

Patent Claim Construction: A Survey of Federal District Court Judges

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Executive Summary

Patent litigation has gained increased Supreme Court and congressional attention in recent years. Concern over the U.S. Court of Appeals for the Federal Circuit's frequent reversal of district courts' patent claim constructions has resulted in critical commentary and proposed legislation intended to address the high reversal rate. Recently, several groups have issued recommendations for federal district court judges on how to manage claim construction, minimize the likelihood of reversal, and reduce the costs of litigation.

This paper presents the results of a survey of federal district court judges. The survey assessed the case management and claim construction procedures currently used by these judges. We compare the judges' reported practices with the recommendations contained in four recent sources: the Federal Judicial Center's *Manual for Complex Litigation, Fourth (MCL)*, the Patent Litigation Committee of the American Intellectual Property Law Association's 2004 Report (*AIPLA Report*), the guidelines issued by the Federal Circuit Bar Association in 2005 (*FCBA Report*), and the public comment draft of the Report on the *Markman* Process released by the Sedona Conference in 2006 (*Sedona Conference Report*).

In general, the surveyed judges' reported practices are consistent with these sources' recommendations. For example, the *AIPLA Report*, the *FCBA Report*, and the *Sedona Conference Report* all recommend that judges hold a separate *Markman* hearing to resolve claim disputes, rather than combining claim construction with the resolution of other dispositive motions, and the majority of judges reported practices consistent with this recommendation. Similarly, these sources recommend only limited and cautious use of special masters and court-appointed technical experts, and judges reported only rare use of either.

When judges' strategies differ from the sources' guidelines, the differences are not extreme. For instance, both the *AIPLA Report* and the *Sedona Conference Report* indicate that, depending on the characteristics of the case, it may be appropriate to hold a *Markman* hearing in the middle of fact discovery. However, all four sources recognize the importance of weighing case-specific factors in determining when to hold a *Markman* hearing. Most judges reported holding a *Markman* hearing after the conclusion of discovery, but before trial—a practice that differs from the *AIPLA Report*'s and *Sedona Conference Report*'s suggestion, but may be consistent with a timing determined by the judges' consideration of case-specific factors.

The survey assessed the practices of both judges who are relatively “more experienced” with patent litigation and claim construction and those who are “less experienced” with these subjects. Judges in these two groups tended to give similar answers, with a few exceptions, which are noted in the text.

I. Introduction

In 1996 the Supreme Court determined in *Markman v. Westview Instruments*¹ that interpretation of patent claims is exclusively a question of law for the courts. In removing claim construction from the jury, the Court stated that “[t]he judge, from his training and discipline, is more likely to give a proper interpretation to such instruments than a jury; and he is, therefore, more likely to be right, in performing such a duty, than a jury can be expected to be.”²

Many commentators believed that the removal of claim construction from the jury, combined with the unified appellate jurisdiction in the U.S. Court of Appeals for the Federal Circuit, would result in greater consistency and uniformity in patent litigation.³ However, the Federal Circuit’s high rate of reversal of claim constructions by district courts⁴ has resulted in growing criticism of the current patent litigation system in general, and of the claim construction process in particular.⁵

Recently, the Supreme Court has taken an active interest in patent litigation, altering its long-standing pattern of deference to the Federal Circuit.⁶ In 2002 the Supreme Court, in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*,⁷ reversed a Federal Circuit finding regarding narrowed claims, initiating a period of

1. 517 U.S. 370 (1996).

2. *Id.* at 388–89 (internal citations and quotations omitted).

3. *Id.* at 391 (“[W]hereas issue preclusion could not be asserted against new and independent infringement defendants even within a given jurisdiction, treating interpretive issues as purely legal will promote . . . intrajurisdictional certainty through the application of stare decisis . . .”). See, e.g., Rochelle Cooper Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. Rev. 1 (1989).

4. For data on reversal rates, see Kimberly A. Moore, *Markman Eight Years Later: Is Claim Construction More Predictable?*, 9 Lewis & Clark L. Rev. 231, 239 (2005) (“After a de novo appeal, the Federal Circuit held that 34.5% of the terms were wrongly construed by the district court. In the 651 cases, the Federal Circuit held at least one term was wrongly construed in 37.5% of the cases. In the cases in which one or more terms were wrongly construed, the erroneous claim construction required the Federal Circuit to reverse or vacate the district court’s judgment in 29.7% of their cases.”).

5. For examples of commentary critical of the claim construction process, see Christian A. Chu, *Empirical Analysis of the Federal Circuit’s Claim Construction Trends*, 16 Berkeley Tech. L.J. 1075 (2001); John F. Duffy, *On Improving the Legal Process of Claim Interpretation: Administrative Alternatives*, 2 Wash. U. J.L. & Pol’y 109 (2000); Craig Allen Nard, *Process Considerations in the Age of Markman and Mantras*, 2001 U. Ill. L. Rev. 355 (2001); Craig Allen Nard, *A Theory of Claim Interpretation*, 14 Harv. J.L. & Tech. 1 (2000); and Arti K. Rai, *Engaging Facts and Policy: A Multi-institutional Approach to Patent System Reform*, 103 Colum. L. Rev. 1035 (2003).

6. Mark D. Janis, *Patent Law in the Age of the Invisible Supreme Court*, 2001 U. Ill. L. Rev. 387, 387 (declaring the Supreme Court to be “well nigh invisible in modern substantive patent law”).

7. 122 S. Ct. 1831 (2002). The Supreme Court also decided another patent case that term, *J.E.M. AG Supply v. Pioneer Hi-Bred International*, 122 S. Ct. 593 (2001), concerning the patentability of plants.

closer scrutiny of the development of patent law.⁸ The Supreme Court overturned rulings by the Federal Circuit six times in the terms ending in 2006 and 2007.⁹

Congress has also recently shown increased interest in restructuring the patent system. In 2007 comprehensive bills were introduced in both the Senate¹⁰ and the House of Representatives¹¹ that would overhaul the patent litigation process, making it more compatible with the patent systems of other nations. Other proposed legislation would establish a pilot program in selected federal districts that would permit designated judges within the district to specialize in patent litigation.¹²

Supreme Court precedent and congressional legislation may well change the landscape of patent litigation in the years to come. In the meantime, however, district court judges have had to develop a variety of case management strategies for construing patent claims and resolving outstanding disputes in light of *Markman*. There are now two broad approaches to claim construction, each developed in federal districts with heavy patent caseloads. The first approach was developed by the Northern District of California and expressed in its Patent Local Rules.¹³ This approach prescribes disclosures by each party that narrow and define claim construction disputes, leading to independent consideration of disputed claims—and often a separate or “free-standing” *Markman* hearing—to resolve claim construction disagreements before infringement issues are considered.¹⁴ This approach emphasizes the central role of claim construction and focuses the judge’s time and

8. John F. Duffy, *The Festo Decision and the Return of the Supreme Court to the Bar of Patents*, 2002 Sup. Ct. Rev. 273, 278–82 (2002). See also Gregory A. Castanias et al., *Survey of the Federal Circuit’s Patent Law Decisions in 2006: A New Chapter in the Ongoing Dialogue with the Supreme Court*, 56 Am. U. L. Rev. 793, 798 (2007) (describing a “third wave” in the Supreme Court’s consideration of U.S. patent law, “marked by more aggressive Supreme Court review of the substance of patent law and patent procedure and less deference to the Federal Circuit’s views of what the content of U.S. patent law should be.”)

