ERROR-CORRECTION AT THE FEDERAL CIRCUIT

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ABSTRACT

The de facto steward of U.S. patent law is the United States Court of Appeals for the Federal Circuit, which is the exclusive appellate venue for patent cases. As the perceived importance of the patent system has steadily increased since the court’s formation in 1982, the Federal Circuit’s performance has been closely followed by an ever-expanding group of practitioners, academics, and other interested observers, who have not been shy about pointing out the court’s deficiencies. Common complaints about the Federal Circuit’s caselaw and the quality of its decision-making include: panel-dependency, formalism, indeterminacy, and the over- or under-enforcement of certain doctrines. The academic literature offers a variety of proposals for remedying or compensating for the Federal Circuit’s perceived shortcomings, such as having specialized patent trial judges, expanding the number of circuit courts that hear patent appeals, and modifying the Federal Circuit’s jurisdiction.

Compared to the existing proposals, this Article takes a different approach to analyzing the Federal Circuit’s problems by focusing primarily on the judges themselves and their adjudicatory environment. This is because many of the complaints share a common origin that is grounded in the internal dynamics of the court: the inability of the Federal Circuit to timely repair its precedents. Drawing on lessons from engineering, cognitive psychology, and management science, this Article develops a novel analytical framework for exploring why the Federal Circuit, in its current form, has difficulty self-correcting, and proposes that a solution may lie in staffing the Federal Circuit with only district judges who serve staggered terms of limited duration.

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INTRODUCTION

Patent-related issues are becoming ever more salient in the national economy, as indicated by the intense interest in patent policy exhibited by all three branches of government in recent years. No wonder, then, that the Chief Judge of the United States Court of Appeals for the Federal Circuit—

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which has exclusive jurisdiction over patent appeals\(^2\)—has declared “We are the most important court in the United States.”\(^3\) While not everyone may agree with that sentiment,\(^4\) the Federal Circuit has, nevertheless, been one of the more closely-scrutinized appellate courts by virtue of its specialized jurisdiction\(^5\) and its mandate to create national uniformity in the adjudication of patent disputes.\(^6\)

Of particular concern to interested observers of the Federal Circuit are certain persistent problems identified in the academic literature, such as: its outcomes are strongly panel-dependent on certain issues;\(^7\) that it has formalist tendencies;\(^8\) that its caselaw leads to indeterminate results;\(^9\) and that it enforces certain doctrines too strictly,\(^10\) while being too lax on

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\(^3\) University of New Hampshire School of Law, Hon. Randall R. Rader discussing the America Invents Act (May 21, 2012) at http://www.youtube.com/watch?v=dcZ7OByqJgk at 10:02.

\(^4\) There is a general consensus that the Supreme Court is the most important court, followed by the U.S. Court of Appeals for the District of Columbia Circuit. See, e.g., Glenn Kessler, Grassley’s D.C. Circuit workload claim should see closer review, WASH. POST (June 8, 2013), available at http://articles.washingtonpost.com/2013-06-08/politics/39832127_1_pending-cases-judges-appeals (“The D.C. Circuit is generally regarded as the second most important judicial body in the United States, after the Supreme Court.”); Michael D. Shear & Jeremy W. Peters, Judicial Picks Set the Stage for a Battle in the Senate, N.Y. TIMES (June 4, 2013), available at http://www.nytimes.com/2013/06/05/us/politics/obama-to-name-3-to-top-appeals-court-in-challenge-to-republicans.html?smid=pl-share (noting that the D.C. Circuit is “typically considered the second-most important after the Supreme Court”).

\(^5\) 28 U.S.C. § 1295(a); see also S. REP. NO. 97-275, at 3 (1981) (“The Court of Appeals for the Federal Circuit differs from other federal courts of appeals . . . in that its jurisdiction is defined in terms of subject matter rather than geography.”).

\(^6\) S. REP. NO. 97-275, at 4 (1981) (“The creation of the Court of Appeals for the Federal Circuit provides . . . a forum for appeals from throughout the country in areas of the law where Congress determines that there is special need for national uniformity.”).

\(^7\) See, e.g., R. Polk Wagner & Lee Petherbridge, Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance, 152 U. PA. L. REV. 1105, 1112 (2004) (“Our findings . . . indicate that claim construction at the Federal Circuit is panel dependent. That is, the data reveals that the composition of the panel that hears and decides an appeal has a statistically significant effect on the claim construction analysis.”).

\(^8\) See, e.g., John R. Thomas, Formalism at the Federal Circuit, 52 AM. U. L. REV. 771, 775 (2003) (“[T]he Federal Circuit’s increasing orientation towards rulemaking may negatively impact innovation policy, lead to heavy burdens upon patent administration, and fail to realize the goals of certainty and predictability so often ascribed to adjudicative rule formalism.”).

\(^9\) See, e.g., S. Jay Plager, Challenges for Intellectual Property Law in the Twenty-First Century: Indeterminacy and Other Problems, 2001 U. ILL. L. REV. 69, 72 (2001) (“On the doctrinal side of indeterminacy, the most obvious and well-known example in patent law is the doctrine of equivalents.”).

\(^10\) See, e.g., Janice M. Mueller, The Evolving Application of the Written Description
others.11 Taken as a whole, the complaints are symptomatic of a court that has been unable to timely correct the imperfections in its caselaw, whether by clarifying, limiting, reconciling, or overruling precedents that have become problematic or otherwise suboptimal. Self-correction by the Federal Circuit is critical because it is effectively the court of last resort in patent cases, given the rarity of Supreme Court review.12 This, coupled with the extreme improbability of Congressional action,13 creates a situation where the primary responsibility “for assuring that gaps are filled, uncertainties resolved, and stupidities corrected”14 in patent law falls squarely on the Federal Circuit. Otherwise, without periodic self-correction, Federal Circuit precedents may ossify in a suboptimal state.15

Compared to the regional circuits, the Federal Circuit requires a faster, more robust mechanism for correcting errors in precedent, for two reasons. First, patent law must be able to keep up with advances in technology.16 Second, as the exclusive appellate venue for patent cases, the Federal

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11 See, e.g., Donald S. Chisum, Weeds and Seeds In the Supreme Court’s Business Method Patents Decision: New Directions for Regulating Patent Scope, 15 LEWIS & CLARK. REV. 11, 23-24 (2011) (“[T]he Federal Circuit has tended to reject indefiniteness charges, applying its extraordinarily lenient standard which allows claims to pass muster unless they are not ‘amenable to construction’ or are ‘insolubly ambiguous.’”).

