Canon does permit a judge to "obtain the advice of a disinterested expert on the law applicable to a proceeding before the judge *if the judge gives notice* to the parties of the person consulted and the substance of the advice, and *affords the parties reasonable opportunity to respond*."[31] The Commentary to this Canon adds further detail:

> The proscription against communications concerning a proceeding includes communications from lawyers, law teachers, and other persons who are not participants in the proceeding, except to the limited extent permitted. It does not preclude a judge from consulting with other judges, or with court personnel whose function is to aid the judge in carrying out adjudicative responsibilities. A judge should make reasonable efforts to ensure that this provision is not violated through law clerks or other staff personnel. An appropriate and often desirable procedure for a court to obtain the advice of a disinterested expert on legal issues is to invite the expert to file a brief *amicus-curiae*.[32]

The wisdom of this ethical precept is debatable, but I leave that issue alone here. For now, the key points are simply that this ethical standard is the existing rule, and judges do well to obey the rules laid down. Justice Kennedy has offered these useful comments on the Code of Conduct:

> In the federal system, we have structures both for the enforcement of ethical rules and for the advice and consideration of ethical questions.
>
> ***
>
> There are a few things you need to know about the Code. First its canons are advisory. Judges are expected to comply with them, but there is no sanction if they do not. Of course, to the extent the Code's philosophy is reflected in specific statutes, such as disqualification for ownership of stock, the judge is obligated to comply by law.
>
> Although compliance with the Code is not mandatory, almost all federal judges are most diligent in conforming their conduct to its provisions. Our judges want to follow high ethical standards, and they regard the Code as an appropriate and essential guide.[33]

Federal judges must curb that instinct to phone a professor. They could give the parties notice and an opportunity to respond, but these burdens typically extinguish the judge's interest in this option.

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30. CODE OF CONDUCT FOR UNITED STATES JUDGES, Canon 3(A)(4), in 175 F.R.D. 363 (1998) [hereinafter CODE OF CONDUCT], *available at* http://www.uscourts.gov/guide/vol2/ch1.html (last visited June 6, 2003).

31. *Id.* (emphasis added).

32. *Id.*

33. Anthony M. Kennedy, *Judicial Ethics and The Rule Of Law*, 40 ST. LOUIS U. L.J. 1067, 1073 (1996).

Judges have a responsibility for deciding the parties' dispute on the pleadings and evidence properly before them. Judges must not conduct their own factual investigations of cases. For instance, a California state court judge erred in a criminal hit and run case by contacting an auto parts dealer during a jury trial.[34] The judge wondered whether a rear light lens for the defendant's type of car would match the trial evidence. The parties apparently had not addressed this point. In a possibly understandable but injudicious reaction, the energetic judge spoke with the parts dealer during the lunch break. Impressed with his findings, the judge afterward resumed by interrupting the defense case to call the parts dealer as the court's own witness, "with minimal notice to the parties and over objection from both sides."[35] The result was a triumph for truth but a defeat for our American style of justice. As the California Supreme Court put it, the judge's "mistake was abandoning his adjudicative role for an investigatory one."[36]

It is possible to ask an expert to file an amicus brief on a knotty point. Judge Jackson asked Professor Lawrence Lessig to do so in the famous *Microsoft* litigation, and the Lessig brief became an authority in the case.[37] As a practical matter, however, this option is uncommon and usually is unattractive. If a judge is to go to the effort of identifying and arranging for the involvement of some expert, usually the judge will want input more flexible and interactive than the formality of a brief permits. In this situation, the judge should consider appointing a court expert under Federal Rule of Evidence Rule 706.

III. CONSIDER COURT-APPOINTED EXPERTS

District judges have clear power to appoint their own technology teachers, thanks to Federal Rule of Evidence 706.[38] A 706 expert is an expert witness

34. Ryan v. Comm'n on Judicial Performance, 754 P.2d 724, 734 (Cal. 1988); *see also infra* notes 134–139 and accompanying text; SHAMAN ET AL., *supra* note 26 (collecting and discussing cases).

35. *Ryan*, 754 P.2d at 734.

36. Wenger v. Comm'n on Judicial Performance, 630 P.2d 954, 963 (Cal. 1981) (cited in *Ryan*, 754 P.2d at 734).

37. United States v. Microsoft Corp., 253 F.3d 34, 47 (D.C. Cir. 2001), *cert. denied*, 534 U.S. 952 (2001).

38. Federal Rule of Evidence 706(a) provides:

> The court may on its own motion or on the motion of any party enter an order to show cause why expert witnesses should not be appointed, and may request the parties to submit nominations. The court may appoint any expert witnesses agreed upon by the parties, and may appoint expert witnesses of its own selection. . . . A witness so appointed shall be informed of the witness' duties by the court in writing, a copy of which shall be filed with the clerk, or at a conference in which the parties shall have opportunity to participate. A witness so appointed shall advise the parties of the witness' findings, if any; the witness' deposition may be taken by any party; and the witness may be called to testify by the court

who answers directly to the judge. The judge need not obtain consent or even input from the parties before appointing such an expert, although it is advisable to keep parties fully informed and to seek stipulations when possible. If the 706 expert also testifies before a jury, it is proper to allow the jurors to learn that the court appointed the expert witness.[39]

The idea of the court expert has considerable support in theory. By counseling district judges to "be mindful" of their various options, including their 706 authority,[40] the Supreme Court "joined a long list of recent proponents of court-appointed experts."[41] District judges who have appointed 706 experts have "reported a high degree of satisfaction with the services provided by the expert . . . ."[42]

Let me add a personal note here. Since writing the first draft of this Article, I was appointed a state court judge and at the moment I am assigned to a small Los Angeles court house that has an exceptional reliance on court-appointed expert witnesses: Mental Health Court, just north of Dodger Stadium. This court's highly specialized jurisdiction includes the issue of criminal defendants' competence to stand trial. On a daily basis, this court appoints psychiatrists as court experts to evaluate these defendants. This practice, it appears, is highly successful. There are fewer than a dozen psychiatrists on the panel that does this work. The specialized bar that serves this courthouse knows and trusts these individuals. It is legally possible to go to trial on the issue of competence alone, but trials are extremely unusual. Instead, the prosecution and the defense attorneys match the expert's evaluation against their own perceptions of the case. Not infrequently there can be a request for a second opinion. And then the cases settle, in line with the trusted experts' evaluation. This example is highly specialized and idiosyncratic, in part because nearly all of the lawyers and the experts are repeat players. Moreover, neither lawyer on a particular case may favor trial if convinced the defendant is truly incompetent, unlike the patent case where each side may want to defeat the other no matter what. Nonetheless, the situation is a

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> or any party. The witness shall be subject to cross-examination by each party, including a party calling the witness.

FED. R. EVID. 706(a).

39. *See id.*

40. *See* Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 595 (1993).

41. Joe S. Cecil & Thomas E. Willging, *Accepting Daubert's Invitation: Defining a Role for Court-Appointed Experts in Assessing Scientific Validity*, 43 EMORY L.J. 995, 995 & n.4 (1994) (citing twelve endorsers and critics of the 706 power); *see also In re* High Fructose Corn Syrup Antitrust Litig., 295 F.2d 651, 665 (7th Cir. 2002), *cert. denied*, Archer-Daniels-Midland Co. v. Dellwood Farms, Inc., 123 S. Ct. 1251 (2003) (recommending that the district judge appoint a 706 statistics expert "rather than leave himself and the jury completely at the mercy of the parties' warring experts").

42. Joe S. Cecil & Thomas E. Willging, *The Use of Court-Appointed Experts in Federal Court*, 78 JUDICATURE 41, 42 (1994).

striking instance where court experts can work like a charm. The result is speedy and informed resolution of cases that require expert input.

Yet the truly striking thing about the power to appoint expert witnesses is how rarely most judges use it. Federal Rule of Evidence 706 has been around since 1975. Its precursors are decades older.[43] The FJC's empirical research shows, however, that only 20 percent of a 1988 sample of district judges had ever appointed a 706 expert. (This sample seems very reliable; the questionnaire went to 537 then-active district judges, and 431 of these judges responded,[44] resulting in a response rate of 80 percent.)

This evidence is consistent with anecdotes I encounter outside the context of Mental Health Court in Los Angeles. For instance, in a judicial discipline action, I once heard a California state judge testify on behalf of another judge's good judicial character. The witness judge praised the respondent judge as admirably innovative. The witness offered the example of the respondent judge's willingness to use court-appointed experts under California Evidence Code section 730, which is analogous to Federal Rule of Evidence 706. California judges have had this power since 1925,[45] but apparently they have used it so infrequently that its mere invocation impressed another judge as notably innovative.

Why have four out of five federal judges never used their power to appoint court experts? This reluctance hardly stems from judicial affection for battling partisan experts. From the perspective of discovering truth, the presentations of adversarial experts have been problematic for a long time. The partisan expert witness has enormous potential as a weapon of pure advocacy. Excellent trial lawyers know this potential. They risk disadvantage and even defeat if they do not wring every drop of advocacy power from their retained experts. In the process, the search for truth can suffer. An expert witness can be the advocate's strongest ally. The expert can speak directly to judge and jury with a demeanor chosen for Walter Cronkite-like sincerity. The expert's motivation can be prompted by ample compensation and guaranteed through careful selection. For the advocate, finding and selecting experts can be a momentous event in the litigation process. Resume horsepower is useful, but better yet is a compelling personal communication style married to the proper attitude. What is the proper attitude? It can be a subtle thing, perhaps detected through give-and-take on casual and seemingly

43. *See* Kaehni v. Diffraction Co., 342 F. Supp. 523, 527 (D. Md. 1972) (describing the origin of one procedure dating back to 1958).

44. *See* Cecil & Willging, *supra* note 41, at 1004 n.33.

45. The first provision in California law to allow the appointment of experts by courts was California Code of Civil Procedure section 1871, enacted by Statutes of California 1925, chapter 156, page 305. That section was recodified in the Evidence Code at section 730 in 1965.

irrelevant issues during a private telephone call or a relaxed interview in a comfortable office. For the trial lawyer puzzling over whether to retain this expert, a core question is whether the expert will become a team player. At some deep level, will the expert come to embrace the cause of the client? Experts with the proper attitude willingly deploy their potentially awesome experience and intelligence in the advocate's service. The result is unlikely to involve lying or deception, if for no other reason than such conduct rarely survives cross-examination. The result is, however, likely to be highly partisan. And the highly partisan character of expert testimony can imperil the search for truth. When one trial lawyer tells a colleague in an unguarded moment that the lawyer is in the process of "shopping for an expert," we should reflect on how accurate this phrase truly is. As a result, there have been serious doubts about the adequacy of adversarial experts for a century or more.[46]

Judges know about these problems with retained experts. Why then have they usually made so little use of court-appointed experts? Judges mention six main issues with using their 706 power: compensation, judicial propriety, neutrality, difficulties in locating experts, timing, and ex parte communication.[47] These issues deserve attention, but are tractable, and are not persuasive reasons to avoid court experts altogether.

A. Compensation

This practical point goes to the heart of the issue, because few truly "expert" experts will appear as volunteers. They tend to have busy schedules. However, Federal Rule of Evidence 706 clearly authorizes the court to require the parties to fund the expert, and at a rate that will induce expert participation.[48] The

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46. *See, e.g.*, Winans v. New York & Erie R.R., 62 U.S. (21 How.) 88, 101 (1858) ("Experience has shown that opposite opinions of persons professing to be experts may be obtained to any amount . . . .") (patent case); William L. Foster, *Expert Testimony,—Prevalent Complaints and Proposed Remedies*, 11 HARV. L. REV. 169, 170–71 (1897).

> It is often surprising to see with what facility and to what an extent [experts'] views can be made to correspond with the wishes or interests of the parties who call them . . . . [T]heir judgment becomes so warped by regarding the subject in one point of view that even when conscientiously disposed, they are incapable of expressing a candid opinion . . . . They are selected on account of their ability to express a favorable opinion, which, there is great reason to believe, is in many instances the result alone of employment and the bias growing out of it.

Id.; Learned Hand, *Historical and Practical Considerations Regarding Expert Testimony*, 15 HARV. L. REV. 40 (1901).

47. *Cf.* Ellen E. Deason, *Managing the Managerial Expert*, 1998 U. ILL. L. REV. 341, 394–95 (stating that uncertainty about authority and proper procedures can deter the appointment of managerial experts).

48. *See* FED. R. EVID. 706(b) ("Expert witnesses so appointed are entitled to reasonable compensation in whatever sum the court may allow . . . . In [cases like patent actions] the compensation

district judge decides how to allocate this cost burden. The judge may initially direct that the parties split this cost equally, for instance, and revisit this allocation once it is clear which party has prevailed. Expert witness compensation thus is not a serious problem in typical patent litigation.

I exclude the exceptional case where one party is an individual of limited means. Patent cases generally are between two commercial entities with substantial litigation budgets. For litigants of this sort, it is appropriate to think of the experts' compensation as a form of user fee to be born by parties that seek extraordinary services from our nation's judicial system. For such litigants, there are unlikely to be many practical problems in getting the parties to pay the bills that the court assesses for the expert. The district judge need merely order that the parties compensate the expert at a certain rate, in the manner the expert specifies.

B. Judicial Propriety

One very experienced federal district judge told me that he was well aware of Rule 706 but that he was unwilling to use the power out of regard for his judicial role. This judge respectfully disagreed with the framers and supporters of this Rule as to its wisdom. The essence of the judicial role is neutrality, this judge submitted, and judges compromise their neutrality by entering the merits of a dispute even slightly, as is apt to happen when the court anoints a testifying witness with the court's imprimatur. The fear is that the witness then will ally the court with one party or the other, at least in some degree. This judge's fear is that something precious then is gone. As a result, this judge personally is unwilling to use the 706 power. I have heard other judges echo variants of this view.

This argument is not persuasive, even though it is a conscientious objection based on a profound consideration, and even though I respect these judges' judgment and experience. What exactly is the correct balance between a judge's twin obligations to be neutral and to do justice? The issue is a large and persistent one for a trial judge. It appears commonly and in many different settings. Consider this example. Suppose a lawyer objects that a pending question to a witness is "irrelevant." Suppose further that the evidence truly is inadmissible because it is privileged and not because it is irrelevant. So the objecting lawyer is right, but for the wrong reason. The judge's most neutral response is simply to say, "Overruled." The problem is that the judge thereby allows inadmissible evidence into court, simply because of poor lawyering.

shall be paid by the parties in such proportion and at such time as the court directs, and thereafter charged in like manner as other costs.").

Alternatively, the judge may respond, "Overruled as to relevance, but sustained as to privilege." In the interest of justice, this judge now has departed from Olympian neutrality in some measure. There also are many intermediate stances, where the judge replies with a hint: "Overruled on that ground," or, more suggestively, "Overruled as to relevance, but is the objection also on grounds of privilege?" Which stance is the right balance of neutrality and justice? There is no one right answer, and there is no requirement that one particular judge adopt a consistent stance in every setting. As much as anything, this issue is one of individual judicial style and temperament, as well as of the demands that press on the court at that moment.

It may be useful here to distinguish between neutrality and passivity. A neutral judge decides matters on the merits and not because of bias against one party. A passive judge, by contrast, does nothing beyond choose between options as the parties present them. Judicial neutrality does not require judicial passivity. A judge can take the initiative in creating options beyond those presented by the parties, so long as the judge remains willing to submit creative options to the parties and to listen fairly and openly to their responses before reaching a final decision on the merits. Thus a judge need not be passive to remain neutral. There is a danger, it is true, that judges will be seduced by their own proposals. But a judge can control that risk. The lesson here, then, is that judges must safeguard their neutrality if they undertake the independent step of appointing a court expert.

Many judges have a keen appetite to do justice. That objective is one of the glories of their job. Federal Rule of Evidence 706 is valid law. It represents the status quo and the conventional wisdom. Some judges may choose to err on the side of passivity and to decline to use this available power for reasons of conscience, but at minimum judges must be aware that this conventional and approved tool is available to them. According to the rules laid down, there is nothing improper or injudicious about a judge's decision to appoint expert witnesses in accord with the provisions of Federal Rule of Evidence 706.

C. Neutrality

Some say there is no such thing as a truly neutral expert, because everyone has a bias.[49] Although perhaps not inevitably true, this point is quite

49. *See, e.g.*, Matter of Fuchsberg, 426 N.Y.S.2d 639, 648 (N.Y. Ct. Jud. 1978).

> [I]t cannot be assumed that legal and other experts will give only objective advice. They may have developed philosophical loyalties which affect the advice that they give; as practicing attorneys they may have cases involving the same problems on which they are rendering

canny. But if so, so what? Judge Richard Posner offers one response:

> The main objection to [the 706] procedure and the main reason for its infrequency are that the judge cannot be confident that the expert whom he has picked is a genuine neutral. The objection can be obviated by directing the party-designated experts to agree upon a neutral expert whom the judge will then appoint as the court's expert. . . . The neutral expert will testify (as can, of course, the party-designated experts) and the judge and jury can repose a degree of confidence in his testimony that it could not repose in that of a party's witness. The judge and jurors may not understand the neutral expert perfectly but at least they will know that he has no axe to grind, and so, to a degree anyway, they will be able to take his testimony on faith.[50]

Moreover, court experts need not be perfect to be worthwhile. The question ought to be whether, on balance, court experts will improve the quality of judicial decisionmaking. Judges (perhaps with the parties' input) obviously should make every effort to select an expert who is as impartial as possible.[51] The resulting expert is likely to be far more impartial than those of the parties. In any event, Rule 706 experts (like other experts) face deposition and cross-examination, which aims to expose bias and lack of neutrality.[52] One rejoinder might be that the judge (and perhaps the jury) will not take sufficient account of cross-examination because the selection and appointment process will blind the judge to the expert's failings. The sensible cure for this problem is for judges to do something they are trained and expected to do—retain their open minds—rather than to exclude a valuable source of information completely because it might be flawed in one respect.