9. *MedImmune, Inc. v. Genentech, Inc.*, 127 S. Ct. 764 (2007); *Microsoft Corp. v. AT&T Corp.*, 127 S. Ct. 1746 (2007); *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007); *Unitherm Food Sys., Inc. v. Swift-Eckrich, Inc.*, 546 U.S. 394, 126 S. Ct. 980 (2006); *Ill. Tool Works, Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 126 S. Ct. 1281 (2006); *eBay Inc. v. MercExchange, L.L.C.*, 126 S. Ct. 1837 (2006).

10. Patent Reform Act of 2007, S. 1145, 110th Cong. (2007).

11. Patent Reform Act of 2007, H.R. 1908, 110th Cong. (2007).

12. H.R. 34 To establish a pilot program in certain United States district courts to encourage enhancement of expertise in patent cases among district judges, 110th Cong. (2007) (passed by the House of Representatives and awaiting action by the Senate).

13. U.S. District Court for the Northern District of California, Patent Local Rules, <http://www.cand.uscourts.gov/>. The Northern District of California was one of the first districts to adopt specific local rules for patent cases.

14. David M. Airan, *Before the Actual Markman Hearing—Timing, Discovery and Alternatives*, in *How to Prepare & Conduct Markman Hearings* 165 (Practicing Law Institute 2005).

effort on this activity.¹⁵ It recognizes that many cases may be resolved through settlement or summary judgment once the claims are construed.

The second approach to claim construction considers disputed claims in the context of a hearing on a dispositive motion, usually a summary judgment motion or a request for injunctive relief. This approach discourages an independent claim construction hearing.¹⁶ It emphasizes the court's understanding of the "bigger picture" of the case and addresses claim construction in this larger context.¹⁷ An example of this approach can be found in the local rules and standing orders of the District of Delaware.¹⁸

Of course, many judges combine features of these two broad approaches to claim construction according to their personal preferences and the needs of individual cases.

15. See, e.g., *Magarl, L.L.C. v. Crane Co.*, No. IP 02-0478-C-T/L, 1:03-CV-01255-JDT-TW, 2004 WL 2750252, at *15 (S.D. Ind. Sept. 29, 2004) ("In the court's view, an earlier *Markman* hearing, one held before the summary judgment briefing, would bring many benefits to the court and the parties. Primarily, the summary judgment process could be narrowed and be more efficient with the benefit of the court's claim construction. A claim construction which precedes summary judgment could avoid unnecessary alternative briefing and evidentiary submissions, including expert witness testimony addressed to or based on rejected claim constructions. The narrowing of the issues could off-set any added delay posed by the separate *Markman* hearing. In addition, a more focused summary judgment process could aid the court in the ultimate goal of properly resolving the claims before it. The interest of getting it right overrides the interest of a speedier resolution. Having a *Markman* hearing and briefing separate from briefing on the summary judgment issues also avoids any risk of confusing the issues of claim construction (a matter of law) with patent infringement (a matter of fact) and sharpens the focus on the issues at hand.") (citations omitted).

16. See, e.g., *Mediacom Corp. v. Rates Tech. Corp.*, 4 F. Supp. 2d 17, 22 (D. Mass. 1998) (contending that implicit in the handling of claim construction in conjunction with a hearing on a motion for summary judgment "is the notion that, like any other determination of a legal rule, such a hearing should take place in the context of conventional motion practice. Only through the use of traditional dispositive motions will the Court remain moored to familiar procedures and standards of decision, and focus on the application of legal rules to discrete factual circumstances. Otherwise, the Court risks crafting elegant, but ultimately useless, statements of claim construction that fail to address the particular controversy before it.")

17. Airan, *supra* note 14.

18. U.S. District Court for the District of Delaware, Local Rules, <http://www.ded.uscourts.gov>. See also U.S. District Court for the District of Delaware, Chief Judge Robinson, Scheduling Orders, <http://www.ded.uscourts.gov/SLRmain.htm>.

II. Sources of Guidance on Claim Construction

In developing their case management strategies, federal judges have access to an abundance of advice about structuring the claim construction process and other aspects of a patent case. This paper considers the recommendations provided by four specific sources (collectively, “the sources” or “the *Markman* commentary”).

First, the Federal Judicial Center’s *Manual for Complex Litigation, Fourth*¹⁹ is a primary reference for federal judges regarding a wide range of issues arising in complex litigation. It offers judges extensive advice concerning how to structure the claim construction process,²⁰ as well as more general guidance regarding pre-trial procedures, expert testimony, and trial techniques in patent cases.²¹

Second, in 2004 the Patent Litigation Committee of the American Intellectual Property Law Association (AIPLA) prepared an extensive report that includes recommendations for the claim construction process.²² The *AIPLA Report* offers a thorough discussion of *Markman v. Westview Instruments*, and recommends that courts follow the general claim construction procedures set forth in the Patent Local Rules of the Northern District of California.

Third, in 2006 the Federal Circuit Bar Association (FCBA), which includes many attorneys who regularly participate in patent litigation, issued a series of guidelines to assist members of the bench and bar “in construing [patent] claims in a cost-effective manner and in a way that will increase the likelihood that their claim-construction decisions will be affirmed on appeal.”²³ This effort followed the Federal Circuit’s en banc decision in *Phillips v. AWH Corp.*,²⁴ which summarized and clarified the claim construction process and addressed the role of general and technology-specific dictionaries in *Markman* proceedings. The *FCBA Report* identifies the principal sources of evidence available to the trial court in construing claims and discusses other aspects of the claim construction process addressed by *Phillips*, such as the relative importance of intrinsic and extrinsic evidence.

Fourth, in June 2006 the Sedona Conference issued a draft “Report on the *Markman* Process”²⁵ for public comment. The *Sedona Conference Report* ana-

19. Manual for Complex Litigation, Fourth (Federal Judicial Center 2004) [hereinafter *MCL*].

20. *Id.* § 33.22.

21. *Id.* §§ 33.22–.27.

22. Patent Litig. Comm., Am. Intellectual Prop. Law Ass’n, *The Interpretation of Patent Claims*, 32 AIPLA Q.J. 1 (2004) (examining “procedures and underlying issues to assist those called on to construe the claims of a patent”) [hereinafter *AIPLA Report*].

23. *Guidelines for Patent Claim Construction: Post-Phillips—The Basics of a “Markman” Hearing*, 16 Fed. Cir. B.J. 13 (2006) (outlining several different claim construction procedures courts have used and the reasons behind them) [hereinafter *FCBA Report*].