12 The Supreme Court grants certiorari in about 1% of cases per term. SUPREME COURT OF THE UNITED STATES, The Justices’ Caseload at http://www.supremecourt.gov/about/justicecaseload.aspx (“The [Supreme] Court’s caseload has increased steadily to a current total of more than 10,000 cases on the docket per Term. . . . Plenary review, with oral arguments by attorneys, is granted in about 100 cases per Term.”).

13 See, e.g., Jennifer Steinhauer, Congress Nearing End of Session Where Partisan Input Impeded Output, N.Y.TIMES (Sept. 18, 2012) (“The 112th Congress is set to enter the Congressional record books as the least productive body in a generation, passing a mere 173 public laws as of last month. That was well below the 906 enacted . . . by the body President Harry S. Truman referred to as the ‘do-nothing’ Congress. . . .”).

14 Paul M. Bator, What is Wrong with the Supreme Court?, 51 U. PITT. L. REV. 673, 680 (1990).


16 See Rochelle Cooper Dreyfuss, In Search of Institutional Identity: The Federal Circuit Comes of Age, 23 BERKELEY TECH. L.J. 787, 827 (2008) [hereinafter Dreyfuss, Institutional Identity] (observing that the Federal Circuit has been deficient in “using its expertise to keep patent law responsive to changing technological facts and emerging national interests”).
Circuit does not experience the type of corrective caselaw “percolation” that occurs among the regional circuits.\footnote{Craig Allen Nard & John F. Duffy, Rethinking Patent Law’s Uniformity Principle, 101 NW. U. L. REV. 1619, 1622 (2007).}

There are two possibilities for why the Federal Circuit is unable to timely correct errors in its caselaw. First, with some precedents, the court may simply fail to recognize the need to take corrective action. As discussed in greater detail infra,\footnote{See infra Part II.A.} the Federal Circuit’s inability to recognize the existence of a problem may be an artifact of the expertise of its judges. Specifically, a pair of related phenomena known in the cognitive psychology literature as the “curse of knowledge”\footnote{See infra note 79 and accompanying text.} and the “curse of expertise”\footnote{See infra note 80 and accompanying text.} (collectively, “the curse of knowledge and expertise”) prevents experts (here, the Federal Circuit judges)\footnote{The high concentration of patent cases on their docket allows judges on the Federal Circuit to develop expertise in patent law. For example, in 2012, patent-related matters constituted 45% of the Federal Circuit’s docket. U.S. COURT OF APPEALS FOR THE FEDERAL CIRCUIT, Appeals Filed, by Category, FY 2012, available at http://www.cafc.uscourts.gov/images/stories/the-court/statistics/Caseload_by_Category_AppealsFiled_2012.pdf.} from effectively transferring their knowledge to non-experts (here, the district judges),\footnote{Patent cases constitute a small fraction of the docket of a typical district judge. For example, in the 12-month period ending March 31, 2012, 285,260 civil cases were filed in the federal district courts, of which 4446 or 1.6% were patent cases. U.S. COURTS, Caseload Statistics 2012, Table C-2, U.S. District Courts—Civil Cases Commenced, by Basis of Jurisdiction and Nature of Suit, During the 12-Month Periods Ending March 31, 2011 and 2012, http://www.uscourts.gov/Viewer.aspx?doc=/uscourts/Statistics/FederalJudicialCaseloadStatistics/2012/tables/C02Mar12.pdf.} and impairs their ability to accurately assess the difficulties encountered by non-experts, respectively. Second, with other precedents, the Federal Circuit may be fully aware that problems exist for which correction is necessary, but the court is slow or resistant to taking action. This second problem, as explored infra,\footnote{See infra Part II.B.} is known in the management science literature\footnote{See infra Part II.B.} as the “knowing-doing gap,”\footnote{The management science literature—particularly in the area of organizational behavior—may be helpful for analyzing judicial behavior. The federal judiciary, while not a company, is a type of organization, such that the literature pertaining to improving organizational performance may provide valuable lessons for the federal courts.} which may arise from the interpersonal dynamics among the Federal Circuit judges.

Taken together, the “curse of knowledge and expertise” and the
“knowing-doing gap” impair the Federal Circuit’s ability to timely correct the errors in its caselaw because the former prevents the court from realizing that a problem exists, while the latter hinders the court from taking remedial action on the problems that it is aware of.

This Article contributes to the literature on the institutional analysis of the Federal Circuit in two ways: First, drawing on concepts from cognitive psychology, management science, and engineering, this Article develops a novel analytical framework for exploring how the various complaints about the Federal Circuit are all symptomatic of its tendency to allow the generation and subsequent maintenance of suboptimal precedents. Specifically, the analytical framework consists of modeling the interaction between the Federal Circuit and the district courts as a feedback loop for developing Federal Circuit caselaw, where the feedback loop may be weakened by the effects of the “curse of knowledge and expertise” and the “knowing-doing gap.” Second, based on this analytical framework, this Article reveals how the Federal Circuit’s ability to correct its precedents may be improved by staffing the court with district judges who serve staggered terms of limited duration. This proposal focuses on a beneficial effect of regular changes in personnel that has not been fully appreciated in the literature relating to judicial term limits and rotations, which tends to concentrate on the Supreme Court26 and issues relating to democratic accountability, the politicization of nominations, and mental decrepitude.27


27 See, e.g., Calabresi & Lindgren, supra note 26 at 809 (“[L]ater retirement and less
rather than the ability of an intermediate appellate tribunal to self-correct.

This Article proceeds in four parts. Part I describes the Federal Circuit’s internal mechanisms for correcting errors in its caselaw, as well as several proposals in the literature that endeavor to remedy or compensate for the Federal Circuit’s deficiencies. This Part also introduces a model of the error-correction feedback loop for Federal Circuit precedents. Part II presents the twin barriers to timely error-correction at the Federal Circuit—namely, the “curse of knowledge and expertise” and the “knowing-doing gap”—which, when considered in the context of the error-correction feedback loop, yields a novel analytical model for evaluating the Federal Circuit’s difficulty with self-correction. Part III analyzes how the twin barriers to error-correction may be overcome by staffing the Federal Circuit with district judges who serve staggered terms of limited duration. Part IV addresses various objections and concerns about the proposal, and is followed by a brief conclusion.