Some judges also express the related concern that court experts will have a disproportionate and unwarranted impact on the jury and that this is bad. But if the key issue before the jury is a matter of science or technology, and the less partisan expert's views are pertinent, it seems logical and laudable that this more reliable and authoritative voice would speak loudest to jurors. This result would seem to be a victory for truth *and* justice.[53] Judges who are not convinced by this logic may prefer, however, to reserve use of court

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> advice; as consultants they may owe allegiance to business or other interests that could benefit from acceptance by courts of their viewpoints.

Id.; Ellen E. Deason, *Court-Appointed Expert Witnesses: Scientific Positivism Meets Bias and Deference*, 77 OR. L. REV. 59 (1998).

50. *In re* High Fructose Corn Syrup Antitrust Litig., 295 F.3d 651, 665 (7th Cir. 2002), *cert. denied*, Archer-Daniels-Midland Co. v. Dellwood Farms, Inc., 123 S. Ct. 1251 (2003) (citations omitted).

51. *See infra* note 60 and accompanying text.

52. *See supra* note 38.

53. *See, e.g.*, Samuel R. Gross, *Expert Evidence*, 1991 WIS. L. REV. 1113, 1188. *But cf.* Deason, *supra* note 49, at 98–141 (examining complexity of issue).

experts to nonjury settings—most prominently, to the claim construction or *Markman* context. Alternatively, these judges may be more attracted to using experts in a nontestifying role, a role I describe in Part IV.

D. Locating the Right Expert

Locating the right expert will take some time, but the search process itself can be straightforward. Three steps can make this traditionally unstructured[54] task organized and even fun.

The first step is to appreciate that the most useful experts will be people who combine knowledge of the relevant field with fine communication and teaching skills. There often is little need to get a Nobel prize winner or one of the top people in the discipline. The law requires that the claim be interpreted according to one with "skill in the art." The demand is for an ordinary expert, not an "expert" expert. A superb teacher may be more useful than an award-winning researcher. For this reason, teaching evaluations or awards may be as or more pertinent than a massive list of well-placed publications.

The second step is to understand precisely from what field the expert should be drawn. This process requires the court to grapple with the disputed terms in the patent claims, which in turn requires input from the parties. The district judge might announce early in the litigation (perhaps by standing order, in districts where patent litigation is very common) that the appointment of a court expert is a possibility and that the parties therefore must (1) identify disputed claim terms and (2) describe the type of expert witness who would make an appropriate 706 expert for that issue.

Once the court has labeled the sort of expertise sought, it can tackle the actual process of the search. It is wise to seek the parties' assistance, both to allocate effort efficiently and because it is preferable that the parties agree on the expert, if possible.[55] The court might ask the parties to locate and submit three candidates on whom they agree. Some judges also might prefer that the parties conduct this search without contacting candidates directly. This limitation makes searching more difficult, but it also prevents a party from litigating the case to candidates during the search process. Alternatively, the judge can order that any contact between candidates and litigants take

54. *E.g.*, Cecil & Willging, *supra* note 42, at 44 n.4 ("Judges are afforded great discretion under Rule 706 in designating a procedure for appointing such an expert.").

55. *See id.* at 45 ("The judge should encourage the parties to participate in the identification of the expert by asking each party to nominate qualified impartial experts."); *cf.* Data Gen. Corp. v. Int'l Bus. Mach. Corp., 93 F. Supp. 2d 89, 91 (D. Mass. 2000) (demonstrating an instance in which a court successfully "directed the parties to agree upon the selection of a technical advisor").

place only in the presence of both parties, so that the two sides can police each others' conduct.

Judges can also be involved in the search more directly, which can become necessary if the parties stalemate. Indeed, the prospect of the court's independent search can forestall stalemate: Parties may be more willing to compromise if they are convinced that there will be a court expert one way or another, because most lawyers will prefer to be involved with, and not shut out from, the selection process for the expert.[56]

There is an approved service designed specifically to help judges locate court experts. It is a project launched by the American Association for the Advancement of Science, called Court Appointed Scientific Experts (CASE).[57] Alternatively, judges (or their law clerks or special masters) can search for experts directly. Many academic scientists now post a raft of biographical information on faculty web sites. It takes only minutes to use the Internet to discover the name, phone number, e-mail address, photo, and resume for (to choose a random example) the chair of the Division of Chemistry and Chemical Engineering at Cal Tech, which is located about thirty minutes away from the downtown Los Angeles courthouse. (Some district judges may prefer to assign searches of this sort to law clerks, who often are delighted to have an official excuse to spend time on the Internet.) A telephone conversation with a scholar-administrator of this sort will produce a list of names that will launch the search. Of course, these contacts must avoid "the merits, or procedures affecting the merits," of the case.[58] Districts with large educational institutions nearby enjoy advantages in this process, but of the minority of district judges who have appointed experts, "[l]ess than 10 percent of the judges reported difficulty finding a neutral expert willing to serve."[59]

Then there is the matter of conflicts. It pays to spend time at the outset to avoid unpleasant surprises later. The best experts may never have served as paid court experts before, and thus may be unfamiliar with the importance and

56. *Cf.* MediaCom Corp. v. Rates Tech., Inc., 4 F. Supp. 2d 17, 30 (D. Mass. 1998) ("The Court invites the parties to assist in the expert's selection. Should they fail, the Court will go it alone.").

57. *See* AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, COURT APPOINTED SCIENTIFIC EXPERTS: A DEMONSTRATION PROJECT OF THE ATTAS, *at* http://www.aaas.org/spp/case/case.htm (last visited June 7, 2003). According to the program's website, it features an advisory committee chaired by the Ninth Circuit's Judge Rymer, benefits from an independent program evaluation by the Federal Judicial Center (FJC), and is endorsed by Justice Stephen Breyer. *See* Stephen Breyer, *Science in the Courtroom*, ISSUES IN SCIENCE & TECHNOLOGY ONLINE, *at* http://www.nap.edu/issues/16.4/breyer.htm (last visited July 29, 2001). The FJC's then-director, the Honorable Fern M. Smith, sent a letter to all district judges to inform them of the service in December 2000.

58. *See supra* note 30 and accompanying text.

59. Cecil & Willging, *supra* note 42, at 44.

method of a rigorous conflicts check. Judges may wish to consult a sample questionnaire published by Hooper, Cecil, and Willging for guidance in this department.[60]

A final step in appointing a court expert is to draft the order setting forth the duties of the witness.[61] To reduce the risk of perceived unfairness and to help focus the issues, the district court may wish to invite the parties to participate in defining these duties.[62] Parties can have strong preferences and inventive suggestions on this score. If the judge can keep everyone happy through agreements that do not impinge on the court's needs, so much the better.

E. Timing

Appointing a 706 expert takes some time. A district judge interested in a court expert will have to plan ahead to avoid litigation delay.

How should a district court arrange for the time required for appointing an expert? District judges have a possible timing model in the rules that govern patent cases in Silicon Valley. The District Court for the Northern District of California has expressed pride about its local rules for patent cases.[63] (Incidentally, this district likewise has issued model patent jury instructions—another very helpful patent trial resource.[64]) These rules require an Initial Case Management Conference at which the parties are to discuss, among other items, plans for a claims construction hearing as well as "the need for and any specific limits on discovery relating to claim construction, including depositions of witnesses, [and] including expert witnesses . . . ."[65] Judges considering the possibility of appointing a court expert are wise to alert the parties at this early stage of the litigation to inform their thinking and trigger their input.

60. *See* Laural L. Hooper et al., *Neutral Science Panels: Two Examples of Panels of Court-Appointed Experts in the Breast Implants Product Liability Litigation*, 64 LAW & CONTEMP. PROBS. 139, 185 (2001) (appendix), Checklists for Financial and Other Conflicts of Interest, http://www.uscourts.gov/guide/vol2/checklist.pdf (last visited July 18, 2003).

61. FED. R. EVID. 706(a) ("A witness so appointed shall be informed of the witness' duties by the court in writing, a copy of which shall be filed with the clerk, or a conference in which the parties shall have the opportunity to participate.").

62. *See* Ass'n of Mexican-Am. Educators v. California, 231 F.3d 572, 613 (9th Cir. 2000) (en banc) (Tashima, J., dissenting) (advocating this practice when appointing technical experts).

63. Press Release, Northern District of California, Changes to the Local Rules of the Court, *available at* http://www.cand.uscourts.gov ("The [Northern District Patent Local Rule Advisory] Committee has created rules which will be a model to all other courts in the nation and the Northern District is extremely pleased with the results.") (last visited July 18, 2003).

64. Northern District of California, Model Patent Jury Instructions, *available at* http://www.cand.uscourts.gov (posted Mar. 7, 2002).

65. Northern District of California, PATENT LOCAL R. 2.1(a)(3), *available at* http://www.cand.uscourts.gov (last modified Dec. 2000).

The use of court experts requires the judge to plan ahead in patent cases. The timing issue requires attention, but it is no reason to foreswear court experts altogether.

F. Ex Parte Communication

"In general, the law frowns upon ex parte communications between judges and court-appointed experts."[66] Ex parte contacts between a trial judge and a trial witness like a court-appointed expert "can create situations pregnant with problematic possibilities."[67] Nevertheless, in practice there "often" have been ex parte communications between judges and court experts.[68] Sometimes this ex parte communication has been limited to procedural matters such as availability and conditions of participation. Other judges, however, have communicated with court experts to obtain technical advice outside of the parties' presence. "In most of these situations, the very purpose of the appointment was to provide the judge with one-to-one technical advice."[69] Parties have been generally aware of this practice and either have consented or acquiesced.[70] Some judges devise their own procedures to address this issue:

> For example, one judge made a record of all discussions with the expert, disclosed the exact content of the discussions to the parties, and gave them an opportunity to respond. Another did not keep a detailed record, but, as part of the parties' agreement to the process, reported the substance of all ex parte discussions to the parties. Yet another judge conducted all communications with the expert in writing. These procedures were designed to alert the parties to the source and content of the judge's information about a case and allow them an opportunity to clarify, rebut, or even reinforce the statements of the expert.[71]

It is ethical for a judge to communicate ex parte with a 706 expert under certain conditions. Absent consent, Canon 3(A)(4) generally proscribes ex parte communication,[72] but there are at least three exceptions to this rule. First, the proscription applies "except as authorized by law."[73] Rule 706 does not address the issue directly, and has apparently been interpreted variously. Second, the canon does not apply to "court personnel whose function is to

66. U.S. v. Craven, 239 F.3d 91, 102 (1st Cir. 2001).
67. *Id.*
68. *See* Cecil & Willging, *supra* note 42, at 44.
69. *Id.* at 44–45.
70. *See id.* at 45.
71. *Id.*
72. *See supra* note 30 and accompanying text.
73. *See supra* note 30 and accompanying text.

aid the judge in carrying out adjudicative responsibilities."[74] It does not appear that 706 experts fit this exception because they are witnesses who presumably are free to investigate and to testify about the state of the world. Court personnel, however, are never permitted to perform this investigative function.[75] Third, the canon permits advice from "a disinterested expert on the law applicable to a proceeding before the judge" if the judge gives the parties notice, the substance of the advice, and an opportunity to respond.[76] Because the Federal Circuit has ruled that claim construction is a question of law and not fact, this description may fit a 706 expert in the highly specialized *Markman* context.[77] It may be proper to interpret the canon's phrase "on the law applicable"[78] as words of description rather than words of limitation, given that drafting history of this provision.[79] I am aware of no authoritative ruling on this score. If this third exception does apply, however, judges may communicate ex parte with a 706 expert even without the parties' consent if judges notify the parties, report on the substance of the advice, and afford the parties a reasonable opportunity to respond. Judge Ronald Whyte has a good suggestion from a different context that could apply here: Direct the expert to take notes as the judge quizzes the expert, make these notes available to the parties, and offer them a reasonable opportunity to respond.[80] It is not clear whether a stipulation from the parties would allow a judge to dispense with these requirements about reporting and a reasonable opportunity to respond, but the parties' consent normally operates to waive objections on appeal.[81]

In sum, judges should consider carefully how they will relate to their court experts. The matter, perhaps more complicated than it might first appear, warrants a planned approach. The safest and most conservative course is to avoid ex parte contact with 706 experts altogether, as with ordinary witnesses. A judge also might seek the parties' express consent to ex parte contacts between witness and judge, provide the parties with a summary of the interac-

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74. *See supra* text accompanying note 32; *see also* E. WAYNE THODE, REPORTER'S NOTES TO CODE OF JUDICIAL CONDUCT 53 (1973) ("Communications between judges and between the judge and court personnel whose function is to aid the judge in carrying out his adjudicative duties were recognized by the Committee as falling within the 'authorized by law' provision.").

75. *See supra* notes 34–36 and accompanying text. *Cf.* Price Bros. Co. v. Philadelphia Gear Corp., 629 F.2d 444, 446 (6th Cir. 1980) (judge may not send law clerks to gather evidence).

76. *See supra* note 31 and accompanying text.

77. *See supra* note 8 and accompanying text.

78. *See supra* note 76 and accompanying text.

79. *See* THODE, *supra* note 74, at 53–54 (provision designed to regularize a reported practice of judges who were calling law professors for advice within the area of the professor's expertise).

80. Oral remarks of the Honorable Ronald Whyte at an intellectual property seminar sponsored by the FJC, Berkeley, California (May 28, 2003) (offered in context of technical advisor rather than 706 expert).

81. *See infra* note 220 and accompanying text.

tions (as perhaps recorded by the expert), and give the parties the chance to respond.[82] This important procedural detail merits attention, but it certainly is not a reason for blanket refusal to appoint court experts.

G. Conclusion About Court Experts

The FJC researchers noted that few district judges oppose appointment of court experts in principle.[83] More than half the responding judges noted that patent cases may be suitable for appointing a court expert.[84] The researchers conclude that some practical problems attend court experts, but that these problems have not been the primary impediments to their appointment.[85] This conclusion seems clearly correct. The practical problems with court experts are tractable in common situations. Most significantly, judges who have tried court experts report satisfaction.[86]

Why then are court experts the exception rather than the rule in patent cases? I conclude that there are two main reasons: Most judges have no personal experience with court experts, and the parties rarely, if ever, suggest the possibility. The lawyers have no interest in mentioning this alternative, because they are doing everything they can to control the litigation. The appointment of a court expert represents a dramatic loss of control. This stranger is unknown and is likely to be influential. He or she is not supposed to have the client's best interests at heart. This prospect is not just unattractive; it is positively threatening.

The judge's perspective is very different. The judge is the one in the hot seat in patent cases. District judges are not to blame for modern patent law, but they are the ones on whom it bears most heavily. Rule 706 offers promising assistance to judges in patent cases, but the parties' parochial interests mean that these judges must exercise initiative to get the help they deserve.

82. *Cf.* Cecil & Willging, *supra* note 42, at 46 ("Ex parte communication between the judges and the expert should occur only with the agreement of the parties or with notice to the parties that the judge is considering appointment of a technical adviser. The instruction [to the expert] should permit the parties to be informed of the substance of the communications."); Rohm & Haas Co. v. Lonza Inc., 997 F. Supp. 635, 638 n.1 (E.D. Pa. 1998) ("With the parties' agreement, a series of questions were submitted to [706 expert] Dr. Smith, and he answered them in the courtroom with counsel present."); Deason, *supra* note 49, at 153 ("[A] judge should restrict her communications with an expert appointed under Federal Rule of Evidence 706."); *see also infra* note 152.

83. Cecil & Willging, *supra* note 42, at 41.

84. *See id.* at 42.

85. *See id.* at 46.

86. *See supra* note 42.

IV. CONSIDER COURT-APPOINTED TECHNICAL ADVISORS

A. What Is a "Technical Advisor?"

A technical advisor is a scientific or technical expert who serves in a capacity similar to a law clerk.[87] The advisor becomes a member of the court personnel for one particular case. Advisors do not testify in open court and the parties cannot question them. Advisors consult directly with the judge, in the same way as—and possibly together with—the judge's regular law clerks. These contacts are ex parte, as with law clerk contacts. Technical advisors do not serve as factual investigators.[88] The arrangement allows judges to consult with scientific or technical experts in a flexible and informal setting.

The federal judiciary has even less experience with technical advisors than with Rule 706 experts. Even judges most cautious about the office of the technical advisor, however, do not doubt its basic legitimacy. The authorities agree that appointment of a technical advisor is within the district court's inherent authority.[89]

Some courts have used this authority, but the instances are few. Outside of the patent context, in the last generation only two circuit decisions have approved technical advisor appointments: the First Circuit's 1988 *Reilly*[90] decision and the Ninth Circuit's en banc *Association of Mexican-American Educators* decision in 2000.[91] Before 2002, there was no circuit authority on technical advisors in the patent context. At the district court level, a few patent models existed before that time. In the late 1990s, District Judge William Young ordered parties before him to agree upon and to pay an expert to serve as his technical advisor in a patent case.[92] Judge Young asked the parties to follow the format of an earlier court order by Judge Richard Stearns, also of Massachusetts. These cases led to no appellate precedents, but Justice Breyer publicized this district court work in a speech and an

87. *See* Reilly v. United States, 682 F. Supp. 150, 152 (D.R.I. 1988), *aff'd*, 863 F.2d 149, 156 (1st Cir. 1988).

88. *See Reilly*, 863 F.2d at 156 ("[A]n advisor, by definition, is called upon to make no findings and to supply no evidence."); *id.* at 157 ("Advisors of this sort are not witnesses, and may not contribute evidence."); *supra* notes 34–35, 75, *infra* notes 152–157 and accompanying text.

89. *E.g.*, Ass'n of Mexican-Am. Educators v. California, 231 F.3d 572, 609 (9th Cir. 2000) (en banc) (Tashima, J., dissenting) ("I agree with the majority that the district court retains the inherent authority to appoint a technical advisor in especially complex cases.").