24. 415 F.3d 1303 (Fed. Cir. 2005).

25. The Sedona Conference Report on the *Markman* Process (The Sedona Conference Working Group on *Markman* Hearings and Claim Construction, June 2006 Public Comment Version, <http://www.thesedonaconference.org>) [hereinafter *Sedona Conference Report*].

lyzes the strengths and weaknesses of many common claim construction practices, and it offers a set of “best practices” based on the experiences of judges and attorneys who lent their expertise to the project. The report offers specific recommendations for claim construction procedures, whereas the other sources are largely, although not entirely, limited to discussion of issues the court should consider when determining the timing and content of a *Markman* hearing.

Given the recent changes in case law, newly proposed legislation, and plentiful case management recommendations, we sought to determine the methods and techniques that judges are currently using to manage patent cases. To gather this information from active federal district court judges, we surveyed judges who had recently construed patent claims in the context of litigation. To assess any effect of judicial experience on claim construction practices, we surveyed some judges who were quite experienced with patent litigation and others who had much less experience with these cases. We asked the judges about their experiences with patent cases and claim construction and about their patent case management strategies. When applicable, we then compared their reported practices with the recommendations of the four sources described above.

In the next section of this paper, we describe our survey methodology. In section IV, we report the results of the survey. We discuss the context, timing, and characteristics of the claim construction process, the use of tools to educate the court regarding scientific and technical issues, and the types of evidence judges considered. We also report on the structure of the claim construction ruling, issues relevant to trial and appeal, and judges’ reflections on their chosen methods and experiences.

III. Survey Methodology

A. Data Set

We identified federal district court judges with claim construction experience in recent patent cases. To do so, we first compiled information about all patent cases terminated in federal district courts from June 1, 2004, to February 28, 2006.²⁶ The information included, for each case, the filing date, termination date, judge assigned at the time of filing, judge of record at the time of disposition, plaintiff, and defendant. This collection comprised 4,779 cases.

Next, in order to create a data set of cases in which the potential for judicial construction of a patent claim or claims existed, we excluded those cases that were disposed of so early in the judicial process that an opportunity for claim construction seemed unlikely.²⁷ Finally, so that the judges we surveyed would have full knowledge about and experience with the management of a given case, we excluded cases in which the judge to whom the case was originally assigned differed from the judge at the time of disposition. These exclusions yielded a data set of 1,880 cases. We relied on this data set to identify judges to survey.

B. Survey Recipients

1. First mailing

To solicit survey responses and feedback about the survey itself from a small group of judges before widely distributing the survey, we sent a copy of the survey to eight judges whose names appeared in our data set. Four of these judges had terminated eight or more of the cases in the data set. We considered these judges to be relatively “more experienced” with patent cases and potentially with claim construction within those cases. The remaining four judges had each terminated only one case appearing in our data set. Compared with the first set of judges, we considered these judges to be “less experienced” with patent cases and claim construction. A review of the cases’ docket sheets confirmed that each of the cases terminated by a “less experienced” judge and at least one of the cases terminated by each “more experienced” judge involved claim construction, often by way of a formal *Markman* hearing.

26. Patent cases were identified by the filing attorney’s designation of a Nature of Suit code that indicated the case involved primarily patent issues. This method did not identify those cases in which patent issues were raised only in defense to an allegation.

27. Excluded cases were those with a Procedural Progress code indicating that they had been disposed of before the issue was joined (i.e., Procprog codes 1, 2, 11, and 12) or after the issue was joined but in which there was no court action (i.e., Procprog code 3), or that were a result of a challenged arbitration (i.e., Procprog code 13). We also excluded those cases that were transferred or remanded (e.g., to another district or to a U.S. agency; i.e., Disp codes 0, 1, 10, and 11), or were dismissed at an early stage (e.g., for want of prosecution or lack of jurisdiction; i.e., Disp codes 2, 3, 4, and 12).

In addition to asking them to answer the main survey questions, we informed these eight judges that they were among the first recipients of the survey and we asked for their feedback about the survey. We received responses from six of the eight judges (75%) and received completed surveys from five of the eight (63%).²⁸ The judges reported few concerns with the survey, seemed to have no trouble answering the questions, and did not recommend any changes to the content or format of the questions. Because these judges did not identify any problems with the survey, we proceeded to send the survey to a larger sample of judges. The responses provided by these five judges are included in the results reported below.

2. Second mailing

We selected an additional 31 judges who had terminated eight or more of the cases in our data set (relatively “more experienced” judges) and an additional 20 judges who had terminated only one case in our data set (relatively “less experienced” judges). A review of these cases’ docket sheets confirmed that each of the cases terminated by a “less experienced” judge and at least one of the cases terminated by each “more experienced” judge involved claim construction and often a *Markman* hearing.

C. Survey Personalization

Each survey was personalized for the recipient judge. In addition to including his or her name, each judge’s survey listed, by name and docket number, the judge’s one terminated patent case (for less experienced judges) or four of the judge’s recently terminated patent cases (for more experienced judges) that the judge had terminated from June 1, 2004, to February 28, 2006. Each judge was asked whether the listed case or cases required judicial construction of a patent claim. More experienced judges were asked to identify which one of the cases requiring claim construction was concluded most recently. If no listed case required judicial construction of a patent claim, the judge was asked to provide the identifying information of a case he or she recently terminated that did require such a construction. Judges were asked to answer many of the survey questions with reference to the identified case.

28. One responding judge indicated that he was unable to complete the survey in a timely fashion.

IV. Survey Results

A. Response Rate

We received responses from 38 of the 59 judges to whom we sent surveys (64%). Thirty-four judges (58%) returned completed surveys; four expressed an inability to complete the survey, for reasons such as not recalling a case that met the survey's parameters, too busy a schedule, or the court records they needed to respond to the survey had already been sent to the archives. Because our data set of cases included ones that terminated months or years earlier (from June 1, 2004, to February 28, 2006), some judges found it difficult to recall specific aspects of the claim construction process. The answers provided in the 34 completed surveys are summarized below. Not all judges answered all questions, and the numbers and percentages in each of the following sections are based on the total number of judges who answered the particular question being discussed. Within each section, "responding judges" refers to those judges who answered the relevant question.

The overall response rate for more experienced judges (21 of 35, or 60%) was similar to that for less experienced judges (13 of 24, or 54%). Twenty-one districts are represented by completed surveys.

B. Survey Responses, by Topic

1. Issues in the case

As intended by the requirements of the survey, all identified cases contained an issue of claim construction. Besides claim construction, the most common issues arising in the cases were factual issues concerning alleged infringement (mentioned by 28 of 34 judges, or 82%). The next most common issue related to claims of willful infringement (mentioned by 27 of 34 judges, or 79%). Some judges indicated that multiple types of issues arose in their cases. Table 1 presents a complete list of the types of issues judges reported arising in their cases. Of those judges who indicated which issue was most central to the case, the majority (18 of 29, or 62%) selected factual issues concerning alleged infringement.