I. THE CURRENT STATE

A. Existing Mechanisms for Correcting Precedents

As an institution, the Federal Circuit has several internal error-correction mechanisms for precedential opinions. They generally fall into two categories: before issuance and after issuance.

1. Before Issuance: Review of Precedential Opinions

Shortly after the Federal Circuit was formed, its first Chief Judge, Howard Markey, and Judge Giles Rich, one of the drafters of the 1952 Patent Act, touted the adoption of two procedures designed to help the newly-formed appeals court fulfill its mandate of bringing uniformity to frequent vacancies . . . have three primary consequences for the current state of the judiciary: the [Supreme] Court’s resistance to democratic accountability, the increased politicization of the judicial confirmation process, and the potential for greater mental decrepitude of those remaining too long on the bench.”); Stras & Scott, supra note 26 at 1422 (noting that “the three most powerful critiques of life tenure” are directed to concerns about “democratic accountability,” “strategic retirement behavior,” and “mental or physical infirmity”).


patent law. First, every draft precedential opinion is circulated to the entire court for several working days in order to allow the nonpanel judges to weigh in and provide comments prior to issuance.\textsuperscript{30} Presently, the review period is ten working days.\textsuperscript{31} Second, the Federal Circuit’s internal administrative departments include an office of the “Senior Technical Assistant” (STA),\textsuperscript{32} whose staff members analyze draft precedential opinions during the review period and circulate memos to the entire court that highlight potential conflicts with existing caselaw.\textsuperscript{33}

While these two mechanisms for pre-issuance correction of precedential opinions have endured throughout the Federal Circuit’s existence, the persistent complaints about the court suggest that Judges Markey and Rich might have overestimated their effectiveness. The utility of circulating draft precedential opinions to the entire court is dependent on the willingness of the nonpanel judges to closely monitor them and provide substantive comments. Persistent concerns about panel-dependent outcomes\textsuperscript{34} and the existence of divergent lines of precedent\textsuperscript{35} suggest that either the nonpanel members are not actively commenting on the circulated draft opinions or the panel members are often ignoring the nonpanel members’ input, or both. As for the STA’s memos analyzing draft opinions for conflicting precedent, they are merely advisory, and the Federal Circuit judges are free to

\textsuperscript{30} The First Annual Judicial Conference of the United States Court of Appeals for the Federal Circuit, 100 F.R.D. 499, 502 (1983) (statement of Chief Judge Howard T. Markey) (“[W]hen a panel has completed work on an opinion and it is ready to issue, that opinion is circulated for seven days to all the non-panel members of the Court.”); see also Giles S. Rich, Columbia Law School Julius Silver Program in Law, Science & Technology - Inaugural Lecture, 68 J. PAT. & TRADEMARK OFF. SOC’Y 604, 617 (1986) (“When the panelists are finally finished, the opinion or opinions are then circulated to the entire court for 7 days (14 in summer), every judge having a chance to criticize.”). In recent years, the number of review days has increased to ten. U.S. COURT OF APPEALS FOR THE FEDERAL CIRCUIT INTERNAL OPERATING PROCEDURES (IOP) #10, ¶5 (July 7, 2010) available at http://www.cafc.uscourts.gov/rules-of-practice/internal-operating-procedures.html.

\textsuperscript{31} IOP, supra note 30 at ¶5 (July 7, 2010).

\textsuperscript{32} 28 U.S.C. § 715(c) & (d) (providing specific authorization for the position of “Senior Technical Assistant” at the Federal Circuit).

\textsuperscript{33} First Annual Judicial Conference, 100 F.R.D. at 502 (statement of Chief Judge Howard T. Markey) (“[O]ur Senior Technical Assistant and his assistant have a major duty of reading every opinion before it goes out and comparing it with earlier decisions. If they even think there even might be a conflict, they notify the judges immediately.”); see also Rich, supra note 30 at 617 (noting that the Senior Technical Advisor is tasked with “commenting on any suspected departure from precedent or suggesting additional citations” for precedential opinions that are circulated prior to issuance).

\textsuperscript{34} See supra note 7.

disregard them. Indeed, possibly as a reflection of the lack of attention
paid by the judges to the STA’s memos, the STA’s conflicts check
procedure has been scaled back in recent years: when the STA’s office was
first established at the Federal Circuit, it reviewed every draft precedential
opinion for potential conflicts prior to issuance; however, on July 7, 2010,
the Federal Circuit’s Internal Operating Procedures (IOPs) were changed so
that the STA reviews a draft precedential opinion for conflicts only if
requested.

2. After Issuance: The En Banc Process

Once issued, precedential panel decisions may be overruled only by an
en banc court. However, the en banc process is seldom invoked: according
to an empirical study by Christopher Cotropia, the Federal Circuit’s en banc
rate is relatively low. This is unsurprising as the en banc process is viewed
by judges as a time-consuming, labor-intensive endeavor whose uncertain
outcomes might not be worth the cost of disturbing the collegial—albeit

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37 First Annual Judicial Conference, 100 F.R.D. at 502 (statement of Chief Judge Howard T. Markey) (noting that the Senior Technical Assistant has “a major duty of reading every opinion before it goes out”).


39 IOP, supra note 30 at #13, ¶1 (Nov. 14, 2008) (“En banc consideration is required to overrule a prior holding of this or a predecessor court expressed in an opinion having precedential status.”).