90. *See Reilly*, 863 F.2d at 156.

91. *See Ass'n of Mexican-Am. Educators*, 231 F.3d at 590; *see also* A&M Records, Inc. v. Napster, Inc., 284 F.3d 1091, 1097 (9th Cir. 2002) (affirming the use of a technical advisor in a nonpatent case).

92. MediaCom Corp. v. Rates Tech., Inc., 4 F. Supp. 2d 17, 29–30 (D. Mass. 1998).

article.[93] Justice Breyer also noted "ways to help [judges] overcome the inherent difficulty of making determinations about complicated scientific, or otherwise technical, evidence" in a concurring Supreme Court opinion.[94] A few other brave district judges went on record with recent interest in technical advisors.[95] Yet all of these exceptions proved the rule: district judges had little direct experience with, and no reliable appellate guidance about, technical advisors in patent cases. This territory was not exactly uncharted, but it certainly could seem worrisomely alien.

B. *TechSearch*

In 2002, the Federal Circuit encountered a technical advisor in a patent case for the first time in *TechSearch, L.L.C. v. Intel Corp.*[96] This development was major news. It came in two parts: factual and legal. The factual news was that District Judge William Orrick of San Francisco had appointed a technical advisor at the parties' expense,[97] and neither party had challenged the judge's power to levy this cost upon them. In short, at a practical level a district judge could make the technical advisor option work. The legal news was that the action was doctrinally proper. Over objection, Judge

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93. Justice Breyer gave this description:

> Judge Richard Stearns of Massachusetts, acting with the consent of the parties in a recent, highly technical, genetic engineering patent case, appointed a Harvard Medical School professor to serve "as a sounding board for the court to think through the scientific significance of the evidence" and to "assist the court in determining the validity of any scientific evidence, hypothesis or theory on which the experts base their testimony." . . . These case-management techniques are neutral, in principle favoring neither plaintiffs nor defendants. When used, they have typically proved successful.

Stephen Breyer, *Science in the Courtroom*, ISSUES IN SCIENCE AND TECHNOLOGY ONLINE, *at* http://www.nap.edu/issues/16.4/breyer.htm (last visited June 19, 2002). *Cf. MediaCom Corp.*, 4 F. Supp. 2d at 29 ("Judge Stearns' reliance on a technical adviser was cited with approval by Mr. Justice Breyer in his February 16th address to the American Association for the Advancement of Science.") (citations omitted).

94. Gen. Elec. Co. v. Joiner, 522 U.S. 136, 149 (1997) (Breyer, J., concurring).

95. *See, e.g.*, Conservation Law Found. v. Evans, 203 F. Supp. 2d 27 (D.D.C. 2002) (nonpatent case); Data Gen. Corp. v. Int'l Bus. Mach. Corp., 93 F. Supp. 2d 89 (D. Mass. 2000) (patent case); TM Patents, L.P. v. Int'l Bus. Mach. Corp., 72 F. Supp. 2d 370, 374 (S.D.N.Y. 1999) (patent case); United States v. Hsu, 185 F.R.D. 192 (E.D. Pa. 1999) (nonpatent case); Xilinx, Inc. v. Altera Corp., 1997 WL 581426 (N.D. Cal. 1997) (patent case); Hall v. Baxter Healthcare Corp., 947 F. Supp. 1387, 1392 (D. Or. 1996) ("I invoked my inherent authority as a federal district court judge to appoint independent advisors to the court.") (nonpatent case); Hemstreet v. Burroughs Corp., 666 F. Supp. 1096, 1123–26 (N.D. Ill. 1987) (patent case).

96. 286 F.3d 1360 (Fed. Cir. 2002).

97. Telephone interview with Matthew Powers (June 20, 2002); telephone interview with technical advisor Dr. Anthony Hearn (June 26, 2002); telephone interview with John Janka (July 11, 2002).

William Orrick told the parties that he would appoint a technical advisor.[98] He did so, and the Federal Circuit affirmed. Judge Orrick thus blazed a trail that other district judges with a patent case now can assess and follow.

According to Judge Orrick, this option is an attractive one for a federal judge. He reports satisfaction with this arrangement and recommends that other federal judges consider using technical advisors.[99]

Strictly speaking, the legal holding in *TechSearch* is geographically limited to the Ninth Circuit, because the Federal Circuit held that the use of technical advisors is a procedural issue governed by regional circuit law.[100] This case originated within the Ninth Circuit, which affirmed the use of a technical advisor in the *Association of Mexican-American Educators* case (which incidentally also was an appeal from Judge Orrick's courtroom).[101] Immediately after *TechSearch*, then, only district judges in the Ninth Circuit (as well as the First Circuit) truly can be certain they have inherent power to appoint technical advisors in patent cases.[102] Other circuits have yet to offer their district judges guidance on this point, as far as I have been able to tell.[103] This remaining uncertainty is not great, however, because venerable Supreme Court authority has prompted even critics of technical advisors to acknowledge the basic district court power to appoint technical advisors.[104] Importantly, the Federal Circuit in *TechSearch* showed a fundamental sympathy for the plight of district courts facing technical issues in patent cases.[105] This plight is vexing and genuine, and the Federal Circuit's sympathetic attitude appears to be broader than a narrow matter of Ninth Circuit doctrine.

98. *See TechSearch*, 286 F.3d at 1368; *TechSearch, L.L.P. v. Intel Corp.*, Nos. 00-1226, 00-1250, Non-Confidential Joint Appendix 7460 (TechSearch's objection to advisor appointment).

99. Telephone interview with the Honorable William Orrick, Jr. (July 2, 2002).

100. *See TechSearch*, 286 F.3d at 1377; *see also* Midwest Indus., Inc. v. Karavan Trailers, Inc., 175 F.3d 1356, 1359 (Fed. Cir. 1999) (en banc) ("[W]ith respect to nonpatent issues we generally apply the law of the circuit in which the district court sits.").

101. *See* Ass'n of Mexican-Am. Educators v. California, 231 F.3d 572 (9th Cir. 2000) (en banc).

102. *See TechSearch*, 286 F.3d at 1376–77; *see supra* note 91 and accompanying text; *cf.* Renaud v. Martin Marietta Corp., Inc., 972 F.2d 304, 308 n.8 (10th Cir. 1992) (mentioning district court use of a technical advisor).

103. As of a search on June 19, 2002 3:00 PM, the question appears open in the other circuits. *See also infra* notes 148–154 and accompanying text.

104. *See Ass'n of Mexican-Am. Educators*, 231 F.3d at 609 (Tashima, J., dissenting) (citing *Ex Parte* Peterson, 253 U.S. 300 (1920)); Reilly v. United States, 863 F.2d 149, 154 (1st Cir. 1988).

105. *See TechSearch*, 286 F.3d at 1378 ("[I]t cannot be expected that trial judges will have expertise in biotechnology, microprocessor technology, organic chemistry, or other complex scientific disciplines."); *id.* at 1377 ("[T]he district court must have the authority to appoint a technical advisor in such instances so that the court can better understand scientific and technical evidence in order to properly discharge its gatekeeper role of determining the admissibility of such evidence.").

Both at the bottom line and with the laudable tone of its language, then, the *TechSearch* decision supports the technical advisor option.

Of great utility, *TechSearch* offers specifics on the proper district court procedures for using technical advisors. I first describe these specifics, which are tremendously helpful to district judges considering the technical advisor option. I then consider the wisdom of the various procedural specifics. In short, I begin with description and elaboration and then turn to normative evaluation.

1. *TechSearch* Procedures

By speaking self-consciously about "the need to establish some definable safeguards for future cases,"[106] the *TechSearch* court undertook extremely helpful rulemaking in an area where district judges thirst for authoritative guidance. Without trustworthy leadership, many district judges in patent cases are reluctant to experiment with technical advisors. The risk of having to retry something as substantial as a patent case is fearsome and can make judges wary of the untested. The Federal Circuit reduced this risk by identifying three procedural steps for district judges interested in technical advisors. I review these three steps, as well as a fourth not at issue in *TechSearch*.

a. Document the "Exceptional" Need

The district judge in *TechSearch* stated that appointing a technical advisor was an "exceptional" practice to be reserved for appropriate cases. The Federal Circuit noted this finding with approval.[107] A district judge pursuing this option would be wise to make similar record findings. When cases pose knotty technological challenges, however, uneasy judges can draft these findings in truly heartfelt terms.

b. Conduct a "Fair and Open" Selection Process

The Federal Circuit suggested that district courts use a "fair and open" procedure for appointing a neutral technical advisor. The court added that

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106. *Id.* at 1378–79.

107. *Id.* at 1379; *cf. Reilly*, 863 F.2d at 156–57.

> Appropriate instances, we suspect, will be hen's-teeth rare. The modality is, if not a last, a near-to-last resort, to be engaged only where the trial court is faced with problems of unusual difficulty, sophistication, and complexity, involving something well beyond the regular questions of fact and law with which judges must routinely grapple. Although a technical advisor can be valuable in an appropriate case, the judge must not be eager to lighten his load without the best of cause.

Id.

"[t]ypically the candidate list would be compiled through the respective parties' counsel, and through any recommendations the district court may make."[108] Judge Orrick did not involve the parties in his search, but rather located his technical advisor through contacts he pursued independently at the RAND think tank.[109] At the time, the parties did not know the method Judge Orrick used to find his advisor.[110] The *TechSearch* opinion did not criticize or even mention this appointment technique, although the opinion does state that the district court determined its technical expert "was a neutral third party."[111] Apparently no party took appellate issue with Judge Orrick's appointment technique. Nonetheless, my comments in Part III.D. about locating court experts apply in this context as well.[112]

There is also a new model of appointment procedure that district judges can consult. The Advisory Committee on the Federal Rules of Civil Procedure has proposed revisions to Rule 53.[113] Rule 53 deals with special masters, not technical advisors, so the proposals are merely suggestive here and would require some modification in this different setting. There are two ideas of particular relevance. First, the proposals define a usefully definite standard and process concerning conflicts of interest.[114] Second, the proposals underline the wisdom of alerting the parties to the judge's plans and of inviting their participation in the selection process.[115]

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108. *TechSearch*, 286 F.3d at 1379 n.3.

109. Telephone interview with the Honorable William Orrick, Jr. (July 2, 2002); telephone interview with technical advisor Dr. Anthony Hearn (June 26, 2002).

110. Telephone interview with Matthew Powers (June 20, 2002); telephone interview with John Janka (July 11, 2002).

111. *TechSearch*, 286 F.3d at 1369.

112. *See supra* text accompanying notes 54–59; *Reilly*, 863 F.2d at 159 ("We think it advisable in future cases that the parties be notified of the expert's identity before the court makes the appointment, and be given an opportunity to object on grounds such as bias or inexperience.").

113. *See* STANDING COMMITTEE ON RULES OF PRACTICE AND PROCEDURE, REPORT OF THE CIVIL RULES ADVISORY COMMITTEE (revised July 31, 2001) [hereinafter RULES REPORT], *available at* http://www.uscourts.gov/rules/comment2002/8-01CV.pdf (last visited July 18, 2003).

114. Proposed Rule FRCP 53(a)(2): "A master must not have a relationship to the parties, counsel, action, or court that would require disqualification of a judge under 28 U.S.C. § 455 unless the parties consent with the court's approval to appointment of a particular person after disclosure of a potential ground for disqualification. . . ." *Id.* at 82. Proposed Rule FRCP 53(b)(4):

> A master's appointment takes effect: (A) after the master has filed an affidavit disclosing whether there is any ground for disqualification under 28 U.S.C. § 455 and, if a ground for disqualification is disclosed, after the parties have consented with the court's approval to waive the disqualification, and (B) on the date set by the order.

Id. at 84.

115. Proposed Rule FRCP 53(b)(1): "Hearing. The court must give the parties notice and an opportunity to be heard before appointing a master. A party may suggest candidates for appointment." *Id.* at 82.

c. Use Affidavits to Enforce Limits on the Technical Advisor's Duties

The Federal Circuit stressed the need to define and to limit the technical advisor's duties, "presumably in a writing disclosed to all parties."[116] The decision offered detailed instructions on this topic.

The *TechSearch* court warned that, "[a]s a practical matter, there is a risk that some of the judicial decisionmaking function will be delegated to the technical advisor. District court judges need to be extremely sensitive to this risk and minimize the potential for its occurrence."[117] The panel continued: "When a district court judge utilizes a technical advisor a reviewing court may want to take a *hard look* at the district court's decision, and to make certain that the decision does not in fact resolve factual disputes in the guise of determining that there is not a genuine issue of material fact."[118] Elsewhere the decision suggested that district judges particularly should guard against extrarecord information: "Typically this would entail making clear to the technical advisor that any advice he or she gives to the court cannot be based on any extrarecord information, except that the advisor may rely on his or her own technology-specific knowledge and background in educating the district court."[119]

To enforce these role limitations, the Federal Circuit suggested that district courts "require pre-appointment and post-completion affidavits by the technical advisor, in which the technical advisor declares that he or she has complied with these safeguards, operated within the scope of his or her assignment, and confined his or her information sources to the record."[120] I append two sample forms from the record in *TechSearch*: the district court's appointment order for its technical advisor and the technical advisor's appointment affidavit. When drafting similar documents, it also may be suggestive to review the proposed revisions to Federal Rule of Civil Procedure 53(b)(2), which, if approved, presently are projected to become effective on December 1, 2003.[121]

The *TechSearch* panel emphasized that the district court in fact had exercised "great care to insure that [the technical advisor's] assistance did not unduly influence the court's consideration of the evidence."[122] Specifically, the district judge had "acknowledged that technical advisors may not contribute evidence [and had] recognized that the technical advisor's role is limited to explaining the terminology and theory underlying the evidence offered by the

116. *TechSearch*, 286 F.3d at 1379.
117. *Id.* at 1379.
118. *Id.* at 1379 n.6 (emphasis added); *see also id.* at 1381 (Dyk, J., concurring).
119. *Id.* at 1379 & n.5; *see supra* note 88, *infra* notes 123–124 and accompanying text.
120. *Id.* at 1379 n.4.
121. *See* RULES REPORT, *supra* note 113, at 83.
122. *TechSearch*, 286 F.3d at 1380–81.

parties."[123] The district court likewise told the parties that the technical advisor had "agreed that he will not engage in any independent investigation of the underlying litigation, provide evidence to the Court, or contact any party or witness in this action."[124] "The court further agreed to identify any material relied upon by [the technical advisor], other than that submitted by the parties or that 'upon which a person versed in the relevant field of knowledge would be reasonably expected to rely.'"[125]

The *TechSearch* court excused one lapse by the district court but warned that it might not excuse it again in a later case. The lapse was the technical advisor's failure to certify that he had complied with the district court's order limiting his role.[126] This apparently was simple oversight. The *TechSearch* court declined to say this lapse was "reversible error"[127] in this case, but the court rejected any implication that it might therefore be downplaying its fear of undue advisor influence: "To the extent the procedures followed by the district court fell somewhat short of those essential to avoiding such influence, we note that the district court appointed the technical advisor prior to the issuance of the Ninth Circuit's *en banc* opinion in *Association of Mexican-American Educators*, and the district court at least followed the minimum requirements necessary *at that time*."[128] This *TechSearch* admonition places district courts on notice that the Federal Circuit may enforce procedural requirements more rigidly in future cases.

TechSearch issued a special warning concerning technical advisors and bench trials. The decision commented that "reviewing courts may want to consider whether the procedural safeguards should be enhanced, or technical advisors should be allowed at all, when the district judge is acting as the trier of fact."[129] Obviously, then, cautious district judges should be especially scrupulous in considering what technical advisor procedures to use during bench trials.

In sum, the district court should define the advisor's role in writing. It may be sensible to seek the parties' input on this document. The court then should obtain two statements or affidavits from the advisor, one at the outset and one at the completion of the advisor's work. The first statement should express the advisor's understanding of the role definition, as well as her or his sworn willingness to comply with these role limitations. The second statement should recount the advisor's sworn and retrospective adherence to these limitations.

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123. *Id.* at 1380.
124. *Id.*
125. *Id.*
126. *Id.*
127. *Id.*
128. *Id.* at 1381 (final emphasis added).
129. *Id.* at 1379 n.6.

d. Make the Advisor's Tutelage Explicit

Beyond the role definition and the sworn statements just described, should a judge create a more extensive written record of the advisor's work? One question is whether the advisor should be required to write a report. The *TechSearch* opinion stated that the district court must "make explicit, perhaps through a report or record, the nature and content of the technical advisor's tutelage concerning the technology."[130] On the facts of *TechSearch*, the expert did not write a report. The *Reilly* court also had been attracted to the idea of a postcompletion affidavit from the technical advisor, but had specifically criticized the suggestion that the technical advisor be required to write a report.[131]

The cases teach that a court reporter need not transcribe the advisor's conversations with the judge and clerks. Judge Orrick did not impose this requirement, and the Federal Circuit affirmed his use of a technical advisor. Even dissenting Judge Tashima in *Association of Mexican-American Educators* said he would not prescribe transcription as a mandatory procedure.[132]

A pair of notable authorities suggest that the written record of the technical advisor's work should be more extensive than that supplied by the advisor's affidavits. Thomas Willging and Joe Cecil stress the benefit to alerting the parties of the nature of the advisor's input. They suggest "methods short of a formal, written report, such as having the judge or expert list the topics addressed, along the lines of a minute entry of a pretrial conference. Perhaps a

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130. *Id.* at 1379.

131. *Reilly*, 863 F.2d at 160 n.8.

> We disagree with the suggestion that a technical advisor should be required, as a matter of course, to write a report. The essence of the engagement . . . requires that the judge and the advisor be able to communicate informally, in a frank and open fashion. Given the free-wheeling nature of the anticipated discourse, and the fact that the advisor is not permitted to bring new evidence into the case, requiring a written report in every case would serve no useful purpose.