Table 1. Issues Arising in the Case

Issues in the Case	Number (and Percentage) of Judges Selecting		
	More Experienced Judges	Less Experienced Judges	Total
Factual issues concerning alleged infringement	19 (90%)	9 (69%)	28 (82%)
Claims of willful infringement	17 (81%)	10 (77%)	27 (79%)
Request for injunctive relief	16 (76%)	7 (54%)	23 (68%)
Claims of inequitable conduct	12 (57%)	3 (23%)	15 (44%)
Claims of unfair competition	4 (19%)	3 (23%)	7 (21%)
Other (common law breach of contract; validity/invalidity)	4 (19%)	3 (23%)	7 (21%)
Claims of antitrust violation	4 (19%)	2 (15%)	6 (18%)
Claims of interference with business or contractual relations	1 (5%)	2 (15%)	3 (9%)

Note: Column percentages do not add to 100% because of rounding and because some judges selected multiple response options. The four columns present, respectively, the response options provided in the survey question; the number and percentage of more experienced judges responding to the question who selected the response; the number and percentage of less experienced judges responding to the question who selected the response; and the total number and percentage of all responding judges who selected the response.

2. Patent subject matter

The disputed patents most often related to computer software, mechanical, and computer hardware inventions (mentioned in 12, 9, and 7 cases, respectively). Some judges indicated that a patent related to more than one subject matter. More experienced judges were more likely than less experienced judges to report computer software cases (mentioned by 9 of 21 more experienced judges (43%) and 3 of 13 less experienced judges (23%)). In contrast, more experienced judges and less experienced judges reported similar rates of mechanical cases and computer hardware cases. Table 2 presents a complete list of the subject matter indicated by responding judges.

Table 2. Patent Subject Matter

Subject Matter	Number (and Percentage) of Judges Selecting		
	More Experienced Judges	Less Experienced Judges	Total
Computer software	9 (43%)	3 (23%)	12 (35%)
Mechanical	5 (24%)	4 (31%)	9 (26%)
Computer hardware	4 (19%)	3 (23%)	7 (21%)
Pharmaceutical	2 (10%)	3 (23%)	5 (15%)
Biochemical	2 (10%)	2 (15%)	4 (12%)
Electrical	3 (14%)	1 (8%)	4 (12%)
Other (semiconductor industry; signal processing apparatus; telecommunications technology)	3 (14%)	0 (0%)	3 (9%)
Medical devices	2 (10%)	0 (0%)	2 (6%)
Biological	0 (0%)	1 (8%)	1 (3%)
Business processes	0 (0%)	1 (8%)	1 (3%)
Chemical	0 (0%)	1 (8%)	1 (3%)

Note: Column percentages do not add to 100% because of rounding and because some judges selected multiple response options. The four columns present, respectively, the response options provided in the survey question; the number and percentage of more experienced judges responding to the question who selected the response; the number and percentage of less experienced judges responding to the question who selected the response; and the total number and percentage of all responding judges who selected the response.

3. Resources

The majority of the judges (30 of 34, or 88%) reported that the parties in their cases appeared to be evenly matched in terms of litigation resources. This was true for both more experienced judges (18 of 21, or 86%) and less experienced judges (12 of 13, or 92%). Three judges (9%) reported that the party defending the validity of the patent appeared to have access to greater resources, and one judge (3%) was uncertain.

4. Breadth of claim construction

Issues regarding the breadth of the claim construction were central to the resolution of the case in 29 of the 34 cases (85%), and the likelihood of these issues being central to the case was not different for more experienced judges and less experienced judges (18 of 21, or 86%; and 11 of 13, or 85%, respectively). In three additional cases (9%), the judge was unsure about the centrality of this issue, and in two cases (6%), the breadth of the claim construction was not central to the resolution.

5. Terms construed

Each patent claim consists of one or more terms: words or phrases that define the invention covered by the patent.²⁹ Courts often require both the patentee and the alleged infringer to submit a claim construction chart identifying where every element of each asserted claim is found, followed by a joint claim construction chart identifying each disputed claim and each party's proposed construction of the claim.³⁰ At least two of the sources in the *Markman* commentary caution the court against setting a fixed limit on the number of terms to be construed at a *Markman* hearing and instead recommend that the parties be encouraged to limit the number of disputed terms themselves.³¹

Within the cases heard by judges responding to the survey, the median number of construed terms was 5.0, and the median number of construed terms that

29. See, e.g., Mark A. Lemley, *The Changing Meaning of Patent Claim Terms*, 104 Mich. L. Rev. 101, 101 (2005).

30. The *MCL* recommends that at the outset of litigation, parties exchange information on the disputed terms that are to be interpreted and then attempt to narrow their differences regarding the disputed terms. *MCL*, *supra* note 19, § 33.222. Subsequently, the parties should present their alternative interpretations in the form of a "claims chart" indicating each disputed claim and each party's proposed interpretation of the disputed claim. *Id.*

31. See *Sedona Conference Report*, *supra* note 25, at 11, n.7 ("[A] court should not explicitly limit the number of claim terms to be considered."); *MCL*, *supra* note 19, § 33.23 (A court should "[c]onsider encouraging the parties to agree to proceed on a limited number of representative claims and disputed models.").

were central to the dispute was 4.0 (80%).³² The numbers for more experienced judges and those for less experienced judges did not differ significantly.

6. Related litigation

Related past or contemporaneous patent litigation may, at times, influence the manner in which a judge construes disputed claims.³³ However, 79% of the judges (26 of 33) reported that the terms of the disputed patent had not been construed in earlier litigation. More experienced judges were slightly more likely to report that the terms had previously been construed (5 of 20, or 25%) than less experienced judges (2 of 13, or 15%), although this difference is not statistically significant.

Seven judges reported that their cases involved disputed terms, some of which had been construed in earlier litigation. These judges indicated that the earlier litigation influenced their claim construction in just over half of these cases (4 of 7, or 57%).

7. Local rules and standing orders

Judges were divided on their use of local rules and standing orders in patent litigation. The majority of judges did not use a local rule of their court to manage the claim construction process, apparently preferring to fashion case management orders using other factors, such as their customary practices or their perceptions of the needs of the individual case. Only 21% of the judges (7 of 34) relied on such a local rule, and in all but one of these instances (6 of 7, or 86%) the local rule was specifically designed for patent cases. All seven judges who relied on a local rule of their court were more experienced judges; no less experienced judges reported using such a local rule.³⁴ Two additional judges (both in the less experienced group) relied on another court's local rule for patent cases.

The most frequently referenced set of local rules for patent cases were those of the Northern District of California, specifically Rules 4.1–4.6, which recommend the use of a stand-alone claim construction proceeding to address disputed terms. Table 3 reports all local rules that were used by the judges.

32. On average, judges construed 10.24 terms per case as part of the claim construction process. Judges reported that an average of 4.47 of these terms (44%) were central to the dispute. However, one judge reported an especially large number of construed terms ($N = 82$), making the median a more informative measure of the number of terms construed.