42 Judge Patricia Wald of the D.C. Circuit describes the dynamics that militate against en banc consideration, as follows:

Perhaps the most effective antidote against profligate en bancing is the very human desire of judges to coexist in peace. Apart from the inordinate demands on the time and resources of judges, en bancs heighten tensions on the court. No judge likes to have her opinions en banced, and although she may expect it from those with whom she frequently disagrees, she may resent it from usual allies. Some judges do indeed regard a vote in favor of en bancing their cases as tantamount to betrayal. Especially on a divided court, we are thus tempted occasionally to rationalize voting against an en banc of one of our colleagues’s opinions for purposes of collegiality (“It’s not that important, I can distinguish the opinion in
legally suboptimal—equilibrium into which the court has settled.\textsuperscript{43} As a result, an extended period of time may elapse before the “right” case appears for which a majority of judges agree is worth the hassle of en banc consideration. In some instances, a change in the composition of the court may be necessary in order for an issue to be ever considered en banc.\textsuperscript{44} And when en banc review finally does occur, there is no guarantee that the outcome will necessarily improve the situation: the en banc court might simply reaffirm the status quo,\textsuperscript{45} take the precedent in a more problematic direction,\textsuperscript{46} or create further uncertainty by issuing a highly fractured decision with no majority opinion.\textsuperscript{47} In short, the Federal Circuit’s en banc practice is a method of self-correction that is rather unreliable and unpredictable.

**B. Existing Proposals in the Literature**

The literature offers a variety of proposals for remedying or compensating for the deficiencies in the Federal Circuit’s caselaw and its decision-making process.

One popular proposal is to develop patent law expertise at the trial the future if I have to”).


\textsuperscript{44} For example, in early 2013, when the Federal Circuit had only nine active judges—such that only five votes would be needed for en banc review—the court issued an en banc order to reconsider the rule in *Cybor Corp. v. FAS Techs. Inc.*, 138 F.3d 1448 (1998) (en banc), that established the *de novo* standard of review of claim construction rulings. Lighting Ballast Control LLC v. Philips Elecs. N. Am. Corp., 500 Fed. Appx. 951 (Fed. Cir. Mar. 15, 2013).

\textsuperscript{45} See, e.g., Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) (en banc). In dissent, Judge Mayer summarized the *Phillips* en banc opinion as follows: “[A]fter proposing no fewer than seven questions, receiving more than thirty amici curiae briefs, and whipping the bar into a frenzy of expectation, we say nothing new, but merely restate what has become the practice over the last ten years . . .” *Id.* at 1330 (Mayer, J. dissenting).

\textsuperscript{46} See, e.g., Akamai Technologies, Inc. v. Limelight Networks, Inc., 692 F.3d 1301 (Fed. Cir. 2012) (en banc). According to Judge Linn, the majority impermissibly “broaden[ed] the doctrine of inducement, such that no predicate act of direct infringement is required.” *Id.* at 1342 (Linn, J., dissenting).

\textsuperscript{47} See, e.g., CLS Bank Int’l v. Alice Corp., 717 F.3d 1269 (Fed. Cir. 2013) (en banc).
level\textsuperscript{48} such as by establishing specialized trial courts\textsuperscript{49} or by changing the venue rules so as to concentrate the filing of patent cases to certain districts.\textsuperscript{50} This proposal has largely come to fruition in the form of the “Patent Pilot Program,”\textsuperscript{51} which helps district judges cultivate patent law expertise through the reassignment of patent cases from judges who would prefer to avoid them to judges who are interested in hearing more of them.\textsuperscript{52} However, empirical support for the expected benefits\textsuperscript{53} of enhancing trial judge expertise is, at best, mixed.\textsuperscript{54} Furthermore, specialization at both the trial and appellate levels could exacerbate Federal Circuit “exceptionalism.”\textsuperscript{55}

Rather than focusing on the trial courts, some commentators have questioned the unitary appellate regime for patent cases. Craig Nard and

\begin{footnotesize}
\begin{enumerate}
\item District Courts Selected for Patent Pilot Program \url{http://www.uscourts.gov/News/NewsView/11-06-07/District_Courts_Selected_for_Patent_Pilot_Program.aspx}
\item See, e.g., Kesan & Ball, supra note 49 at 423 (“One of the principal arguments for the creation of a patent trial court is that it would resolve cases more efficiently, thereby saving time and money for both litigants and the court system.”); Kimberly A. Moore, \textit{Forum Shopping in Patent Cases: Does Geographic Choice Affect Innovation?}, 79 N.C. L. Rev. 889, 932 (2001) (“[A] specialized tribunal would develop expertise in patent law and the resolution of patent cases, increasing its accuracy and efficiency at resolving these cases.”).
\end{enumerate}
\end{footnotesize}
John Duffy proposes expanding the number of circuit courts that hear patent appeals, on the theory that “a polycentric, competitive appellate structure” may facilitate doctrinal development through incremental innovation and experimentation, as well as provide clearer signals to the Supreme Court to intervene. However, it is unclear whether the process of error-correction through intercircuit percolation may be fast—and robust—enough for patent law, which must keep abreast of rapid technological innovation.

Others have considered whether the scope of the Federal Circuit’s jurisdiction might be a source of its dysfunction. Paul Gugliuzza, for example, proposes modifying the Federal Circuit’s jurisdiction so that it has a mix of cases that is closer to that of the regional circuits, under the theory that Federal Circuit judges who are exposed to a more generalized docket would be “more policy conscious, less formalist, and, ideally, more responsive to the different innovation dynamics present in different industries.” However, this proposal presupposes that the adjudicatory style of individual Federal Circuit judges will change if their knowledge of generalist legal principles is enhanced. As will be discussed later, a substantial part of the problem with the Federal Circuit is not only the lack of knowledge but also the lack of the will to act.

A common limitation in the aforementioned proposals is that they may not be adequate to counteract the primary pathology underlying the complaints about the Federal Circuit, which, as identified by John Golden, is the ossification of precedent resulting in “suboptimal legal equilibria.” Golden’s solution to the ossification problem requires the Supreme Court to assume the role of “prime percolator,” which periodically grants review to disturb those suboptimal Federal Circuit precedents that have “frozen legal doctrine either too quickly or for too long.” In addition, Golden suggests that the Federal Circuit itself can further promote percolation by not writing or reading panel opinions unnecessarily broadly, and granting en banc

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56 Nard & Duffy, supra note 17 at 1651-55.
57 See, e.g., Golden, supra note 15 at 661 (observing that Nard and Duffy’s “solution threatens to sacrifice substantial benefits of unified review under the Federal Circuit while providing little assurance of adequate percolation”).
59 Id. at 1499.
60 See infra Part II.B.
61 Golden, supra note 15 at 701 & n.262.
62 Id. at 720; see also id. at 673 (observing that the Federal Circuit in its current operation may “be more likely to produce a suboptimal body of legal doctrine that sticks—that is unlikely to be abandoned or seriously questioned, even after its negative consequences have become clear”).
63 Id. at 662.
review when precedent has reached a “suboptimal doctrinal equilibrium.”