Id.; *see also infra* notes 157–190 and accompanying text.

132. Ass'n of Mexican-Am. Educators v. California, 231 F.3d 572, 613 (9th Cir. 2000) (en banc).

> While I would not prescribe a mandatory procedure for making that record, such as a reporter's transcript of all ex parte conferences between the court and the technical advisor, obviously, some documentation is required—such as a report by the advisor, a summary of the advice given, or the court's statement on the record—of the court's interaction with the technical advisor.

Id. *But see id.* at n.7.

> In *Reilly*, the court suggested that a technical advisor should file an affidavit attesting to his compliance with the job description after his services have been rendered. . . . This is one of a number of ways that a district court could ensure that the technical advisor does not exert any inappropriate influence on the outcome of the trial.

Id.

law clerk or deputy clerk could assist with that function."[133] Governing black letter does not compel even this step. Yet a district judge eager to try a new practice in an unobjectionable way might want to consider this recommendation from knowledgeable researchers, especially given Judge Whyte's experience with and recommendation of this approach.[134]

e. Tax the Advisor's Fee to the Parties

Judge Orrick taxed the advisor's fee to the parties.[135] Apparently no party challenged this procedure on appeal, because the Federal Circuit did not examine or even mention this point. This compensation issue has not been settled authoritatively, but perhaps no party challenged it because the court's procedure seemed proper. In taxing the fee to the parties, Judge Orrick followed the earlier practice of Judge Young in the *MediaCom* case, who in turn followed Judge Stearns in *Biogen Inc. v. Amgen.*[136] Federal district judges have certain inherent powers to tax appointment expenses as costs.[137] Federal statutory law also empowers judges to tax the "compensation of court appointed experts" as costs.[138] Technical advisors may well qualify as "court appointed experts" for this statutory purpose, although the matter is not free from doubt.[139] One article states that judges can apply for federal funding for technical experts, but the article offers this course as one of many options for compensating technical advisors.[140] As a practical matter, it is straightforward for judges to

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133. E-mail message from Thomas Willging (Aug. 28, 2002); *see* Cecil & Willging, *supra* note 41, at 1032–33; note 71 and accompanying text; *cf.* notes 157–163 and accompanying text.

134. *See supra* note 80 and accompanying text.

135. *See supra* note 97.

136. *See* MediaCom Corp. v. Rates Tech., Inc., 4 F. Supp. 2d 17, 29–30 (D. Mass. 1998).

137. *See Ex Parte* Peterson, 253 U.S. 300, 314–17 (1920).

138. *See* 28 U.S.C § 1920(6) (2003). *But cf.* Crawford Fitting Co. v. J. T. Gibbons, Inc., 482 U.S. 437 (1987) (holding that 28 U.S.C. § 1821(b) caps amount court may tax for *parties'* own expert witnesses).

139. *But see* Hall v. Baxter Healthcare Corp., 947 F. Supp. 1387, 1393 n.9 (D. Or. 1996).

> The fees, approximately $76,000, have been paid by the parties. Because I did not appoint the experts under Rule 706, their fees are not 'costs' that may be awarded to the prevailing party under Fed. R. Civ. P. 54(d) and 28 U.S.C. § 1920(6). *See, e.g., In re* Philadelphia Mortg. Trust, 930 F.2d 306, 308–09 (3d Cir. 1991); Kansas v. Deffenbaugh Indus., Inc., 154 F.R.D. 269, 270 (D. Kan. 1994) ("The legislative history of § 1920(6) expressly refers to court-appointed expert witnesses 'as permitted by rule 706 of the Federal Rules of Evidence.'")

Id.

140. Cecil & Willging, *supra* note 42, at 45 n.5.

> If the expert is appointed as a technical adviser under the inherent authority of the court, payment *may* be made under statutory authority that permits the judiciary to employ consultants and experts. 5 U.S.C. § 3109, 28 U.S.C. § 602(c). Such compensation is unusual and requires the permission of the director of the Administrative Office of the U.S. Courts before the appointment. In the few cases that have arisen, the Administrative Office has

tax costs to parties who are calling upon the court system and over whom judges have direct and powerful control. Writing to Washington, D.C. for federal funding is another matter. Such a requirement would squelch much district court interest in technical advisors.

In sum, the *TechSearch* decision did district judges a great favor by suggesting an acceptable procedural framework for using technical advisors. There remains the question, however, of whether *TechSearch* itself selected the right procedural approach to the advisor situation. The next section considers whether *TechSearch* required too much procedure.

2. *TechSearch* Procedures Evaluated

TechSearch looks different to different audiences. To district judges, the *TechSearch* decision offers reassuring and reliable guidance. The dicta in the decision are beneficial because they describe how a district judge can safely use a technical advisor. For district judges, the decision is a map.

For appellate judges, the decision is an appetizer. *TechSearch* is a tentative and early entry in a developing appellate conversation about technical advisor procedures. As yet, we have little firm appellate law on the issue. *TechSearch*'s precise holding is very narrow: Judge Orrick did not abuse his discretion according to Ninth Circuit procedural standards that did not yet exist and that the *TechSearch* panel was therefore forced to "predict."[141] Indeed, a major influence on the *TechSearch* panel was Judge Tashima's dissenting opinion in *Association of Mexican-American Educators*.[142] This dissent may carry little doctrinal weight. Other Ninth Circuit judges appeared to reject it, ten to one.[143] Yet the Ninth Circuit majority's treatment of Judge Tashima's dissent itself is Delphic: the majority disagreed with Judge Tashima but did not engage his suggestions on their merits. The majority did not endorse his views, but did leave open the possibility that Judge Tashima's proposed guidelines might apply to a later case.[144] The majority thereby left a doctrinal

> construed the statute narrowly and, for example, denied authorization where appointment of an expert would be appropriate under Rule 706.

Id. (emphasis added).

141. *TechSearch*, 286 F.3d at 1378.

142. *Id.* at 1378–79.

143. *See* Ass'n of Mexican-Am. Educators v. California, 231 F.3d 572, 590 n.12 (9th Cir. 2000) (en banc).

144. *See id.* at 591.

> [Judge Tashima's] disagreement rests on his analysis of how we should respond to the relative paucity of information in the record about [the technical advisor's] interaction with the district court. In our view, the absence of *any* evidence even suggesting an impropriety on the part of the district court militates against a conclusion that the court abused its discretion. Although it is at least possible, as Judge Tashima suggests, that "[the technical advisor] may have

void. The 1988 *Reilly* decision from the First Circuit offered more definite procedural suggestions for dealing with technical advisors, but it also rendered no holdings about essential procedures because the government had waived the issue.[145] The other circuits have yet to weigh in on this question of regional circuit law, but someday they are likely to take up the question.[146] The time is ripe to consider the merits: What is the right procedural perspective on technical advisors?

TechSearch's procedures seem sensible in two respects but perhaps overly procedural in other ways. I praise the two admirable features and then question other aspects of the ruling.

a. Praise

TechSearch was right, first, to seek assurance that the district court understood the limits of the technical advisor's role. A premise of that role is that the advisor is a tutor and sounding-board, akin to a scientifically proficient law clerk. It would contravene that role for the technical advisor also to investigate "adjudicative facts," to use the terminology of Professor Kenneth Culp Davis.[147] Because it is improper for judges or their clerks to undertake personal fact investigations of this kind, an advisor also would err by in effect becoming the judge's private eye. The case of *Edgar v. K.L.*[148] illustrates this error. There the district court asked three experts to interview witnesses familiar with the operation of a mental health system at issue. The court did not describe the experts as "technical advisors," and did not appoint them under its inherent authority. Rather, the district judge appointed the panel under a

> impermissibly influenced the court's ultimate finding," . . . we instead assume that the district court did its job properly when we lack evidence to the contrary. Judge Tashima also proposes a list of procedures for district courts to follow when appointing technical advisors. Even assuming that those procedures are appropriate, *the district court did not have the benefit of Judge Tashima's dissent before this trial, and we will not fault the court for failing to foresee his recommendations. We are not willing to find an abuse of discretion and to undo this entire trial because the district court did not follow a set of guidelines that are required nowhere in the rules or relevant case law.*

Id. (second emphasis added) (citations omitted).

145. Reilly v. United States, 863 F.2d 149, 159–60 (1st Cir. 1988).

146. *See supra* notes 100, 103 and accompanying text.

147. See *In re* High Fructose Corn Syrup Antitrust Litig., 295 F.3d 651, 665 (7th Cir. 2002) ("basic facts of the who-said-or-did-what-to-whom kind"); Kenneth Culp Davis, *Approach to Problems of Evidence in the Administrative Process*, 55 HARV. L. REV. 364, 402–03 (1942) ("adjudicative" facts are those facts "concerning [the] immediate parties—what the parties did, what the circumstances were, what the background conditions were," as opposed to "legislative facts"); *see also* Laurens Walker & John Monahan, *Social Facts: Scientific Methodology as Legal Precedent*, 76 CAL. L. REV. 877, 881 & nn.21–27 (1988) (comparing Davis's terminology to proposed distinctions between "social facts," "social authority," and "social frameworks").

148. 93 F.3d 256 (7th Cir. 1996) (per curiam).

detailed order to which the parties consented but to which the district court then failed to adhere.[149] The judge went beyond the order and met privately with the experts, who defended their "unorthodox" investigation methods and outlined their tentative conclusions.[150] This ex parte information, the Seventh Circuit said, was "'personal' knowledge no less than if the judge had decided to take an undercover tour of a mental institution to see how the patients were treated. Instead of going himself, this judge appointed agents, who made a private report of how they investigated and what they had learned."[151] The judge's "personal knowledge" was poisonous; it dictated that he be disqualified from the case.[152] *TechSearch* differed from *Edgar* because Judge Orrick had not sent his technical advisor on a fact-finding mission. To the contrary, the judge told the advisor to avoid factual investigation.[153] On appeal, the plaintiff claimed that the advisor had not obeyed this instruction, but the Federal Circuit dismissed the plaintiff's charge as unsubstantiated.[154] It was sensible, as well as consistent with precedent,[155] to limit the advisor's role in this way. Appellate courts rightly look for assurance that the district judge understands this limit. This assurance logically might come in different ways. *TechSearch* was wise both to identify this concern about role limits and to leave some flexibility about how district courts might allay it.[156]

TechSearch was right, second, to avoid proceduralizing the office of technical advisor into infirmity. *TechSearch* did not adopt the extremely formal procedures that some advocate. Process always comes at a price.[157] In post-*Markman* patent law, the advent of the technical advisor is a promising new development. It would have been a shame to smother it at the outset.

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149. *Id.* at 257–58.

150. *Id.* at 257–60.

151. *Id.* at 259.

152. *Id.* at 258–59 ("[M]andatory disqualification under 28 U.S.C. § 455(b)(1) follows."); *id.* at 258 ("[t]hat consent would be ineffectual"); *see also supra* notes 34–36 and accompanying text.

153. TechSearch L.L.C. v. Intel Corp., 286 F.3d 1360, 1380 (Fed. Cir. 2002) (stating that technical advisors "may not contribute evidence" and assuring parties that the technical advisor had "agreed that he will not engage in any independent investigation of the underlying litigation, provide evidence to the Court, or contact any party or witness in this action").

154. *See id.* at 1380 ("Upon review of the record before us, we are not convinced that the evidence suggests that [the technical advisor] conducted independent experiments or research.").

155. *See supra* note 88. *But cf.* Reilly v. United States, 682 F. Supp. 150, 152 (D.R.I. 1988) ("The expert . . . may conduct pertinent experiments, either on his own or in cooperation with others.").

156. *See TechSearch*, 286 F.3d at 1379 (proposing as a guideline that the district court "clearly define and limit the technical advisor's duties, *presumably* in a writing disclosed to all parties") (emphasis added); *id.* at 1379 n.4 (suggesting "[o]ne option" for fulfilling this task).

157. *Cf.* Harold Leventhal, *Environmental Decisionmaking and the Role of the Courts*, 122 U. PA. L. REV. 509, 551 (1974) (decrying a "resulting overload of procedure").

Some observers have proposed that technical advisors be swathed in extremely formal procedures. These proposals range from requiring a "written report summarizing the technical advisor's discussions with the judge"[158] to a complete ban on informal off-the-record conversations between judge and advisor.[159] These proposals threaten stifling excess. The *Reilly* court offered a contrary and thoughtful view:

> We disagree with the suggestion that a technical advisor should be required, as a matter of course, to write a report. The essence of the engagement . . . requires that the judge and the advisor be able to communicate informally, in a frank and open fashion. Given the freewheeling nature of the anticipated discourse, and the fact that the advisor is not permitted to bring new evidence into the case, requiring a written report in every case would serve no useful purpose.[160]

In a similar manner, the *TechSearch* holding affirmed the use of the advisor where the relationship was informal, ex parte, and not subject to a written reporting requirement.[161]

It is fortunate that *Reilly* and *TechSearch* did not adopt extremely formal procedures that would reduce the educational benefits a flexible advisor relationship can supply. Courts traditionally have compared advisors to judicial law clerks. Some criticize this comparison, but I defend it in the next part.[162] Presently I use the law clerk analogy to make concrete the cost of added process here. The position of the judicial law clerk is one of the very successful innovations in the judicial system. Judges appreciate the benefits of close and flexible relations with their clerks. Imagine how it would harm the judge-clerk relationship to require clerks to file meaningful reports, for the parties' review, about the clerks' work on particular cases. Worse yet, suppose the judge could communicate with clerks only on the record, in the presence of a court reporter. Most prudent people become more guarded when communication is

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158. Note, *Improving Judicial Gatekeeping: Technical Advisors and Scientific Evidence*, 110 HARV. L. REV. 941, 956–57 (1997) ("In addition, courts should allow the parties to comment on the written report—perhaps by submitting their own expert reports in response . . . ."); *see also* Ass'n of Mexican-Am. Educators v. California, 231 F.3d 572, 613 (9th Cir. 2000) (en banc) (Tashima, J., dissenting) ("[T]he nature and scope of the advice provided to the district court by the technical advisor should be recorded in some manner."). *But cf. id.* at 613 n.8 ("I do agree that the unique role played by a technical advisor justifies ex parte communications between the judge and the advisor, subject to the limitations explained above.").

159. *See* Deason, *supra* note 49, at 64, 151–53, 156 (suggesting that Canon 3 of the judicial ethics code be extended to cover advisor contacts, thus impliedly excluding advisors from the "court personnel" with whom ex parte contact is permitted); *see* text accompanying *supra* notes 32, 74–75.

160. Reilly v. United States, 863 F.2d 149, 160 n.8 (1st Cir. 1988).

161. *See also* text accompanying *supra* notes 120–131.

162. *See infra* notes 181–190 and accompanying text.

recorded. To record communication in chambers is to tax it. "Stupid" questions become less common, even when they might turn out to be fundamental and essential. There is apt to be less speculative brainstorming, less thinking out loud, less vigorous debate, less creativity, less candor, and less communication all around. For this reason, most judges are unenthusiastic about their clerks ever speaking freely to reporters about chambers conversations.[163] The same benefits of flexibility and candor are at stake with technical advisors. The judiciary's successful experience with law clerks suggests that the *TechSearch* decision was wise to avoid the extremely formal procedures that some have proposed for advisors.

b. Questions

This last point of praise for *TechSearch* also suggests a criticism of it. While *TechSearch* avoided extremely formal procedural requirements for technical advisors, the decision still suggested procedural "safeguards" far in excess of those that govern the law clerk situation. If the law clerk analogy is valid, then the procedures that *TechSearch* prescribed may be excessive.

There is some reason to believe that the law clerk analogy indeed is valid. Indeed, in some situations a law clerk and a technical advisor might be the very same person. Consider this hypothetical. A judge anticipates a heavy docket of patent cases. Suppose the judge is on the Federal Circuit. Or perhaps the judge is a senior district judge specializing in patent cases. Either way, suppose the judge has no scientific training and deliberately hires judicial law clerks who do. Once the law clerks are on staff, the judge calls on the clerks' scientific training in the patent cases, as the judge sees fit. Or suppose a district judge with a patent case just happens to have a judicial law clerk with scientific training. Should special procedural requirements from *TechSearch* apply to any of these situations?

The standard judge-law clerk relationship is nearly free of formal procedural restrictions, and that is a good thing. Judges hire law clerks without notice to or input from parties. Judges interact with their clerks off the record, in any way the judges prefer. Judges do not go on the record to define or limit the duties of their clerks. Clerks never complete affidavits of compliance or file reports about their actions. Rules of ethics govern clerks,[164] but beyond that minimal mechanism we trust judges to supervise the relationship entirely by their own lights. Appellate courts test the validity of the judicial decision product from lower courts not by checking the procedures that governed clerk activities

163. *See generally* Alex Kozinski, *Conduct Unbecoming*, 108 YALE L.J. 835 (1999) (book review).

164. *See* Code of Conduct for Judicial Employees, *at* http://www.uscourts.gov/guide/vol2/ch2a.html (last visited June 8, 2003).

there but by examining whether the decisions are supportable on their face, as matters of substance. The absence of formal procedural regulation permits judges to manage clerks in flexible and highly productive ways. The appellate review guarantees defensible results.

This informal system works fine. Its informality is virtue, not worrisome vice. It would be possible to formalize the judge-clerk relationship with mandatory procedures, but we would probably not praise these added hoops as "procedural safeguards." A more likely label might be "annoying and worthless nuisances."