33. See, e.g., *MCL*, *supra* note 19, § 33.23 (stating that “[s]ome of the obstacles in managing patent litigation can be avoided” by determining whether there is related litigation pending or past decisions involving the same patent). The *FCBA Report* recommends that parties be “required to identify any related litigation and the potential effect each case may have on the other.” *FCBA Report*, *supra* note 23, at 10. The *AIPLA Report* also discusses related past litigation as a source of guidance for current litigation. It indicates that although the Federal Circuit and the Supreme Court have not ruled specifically on the preclusive effect of a claim construction hearing in previous litigation, district courts have operated under the assumption that collateral estoppel does apply if all the required elements are met. *AIPLA Report*, *supra* note 22, at 71–73.

34. This is a statistically significant difference, $X^2(1, N = 34) = 5.46, p < .03$.

Table 3. Local Rules Judges Relied on for Claim Construction Management

Local Rule	Number of Times Mentioned by Judges
Patent Local Rules 4.1–4.6 of the Northern District of California ^a	6
Patent Local Rule 6 of the Northern District of Georgia	1
Patent Local Rules 4.1–4.6 of the Eastern District of Texas	1

a. One judge stated that his court has adopted its own patent rules modeled after the Patent Local Rules of the Northern District of California.

Similarly, most judges did not develop or rely on a standing order to guide their management of the claim construction process. Ninety-one percent of responding judges (30 of 33) did not use such a standing order, and 9% (3 of 33) did. All three judges who reported using their court’s standing order were in the more experienced judge group; no less experienced judges reported making use of such an order.

Of the three judges who reported using a standing order of their court, only one indicated that the standing order was specifically designed for patent cases. One judge (in the less experienced group) who answered the original question in the negative indicated that he relied on a standing order specifically designed for patent cases that was not developed by his court. This judge cited the Northern District of California Patent Local Rules.

8. Claim construction case management order

Forty-four percent of the judges (15 of 34) indicated that they prepared a separate pretrial order to govern the claim construction process. A similar number of judges (14 of 34, or 41%) addressed the claim construction process as part of a more general pretrial order. The remaining five judges (15%) did not address the claim construction process with a pretrial order.

These responses may suggest different approaches by more experienced judges and less experienced judges. More experienced judges were more likely to include the claim construction process as part of a more general pretrial order (10 of 21, or 48%) than to prepare a separate pretrial order (8 of 21, or 38%) or to not address the claim construction process by a pretrial order at all (3 of 21, or 14%). In contrast, less experienced judges were more likely to prepare a separate pretrial order for the claim construction process (7 of 13, or 54%) than to address the claim construction process as part of a more general pretrial order (4 of 13, or 31%) or to not address the claim construction process by a pretrial order at all (2 of 13, or 15%).³⁵

35. Despite the differences in percentages, a chi-square test indicates that the distributions are not statistically different from each other.

9. Context for claim construction ruling

As noted previously, courts may conduct a separate claim construction proceeding or may construe the patent claims in the context of a related proceeding, such as that for a summary judgment motion or a motion for a preliminary injunction.³⁶

Judges reported that the most common procedural context for a claim construction ruling was a proceeding unconnected to other motions or proceedings (mentioned in 27 of 34 cases, or 79%). A ruling undertaken in the context of responding to a motion for summary judgment was the next most common context, mentioned nine times (26%). Four judges reported two procedural contexts each per case. Table 4 presents a complete list of the procedural contexts of the claim construction rulings.

Table 4. Procedural Contexts of Claim Construction Ruling

Procedural Contexts	Number (and Percentage) of Judges Selecting		
	More Experienced Judges	Less Experienced Judges	Total
Undertaken as a claim construction proceeding unconnected to other motions or proceedings	16 (76%)	11 (85%)	27 (79%)
Undertaken in the context of responding to a motion for summary judgment	6 (29%)	3 (23%)	9 (26%)
Undertaken in the context of responding to a motion for a preliminary injunction	0 (0%)	1 (8%)	1 (3%)
Other (one term was construed during trial)	1 (5%)	0 (0%)	1 (3%)

Note: Column percentages do not add to 100% because of rounding and because some judges selected multiple response options. The four columns present, respectively, the response options provided in the survey question; the number and percentage of more experienced judges responding to the question who selected the response; the number and percentage of less experienced judges responding to the question who selected the response; and the total number and percentage of all responding judges who selected the response.

36. Several *Markman* commentators warn against construing patent claims in the context of resolving a summary judgment motion. For example, the *Sedona Conference Report* points out that if any facts concerning the characteristics of the patent or prior art are in dispute, there will most likely be no judicial economy benefit from combining the two procedures. *Sedona Conference Report*, *supra* note 25, at 6–7. See also *FCBA Report*, *supra* note 23, at 4–5; *AIPLA Report*, *supra* note 22, at 65.

10. Claim construction timing

Courts face a difficult decision in determining when during the discovery process to rule on a patent claim construction.³⁷ According to the surveyed judges, claim construction rulings most often occurred after discovery, but before trial (mentioned in 14 of 34 cases, or 41%). Such an approach permits the claim construction to be informed by all information developed through discovery. Less commonly, claim construction rulings occurred during general discovery (10 of 34, or 29%), prior to discovery (3 of 34, or 9%), after expert discovery but before the conclusion of fact discovery (3 of 34, or 9%), or during trial but before closing arguments (1 of 34, or 3%). Four judges indicated that the claim construction occurred at another time. When they elaborated, these judges indicated that the rulings occurred after general discovery but before expert discovery on the issue of damages; after discovery relevant to claim construction and before completion of remaining discovery (with the exception of one term, which was construed after completion of all discovery); or at the end of fact discovery but before the conclusion of expert discovery.³⁸ These distributions were similar for more experienced judges and less experienced judges.

More experienced judges were most likely to schedule the claim construction process on the basis of an anticipated trial date (10 of 21, or 48%), whereas less experienced judges were most likely to set the schedule on the basis of a date negotiated by the parties (5 of 13, or 38%). Table 5 presents a complete list of the ways in which the judges determined the timing of the claim construction process.

Ninety-seven percent of responding judges (32 of 33) felt that the timing of their claim construction process was effective and appropriate, taking into account subsequent events in the case. One judge—who combined claim construction and summary judgment—felt the timing of her claim construction was ineffective. This judge noted that she has discontinued this practice and now resolves claim construction issues before considering other dispositive motions.