There are several limitations to Golden’s proposal. First, given the overall rarity of certiorari grants, the Supreme Court’s execution of its percolation function may not be timely and frequent enough to materially improve the performance of the Federal Circuit beyond its current state. Second, it is unclear how the tendency of some Federal Circuit judges to write (or interpret) broadly may be effectively restrained. And third, going en banc is a labor-intensive and unpredictable process, such that caselaw may be stuck in a suboptimal legal equilibrium until the “right” case comes along or if the composition of the court changes.

More generally, the above-mentioned proposals do not fully account for the internal dynamics of the Federal Circuit that may inhibit timely self-correction of suboptimal precedents. The immediate, day-to-day environment in which the Federal Circuit judges operate exerts considerable influence on their voting behavior and the manner in which opinions are produced. To see why the internal dynamics of the Federal Circuit matter, it may be helpful to consider the court in the context of an error-correction feedback loop between it and the district courts.

C. The Error-Correction Feedback Loop for Federal Circuit Caselaw

Given the rarity of Supreme Court review, the development of patent caselaw is largely a two-step, iterative process between the Federal Circuit and the district courts: (1) the district courts enter judgment on issues decided through the application of Federal Circuit caselaw; and (2) the Federal Circuit reviews the judgment to ascertain whether there is error, and generates caselaw for the district courts to apply in future cases. This process for developing Federal Circuit caselaw may be modeled as an error-correction feedback loop as shown in Figure 1.

If there is error in the judgment below, the Federal Circuit must ascertain whether it resulted from the misapplication of otherwise proper
precedent or whether the error was precipitated by some deficiency in the existing precedent, which is usually signaled by an outcome that is contrary to the public interest. If it is the former, that is, the district court had misapplied otherwise nondefective caselaw, the Federal Circuit would simply issue a decision explaining the district court’s errors. If, however, it is the latter, that is, the error had resulted from some deficiency in the existing caselaw (e.g., it is difficult to apply consistently or is doctrinally unsound), which led to a result inconsistent with the public interest, the Federal Circuit would need to issue a decision that clarifies, modifies, limits, or overrules the relevant caselaw.

**Figure 1. Error-Correction Feedback Loop for Developing Federal Circuit Caselaw**

As shown in the block diagram of Figure 1, the effectiveness of the error-correction feedback loop is dependent on the Federal Circuit’s ability to: (1) detect errors not only in district court judgments but also, more importantly, in its own caselaw; and (2) generate appropriate precedents to correct those errors. These two functions—error-detection and precedent-generation—work in tandem, and if either one of those functions is deficient, the feedback loop breaks down. At bottom, many of the criticisms directed at the Federal Circuit and its caselaw may be traced to persistent problems in its ability to self-correct its precedents through this

70 See supra notes 7-11 and accompanying text.
71 Cf. Golden, supra note 15 at 686 (observing that “[t]he most robust criticisms of the [Federal] Circuit, including charges that the Circuit’s pre-KSR jurisprudence interpreted
feedback loop.

Whether the feedback loop is operating properly (or not) may be explained further with reference to Figures 2a-2d. In each of those figures, the strength of patent protection that is provided by a set of precedents is plotted as a function of time. The time axis identifies 1982, which is when the Federal Circuit was formed. Prior to 1982, the litigation environment was perceived as providing weaker patent protection than warranted by the public interest. When it was formed, the Federal Circuit was tasked with creating a uniform body of patent law that properly balanced the rights of the patentee with that of the public. This optimal level of patent protection that comports with the public interest is represented by the dotted line starting at 1982.

Figure 2a provides a conceptual illustration of how the error-correction feedback loop should operate to develop Federal Circuit caselaw: the court, after its formation in 1982, generates a series of precedents on a given issue through an iterative process of reconsidering and refining its caselaw, and, over time, the precedents associated with that issue converge to a level of patent protection that satisfies the public interest.

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Figures 2b-2d illustrate several scenarios where the error-correction feedback loop is weak or malfunctioning. In Figure 2b, the caselaw on a particular issue is overly protective of patentees. One example of this is the Federal Circuit’s caselaw on inequitable conduct, which has consistently tightened the circumstances under which that doctrine may be successfully invoked. Figure 2c illustrates the opposite scenario, where the applicable doctrine may be insufficiently protective of patentees, such as the heightened enablement and written description requirements for biotechnology and chemical inventions. In both Figures 2b and 2c, the associated precedents have settled into suboptimal trajectories, which could result from (1) the absence of a critical mass of judges who are willing (or able) to force a change in direction, (2) the persistent application of a rule in an overly-formalistic manner, or (3) some combination of both.

Figure 2d shows another instance where the feedback loop is not functioning properly, as it allows prolonged oscillatory behavior. The canonical example of this type of dysfunction is claim construction, where the Federal Circuit has applied two distinct methodologies that have created considerable uncertainty on appeal. Where the precedents swing regularly between two positions on an issue without any prospect of convergence, it may reflect the existence of two camps of judges at the court, which may lead to panel-dependent outcomes. At a high level, panel-dependence could

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76 An example of this is the teaching-suggestion-motivation (“TSM”) test for combining references in an obviousness analysis—the rigid application of which was eventually rejected by the Supreme Court in KSR Int’l Co. v. Teleflex Inc., 550 U.S. 398 (2007).
77 See Wagner & Petherbridge, supra note 7.
be indicative of a more fundamental problem: the precedents associated with a given doctrine are so indeterminate\(^\text{78}\) that they comfortably accommodate inconsistent approaches favored by different camps of judges.

Although the types of dysfunctions illustrated in Figures 2b, 2c, and 2d are different, they all result from a weak feedback loop and are symptomatic of a court whose ability to self-correct is impaired.