This comparison logically throws attention on the rationale for the *TechSearch* procedural requirements. The *TechSearch* decision said the rationale was "to prevent the technical advisor from introducing new evidence and to assure that the technical advisor does not influence the district court's review of the factual disputes."[165] The opinion stressed the gravity of these dangers: "[T]here is a risk that some of the judicial decision-making function will be delegated to the technical advisor. District court judges need to be extremely sensitive to this risk and minimize the potential for its occurrence."[166] The court hinted it would take a "hard look" at future use of technical advisors to guard against their "undue influence" on judges in future cases.[167] Concurring Judge Dyk used stronger terms to stress this concern. He said "district court judges may have a tendency to rely on technical advisors in summary judgment situations to resolve disputed issues of fact."[168] He cautioned that district judges must "confine technical advisors to the proper sphere—to provide advice without compromising the decision-making obligation of the district judge."[169] He flatly declared his suspicion that the particular technical advisor in *TechSearch* may have influenced Judge Orrick too heavily, and he worried that "the district court may have resolved factual issues on summary judgment."[170] This charge is hard to evaluate, for Judge Dyk offered no evidence to support it and no such evidence appears in the majority decision. Rather, Judge Dyk said that alternate supporting logic in the majority decision dispelled his concerns about the majority's result on the *TechSearch* facts.[171] Nevertheless, Judge Dyk reiterated that "we must be particularly careful to take a 'hard look' at the district court's conclusions" in cases involving technical

165. *TechSearch*, 286 F.3d at 1377.
166. *Id.* at 1379.
167. *Id.* at 1379 & n.6.
168. *Id.* at 1381 (Dyk, J., concurring).
169. *Id.*
170. *Id.*
171. *Id.*

advisors.[172] It was on these grounds that the *TechSearch* decision advised district courts to adopt a range of procedures when using technical advisors.

Examining the rationales for these procedures reveals logical weakness. At bottom, there are three different issues. I treat each in turn.

(1) Improper Summary Judgment Decisions?

The *TechSearch* majority and concurrence both voiced concern that district judges might rely on technical advisors and might improperly resolve disputed issues of fact when ruling on summary judgment motions.[173] It is error for a district judge to grant summary judgment in the teeth of a dispute over an issue of material fact.[174] But such error is substantive, not procedural. That substantive error logically calls for substantive review and remedy rather than a review of the procedures by which the district court chose to manage its staff, as *TechSearch* recommends. That substantive review would examine the district court decision to see if it truly did improperly resolve a disputed issue of material fact. Similarly, if the advisor improperly introduced (and the district court relied upon) some decisive fact not in the record, it is straightforward on appeal to show this error: Identify the district court's reliance on Fact X and demonstrate that there is no record support for Fact X. Appellate courts routinely examine district court summary judgments on the merits for improper fact calls. The *TechSearch* panel itself recommended a "hard look," presumably of just this character.[175] That substantive process seems to be the most direct and logical way to respond to *TechSearch's* stated fear that district judges will use technical advisors improperly to resolve fact disputes when deciding summary judgment motions. This fear of improper summary judgment decisions is not convincing support for *TechSearch's* procedural recommendations, because substantive review is the appropriate response to a fear of substantive error.

(2) Inappropriate Deference?

Underlying the *TechSearch* decision is a more basic fear that lazy or intimidated district judges might delegate away the hard job of understanding and deciding the complex merits of a case. Shirking indeed is a universal human temptation and is an appropriate focus of appellate concern. Yet the *TechSearch* procedures are unlikely to respond effectively to this concern.

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172. *Id.* at 1381.
173. *Id.* (Dyk, J., concurring); *see also id.* at 1379 & n.6.
174. FED. R. CIV. PROC. 56(c).
175. *TechSearch*, 286 F.3d at 1381.

In the quest to find the proper response to the possibility of judicial shirking, the particular setting is critical. Sometimes that setting makes shirking obvious. In the landmark *La Buy*[176] case, for instance, the trial judge delegated two entire antitrust trials to a special master. The reason? The judge said he was too busy to handle these complex matters. This particular district judge, moreover, had a "freewheeling" practice of referring matters to masters.[177] The Supreme Court said that these delegations were "little less than an abdication of the judicial function depriving the parties of a trial before the court on the basic issues involved in the litigation."[178] The Court worried that to permit this maneuver might lead judges all over the nation to try it.[179] Managers everywhere can understand the *La Buy* decision.

The setting is different, however, when the assistant works at the judge's elbow. It is easy to tell when a judge delegates away entire trials but hard to tell when a judge relies too heavily on elbow staff in chambers. For my discussion here, the staff assistant might be either a judicial law clerk or a technical advisor. In either case, the evil occurs, if at all, when the judge rubber-stamps a decision that in reality belongs to the assistant: The assistant makes suggestions that the slothful judge mindlessly ratifies. This improper delegation is subtle and difficult to detect from afar.[180] The process when corrupted has the same general outlines as when the process is working right: Parties present arguments, the judge consults staff, and the court renders its decision. When the process is working right, it is possible that an excellent assistant can anticipate the judge's thinking to a laudable and efficient degree through consultation, skill, and diligent effort. In this case of ideal efficiency, the judge may need to do relatively little polishing of the assistant's work. It takes intrusive inquiry to distinguish this ideal of skill and efficiency from sinful sloth. We could get an idea of how much the decision truly belongs to the judge by permitting the parties to quiz the judge afterwards on his or her grasp of telling details. Or perhaps the parties could carefully examine a well-documented judicial drafting process, and/or time records kept by judge and staff. These outlandish measures, however, would impose serious and unwarranted costs on busy district judges. At the

176. La Buy v. Howes Leather Co., 352 U.S. 249 (1957).

177. United States v. Microsoft Corp., 147 F.3d 935, 954 (D.C. Cir. 1998) (characterizing the *La Buy* facts); *see La Buy*, 352 U.S. at 258 (noting that this particular district judge had "referred 11 cases to masters in the past 6 years").

178. *LaBuy*, 352 U.S. at 256.

179. *See id.* at 258 ("But even 'a little cloud may bring a flood's downpour' if we approve the practice here indulged, particularly in the face of presently congested dockets, increased filings, and more extended trials.").

180. *Cf.* Deason, *supra* note 49, at 123 ("[T]here are no measures to quantify the appropriate degree of deference that an expert should receive."); *id.* at 134 ("Overt clues that a court did not rigorously conduct its own analysis are unusual, however, and it is hard to see how in their absence appellate review can very effectively identify instances of excessive deference.").

same time, the less intrusive *TechSearch* procedures probably do little to serve this subtle inquiry, for they are mere recitals that could be boilerplate in the hands of a truly lazy or intimidated judge. With law clerks, we do not even bother to inquire. We just presume the best and test the result on its face. Would it not be sensible to do the same with technical advisors? That is, does the federal judiciary's experience with law clerks suggest that procedural formalities for technical advisors are not worth the effort?

The *TechSearch* panel sought to distinguish technical advisors from law clerks. Its concern was that district judges can detect unreliable legal analysis from law clerks more easily than unreliable scientific analysis from advisors, because judges are experts in law but not science. Judge Tashima stated this concern, and *TechSearch* repeated his words: "[A] judge can filter out "bad" legal advice or research from a law clerk; he or she is ill-equipped, however, to do the same with "bad" technical advice."[181] This concern seems to have an unintended and paradoxical implication: because judges know little science, we therefore should raise the cost of their access to scientific expertise. The court's concern ought not to persuade other appellate courts to adopt the *TechSearch* procedures for technical advisors. If the judge gets bad technical advice and thus misinterprets a technical patent claim, that mistake is one of technical substance under *Markman* that the Federal Circuit will review de novo and presumably will detect. The same would follow if the judge put a clerk's bad legal analysis into an opinion and thereby erred while deciding a legal issue. In either event, the sensible remedy is substantive review on the merits, not a set of procedures to see how the judge managed staff in chambers. The issues and the advice might be legal, or they might be scientific and technical. In either event, a district judge with the right motivation and work ethic will make the effort to master the material to a satisfactory degree. In either event, a district judge with the wrong motivation and work ethic will defer to the assistant, whether the assistant is a law clerk or a technical advisor. It is sensible to allow judges of the Federal Circuit to hire scientifically trained law clerks with whom those judges freely may consult. It also is sensible to allow district judges to do the same with technical advisors. On the other hand, if there is something generally suspect about chambers personnel with technical training, circuit judges might want to spell out the implications of this concern, in part to alert judges in the Federal Circuit as to whether they should consider limiting their use of such clerks.

181. TechSearch L.L.C. v. Intel Corp., 286 F.3d 1360, 1379 n.6 (Fed. Cir. 2002) (quoting Ass'n of Mexican-Am. Educators v. California, 231 F.3d 572, 614 (9th Cir. 2000) (Tashima, J., dissenting)); *see also* Deason, *supra* note 49, at 138–41; Note, *supra* note 158, at 957.

Another possible distinction between law clerks and technical advisors appears in Judge Tashima's dissent in the *Association of Mexican-American Educators* case:

> [R]esolution of legal issues is committed to the judge qua judge and is subject to *de novo* review. On the other hand, factual issues, no matter how technical, are committed to the factfinder and, to be reviewed properly, must be based on the record made in the trial court.[182]

Judge Tashima wrote his dissent in a nonpatent case. By contrast, in the patent context under *Markman*, the district court decision about claim interpretation indeed is subject to de novo review.[183] Everyone agrees that technical advisors, like law clerks, must not contribute evidence.[184] This logic does not support more procedural requirements for advisors than for clerks in patent cases.

There are other proposed distinctions between law clerks and advisors in the secondary literature, but these suggestions do not justify treating advisors more harshly than law clerks. In a thoughtful and probing article, Professor Ellen Deason notes some ways in which technical advisors differ from clerks. She first notes that clerks tend to be young and inexperienced, while technical advisors commonly will be seasoned and professionally distinguished.[185] The danger is that a judge may be awed by the accomplished expert, and may defer excessively. There is something to this point, but I respectfully suggest that it is a matter of degree rather than kind. Every time an excellent law clerk hands over a marvelous bench memo or a brilliant draft opinion, judges face the issue of whether they will do their jobs fully. Every year, some law clerks are extraordinary. The pool is large and the bell curve's right tail will display a predictable variance from the mean. Across the nation, some clerks no doubt have research, writing, and reasoning talents impressive to even the most self-confident judges. Similarly, some judges retain long-term or permanent clerks for whom the judges have a sufficiently high regard. These relationships can ripen into professional partnerships of remarkable collaboration. There is nothing suspect about any of these associations. They can facilitate judicial decisionmaking of the highest caliber.[186] Yet, to a cynic, they can allow the

182. *Ass'n of Mexican-Am. Educators*, 231 F.3d at 614 (Tashima, J., dissenting).
183. *See supra* note 8 and accompanying text.
184. *See supra* note 147–156 and accompanying text.
185. *See* Deason, *supra* note 49, at 139–41 & n.331.
186. *Cf. id.* at 123.

> [I]t is a hallmark of an educated and reflective person that he recognizes, consults, and defers to authority on a wide range of topics. . . . Deference to authority is not merely the habitual practice of educated people, it is, generally, the right thing to do, from a normative point of view. The man who persists in believing that his theorem is valid, despite the dissent of leading mathematicians, is a fool. The man who acts on his belief that a treatment, disparaged by medical experts, will cure his child's leukemia, is worse than a fool.

slothful judge to look good on paper while watching daytime television. The question, however, is whether the judge is personally willing to work to a standard of professional competence. Wisely, the standard recourse here is to a substantive review of the decision on appeal and not to a procedural review of the judge's relations with staff. Upon learning that our federal judiciary might be assisted by personnel of the highest competence, we should react with joy and not suspicion. The potential stature and accomplishment of the technical advisor is not a good reason to burden the judge's relationship with that advisor.

Professor Deason also points out that judges have less perspective on advice when it comes from technical advisors than from law clerks and thus less ability "to assess and disagree."[187] True enough. Certainly a district judge will be interested in technical advisors precisely because they bring knowledge from far beyond the judicial ken. This circumstance does not dictate, however, that district judges will shirk their obligation "to become fully familiar with the case's technical questions and to weigh them independently."[188] After all, appointing a technical advisor is not the path of least resistance for a district judge. It is more work for the same pay. The easy way out is to rule for one side or another, to sign the proposed findings and order, and not to bother with advisors or any of the other options this Article outlines. Those judges interested in technical advisors are those willing to take on extra work so they can do an excellent job of deciding cases correctly. This group is the opposite of shirkers. This group knows it needs scientific help, but that fact is no reason to presume or suspect that these judges are likely to abdicate their core duty.

Professor Deason further observes that the scope of a law clerk's legal research is more predictable to parties than the sources on which technical advisors may draw.[189] I am not certain this point is true, or if true, whether it would be a bad thing. Certainly parties in patent litigation have access to formidable scientific and technical resources, at least in the kind of cases that I address here. Scientific or technical experts are virtually mandatory. Clients often have additional scientific and technical expertise on staff as well. Just as we should presume that the lawyers will know the relevant legal sources, we should presume the parties' staff and retained experts will know the relevant scientific and technological sources. Moreover, it might well be salutary for the parties to regard the court not as a predictably ignorant entity that can know only the science that the parties choose to teach it but instead as an

Id. (quoting Stephen P. Stich & Richard E. Nisbett, *Expertise, Justification, and the Psychology of Inductive Reasoning*, *in* THE AUTHORITY OF EXPERTS: STUDIES IN HISTORY AND THEORY 226, 237 (Thomas L. Haskell ed., 1984)).

187. *Id.* at 140–41.

188. *Id.* at 123.

189. *See id.* at 141.

intellectually potent and resourceful decisionmaker, with possible access to the same materials "upon which a person versed in the relevant field of knowledge would be reasonably expected to rely."[190] We think well of judges who undertake independent library research and find the relevant authorities in the legal literature that the parties failed to cite. The same should hold in the scientific and technological sphere, when patent law requires district judges to render scientific and technological claim interpretations.

There is another difference between clerks and advisors, but it is hard to see how it makes the case for procedural formalism. Judges hire judicial law clerks to work on unknown cases that arise over the course of a year or two, while judges hire technical advisors for just one case that is specific and known. Yet the judge's motivation remains the same in both situations: to get excellent, reliable, and impartial help. This difference does not imply a need for more mandatory procedures when judges hire advisors as compared to when they hire clerks.

In sum, it is sensible to compare technical advisors to law clerks. Both advisors and clerks can comprise a district judge's staff in chambers. It is possible and even predictable that some federal district judges may shirk by delegating too much responsibility to chambers personnel. The usual check on this problem is to expose the district court's decisions to substantive appellate review. It would be possible, but undesirable, for appellate judges to combat excessive staff delegation in the district court through intrusive procedural review: requiring judges and their staff to communicate on the record, to keep time and task records, and so forth. Wisely, no one proposes such measures. The procedures that the *TechSearch* court suggested are far less intrusive but also far less likely to be effective. They can amount only to requiring a set of recitals. For district judges truly prone to shirking, these recitals can become boilerplate too easily for them to have much effect. If the fear is excessive deference, then, the sensible appellate reaction is for judges to think of technical advisors as court personnel, to review the district court's decision for substance, and to dispense with the procedures that Judge Tashima and the *TechSearch* court propose.

(3) Advisor Bias?

Another perceived danger from technical advisors is lack of neutrality.[191] This issue did not arise in the *TechSearch* case, and there is reason to doubt this danger at the systematic level. When experts are the court's own, there

190. TechSearch L.L.C. v. Intel Corp., 286 F.3d 1360, 1380 (Fed. Cir. 2002).

191. *See* Ass'n of Mexican-Am. Educators v. California, 231 F.3d 572, 611–12 (9th Cir. 2000) (en banc) (Tashima, J., dissenting); Deason, *supra* note 49, at 99–121; Note, *supra* note 158, at 953.

is no cause to suspect inherent bias.[192] District judges have reliable incentives here, for the whole attraction of advisors is to gain a less partisan perspective than the ones offered by the parties' experts. District judges thus can be expected to screen prospective advisors for bias, just as district judges routinely screen prospective jurors for the same reason. Every experienced trial judge is skilled at this sort of screening process. There is a question, however, about *how* the district judge should vet experts.[193] Many district judges believe that judicial voir dire is more efficient than the notorious and time-consuming battle for advantage that often comprises lawyer voir dire. This view is sound, in my experience, and suggests that appellate judges should give district judges the discretion to evaluate and forestall the danger of advisor bias. This flexible stance would avoid the rigidity of an advance prescription that would force every advisor appointment into a single mold.

3. Are Ex Parte Contacts with Technical Advisors Ethical?

A final question is whether judges may ethically contact technical advisors on an ex parte basis. The *TechSearch* opinion did not address this ethical question because apparently no party raised it. The parties seemed to take it for granted that Judge Orrick's action was ethically valid. This instinct rested on a firm legal footing.

Canon 3(A)(4) is the general rule against ex parte communication.[194] This canon does not apply to "court personnel whose function is to aid the judge in carrying out adjudicative responsibilities."[195] Technical advisors indeed do have the function of aiding the judge in carrying out adjudicative responsibilities, thus satisfying the latter clause of this exception. Are they, however, "court personnel?" Advisors are not long-term or permanent workers, but rather are case specific. Neither are advisors court employees in the formal sense of drawing a paycheck issued by the government, subject to government tax withholding and tax reporting. Rather, advisors are paid by the parties at the judge's order. In this sense, advisors are akin to independent contractors rather than employees.[196]

Yet for the case on which they advise the court, advisors do have the earmarks of "court personnel." An official, public, and procedurally regular

192. *See supra* notes 46, 49–50 and accompanying text.

193. *See supra* note 60 and accompanying text.

194. *See* text accompanying *supra* note 30.

195. *See* text accompanying *supra* note 32.