37. The *MCL* makes no specific recommendation on when to hold a *Markman* hearing, but seems to favor holding a pretrial hearing rather than forcing the parties to try the case with alternative claim constructions. *MCL*, *supra* note 19, § 33.223. The *Sedona Conference Report* cautions against having claim construction too early and recommends that the *Markman* hearing take place in the middle of fact discovery. *Sedona Conference Report*, *supra* note 25, at 6. The *FCBA Report* also suggests a compromise between early and late claim construction, and sets forth a variety of factors that a court should consider in making the choice of when to have the hearing. *FCBA Report*, *supra* note 23, at 3–5. Finally, the *AIPLA Report* follows much the same logic of the other three sources in weighing the pros and cons of holding the *Markman* hearing at different stages of litigation, and asserts that “[m]ost courts and commentators agree, however, that a *Markman* Proceeding should not take place before at least some discovery has occurred.” *AIPLA Report*, *supra* note 22, at 58.

38. One judge provided two answers to this question.

Table 5. Timing of Claim Construction Process

How Timing Was Determined	Number (and Percentage) of Judges Selecting		
	More Experienced Judges	Less Experienced Judges	Total ^a
Determined by judge: set on the basis of anticipated trial date	10 (48%)	2 (15%)	12 (35%)
Other (consultation of judge and parties; in conjunction with deadlines for summary judgment motions or discovery; pursuant to patent local rules or case management order)	7 (33%)	3 (23%)	10 (29%)
Determined by parties: negotiated	4 (19%)	5 (38%)	9 (26%)
Determined by judge: set on the basis of anticipated disposition of a pretrial motion	1 (5%)	3 (23%)	4 (12%)

Note: Column percentages do not add to 100% because of rounding and because some judges selected multiple response options. The four columns present, respectively, the response options provided in the survey question; the number and percentage of more experienced judges responding to the question who selected the response; the number and percentage of less experienced judges responding to the question who selected the response; and the total number and percentage of all responding judges who selected the response.

a. One judge provided two answers to this question.

11. Claim construction hearing

Courts can resolve claim construction disputes on the papers alone, or through a formal hearing that may or may not involve expert testimony. *Markman* commentators recognize the need for flexibility in structuring the hearing.³⁹ Eighty-five

39. The *FCBA Report* discusses three types of *Markman* hearings: submission on the papers, a briefing and argument without an evidentiary hearing, and an evidentiary hearing. The report notes that conducting a *Markman* hearing through a simple submission on the papers is not the preferred procedure. *FCBA Report*, *supra* note 23, at 10–11. The *AIPLA Report*’s breakdown of different types of possible *Markman* hearings is similar to that of the *FCBA Report*, and the *AIPLA Report* shares the *FCBA Report*’s caution regarding claim construction based on paper submissions alone. *AIPLA Report*, *supra* note 22, at 61. The *Sedona Conference Report* recommends two options for courts to follow: a default procedure and an alternative procedure. *Sedona Conference Report*, *supra* note 25, at 4. The *Sedona Conference Report* also recommends that the hearing proceed on a term-by-term basis; that is, each party should argue its proposed construction of a claim term before moving on to the next one, rather than one party arguing its proposed constructions for all disputed claims before the next party proceeds. *Id.*

percent of the judges (29 of 34) held a hearing as part of the claim construction process. This percentage was slightly higher for more experienced judges (19 of 21, or 90%) than for less experienced judges (10 of 13, or 77%).

In those cases in which a claim construction hearing was held, the hearing was frequently limited to claim construction issues (24 of 29, or 83%). This was somewhat less likely in cases heard by more experienced judges (14 of 19, or 74%) than in those heard by less experienced judges (10 of 10, or 100%).⁴⁰ In the five cases in which the hearing was not limited, the other considered issues included those relating to infringement and summary judgment.

Judges reported that in each case in which there was a hearing as part of the claim construction process, the parties set forth their proposed constructions of the claims in dispute prior to the hearing (29 of 29, or 100%). In approximately 60% of these cases, the hearing was held prior to the close of discovery (reported by 12 of 19 more experienced judges, or 63%; and 6 of 10 less experienced judges, or 60%).

In most instances, discovery leading up to the *Markman* hearing was not limited to issues central to claim construction. More experienced judges reported no such limits in 11 of 14 cases (79%), and less experienced judges reported no such limits in 6 of 8 cases (75%). Less frequently, judges reported that discovery before the *Markman* hearing was limited to experts who would participate in the hearing (2 responses each from more experienced judges and less experienced judges). One judge reported that claim construction was done after the deadline for fact discovery, but before the close of expert discovery.

12. Educational tools

The technical complexity of many patent claims can lead judges to seek the assistance of court-appointed experts, special masters, technical advisors, and expert tutorials to gain the substantive knowledge necessary for an informed assessment of the claims. The *Markman* commentary is generally cautious about the use of court-appointed experts⁴¹ and special masters,⁴² as well as other forms of outside assistance.

40. This difference approaches statistical significance, $X^2(1, N = 29) = 3.18, p < .10$.

41. The *MCL* recognizes that an appointed expert may be an option when “the subject matter is complex and the differences between the experts offered by the parties are not attributable to factual disputes that a trial can readily resolve.” *MCL*, *supra* note 19, § 33.26. The use of such experts should be limited to educating the court on the general subject matter, not the specifics, of the dispute. The *Sedona Conference Report* also recommends sparing use of court appointed experts. *Sedona Conference Report*, *supra* note 25, at 10. The *AIPLA Report* mentions that the local rules of the Northern District of California describe the function of appointed technical experts as helping “the court to understand and reconcile the evidence, including the competing views of the parties’ experts.” These rules caution judges that they should not give appointed experts’ testimony too much weight, and only use such experts in “isolated cases.” *AIPLA Report*, *supra* note 22, at 63.

Judges who responded to the survey indicated that the tool they used most frequently to educate themselves about the case, apart from the parties' briefs, was a separate overview or tutorial of technical matters prepared by the parties. Eleven more experienced judges and six less experienced judges (17 of 26, or 65%) reported using an overview or tutorial,⁴³ and some judges reported using multiple educational tools. Table 6 presents a complete list of educational tools used by the judges.

The *Markman* commentary is even more cautious about the use of court-appointed experts in patent law. The *MCL* notes that the use of patent law experts is "controversial and their acceptance varies widely from court to court." *MCL*, *supra* note 19, § 33.26. The *Sedona Conference Report* recommends that a court use testimony by a patent law expert only in rare cases to provide information on "arcane aspects of patent prosecution," if necessary. *Sedona Conference Report*, *supra* note 25, at 10. The *FCBA Report* includes similar cautions about the use of patent law experts. *FCBA Report*, *supra* note 23, at 15. The *AIPLA Report* refers to the description of the use of court-appointed patent law experts in the Northern District of California Patent Local Rules, which state that such testimony should be given little or no deference, and should probably be excluded altogether. *AIPLA Report*, *supra* note 22, at 41–42.