II. THE TWIN BARRIERS TO ERROR-CORRECTION

This Section introduces two theories that may help explain the weakness of the feedback loop for correcting Federal Circuit precedents: (1) the “curse of knowledge and expertise,” which impairs the ability of Federal Circuit judges to recognize problems in existing caselaw; and (2) the “knowing-doing gap,” which is their failure to take corrective action despite recognizing the existence of a problem. Taken together, the “curse of knowledge and expertise” and the “knowing-doing gap” form the twin barriers to error-correction.

A. The “Curse of Knowledge and Expertise”

As described in the cognitive psychology literature, the “curse of knowledge” is a phenomenon in which experts (here, the Federal Circuit judges) are unable to effectively impart their expertise to non-experts (here, the district judges) because they tend to communicate in a manner that assumes that the non-experts possess a certain level of knowledge.\(^\text{79}\) A related phenomenon is the “curse of expertise,” which renders experts prone to underestimating the difficulties encountered by non-experts who attempt to perform tasks within the expert’s field,\(^\text{80}\) and resistant to correcting or

\(^{78}\) See Paul R. Michel, The Court of Appeals for the Federal Circuit Must Evolve to Meet the Challenges Ahead, 48 AM. U. L. REV. 1177, 1191 (1999) ("[T]he complaint regarding panel dependency may be symptomatic of broader ills, such as, ‘indeterminacy’ or ‘unpredictability.’").

\(^{79}\) See Colin Camerer, George Loewenstein & Martin Weber, The Curse of Knowledge in Economic Settings: An Experimental Analysis, 97 J. POL. ECON. 1232, 1247 (1989) ("The curse of knowledge makes personal expertise seem more widely shared than it is, making it difficult for people to convey their expertise to others . . . The curse of knowledge suggests that informed subjects will be unable to ignore the information they have that the uninformed subjects lack, causing a bias in their predictions."); see also Janet Rae-Dupree, Innovative Minds Don’t Think Alike, N.Y. TIMES, Dec. 30, 2007 (describing “curse of knowledge” with examples).

\(^{80}\) See Pamela J. Hinds, The Curse of Expertise: The Effects of Expertise and Debiasing Methods on Predictions of Novice Performance, 5 J. EXPERIMENTAL PSYCHOL.: APPLIED 205, 205 (1999) [hereinafter Hinds, Curse of Expertise] (reporting results from
changing their positions when presented with information that would help increase the accuracy of their analysis.\textsuperscript{81} In short, the “curse of knowledge and expertise” creates a massive blind-spot for experts in their interactions with non-experts.

At the Federal Circuit, the “curse of knowledge and expertise” is at work when it skews the judges’ perceptions regarding the clarity or the soundness of the court’s precedents, such that they may fail to recognize when an existing doctrine warrants reconsideration, or, when drafting opinions, whether a new rule is expected to be difficult for generalist district judges to apply correctly.\textsuperscript{82} In the context of the error-correction feedback loop of Figure 1, the “curse of knowledge and expertise” adversely affects both the error-detection function and the precedent-generation function.

With respect to the error-detection function, the expertise of the Federal Circuit judges may interfere with their ability to recognize when an error in the judgment below is attributable to some substantive flaw or deficiency in the applicable precedent that makes it difficult for the district judge to apply it in a manner consistent with existing caselaw while achieving an outcome that does not offend the public interest,\textsuperscript{83} as opposed to when the error results from the district judge’s carelessness in following precedent that is substantively sound. Compared to the district judges, the Federal Circuit judges may have a superior understanding of how a rule they created should work \textit{in theory}, but the precedents associated with that rule may not always faithfully impart this understanding when read by the district judges or be amenable to reliable application at the trial level in a manner that properly

\textsuperscript{81} See \textit{id.} at 217 (“The results reported here suggest that experts’ superior knowledge actually interferes with their ability to predict novice task performance times. . . . [The experts] were also unable to correct their estimates when they were prompted with a presentation intended to help them reduce their underestimation.”); \textit{see also} Jeffrey J. Rachlinski & Cynthia R. Farina, \textit{Cognitive Psychology and Optimal Government Design,} 87 \textit{Cornell L. Rev.} 549, 560 (2002) (“Experts tend to be overconfident about their decisions. Experts are ‘often wrong but rarely in doubt.’ People in general tend to overestimate their own abilities in areas about which they believe themselves to have some greater-than-average knowledge.” (citation omitted)).

\textsuperscript{82} \textit{Cf.} Paul D. Carrington, Daniel J. Meador & Maurice Rosenberg, \textit{Justice on Appeal} 168 (1976) (observing that judges who are “narrowly specialized will become so confined in their perspectives that they will lose sight of the basic values at stake in their decisions and develop strong tendencies toward arcane and intricate legal development which can be followed and understood only by their own bar”).

\textsuperscript{83} For example, the following pair of claim construction canons that work in tandem is particularly difficult to apply correctly in a reliable manner: claims must be read in light of the specification; however, limitations cannot be imported from the specification. These canons, which introduce considerable uncertainty in ascertaining claim scope, are ripe for an overhaul.
balances the rights between the patentee and the public. Along these lines, the “curse of knowledge and expertise” also impairs the precedent-generation function, as Federal Circuit judges may draft precedential opinions articulating rules that seem fair and workable (to them), but not when district judges attempt to apply them in the first instance.

The issuance of opinions articulating new rules that conflict with pre-existing ones constitutes a major failure of the precedent-generation function. As such, it is unfortunate that the Federal Circuit recently scaled back the generation of the STA’s reports of potential conflicts in draft precedential opinions. If the STA’s role reduction were not motivated solely by budget concerns, but rather because most of the judges disregarded the reports, it may be indicative of that symptom associated with the “curse of expertise” in which those with high levels of expertise are less receptive than non-experts to debiasing information that could improve the accuracy of their analysis.