196. *Cf.* Code of Conduct for Judicial Employees ("This Code of Conduct applies to all employees of the Judicial Branch.... Contractors and other nonemployees who serve the Judiciary are not covered by this code, but appointing authorities may impose these or similar ethical standards on such nonemployees, as appropriate."), *at* http://www.uscourts.gov/guide/vol2/ch2a.html (last visited July 18, 2003); *see also supra* notes 114–125 and accompanying text.

judicial order has attached the advisor to the court. Thus there is the publicized appearance that the advisor bears a fair, neutral, professional, and helping relationship to the judge, as is the case with traditional court personnel. The *TechSearch* district court, for instance, appointed the advisor on the record and made a finding that the technical advisor was a qualified and neutral third party.[197] The parties were well aware of the technical advisor's role in the case; indeed, they were writing checks to him.[198] The advisor's key duty is to assist the court in its adjudicative responsibility, as the court determines is appropriate. Advisors serve at the courts' direction and at their pleasure. Advisors are completely subject to court regulation and control, with potentially free access to court chambers and facilities. The court has the power to hire, to fire, and to take other control measures as the court deems appropriate.[199] The advisor also must behave in a judicious manner. In particular, independent factual investigation is prohibited. Advisors thus differ from 706 experts, who are free to investigate adjudicative facts and to testify about them.[200]

Under these announced, regularized, and restricted conditions, it seems accurate to classify technical advisors as "court personnel whose function is to aid the judge in carrying out adjudicative responsibilities." Under this analysis, Canon 3(A)(4) would permit a judge to have ex parte contacts with technical advisors, just as the canon also permits judges to contact their law clerks on an ex parte basis.

This analysis possesses the appeal of logic but lacks the imprimatur of appellate approval. Judges who find that fact troubling can create a belt-and-suspenders option by treating the technical advisor as "a disinterested expert on the law applicable to a proceeding."[201] This approach requires the judge to give notice to the parties of the advisor consulted and the substance of the advice, and to afford the parties reasonable opportunity to respond.[202] This option forsakes some of the flexibility of completely ex parte advisor contact to achieve the security of an explicit safe harbor in the federal ethical rules.

197. *See supra* note 111 and accompanying text; *see also supra* notes 120–125 and accompanying text.

198. Compare *Matter of Judicial Disciplinary Proceedings Against Tesmer*, 580 N.W.2d 307, 315–16 (Wis. 1998), in which unbeknownst to the parties, the judge secretly relied on a longtime close law professor friend who visited her home on weekends and who drafted at least thirty-two opinions for her there over a three year period. The court found that the judge's ex parte communication with a "person outside of and unconnected with the judicial system" was improper. *Id.* at 316.

199. *See, e.g.*, CODE OF CONDUCT, Canon 3(A)(6) ("A judge should avoid public comment on the merits of a pending or impending action, requiring similar restraint by court personnel subject to the judge's direction and control.").

200. *See supra* notes 74–75 and accompanying text.

201. *See* CODE OF CONDUCT, Canon 3(a)(4), *supra* note 30; *supra* notes 30–31 and accompanying text.

202. *See supra* notes 76–80 and accompanying text.

C. Conclusion About Technical Advisors

The Federal Circuit's 2002 *TechSearch* decision does a great service for district judges in patent cases. The opinion shows a district judge how to get technical horsepower in chambers to cope with the exceptional challenge of a patent fight where the stakes are high and the technology is intimidating. District judges will welcome this paint-by-numbers assistance from the Federal Circuit, even though they may wonder whether all that process truly is necessary. Regional circuit judges should ponder whether it is preferable to treat technical advisors more like law clerks and therefore to decline *TechSearch*'s procedural suggestions. We are likely to see more such cases, thanks to leadership by both the Federal Circuit and by Judge Orrick in San Francisco, whose repeated willingness to try out a good idea ought to win him swift election to the federal judiciary's Hall of Fame on this count alone.

V. CONSIDER PATENT SPECIAL MASTERS

The fifth option is a patent special master. By "patent special master," I mean an additional staff lawyer with litigation experience and patent expertise that regular judicial law clerks rarely possess. A patent special master ideally is schooled in patent law and practice, and works at the judge's elbow, with the parties' consent and at their expense. Patent special masters differ from 706 experts and technical advisors in that they are attorneys rather than scientists or technologists. These attorneys might be senior veterans of true professional repute. Patent special masters thus can offer the district judge two advantages: a sizeable professional background to tap when pondering how to handle an unwieldy matter, and extra hands to help with the heavy lifting when the paper avalanches onto the judge's floor. Especially in complex patent cases, district judges may long for a seasoned nonpartisan with whom they can mull over the issues and the options. Judges also may want to prevent a single case from monopolizing their regular judicial law clerks. The patent special master heeds these calls.

A. Practical Contours of the Role

How can a district judge get this added help? Federal judges can appoint special masters, who can perform many different roles.[203] As Professor Edward

203. *See, e.g.*, Phillips Petroleum Co. v. Huntsman Polymers Corp., 157 F.3d 866, 876 (Fed. Cir. 1998) (recounting the work of a stipulated special master in patent case); Edward H. Cooper, *Civil Rule 53: An Enabling Act Challenge*, 76 TEX. L. REV. 1607, 1612 (1998) (referring to the "increasingly diverse uses of masters as judicial adjuncts"); Thomas L. Creel & Thomas McGahren,

Cooper aptly notes, "[a]ppointment of a master may be justified when *economically powerful adversaries* conduct their litigation in a manner that threatens to consume an unfair share of the limited resources of public judicial officers."[204]

There is some published precedent for special masters serving as patent special masters,[205] but mostly I learned about this role from personal experience. District Judge Stephen Wilson appointed me as a special master to do this work in a computer patent case.[206] Judge Wilson previously had used a special master in a leading Federal Circuit case on the practice.[207] The case I worked on settled rather than led to a reported decision. My involvement began when the judge called me, vetted me for conflicts, and informed the parties of his intentions. He gave the parties my resume and reviewed my situation on the record. (I now believe it would have been helpful for me also to have filed a formal affidavit attesting to my neutral status.[208]) The judge issued an order describing my role. The parties acquiesced in my appointment. I reviewed pleadings, met ex parte with the judge and his law clerks in chambers, and sat at the law clerks' table during court hearings. I avoided speaking with counsel while the matter was pending. I felt much like a judicial law clerk again, after twenty years' absence, except that now I felt as though I had some better idea of the topic. The parties split my hourly rate, and they paid promptly. I did not testify, I wrote no report, and I presided over no hearings (although I perhaps might have done so had that seemed useful to the judge in the later course of the matter). Judge Wilson did not delegate decisions to me. I worked through boxes of papers and talked the case over with him, before hearings and during recesses, as was helpful to the judge. As various matters arose, he decided what he would do.

This arrangement seemed sensible and constructive. This case was between economically powerful adversaries.[209] It was occupying a disproportionate share

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Use of Special Masters in Patent Litigation: A Special Master's Perspective, 26 AIPLA Q.J. 109, 129–39 (1998) (describing the variety of roles special masters have performed in patent cases).

204. Cooper, *supra* note 203, at 1612 (emphasis added). Professor Cooper is the Reporter for the Advisory Committee on the Federal Rules of Civil Procedure.

205. *See* Creel & McGahren, *supra* note 203, at 141 ("[A]nother function [the special master] was asked to undertake was as an advisor on patent law and practice."). See also the special master's description of district court practice in *Alpex Computer Corp. v. Nintendo Co.*, 102 F.3d 1214, 1216, 1218 (Fed. Cir. 1996) ("In order to resolve the outstanding questions of claim construction prior to trial, the district court held an evidentiary hearing with the assistance of a special master . . . . [T]he district court submitted the issue of claim construction to a special master.").

206. Unova, Inc. v. Compaq Computer Co., No. CV00-1333 SVW(RNBx). I performed this work before I was appointed to the Superior Court.

207. *See* Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1566–67 (Fed. Cir. 1988).

208. *See supra* note 114 and accompanying text.

209. *See supra* note 204 and accompanying text.

of the court's docket. The stakes were high. The judge wanted some help in getting his arms around the thing. It seemed helpful to him to be able to talk off the record with someone who also had read the papers carefully and whose only aim was to help find the legally correct answers to the case's many questions. Judge Wilson's interest in thoughtful and informed deliberation was ideally judicious.

The patent special master option is attractive. In my experience, it works well. District judges attracted to the idea should announce their plans and should give the parties timely notice so they can object if they so choose.[210] Judges should want the parties to have notice before the judge begins to invest time and to rely. It likewise is in the judge's interest to issue an order describing the patent special master's role and emphasizing that the judge is not delegating decisionmaking power to the clerk. Furthermore, it may be prudent for the patent special master to execute three affidavits. The first would disclose the conflicts situation immediately. The second would confirm the clerk's understanding of the patent special master's role—a matter that might benefit from the court's consultation with counsel to define that role precisely. The third affidavit would be pertinent after service and would attest to role compliance.[211]

I add a note about locating the right candidate in future cases. The small size of the patent bar can mean that many logical candidates have conflicts of interest. Yet three factors are significant here. First, extensive patent law expertise may not be absolutely essential. When a judge reflects on what sort of talent would best help untangle a knotty matter, perhaps the main thing is just to get an extremely smart and experienced civil litigator. They are plentiful at the right price, and something may be much better than nothing. Second, the market for this work may well be national. E-mailed messages and documents can reduce the need for travel, and the cost and inconvenience of travel may be slight anyway compared to the scale of a truly large patent fight. Third, there may be a developing and informal national pool of lawyers into which judges can tap. These factors suggest that the judge may wish to start looking for a patent special master early on. A fruitful search may take time.

B. Evolution of Special Master Practice

Is the patent special master role the proper work of a special master? What exactly is a special master, anyway? We used to know, but we are not sure

210. *Cf.* Burlington N. R.R. Co. v. Dep't of Revenue, 934 F.2d 1064, 1069–70 (9th Cir. 1991) (noting the district court's lack of notice to the parties in evaluating whether the appellant's delay of thirteen days for objection was "within a reasonable time").

211. *See supra* notes 116–130 and accompanying text.

anymore. Rule 53 of the Federal Rules of Civil Procedure is about masters. Once upon a time there was an identifiable core to Rule 53:

> Historically, Rule 53 was designed to help judges resolve fact-intensive cases. The process involved having a master review facts, organize the information, and prepare a comprehensive report to assist the judge or jury. The traditional image is one of a court-appointed accountant poring over volumes of bookkeeping records, classifying them, and perhaps applying clear legal formulas to thousands of transactions.[212]

Some older authority also suggests that, at least in one circuit, special master is a "misnomer"[213] for the work I describe. In a patent case, Judge Albert Bryan wrote:

> The Rules contemplate a separate and distinct proceeding before the master. If it is genuine reference, it should be strictly followed; otherwise the trial stages before and subsequent to the [master's] report become blurred. *Of course, the District Court has the right on an intricate subject of suit, as here, to engage an advisor to attend the trial and assist the court in its comprehension of the case.* . . . But when there is a merging of master and advisor the result may have a hybrid status.[214]

This traditional core to master practice is gone. Out of an "awareness that special master activity had expanded beyond its traditional boundaries,"[215] a federal advisory committee commissioned a large empirical study that the FJC published in 2000. This FJC study "confirmed that special masters often are used for purposes not clearly contemplated by Rule 53."[216] This study covered special master activity of all kinds, without any focus on the particular variant I pursue here. It found that modern use of special masters:

> covered a full spectrum of civil case management and fact-finding at the pretrial, trial, and posttrial stages . . . Judges appointed special masters to quell discovery disputes, address technical issues of fact, provide accountings, manage routine Title VII cases, administer class settlements, and

212. THOMAS E. WILLGING ET AL., SPECIAL MASTERS' INCIDENCE AND ACTIVITY: REPORT TO THE JUDICIAL CONFERENCE'S ADVISORY COMMITTEE ON CIVIL RULES AND ITS SUBCOMMITTEE ON SPECIAL MASTERS 4 (2002), *available at* http://www.fjc.gov/public/pdf.nsf/lookup/SpecMast.pdf/$file/SpecMast.pdf (visited July 18, 2002).

213. Danville Tobacco Ass'n v. Bryant-Buckner Ass., Inc., 333 F.2d 202, 208 (4th Cir. 1964) (Bryan, J.) ("'Master' was a misnomer. In truth he did not serve as a master in the sense of being a commissioner of reference or master in chancery. He did not take evidence; he did not resolve any factual disputes; he made no rulings of law.").

214. Bullard Co. v. Gen. Elec. Co., 348 F.2d 985, 990 (4th Cir. 1965) (Bryan, J.) (emphasis added).

215. WILLGING ET AL., *supra* note 212, at 3.

216. RULES REPORT, *supra* note 112, at 107; *see also id.* at 106 ("In working through the Civil Rules, these committees observed that Rule 53 does not describe the uses of special masters that have grown up over the years.").

implement and monitor consent decrees, including some calling for long-term institutional change.[217]

Modern master practice has so completely outstripped the traditional premise of Rule 53 that the Judicial Conference now is extensively revising the rule to "reflect the vast changes that have overtaken the use of special masters."[218] I will return to the impending Rule 53 revision shortly, but first I identify the technique that has expanded the traditional role of masters.

The FJC study found that courts and litigants expanded use of masters beyond the apparent reach of Rule 53 through consent and acquiescence:

> How do consent and acquiescence work in practice? . . . [One scenario is that] a judge faced a mass of complicated activity at the discovery or posttrial stage of a case. . . . If the judge felt strongly that the work required an independent actor and that its demands exceeded the court's resources, what one attorney called litigation dynamics took over. Unless the parties came up with a plausible alternative or unless at least one party objected that it could not afford to pay the master's fees, the parties consented to the appointment.[219]

This district court system of consent and acquiescence thus had been widespread but largely undocumented before the 2000 FJC survey. These consensual arrangements left a scant trail in appellate reports because consent and acquiescence are binding on the parties and thus have foreclosed appellate review.[220]

C. The Success of an Informal System

How well has this pervasive but unreported system worked? Professor Cooper observed in 1998 that there were "few visible signs of distress."[221] Later data bore out this understated view. In the opinions of the people served and the people paying, the master system has worked very well indeed. "Almost all" of the judges and lawyers surveyed said the masters were "effective."[222] "[A]ll judges and almost all attorneys queried thought that the benefits of appointing the masters outweighed any drawbacks and said that they would, with the benefit of hindsight, still support the appointments."[223] Added

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217. WILLGING ET AL., *supra* note 212, at 4.

218. RULES REPORT, *supra* note 112, at 22.

219. WILLGING ET AL., *supra* note 212, at 5.

220. *See* Constant v. Advanced Micro-Devices Inc., 848 F.2d 1560, 1566 (Fed. Cir. 1988) ("Failure to object in a timely fashion constitutes a waiver."); *see also* Kobrin v. Univ. of Minn., 121 F.3d 408, 413 (8th Cir. 1997); Burlington N. R.R. Co. v. Dep't of Revenue, 934 F.2d 1064, 1069 (9th Cir. 1991) ("These cases reflect the courts' desire to avoid rules that provide an incentive to withhold objections until disappointed by an unfavorable result."); *supra* note 100 and accompanying text.

221. *See* Cooper, *supra* note 203, at 1612.

222. WILLGING ET AL., *supra* note 212, at 9.

223. *Id.*

cost was the most commonly cited drawback of this procedure, with failure to accelerate or slowing of the case a second complaint. "Yet, none of our interviewees found that these drawbacks outweighed the benefits in a given case."[224] Indeed, study participants did not report that cost was a major reason for limiting these appointments.[225] All in all, then, this largely uniform record of success with masters is impressive.

Under the current Rule 53, then, district judges have used their power to seek consent from the parties to get effective help that has gone beyond traditional notions of a "special master." The patent special master idea is not common, but it is in step with the diversity of modern Rule 53 practice that we now know exists.

D. Impending Rule 53 Revisions

Changes in Rule 53 are likely to take effect on December 1, 2003.[226] The proposed revision leaves intact the district court power of appointing masters with the parties' consent.[227] As currently proposed, the revisions add four noteworthy features. First, "the court must consider the fairness of imposing the likely expenses on the parties and must protect against unreasonable expense or delay."[228] Second, the court "must give the parties notice and an opportunity to be heard before appointing a master. A party may suggest candidates for appointment."[229] Third, the court must issue an order that specifies the master's duties, authority, compensation, and other important details, including the circumstances in which the master may communicate ex parte.[230] Fourth, the master must file an affidavit about potential conflicts of interest for the appointment to become effective.[231] Before their effective date of December

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224. *Id.*

225. *Id.* at 6. *But cf. id.* ("These cases were hardly typical, however. They generally involved both high financial stakes and parties who were willing and able to pay the masters' fees.").

226. PRELIMINARY DRAFT OF PROPOSED AMENDMENTS TO THE FEDERAL RULES OF PRACTICE AND PROCEDURE (2001), *available at* http://www.uscourts.gov/rules/comment2002/8-01Broc.pdf (visited July 22, 2002).

227. *See* RULES REPORT, *supra* note 112, at 119 (Proposed Rule 53(a)(1)(A)) (stating that the court may appoint a master to "perform duties consented to by the parties"); *id.* at 130 (Proposed Committee Note stating that, "Courts should be careful to avoid any appearance of influence that may lead a party to consent to an appointment that otherwise would be resisted. Freely given consent, however, establishes a strong foundation for appointing a master.").

228. *Id.* at 120 (Proposed Rule 53(a)(4)); *see also id.* at 121 (Proposed Rule 53(b)(2) stating that the court must "direct the special master to proceed with all reasonable diligence").

229. *Id.* at 120 (Proposed Rule 53(b)(1)).

230. *Id.* at 129 (Proposed Rule 53(b)(2)(A)–(E)).

231. *Id.*

1, 2003, these measures are useful suggestions. If approved without change, these measures will be mandatory after December 1, 2003.[232]

Can judges appoint a patent special master only when the parties consent? The proposed revision to Rule 53 indeed may cause that change, which perhaps would be an unjustified development. Unjustified or not, however, the rule revision is likely to be a fact of life for district judges in the future. The practical implication is that judges considering patent special masters after December 1, 2003 will be on far safer ground if they undertake this action only with the parties' consent. The balance of this section offers support for these conclusions.