42. The *MCL* indicates that special masters with technical expertise in the area can provide recommendations to the court on technical issues and claim construction. *MCL*, *supra* note 19, § 33.23. Special masters may also be used by a court for in camera inspections of communications between the defendant and trial counsel for evidence of fraud or willful infringement if "reliance on opinions of counsel" is asserted as a defense by the defendant, or used by parties who want to keep confidential information concerning the patents themselves out of the hands of experts from opposing parties. Magistrate judges can be used to assist the court in administering discovery in the case, as well as to help the court understand technical matters in the case. *Id.* The *FCBA Report* cautions that a special master is only to be used for factual determinations, not for determination of legal issues, which is the domain of the court itself. *FCBA Report*, *supra* note 23, at 15. The *AIPLA Report* notes that a court can use special masters as an alternative to patent law experts to supplement the court's knowledge of patent law issues. It also cautions against using a special master for additional assistance because a special master may "conduct overly broad investigations," and a court may be inclined to give more deference than is merited to the recommendations of the special master. *AIPLA Report*, *supra* note 22, at 63.

43. The *MCL* urges the parties and the court to determine whether there is a need for judicial education during the initial case management conference, and whether the use of a tutorial is appropriate. A tutorial may be presented orally or in writing, or recorded on videotape or audiotape. *MCL*, *supra* note 19, § 33.23. The *Sedona Conference Report* encourages the use of a neutral technology tutorial, designed as "a non-argumentative presentation of the technology and its background, without argument concerning the patents involved or the accused products or methods." The report states that only basic discussion of the technology underlying the patents and devices should be allowed during the tutorial. *Sedona Conference Report*, *supra* note 25, at 3.

Table 6. Educational Tools Used by Judges

Educational Tools	Number (and Percentage) of Judges Selecting		
	More Experienced Judges	Less Experienced Judges	Total
Separate overview or tutorial of technical matters prepared by the parties	11 (73%)	6 (55%)	17 (65%)
Background report on underlying technical issues prepared by the parties	1 (7%)	4 (36%)	5 (19%)
Other (extensive or additional briefs; prior ruling by another court; none)	1 (7%)	4 (36%)	5 (19%)
Glossary of key terms and concepts prepared by the parties	0 (0%)	3 (27%)	3 (12%)
Special master appointed by the court	1 (7%)	1 (9%)	2 (8%)
Technical advisor appointed by the court	2 (13%)	0 (0%)	2 (8%)

Note: Column percentages do not add to 100% because of rounding and because some judges selected multiple response options. The four columns present, respectively, the response options provided in the survey question; the number and percentage of more experienced judges responding to the question who selected the response; the number and percentage of less experienced judges responding to the question who selected the response; and the total number and percentage of all responding judges who selected the response.

13. Extrinsic evidence considered

In addition to the patent and prosecution history, courts can consider a wide range of information in the context of a *Markman* hearing. Most commonly, judges reported considering expert testimony or a report from a science or technology expert (reported by 20 of 31 judges, or 65%).⁴⁴ Judges also routinely referred to dictionaries (reported by 16 of 31 judges, or 52%). Many judges reported considering several different types of extrinsic evidence. Table 7 presents a complete list of the types of extrinsic evidence considered.

For the relatively small number of judges who reported which type of extrinsic evidence they found most helpful, testimony or a report from a science or technology expert was the most common selection (9 of 18, or 50%). Twenty-eight percent of the responding judges (5 of 18) selected dictionaries as the most helpful piece of extrinsic evidence, and one judge (6%) found testimony or a report about prior art most helpful. Three judges (17%) selected “Other” extrinsic evidence—two specified that prior related rulings (one involving a Federal Circuit case dealing with similar technology) were most helpful, and the third indicated that his reliance on a special master’s recommendation was most useful.

44. The Supreme Court cautioned in *Markman* that although a court can hear expert testimony to help it understand the technical matters behind an invention, a court should not “blindly follow such testimony” when construing claims; claim construction is a question of law and is for the court to decide. *MCL*, *supra* note 19, § 33.26, citing *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 387 (1996). Expert testimony by a person of “ordinary skill in the relevant art” is deemed appropriate by the *Sedona Conference Report* to provide background information to the court on the technology involved with the patent and how the invention works, and to explain how a particular term is understood in the pertinent field. *Sedona Conference Report*, *supra* note 25, at 5. The report also urges that testimony given by the inventor be limited in scope and that the court give it little to no deference when construing the claims, because of the self-interest of the inventor. *Id.* at 9. The *FCBA Report* offers similar advice and raises similar concerns about expert testimony by inventors. *FCBA Report*, *supra* note 23, at 15. The *AIPLA Report* only briefly discusses the testimony of expert witnesses and observes that all expert testimony in litigation is “self-serving and somewhat unreliable.” *AIPLA Report*, *supra* note 22, at 40–41.

Table 7. Extrinsic Evidence Considered by Judges

Extrinsic Evidence Considered	Number (and Percentage) of Judges Selecting		
	More Experienced Judges	Less Experienced Judges	Total
Expert testimony or report from a science or technology expert	11 (61%)	9 (69%)	20 (65%)
Dictionaries	8 (44%)	8 (62%)	16 (52%)
Testimony or report about prior art	6 (33%)	6 (46%)	12 (39%)
Declarations from those witnesses who were deposed	4 (22%)	5 (38%)	9 (29%)
Testimony or report about the accused device	4 (22%)	4 (31%)	8 (26%)
Expert testimony or report from the inventor	3 (17%)	3 (23%)	6 (19%)
Non-inventor factual testimony or report	3 (17%)	2 (15%)	5 (16%)
Other (law clerk did online search for related terms; order from another court that had construed the claims; recommendation by special master)	3 (17%)	2 (15%)	5 (16%)
Expert testimony or report from a patent law expert	0 (0%)	1 (8%)	1 (3%)

Note: Column percentages do not add to 100% because of rounding and because some judges selected multiple response options. The four columns present, respectively, the response options provided in the survey question; the number and percentage of more experienced judges responding to the question who selected the response; the number and percentage of less experienced judges responding to the question who selected the response; and the total number and percentage of all responding judges who selected the response.

14. Claim construction decision

The claim construction decision may be as brief as a listing of the court's construction of the disputed term or terms, but at least one of the *Markman* commentators recommends a comprehensive, well-reasoned written opinion to guide the preparation of jury instructions and to provide a detailed record for potential review by the Federal Circuit.⁴⁵

All but one judge (33 of 34, or 97%) prepared written decisions to memorialize their constructions of the patent claims. Of those who prepared such a decision, almost all (31 of 33, or 94%) included in the decision the reasons for the selected claim construction.

Few judges had to reconsider their claim construction after the initial determination (4 of 32, or 13%), and of the four who did (three from the more experienced judge group; one from the less experienced judge group), three did so because of issues regarding the construction of terms that arose from the initial claim construction. A fifth judge pointed out that although he adhered to his original construction, he continued to reconsider the construction throughout subsequent proceedings.

Although most judges (31 of 34, or 91%) indicated that they would not, in hindsight, change anything about the way they conducted the claim construction process in the case in question, three (9%) said they would. These judges indicated that they would, in hindsight, have used a scheduling order to control *Markman* issues, performed the claim construction earlier—in the context of an early summary judgment motion, and heard claim construction arguments before (rather than concurrent with) summary judgment arguments.