Research suggests that the key factors contributing to the “curse of knowledge and expertise” include anchoring effects—i.e., the heavy reliance on initial information or impressions—and the “availability heuristic”—i.e., the tendency to rely on information that readily comes to mind. This suggests that the adverse effects of the “curse of knowledge and expertise” may be aggravated by the selection effects introduced by the appeals process: the mix of cases and issues that reach the Federal Circuit may not be representative of what the district judges encounter. As a result, the Federal Circuit judges might over- or under-estimate the severity of the problems associated with certain doctrines. This skew in perception may be the most severe for those issues that come before the Federal Circuit infrequently but arise often at the district court level (and vice versa), such as discovery issues and evidentiary rulings, for which seasonable appellate review might be available only through discretionary means. Accordingly, deficient or suboptimal Federal Circuit precedents affecting issues that arise

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84 See supra notes 37-38 and accompanying text.
85 See Hinds, Curse of Expertise, supra note 80 at 212.
86 See id. at 206.
88 Hinds, Curse of Expertise, supra note 80 at 218 (“The primary difference between those with more and those with less expertise was the accuracy with which they recalled their own novice performance of the task. . . . Evidence from these data suggest that the availability bias is the key contributor to experts’ relative inaccuracy in estimating novice performance times.”).
90 For example, a petition for a writ of mandamus. See In re Calmar, Inc., 854 F.2d 461, 464 (Fed. Cir. 1988) (“Mandamus may be employed in exceptional circumstances to correct a clear abuse of discretion or usurpation of judicial power by a trial court.”).
frequently at the district court level, but which rarely make it to the appellate level, not only will have a major adverse impact, but also will endure because the opportunities to develop and refine caselaw will be rare.91

B. The “Knowing-Doing Gap”

Inaction despite recognizing the existence of a problem is known in the management science literature as the “knowing-doing gap.”92 A canonical example is the disturbingly low rate of hand-washing by healthcare professionals who are fully aware that hand hygiene is essential for minimizing hospital-acquired infections.93

In the context of the error-correction feedback loop of Figure 1, the “knowing-doing gap” affects primarily the precedent-generation function, and is manifested when at least some of the Federal Circuit judges recognize that certain precedents are problematic, but are unable or unwilling to take remedial measures. Because the existence of a “knowing-doing gap” is primarily dependent on situational considerations, rather than the personal characteristics of individual actors,94 it may be helpful to focus on the internal dynamics of the appellate decision-making environment. In this regard, there are three considerations that appear to be salient: (1) the consistency trap, (2) the need to maintain a collegial working environment

91 For example, it took over twenty years for the “adverse inference” and the “affirmative duty” rules in Underwater Devices, Inc. v. Morrison-Knudsen Co., 717 F.2d 1380 (1983) that presented thorny privilege and waiver issues for accused infringers to be overruled in Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp., 383 F.3d 1337 (2004) (en banc) and In re Seagate Tech., LLC, 497 F.3d 1360 (2007) (en banc).
92 See generally Jeffrey Pfeffer & Robert I. Sutton, THE KNOWING-DOING GAP: HOW SMART COMPANIES TURN KNOWLEDGE INTO ACTION 4 (2000) (“[W]e embarked on a quest to explore one of the great mysteries in organizational management: why knowledge of what needs to be done frequently fails to result in action or behavior consistent with that knowledge. We came to call this the knowing-doing problem . . . .” (emphasis in original)).
93 See, e.g., Keith L. Cummings, Deverick J. Anderson & Keith S. Kaye, Hand Hygiene Noncompliance and the Cost of Hospital-Acquired Methicillin-Resistant Staphylococcus aureus Infection, 31 INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY 357, 357 (2010) (“Noncompliance with hand hygiene recommendations is widely recognized as the most important modifiable cause of hospital-acquired infections. . . . Unfortunately, rates of compliance with hand hygiene recommendations are unacceptably low in most hospitals. Results from most studies suggest that overall hand hygiene compliance rates are below 50%.”).
94 See Pfeffer & Sutton, supra note 92 at 6 (“Some organizations are consistently able to turn knowledge into action . . . . Other organizations . . . fail to translate their knowledge . . . into action. . . . These differences across firms come more from their management systems and practices than from differences in the quality of their people.”).
or détente, and (3) the lack of urgency.

The Consistency Trap. In the environment of an appellate court, the pressure for consistency can help maintain suboptimal precedents. Specifically, correcting a body of caselaw may require one or more judges to take positions inconsistent with their prior votes or opinions, which could expose them to the risk of losing face. If the membership of a court has split into opposing camps, the resolve of individual judges to seek vindication and to stay consistent may be heightened. At the same time, it may take less energy to simply default to a prior position, because a judge who endeavors to justify a change on principled grounds may need to undertake a detailed analysis. For judges who wish to maximize the "leisure" aspect of the judicial utility function, staying consistent may be an attractive route. Therefore, if there is no urgency, a judge will likely defer the investment of the necessary mental and emotional energy required to properly reconsider a prior ruling.

Maintaining Collegiality or Détente. The collective need of a group of judges to maintain collegiality or détente on a daily basis, and to avoid fruitless battles with colleagues who might serve with them for decades,
may take prominence over correcting suboptimal caselaw, which may involve resurrecting disputes over which the judges have “agreed to disagree.” Although a certain degree of collegiality is indispensable to effective decision-making,\textsuperscript{102} the risk of “settling” behavior nevertheless exists\textsuperscript{103}: when a group of judges serves together long enough, its members will become intimately familiar with each others’ views to an extent that would allow them to reach a state of equilibrium where the judges fall into a predictable pattern in their voting and opinion-writing.\textsuperscript{104} This predictability may lead to the ossification of suboptimal precedent.\textsuperscript{105} In addition, because the en banc process is fraught with drama, high cost, and uncertainty,\textsuperscript{106} individual panels are left with essentially two options for handling precedents they find troublesome: distinguish them or ignore them.\textsuperscript{107} As a result, over time, divergent lines of precedent may emerge that prove

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\textsuperscript{103} See Erwin Chemerinsky & Larry Kramer, \textit{Defining the Role of the Federal Courts}, 1990 BYU L. Rev. 67, 72 (1990) (“The danger when judges have strong collegial relationships is that they may be reluctant to challenge colleagues and so decide cases or join opinions to preserve those relationships.”); \textit{but see} Edwards, supra note 102 at 1646 (“In my view, it is collegiality that allows judges to disagree freely and to use their disagreements to improve and refine the opinions of the court.”)

\textsuperscript{104} \textit{Cf.} Pauline T. Kim, \textit{Deliberation and Strategy on the United States Courts of Appeals: An Empirical Exploration of Panel Effects}, 157 U. Pa. L. Rev. 1319, 1369 (2009) (“Because of the routine, ongoing interactions among judges within a circuit, the views of their immediate colleagues will be far more salient for panel members when they deliberate than the preferences of the Supreme Court.”).