How might the proposed Rule 53 revision limit district court power? The proposed revision clearly permits judges to appoint a patent special master with the parties' consent.[233] For masters who do not enjoy party consent, however, the proposed revision sets different standards for those who are to "hold trial proceedings" and for those who will "address pretrial and post-trial matters."[234] Patent special masters presumably would fall in the latter category, for they do not hold trial proceedings. For this latter category, the proposed revision states that, lacking consent, a court may appoint a nontrial master only "to address matters that *cannot be addressed effectively* and timely by an available district judge or magistrate judge of the district."[235]

This "cannot be addressed effectively" standard is new and demanding. The revision acknowledges that the current Rule 53 says little or nothing about masters who are not trial participants.[236] The proposed revision changes this situation by adding a new regulatory standard. This new standard presumably would apply to patent law clerks, who are not trial participants in the main. The new standard appears to be high: Must the district court have a patent special master to address the case at bar "effectively?" Effectiveness tends to be an ambiguous standard, for it comes by degree. How effective is effective enough? Even so, my argument has been that a patent special master is helpful to district courts with difficult patent cases. The idea is socially desirable: Its benefits outweigh its social costs. But is a patent special master essential, in the sense that the district court cannot "effectively" address the case without one? For nearly all patent cases in America before now, there were no patent special masters. It would take hubris now to declare that all this judicial decisionmaking was ineffective. I do not make that claim. Patent special masters can be worth the cost, but very rarely, if ever, will they be essential to effective court

232. *See* http://www.uscourts.gov/rules/newrules6.html (visited June 9, 2003).

233. *See supra* note 227 and accompanying text.

234. RULES REPORT, *supra* note 112, at 119. *Compare* Proposed Rule 53(a)(1)(B) *with* 53(a)(1)(C).

235. *Id.* (emphasis added).

236. Proposed Committee Note, *id.* at 130 (stating that pretrial master practice "is not well regulated by present Rule 53, which focuses on masters as trial participants").

operation. Therefore the revised Rule 53 is unlikely to be a source of authority for patent special masters, unless the parties consent to the proposal.

When the parties do not consent, a patent special master appointment might rest on another potential source of power: inherent power. Courts traditionally have inherent power independent of Rule 53's scope.[237] "Deeply rooted in Anglo-American judicial usage, inherent judicial authority is broad indeed and is nowhere precisely defined."[238] Authority from the Federal Circuit states that district courts have had inherent power to appoint special masters in appropriate cases. These statements seemed to empower district judges to appoint patent special masters without the parties' consent.[239] The statements read like expressions of Federal Circuit law, but a possible implication of the 2002 *TechSearch* decision is that this issue properly is controlled by regional circuit law rather than by the Federal Circuit.[240] Regional circuits have taken various perspectives on nonconsensual use of special masters. In the famous *Microsoft* case, the D.C. Circuit expressed notable and colorful hostility in reference to a special master who was to render proposed findings and conclusions.[241] This hostility might not apply to appointment of a mere patent special master. The three historic problems with special masters are cost, delay, and abdication of judicial responsibility.[242] Patent special masters might escape these problems,

237. Irving R. Kaufman, *Masters in the Federal Courts: Rule 53*, 58 COLUM. L. REV. 452, 462 (1958) ("Over and above the authority contained in rule 53 to direct a reference, there has always existed in the federal courts an inherent authority to appoint masters as a natural concomitant of their judicial power.").

238. Daniel J. Meador, *Inherent Judicial Authority in the Conduct of Civil Litigation*, 73 TEX. L. REV. 1805, 1805 (1995); *cf.* Robert J. Pushaw, Jr., *The Inherent Powers of Federal Courts and the Structural Constitution*, 86 IOWA L. REV. 735, 739 (2001) ("The Court has never explained how the Constitution simultaneously limits federal courts (especially as compared to Congress), yet authorizes them to exercise broad and virtually unreviewable inherent authority.").

239. Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1566–67 (Fed. Cir. 1988); *see also* Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 72 F.3d 857, 864–66 (Fed. Cir. 1996) ("Consent of the parties is not required."), *rev'd on other grounds*, 520 U.S. 1111 (1997).

240. *See supra* note 100 and accompanying text.

241. *See* United States v. Microsoft Corp., 147 F.3d 935, 940 (D.C. Cir. 1998); *id.* at 954 ("[T]he Court's action in *La Buy* appears necessarily to depend on the view that, at least at some point, even the temporary subjection of a party to a Potemkin jurisdiction so mocks the party's rights as to render end-of-the-line correction inadequate."); *id.* at 955 ("[I]t is very doubtful that complexity tends to legitimate references to a master at all."); *id.* at 955 n.22 ("unilateral, unnoticed deputization of a vice-judge"); *id.* at 956 (noting that an earlier case held that a district judge "has no discretion to impose on parties against their will 'a surrogate judge,'" which "effectively ruled out nonconsensual references in nonjury cases except as to peripheral issues such as discovery and remedy"); *id.* (noting that reference to a special master was error because the *Microsoft* case was "devoid of anything remotely 'exceptional' within the meaning of Rule 53(b)"); *id.* ("The reference to the master was in effect the imposition on the parties of a surrogate judge and either a clear abuse of discretion or an exercise of wholly non-existent discretion.").

242. *See, e.g.*, Jerome I. Braun, *Special Masters in Federal Court*, 161 F.R.D. 211, 215–16 (1995); Kaufman, *supra* note 237, at 453–54; Patricia M. Wald, *"Some Exceptional Condition"—The Anatomy of a Decision Under Federal Rule of Civil Procedure 53(b)*, 62 ST. JOHN'S L. REV. 405, 410 (1988).

but this point is not settled in D.C. Circuit law. Other circuits are less militant, although they occasionally fault district judges for misusing masters. For instance, these circuits condemn using masters in ordinary cases that involve only "simple factual matters."[243] These circuits likewise fault district courts that delegate the judicial decisionmaking function for an entire case to a master when the district court gives "mere rubber stamp" review to the master's work.[244] Yet one such circuit also remains generally sanguine about masters in less extreme cases.[245] In sum, a very substantial appellate basis has existed for thinking that district courts have inherent power to appoint masters in many patent cases.

However, this situation may change if the Rule 53 revisions become effective on December 1, 2003. As Professor Stephen Yeazell persuasively puts it:

> Inherent power is a fine argument when the rule doesn't cover something at all or when the power seems necessary to perform a basic function of judging. But when we have cases like *La Buy*[246] telling judges to be careful about masters and a Rule that says how to appoint a master, then to do an end run with ill-defined inherent power seems to be inviting not only a reversal but a short lecture on respect for the Rules.[247]

On December 1, 2003, then, the Rule 53 revision may terminate the inherent power that formerly existed in this field.[248]

This result would be in some tension with the FJC study that figured in the origin of the rule revision. That study asked "what rule changes do judges, special masters, and lawyers want?"[249] The "majority" of those surveyed saw no need for change.[250] Those who suggested change mostly favored "a broad, flexible grant of authority."[251] The FJC study expressly warned that "[s]pecific new rules might be construed to constrain the inherent authority that currently allows judges to take all the steps necessary to manage complex litigation."[252] In essence,

243. Bennerson v. Joseph, 583 F.2d 633, 642 (3d Cir. 1978).

244. Burlington N. R.R. Co. v. Dep't of Revenue, 934 F.2d 1064, 1074 (9th Cir. 1991); *see also id.* at 1073 (district court delegated judicial decisionmaking function for entire case); *id.* at 1072 (case circumstances were not exceptional); *compare supra* notes 176–179 and accompanying text.

245. *In re* Hanford Nuclear Reservation Litig., 292 F.3d 1124, 1138 (9th Cir. 2002) ("It is within a district court's discretion to appoint a master, and to decide the extent of the duties of a special master.").

246. *See* notes 176–179 and accompanying text *supra*.

247. Personal communication to author, Apr. 8, 2003. *Cf.* Swierkiewicz v. Sorema, 534 U.S. 506, 514–15 (2002) ("Whatever the practical merits of this argument, the Federal Rules do not contain a heightened pleading standard for employment discrimination suits. A requirement of greater specificity for particular claims is a result that 'must be obtained by the process of amending the Federal Rules, and not by judicial interpretation.'") (citation omitted).

248. *See, e.g.*, *supra* note 239.

249. WILLGING ET AL., *supra* note 212, at 11.

250. *Id.*

251. *Id.*

252. *Id.*

the empirical study found that the system was not broken, yet proposed to fix it anyway. "One got the sense that some of our respondents were saying, in effect, 'while you're up, get me a rule change.'"[253] This empirical foundation does not mesh with the conclusion that the rule revision will cut off an inherent power that district courts currently enjoy.

This debate could become quite involved. Inherent power is a concept at once nebulous and fundamental. There also arises the issue of the existence and clarity of a rule's plain meaning. Here I do not pursue these tangents, but rather draw a limited, pedestrian, and practical conclusion: In the future, district judges will be on safer grounds if they appoint a patent special master only after obtaining the parties' consent.

E. Are Patent Special Masters Ethical?

There are three questions here. First, may judges ethically contact patent special masters on an ex parte basis, and if so, why? The answer is yes, because consent waives ex parte objections, and because patent special masters (like technical advisors) probably are "court personnel." Second, is it ethically permissible for a patent special master to receive payments from the parties? Again the answer probably is yes. Third, does this option run afoul of a 2003 advisory letter? The answer is no. I address each point in turn.

The first question is whether judges ethically may contact patent special masters on an ex parte basis. Most fundamentally, the parties waive this objection when they expressly consent to this ex parte conduct, as I presume they have done in this situation.[254] Moreover, it appears that patent special masters, like technical advisors, properly should be considered "court personnel."[255] Although there is no authoritative resolution of the issue, it thus appears that Canon 3(A)(4) permits judges to have ex parte contacts with patent special masters, just as the canon permits judges to have ex parte contacts with judicial law clerks and with technical advisors.[256] The situation is similar for technical advisors and patent special masters but potentially different for 706 experts. This situation makes sense. One crucial feature common to both the technical advisor and the patent special master roles is that neither may engage in independent factual investigation, as a 706 expert witness is free to do.[257]

253. *Id.* at 11–12.
254. *See supra* notes 220, 227–253 and accompanying text.
255. *See supra* notes 194–200 and accompanying text.
256. *See supra* notes 194–195 and accompanying text.
257. *See supra* note 198 and accompanying text.

The second question is whether it is proper for the court to ask law firms to pay the cost of a patent special master. Patent special masters differ from judicial law clerks in a key respect: the financial support mechanism. Judicial law clerks are regular federal employees on the federal payroll, while patent special masters seem more like independent contractors whom the parties pay according to judicial order for the purpose of assisting the court for the duration of one particular case.[258] This distinction between employee and independent contractor matters because the Code of Conduct for Judicial Employees applies to the former and not the latter.[259] This Code thus bars law clerks from accepting funds from law firms likely to come before the court, but apparently does not bar (or apply at all to) law firm payments to patent special masters according to court order.[260]

A pertinent advisory opinion applied this basic prohibition on payments to judicial law clerks in an enlightening way. The issue was whether regular judicial law clerks could accept bonuses during their clerkship from their future law firm employer. This advisory opinion said such payments would violate the explicit terms of the Code governing judicial employees.[261] This advisory opinion did not take up the issue of patent special masters. Nevertheless, as a textual matter, "[c]ontractors . . . are not covered by this code . . . ."[262] It thus appears that patent special masters ethically can receive law firm payments, even though ordinary judicial law clerks cannot.

This ban on payments to law clerks makes sense, even apart from the application of the literal code language. Law firm payments to current judicial law clerks would create at least an appearance of judicial indebtedness to the law firm, even if the particular clerk scrupulously avoided cases involving the future employer. Bonus payments would allow judges to attract more experienced and senior lawyers than the judge might otherwise be able to hire. The judge directly benefits. Indirectly as well, reasonable judges can be expected to take pleasure from good fortune flowing to the chambers family. These

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258. *See supra* notes 195–196 and accompanying text.

259. *See supra* note 196.

260. *See* Code of Conduct for Judicial Employees, *at* http://www.uscourts.gov/guide/vol2/ch2a.html (last visited June 8, 2003); *see also id.* (Canon 4(E) stating that, "[A] judicial employee should not receive any salary, or any supplementation of salary, as compensation for official government services from any source other than the United States . . . ."); 5 U.S.C. §7353(a) (2003) ("[N]o . . . employee of the . . . judicial branch shall solicit or accept anything of value from a person (1) seeking official action from [or] doing business with . . . the individual's employing entity; or (2) whose interests may be substantially affected by the performance or nonperformance of the individual's official duties.").

261. Committee on Codes of Conduct, Advisory Opinion No. 83, Law Clerks' Bonuses and Reimbursement for Relocation and Bar-Related Expenses, *at* http://www.uscourts.gov/guide/vol2/83.html (visited June 9, 2003).

262. *See supra* note 196.

benefits create problems of appearance. A losing party in the future that was opposed by the paying law firm could always have a lurking and reasonable question about the conscious or subconscious relevance of those past payments on the judicial resolution of the case. This advisory opinion is correct.

The situation is different when the judge asks both parties if they are willing to split the fair market value for present work from a supplementary patent special master. Here the payment is not a gratuity akin to one player's tip to an already-salaried employee. It is not a one-sided bonus arising out of the spontaneous generosity of a single firm that creates questions about motives and debts. Rather it is a court-initiated and court-supervised user fee to be split between the parties that is essential to finance needed and immediate work. It is a cost taxed to both parties in response to an exceptional burden that these parties have brought to the court, a fairly shared obligation for valid services currently rendered. In principle as well as literally, then, party payments to patent special masters seem perfectly proper, despite the fact that judicial law clerks may not receive bonus payments from a future law firm employer during their clerkships.

The third question is whether this option runs afoul of an unpublished 2003 advisory letter from the Associate Director and General Counsel to the Administrative Office of the United States Courts.[263] The letter addressed the issue "whether a judge's former law clerk may be continued in employment as a special master under F.R.C.P. 53," and concluded that it would not be appropriate to use the special master process to continue a law clerk's employment.[264] The letter's logic is that there are "fundamental distinctions between these quite disparate functions" performed by ordinary law clerks and by special masters.[265] Law clerks are government civil service employees paid solely by the government rather than by the parties, the letter reasons, while special masters are normally independent contractors paid by parties. Masters traditionally have power to regulate hearings, to require the production of evidence, to make evidentiary rulings, to swear and examine witnesses, and independently to produce a written report that is filed with court clerk and served on the parties.[266] Law clerks, the letter concludes, do none of these things.[267]

This letter does not impeach the option I have outlined here. This letter addressed a different issue than the one I have reviewed in this section of this

263. Letter from Associate Director and General Counsel to the Administrative Office of the United States Courts, to a Chief Judge, U.S. District Court (Mar. 21, 2003) (on file with author).

264. *Id.* at 1.

265. *Id.* at 3.

266. *Id.* at 2.

267. *Id.*

Article. My concern has been on the demands created by exceptional and highly episodic patent cases—an issue the letter did not broach. In contrast, the letter's focus was on ordinary law clerks. An unstated but obvious concern in the letter was the prospect that every one of the hundreds of federal district judges might well like to augment their staffs regularly by retaining proven law clerks while continuing to hire new ones. This potential warrants genuine and justifiable concern by the Administrative Office.[268] The letter also makes no mention of the impending revision of Rule 53 that expressly permits courts to appoint masters "to perform duties consented to by the parties,"[269] while my analysis relies heavily on the flexibility and legitimacy created by the parties' consent.[270] Moreover, the letter makes no suggestion of unethical conduct in the sense of a violation of the Code of Conduct for United States Judges, to which the letter does not refer. In sum, there is no ethical barrier to the patent special master idea.

F. Conclusions About Patent Special Masters

When a patent infringement case is of monstrous scale, able parties gear up to meet the challenge. District judges should consider doing the same. One option is a patent special master: an experienced litigator who can supplement the regular court staff for a particularly demanding case. The parties fund this attorney, who ideally should have the savvy and work ethic to help a beleaguered district judge pacify an unruly beast. The rubric of "special master" is a means to this end. Judges have an undoubted power to seek consent for such special master proposals, and parties commonly go along with bench suggestions about special masters.[271] The patent special master idea thus is promising and practical. In the right case, it is worth a try.

VI. RECALL THE *VITRONICS* MANTRA

The Court of Appeals for the Federal Circuit has used its exclusive jurisdiction over patent appeals to create an unfortunate national rule about expert testimony in patent trials. This rule, commonly associated with the *Vitronics* decision,[272] governs the evidence that federal district judges may use to interpret patent claims, the crucial part of a patent that precisely defines

268. *See supra* note 179 and accompanying text.

269. *See* Amendments to the Federal Rules of Civil Procedure, Proposed Rule 53(a)(1)(A), *available at* http://www.uscourts.gov/rules/supct1202/CVclean.PDF (last visited July 18, 2003); *see supra* notes 221–227 and accompanying text.

270. *See supra* notes 217–223 and 233–253 and accompanying text.

271. WILLGING ET AL., *supra* note 212, at 28 & tbl. 3.

272. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 (Fed. Cir. 1996).

the metes and bounds of the invention. This *Vitronics* rule distinguishes between "extrinsic evidence," including expert testimony, and "intrinsic evidence," which is the language of the patent itself together with the "patent prosecution history," which in turn is the written record of negotiation between the inventor and the patent examiner before the examiner approved the requested patent. Under *Vitronics*, it is "legally incorrect" for federal district judges to rely on expert testimony to interpret patent claims that, in light of the intrinsic evidence, are unambiguous.[273]

Vitronics does permit district judges to consider expert testimony for claim interpretation when the claim terms are ambiguous.[274] This exception is of unpredictable dimensions, however, because ambiguity or its opposite can be in the eye of the beholder. If the Federal Circuit finds a term to be unambiguous, then district court use of expert testimony in claim interpretation can be improper even though the district court sincerely thought the issue indeed was ambiguous.