15. Case progress after claim construction

Following the claim construction decision, a similar number of cases were resolved by summary judgment or injunctive relief (9 of 34, or 26%), resolved by jury trial (8 of 34, or 24%),⁴⁶ or settled without further decisions on the merits (8 of 34, or 24%). Cases were less likely to be settled following resolution of other

45. The *Sedona Conference Report* explains that in a jury trial, the *Markman* ruling should be a “well-reasoned opinion that can be expressed in understandable jury instructions.” *Sedona Conference Report*, *supra* note 25, at 15. A full opinion from a *Markman* hearing will help the parties understand the reasons behind the court's claim construction and will make it easier for the parties to prepare for trial and a possible appeal. Furthermore, because the Federal Circuit reviews patent case decisions de novo, the only record the Federal Circuit has to review is from the district court, and having the reasoning behind the district court's claim construction ruling makes it easier for the Federal Circuit to conduct a proper review. The *Sedona Conference Report* reminds courts that juries in patent cases need adequate written instructions that “identify the claim term or terms in dispute and the court's construction of that term or those terms” to ensure that they understand the claim construction ruling and what is covered by the patent at issue. *Id.* at 17.

46. In one of these cases, the patent issues were resolved by jury trial and the antitrust allegations were later settled.

issues on the merits (6 of 34, or 18%) or resolved by bench trial (2 of 34, or 6%). Three additional cases are currently unresolved or stayed. Two judges indicated two resolutions each for their cases, and the likelihood of each type of case resolution was similar for more experienced judges and less experienced judges.

16. Appeal

Seventeen judges reported that their cases were resolved by summary judgment or jury trial, and most of these cases were appealed to the Federal Circuit (12 of 17, or 71%). The percentage of appealed cases was only slightly higher for more experienced judges (8 of 11, or 73%) than for less experienced judges (4 of 6, or 67%). One of the appeals in the former group was later withdrawn after settlement.

Of the eleven appeals that moved forward, each did so following a final judgment. The judges reported that the claim construction was an issue on appeal in most of these cases (8 of 11, or 73%). The claim construction was an issue on appeal in all seven cases (100%) involving more experienced judges, but in only one of the four cases (25%) involving less experienced judges.⁴⁷

In about a third of the appealed cases (4 of 11, or 36%), the claim construction was the primary issue on appeal. In an equal number of cases (4 of 11, or 36%), the responding judge did not know the primary issue on appeal. In three cases (27%), the claim construction was not the primary issue on appeal.⁴⁸

The claim constructions had differing outcomes on appeal. Of those resolutions that were reported, three cases with appealed claim constructions later settled before an appellate court decision, two cases' constructions were affirmed, two were reversed in whole or in part, one construction was resolved as a result of an appeal in a related case, one case is still pending, and one case's resolution was reported as unknown. Both cases in which the construction was reversed were remanded.

17. Changes to the claim construction process

Fifty-eight percent of responding judges (19 of 33) do not believe the claim construction process is in need of reform; however, 42% believe that it is (14 of 33). More experienced judges were evenly split in their responses to the question "Do you believe the claim construction process is in need of reform?" (10 of 20, or 50%, responding "no"), whereas less experienced judges tended to believe the process is not in need of reform (9 of 13, or 69%, responding "no").

47. This difference is statistically significant, $X^2(1, N = 11) = 7.22, p < .01$. However, the small number of applicable cases, especially those heard by less experienced judges ($N = 4$), should be noted.

48. One judge did not answer the question about whether the claim construction was the primary issue on appeal. However, because he answered in the negative to the preceding question, "Was the claim construction an issue on appeal?," the answer to the subsequent question must be no, as well. We coded this response accordingly.

Judges' opinions regarding potential alternatives to the current random assignment process for patent cases varied. The most frequently selected option was that no changes to the random assignment process are necessary (selected by 13 of 32 judges, or 41%). The next most common alternative selected was the institution of a new Article I court, with Article III review, for patent cases (selected by 9 of 32 judges, or 28%). Other frequently selected alternatives included allowing a district judge to opt out of randomly assigned patent cases (selected by 8 of 32 judges, or 25%) and designating specialized judges within each district to hear all of that district's patent cases (selected by 7 of 32 judges, or 22%). Some judges selected more than one alternative. More experienced and less experienced judges supported the offered alternatives at similar rates, with the exception of allowing district judges to opt out of randomly assigned patent cases, which was selected by 8 of the 19 more experienced judges who responded (42%), but by none of the 13 less experienced judges who did so.⁴⁹ Table 8 presents a complete list of alternatives to the current random assignment process that were selected by the judges.

49. The difference in the distribution of responses to this option is statistically significant, $X^2(1, N = 32) = 7.30, p < .01$ (the differences in distribution of responses to the other options is not).

Table 8. Selected Alternatives to the Current Random Assignment Process

Selected Alternatives	Number (and Percentage) of Judges Selecting		
	More Experienced Judges	Less Experienced Judges	Total
No changes to the random assignment process are necessary	7 (37%)	6 (46%)	13 (41%)
Institute a new Article I court, with Article III review, for patent cases	5 (26%)	4 (31%)	9 (28%)
Allow a district judge to opt out of randomly assigned patent cases	8 (42%)	0 (0%)	8 (25%)
Designate specialized judges within each district to hear all of the district's patent cases	5 (26%)	2 (15%)	7 (22%)
Other (allow interested judges to handle patent cases in other districts as visiting judges; create an Article III district court for patent cases; distribute cases evenly across all judges in the district; improve training for judges and identify qualified mediators; improve the Patent and Trademark Office and the standards it uses, and have the Federal Circuit adopt a more deferential standard)	3 (16%)	3 (23%)	6 (19%)
Allow judges with relevant scientific backgrounds to request patent cases ^a	2 (11%)	2 (15%)	4 (13%)

Note: Column percentages do not add to 100% because of rounding and because some judges selected multiple response options. The four columns present, respectively, the response options provided in the survey question; the number and percentage of more experienced judges responding to the question who selected the response; the number and percentage of less experienced judges responding to the question who selected the response; and the total number and percentage of all responding judges who selected the response.

a. One respondent endorsed doing this “on a limited basis.”

V. Conclusion

In patent cases, judges are often faced with complicated scientific and technological issues, multiple claims and defenses, and lengthy litigation. To resolve these cases, judges rely on their previous experience with patent litigation as well as on practices they have adopted from other types of cases. “Best practices” recommendations from many sources are also available. Our data do not identify the extent to which judges rely on these published recommendations, or the extent to which the recommendations reflect successful case management practices already in use by judges. What is clear is that multiple sources and judges themselves seem, more often than not, to agree on the appropriate methods for managing patent litigation.

Both more experienced judges and less experienced judges have developed claim construction procedures that they consider to be effective and successful. Given recent Supreme Court decisions and Congress’s apparent interest in patent reform,⁵⁰ it remains to be seen how these case management techniques will change as patent law and litigation continue to evolve.

50. *See supra* notes 6–12.