Some later Federal Circuit decisions appear to undercut or entirely reverse the *Vitronics* rule.[275] Yet other decisions seem to continue to cite *Vitronics* in its original form, without reference to later cases.[276] *Vitronics* thus remains a latent fact of life for federal district judges, who cannot predict when the Federal Circuit will or will not apply *Vitronics* in its original and unmodified form.

The *Vitronics* rule can make it risky for district judges to hear expert testimony when interpreting patents. District judges must know how to skirt its peril. Relying on expert testimony for claim interpretation poses a hazard, but using that testimony for other purposes does not. In particular, the Federal Circuit says that "[e]xtrinsic evidence may always be consulted . . . to assist in

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273. *Id.* at 1585.

274. *Id.* at 1583 ("In those cases where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper.").

275. *See, e.g.*, Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1308–09 (Fed. Cir. 1999); *id.* at 1314–15 (additional views of Rader, J., and Plager, J.); AFG Indus., Inc. v. Cardinal IG Co., Inc., 239 F.3d 1239, 1249 (Fed. Cir. 2001) ("This case presents a good example of how *extrinsic evidence can and should be used* to inform a court's claim construction, and how failure to take into account the testimony of persons of ordinary skill in the art may constitute *reversible error*.") (emphasis added); *cf.* Karl Koster, *Extrinsic Evidence in Patent Claim Interpretation: Understanding the Post-Markman Confusion*, 8 J. INTELL. PROP. L. 113, 129–36 (2000) (*Pitney Bowes* signals a moderating view of the use of extrinsic evidence).

276. *See* Intel Corp. v. VIA Tech., Inc., 319 F.3d 1357, 1367 (Fed. Cir. 2003) ("When an analysis of *intrinsic* evidence resolves any ambiguity in a disputed claim term, it is improper to rely on extrinsic evidence to contradict the meaning so ascertained.") (citing *Vitronics*, 90 F.3d at 1583); Pickholtz v. Rainbow Tech., Inc., 284 F.3d 1365, 1372–73 (Fed. Cir. 2002) ("Only if a disputed claim term remains ambiguous after analysis of the intrinsic evidence should the court rely on extrinsic evidence.") (citing *Vitronics*, 90 F.3d at 1583).

understanding the underlying technology."[277] Therefore, district judges should make a record that expert testimony was extrinsic evidence that the court used only for background education, not for claim interpretation. Making this record can prevent a finding of *Vitronics* error on appeal.[278] For claim interpretation, district judges should take note of the *Vitronics* rule and should concentrate instead on intrinsic evidence: the patent itself and its prosecution history.[279]

CONCLUSION

Federal judges are not technologically trained, but the *Markman* decision forces them to make technological decisions in patent cases. This dilemma is not the fault of federal district judges, but it is their predicament. The finer the jurist, the faster the district judge will be to acknowledge and to redress the problem. The key is education. Someone must teach the generalist judge some highly specialized technology and science. That process certainly need not be painful. It should be stimulating and fun, the way terrific teaching can always make an unlikely topic spring to life through inquiry and exploration.

District judges can take six concrete steps to tame challenging patent cases. The first resort is reliance on our time-honored adversarial mechanism. Judges ought not be bashful about demanding the best from trial counsel, and this Article has surveyed some educational formats that judges have praised as effective. The second step is to observe ethical proprieties should judges decide to go beyond the educational resources that the parties offer. Judges must avoid inappropriate ex parte contacts and must not embark on independent factual investigations. The third step is to consider appointing a court expert witness under Rule 706 of the Federal Rules of Evidence. Judges ought to overcome a natural reluctance to limit themselves to the parties' proposals,

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277. Interactive Gift Express, Inc. v. Compuserve Inc., 256 F.3d 1323, 1332 (Fed. Cir. 2001) (emphasis added).

278. *Cf. Pitney Bowes*, 182 F.3d at 1309 ("[W]e do not doubt the district court's express statements that it did not rely on extrinsic evidence in its claim construction.").

279. *Cf.* Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202–03 (Fed. Cir. 2002).

> Dictionaries, encyclopedias and treatises, publicly available at the time the patent is issued, are objective resources that serve as reliable sources of information on the established meanings that would have been attributed to the terms of the claims by those of skill in the art. . . . As resources and references to inform and aid courts and judges in the understanding of technology and terminology, it is entirely proper for both trial and appellate judges to consult these materials at any stage of a litigation, regardless of whether they have been offered by a party in evidence or not. Thus, categorizing them as "extrinsic evidence" or even a "special form of extrinsic evidence" is misplaced and does not inform the analysis.

Id.

because the alternative of a Rule 706 expert witness is a good one in the opinion of judges who have tried it. The same is true for the fourth option of a technical advisor, especially now that the recent *TechSearch* decision has created more certainty and predictability about this unusual arrangement. The fifth option is a patent special master: an experienced attorney financed by the parties who serves in chambers for one particular case. This alternative permits judges, with the parties' consent, to augment their staffs to handle the load of exceptionally large and arcane cases. Finally, the Federal Circuit's *Vitronics* doctrine is an unfortunate fact of life for district judges who must interpret patents. *Vitronics* suggests judges should consider making a record that they are relying on expert testimony for background education only and not for the purpose of interpreting patent claims.

After a typical day-long session devoted to these patent issues, it is predictable that one district judge or another will look up and wearily ask, "Won't Congress create a specialized trial court to handle these cases?" "Not in time," I reply. Nor should it, I think. American federal district judges cannot be beat for experience, brains, and a driving ambition to do right by justice. They just need the right tools. My hope here has been to offer a small but trusty set.

APPENDIX A

Sample Technical Advisor Appointment Order from *TechSearch*[*]

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TECHSEARCH L.L.C., Plaintiff,	)	No. C-98-3484 WHO
vs.	)	MEMORANDUM DECISION AND ORDER
INTEL CORPORATION, Defendant.	)	

In this patent infringement case, TechSearch, Inc., ("TechSearch"), owner of U.S. Patent No. 5,574,927[1] ("the '927 patent") entitled "RISC Architecture Computer Configured for Emulation of the Instruction Set of a

* Originally filed: Nov. 9, 1999, Richard W. Wies, Clerk, U.S. District Office, Northern District of California.

1. The '927 patent is highly technical. For example the "Abstract" section of the patent begins:

> A RISC architecture computer configured for emulating the instruction set of a target computer to execute software written for the target computer, e.g. an Intel 80X86, a Motorola 680X0 or a MIPS R3000. The apparatus is integrated with a core RISC computer to form a RISC computer that executes an expanded RISC instruction. The expanded RISC instruction contains the data fields which designate indirect registers that point to emulation registers that correspond to registers in the target computer. The width of the emulation registers is at least the width of those in the target computer. However, a field in the expanded RISC instruction restricts the emulated width to that required by a particular emulated instruction. Additionally, the expanded RISC instruction contains a field which designates the instruction mode for condition codes and target computer. Target instructions are parsed and dispatched to sequences of one or more expanded RISC instructions to emulate each target instruction.

U.S. Patent No. 5,574,927 at 1.

Sample Technical Advisor Appointment Order from *TechSearch*

Target Computer," alleges that Intel Corporation ("Intel") sells products including devices that infringe the patent in suit. TechSearch alleges that Intel has infringed at least claims 1, 4, and 14 of the '972 patent by manufacturing and/or selling or offering to sell the following computers and/or processors: the Intel Pentium Pro processor, the Intel Pentium II processor and the Intel Pentium II processor with MMX technology. TechSearch further alleges that Intel has sold its microprocessors to companies like Dell Computer, IBM, Fujitsu, Toshiba, and Gateway 2000. Intel claims that it did not infringe the patent, that the patent is invalid, that TechSearch is not the proper owner of the patent, and that the patent is unenforceable. Intel counterclaimed, seeking a declaratory judgment that the patent is invalid and unenforceable, and that Intel did not infringe the '927 patent.

The Court finds this to be highly technical case far beyond the boundaries of the normal questions of fact and law with which judges routinely grapple, and therefore has decided to appoint Dr. Anthony Hearn as a technical advisor. Dr. Hearn is a Resident Consultant at RAND Corporation in Santa Monica, California and an adjunct staff member at the IDA Center for Computing Sciences in Bowie, Maryland. His resume is hereto attached at Exhibit A, and his declaration in support of his appointment as technical advisor is attached at Exhibit B.

The Court has the inherent authority to appoint a technical advisor, without regards to the procedures set forth in Rule 706 of the Federal Rules of Evidence for appointing expert witnesses. *Reilly v. United States*, 863 F.2d 149, 154–55 and n.4 (1st Cir. 1988); *Ex Parte Peterson*, 253 U.S. 300, 312–14 (1920). "[S]uch appointments should be the exception and not the rule, and should be reserved for truly extraordinary cases where the introduction of outside skills and expertise, not possessed by the judge, will hasten the just adjudication of a dispute without dislodging the delicate balance of the juristic role." *Reilly*, 863 F.2d at 156. Recently, in *General Electric Co. v. Joiner*, Justice Breyer wrote separately to endorse this practice:

> [A]s cases presenting significant science-related issues have increased in number . . . judges have increasingly found the Rules of Evidence and Civil Procedure ways to help them overcome the inherent difficulty of making determinations about complicated scientific or otherwise technical evidence. Among these techniques are . . . the appointment of special masters and specially trained law clerks.

522 U.S. 136; 118 S. Ct. 512, 520 (1997).

The Ninth Circuit quoted the above language in approving this Court's appointment of a technical advisor in *Association of Mexican-American*

Sample Technical Advisor Appointment Order from *TechSearch*

Educators v. State of California, Nos. 96-17131 & 97-15422, 1999 WL 976720 (9th Cir. Oct. 28, 1999) ("AMAE"). That case involved highly technical statistical analysis (psychometrics) which presented "problems of unusual complexity beyond the normal questions of fact and law with which judges routinely grapple." *Id.* at 20. There, the Court appointed a technical adviser to advise the Court through *ex parte* communications. The Court did not rely on the technical advisor's opinions as a source of evidence, nor did the technical advisor testify; what the technical advisor did was to assist the Court in understanding the evidence submitted by the parties. *Id.* The Ninth Circuit held that the Court did not err in refusing cross examination of the technical advisor and in not requiring him to furnish an expert's report. *Id.*

Technical advisors are not witnesses, and may not contribute evidence. *Reilly*, 863 F.2d at 157. A judge may not appoint a technical advisor to brief him on legal issues, or to find facts outside the record of the case; the advisor's role is to acquaint the judge with the jargon and theory disclosed by the testimony and to help think through certain of the critical technical problems that invariably arise pre-trial and during the trial. *Id.* at 158. Technical advisors are not subject to discovery or cross-examination. *See id.* at 159; *Renaud v. Martin Marietta Corp.*, 972 F.2d 304, 308 (10th Cir. 1992).

In this case, the Court urgently requires the assistance of a technical advisor because the parties' voluminous evidence in fields with which the Court is not familiar is extremely complicated. At the *Markman* hearing in August, the Court heard expert testimony from both parties regarding the microarchitecture and function of "RISC architecture computers." The Court subsequently examined the parties' papers and hearing exhibits, which detail the steps a microprocessor performs in order to emulate another computer, and the experts' statements as to how the patent would be understood by one skilled in the art. A technical advisor could have assisted the Court in a number of ways to clarify the conflicting, apparently one-sided opinions of each expert.

In order to resolve upcoming motions for partial summary judgment and any problems that may arise before, during, or after trial, the Court will again be faced with expert testimony, scientific articles, and patents utilizing highly technical electrical engineering and microprocessor design. For example, in order to meaningfully determine whether a particular article "discloses and enables" the invention at issue, the Court must confront contradictory testimony form foremost experts in the field. Thus, the Court has been, and will be, asked to wrestle concepts "beyond the normal questions of

Sample Technical Advisor Appointment Order from *TechSearch*

fact and law with which judges routinely grapple." AMAE, 1999 WL 976720 at *20.

In accepting this engagement, Dr. Hearn has affirmed to the Court that he is a neutral third party in regard to this action, that he has no ideological, financial or professional interest in the outcome of the litigation, and that he will respond *ex parte* to the Court to questions concerning technical or scientific terminology or theory in a manner consistent with his best understanding of relevant, generally accepted scientific knowledge. He has further affirmed that he has never had, does not presently have, and does anticipate entering into any future financial, business or personal relationship with either litigant, including stock ownership, grant money, consulting contracts or employment, and will not do so while this action is pending. Nor will he use or seek to benefit from any confidential information that he may acquire in the course of this employment. Should Dr. Hearn become aware of any conflict or potential conflict, he has agreed to inform the Court immediately. In such an event, the Court will inform the parties, and either seek their comments or terminate his engagement sua sponte.

Dr. Hearn has agreed that his communications with the Court and any information shown or provided to him by the Court in connection with this litigation are to be treated as confidential. Dr. Hearn has further agreed that he will not engage in any independent investigation of the underlying litigation, provide evidence to the Court, or contact any party or witness in this action. The Court will identify for the parties materials, if any, used by Dr. Hearn in providing advice to the Court other than those submitted by the parties or those upon which a person versed in the relevant field of knowledge would be reasonably expected to rely.

The parties, including their experts and consultants, are ordered not to have any communication with Dr. Hearn except in the presence of the Court. Should any party contact Dr. Hearn (except to provide payment as set forth below), or should any person seek to communicate with him about the substantive issues involved in this litigation, he will inform the Court immediately of all facts and circumstances concerning such contact.

The parties have been advised that, consistent with the nature of his engagement, the Court anticipates having direct *ex parte* communications with Dr. Hearn.

Dr. Hearn shall keep track of his time and submit a monthly statement to the Court showing the hours expended. The parties are each directed to pay one-half of Dr. Hearn's compensation, which shall be $250 per hour for

Sample Technical Advisor Appointment Order from *TechSearch*

study and travel time and $300 per hour for Court time, plus such reasonable costs as he may incur in the performance of his duties.

Dr. Hearn will execute an affidavit indicating his understanding of this Order prior to beginning his engagement. He will at the conclusion of his employment file an affidavit attesting to his compliance with the terms of this Order.

Therefore, good cause appearing,

IT IS HEREBY ORDERED that:

1. Dr. Anthony Hearn is appointed Technical Advisor to the Court in the above-entitled action for the purpose of assisting the Court in understanding all matters requiring technical expertise and skill above and beyond the normal matters routinely dealt with by the Court. During any phase of the case, particularly during the testimony of experts, the Technical Advisor will be in Court and will confer *ex parte* with the Court from time to time. His role will be similar to that of a judicial clerk and, therefore, he will not be available for communication with or questioning by the parties. The Court will not call Dr. Hearn as a witness.

2. The Technical Advisor will be paid for his services at rates of $250 per hour for study and travel time and $300 per hour for Court time, plus such reasonable costs as he may incur in the performance of his duties. Each side will pay one-half of his fees and costs when approved by the Court. Payments shall be made within 30 days after receipt by the parties of copies of Dr. Hearn's billing statements approved by the Court.

Dated: November 9, 1999

William H. Orrick
United States District Judge

APPENDIX B

Sample Technical Advisor Declaration from *TechSearch*

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TECHSEARCH L.L.C., Plaintiff, vs. INTEL CORPORATION, Defendant,	No. C-98-3484 WHO DECLARATION OF DR. ANTHONY C. HEARN IN SUPPORT OF APPOINTMENT AS COURT TECHNICAL ADVISOR

I, Dr. Anthony Hearn, declare under penalty of perjury under the laws of the United States as follows:

1. I agree to act as the Court's technical advisor in this action. I will assist the Court in educating itself in the terminology and theory disclosed by the evidence as the Court deems necessary. I will act as a sounding board for the Court to think through the scientific significance of the evidence, and will assist the Court in understanding any technological evidence, hypothesis or theory on which the experts base their testimony. In so doing, I will to the best of my ability respond in a manner consistent with generally accepted knowledge in the relevant area.

2. I understand and agree that I am not to engage in any independent investigation of the litigation, provide evidence to the Court, or contact any party or witness in this action.

3. I hereby certify that I have read and that I understand the terms of the Protective Order between TechSearch, Inc., and Intel Corporation, and agree to be bound by its terms. I understand and agree that my communications

Sample Technical Advisor Declaration from *TechSearch*

with the Court on this matter and any information shown or provided to me by the Court are to be treated as confidential. I understand that this requirement of confidentiality shall not apply to the fact of my engagement, the amount of compensation I receive, information available to me from public records, or any matter otherwise specified in writing by the Court.

4. I affirm that the declaration and Curriculum Vitae provided by me to the Court was accurate and complete in all material respects.

5. I affirm that I am a neutral third party in regard to this action, with no ideological, financial or professional interest in the outcome of the litigation.

6. I affirm that I have never had, nor presently have, nor anticipate in the future having any financial, business or personal relationship with either party, including stock ownership, grant money, consulting or employment.

7. I agree that I will not acquire any stock in either party until final resolution of this action, nor use or seek to benefit from any confidential information I may acquire in the course of this engagement.

8. I understand and agree that if I become aware of any conflict or potential conflict, I am to inform the Court immediately.

9. I understand and agree that should any party contact me (except to provide payment as set forth in the Order), or should any person seek to communicate with me about any substantive issue in this litigation, I will inform the Court immediately of all facts and circumstances concerning such contact.

10. I agree to keep accurate records of my time and submit a monthly statement for the Court's approval showing the hours I have expended on matters referred to me by the Court.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

Executed on November 9, 1999.

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Dr. Anthony C. Hearn

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