\textsuperscript{105} An example of ossified precedent is the de novo standard of review for claim construction established in \textit{Cybor Corp. v. FAS Techs., Inc.}, 138 F.3d 1448 (Fed. Cir. 1998) (en banc), which, despite intense criticism, has endured for at least fifteen years. Another example is nonobviousness caselaw prior to \textit{KSR}. \textit{See} Nard & Duffy, supra note 17 at 1661 (observing that, prior to the Supreme Court’s \textit{KSR} decision, the Federal Circuit had used “boilerplate citations to the [teaching-suggestion-motivation] test, rarely if ever providing new policy justifications for the rule or considering new alternatives or adjustments to the test” and concluding that the “doctrinal stagnation shows the weakness of the common-law process at the Federal Circuit, for the suggestion test remained unrefined and unchallenged for decades”).

\textsuperscript{106} \textit{See supra} Part I.A.2.

\textsuperscript{107} See generally Weil & Rooklidge, \textit{Stare Un-Decisis, supra} note 35.
increasingly difficult to reconcile.\textsuperscript{108}

The willingness of appellate judges to not only live with, but also allow the creation and maintenance of, suboptimal precedent and divergent caselaw\textsuperscript{109} may be explained by certain behaviors characterized by Judge Richard Posner as “going along” voting and “live and let live” opinion-joining.\textsuperscript{110} “Going along” voting in a panel occurs when the judges who are relatively indifferent about the outcome cast their votes with the member having the strongest views.\textsuperscript{111} Otherwise, if one or both of the indifferent judges were to vote differently from the opinionated judge, they will need to respond to the spirited arguments of the opinionated judge in either a majority opinion or a dissent.\textsuperscript{112} For this reason, “going along” is less costly than devoting resources to an issue a judge may not feel strongly about.\textsuperscript{113} Relatiedly, “live and let live” opinion-joining occurs when a judge joins an opinion that contains remarks that he disagrees with, but which are perceived by the joining judge to be dictum.\textsuperscript{114} A judge may rationally view the effort to eliminate dictum with which he disagrees as not worth the hassle and potential clashes with the authoring judge.\textsuperscript{115}

The “going-along” voting and “live and let live” opinion-joining described by Judge Posner constitute a set of behaviors that may be characterized more generally as “collegial concurrence,” which Cass Sunstein and others define as a form of deference to one’s colleagues\textsuperscript{116} that

\textsuperscript{108} Claim construction is a canonical example. See Wagner & Petherbridge, supra note 7.

\textsuperscript{109} See, e.g., Dreyfuss, Continuing Experiment, supra note 48 at 776 (observing that “an examination of the way the court handles open questions lends support to the concern that the court is not making fruitful attempts to achieve consensus”); see also Weil & Rooklidge, Stare Un-Decisis, supra note 35 at 806 (“Even as the [Federal Circuit] continues its institutional efforts to keep litigants from attempting to tailor their legal arguments to appeal to particular judges’ perceived biases and predilections, it simultaneously allows fissures to open and widen in the edifice of its jurisprudence.”).

\textsuperscript{110} Posner, Judges Maximize, supra note 97 at 20-21.

\textsuperscript{111} Id. at 20.

\textsuperscript{112} Id. Judge Douglas Ginsburg of the D.C. Circuit characterizes dissents as costly endeavors:

Even one dissident judge can impose upon me the cost, in time and aggravation, of having to respond to a dissenting opinion -- and the further risk that I will lose my majority in the panel (or upon rehearing en banc). . . . [O]n the court the concurrence of a colleague is the coin of the realm.


\textsuperscript{113} Posner, Judges Maximize, supra note 97 at 20.

\textsuperscript{114} Id. at 20-21.

\textsuperscript{115} Id.

\textsuperscript{116} Cass R. Sunstein, David Schkade, Lisa M. Ellman & Andres Sawicki, ARE JUDGES POLITICAL? AN EMPIRICAL ANALYSIS OF THE FEDERAL JUDICIARY (2006) at 64.
arises out of a sense of realism,\textsuperscript{117} where an individual judge rationally views any attempt to “correct” the other members of the panel as costly and futile. Collegial concurrence may also be at work when a draft precedential opinion setting forth a problematic rule is circulated to the entire court,\textsuperscript{118} and the nonpanel judges acquiesce in its issuance without substantive revisions.\textsuperscript{119}

The risk of perpetuating and creating problematic caselaw also exists if there is a split panel, particularly when the judges belong to opposing camps. Suboptimal precedents may result when panel members unduly focus on vindicating their respective positions or when lingering resentments or jealousies surface,\textsuperscript{120} such that the collective will may not exist to undertake a labor-intensive analysis to reconcile competing considerations and craft a workable rule. In those cases where the dissenting judge has essentially been “written off” by the majority, it is possible that the majority may take more extreme positions than if it were endeavoring to convert a dissenter into a joiner.

\textit{Lack of Urgency.} Rarely will a critical mass of Federal Circuit judges perceive an urgent need to correct some defective precedent and “rock the boat”\textsuperscript{121} in undertaking the laborious en banc process.\textsuperscript{122} A sense of urgency arises infrequently because the consequences of inaction are not concrete and immediate for a permanent Federal Circuit judge. Rather, the impact of suboptimal decisions from the Federal Circuit is most immediate on the practitioners, who may need to update their case strategies, and on the

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{117} \textit{Id.} at 65 (“A collegial concurrence might well result from a simple calculus: The majority view may be right, and in any case, a dissenting opinion will not do any good even if the majority is wrong.”).
\item \textsuperscript{118} \textit{See supra} Part I.A.1.
\item \textsuperscript{119} At the Federal Circuit, a nonpanel judge may prevent the issuance of an opinion by circulating a “hold sheet.” \textit{IOP, supra} note 30 at \#10, ¶5 (“A nonpanel member judge in regular active service may submit a hold sheet pending a request for an en banc poll. Absent transmittal of a hold sheet or a request for an en banc poll during the circulation period, the authoring judge sends the opinion . . . to the clerk for issuance.”).
\item \textsuperscript{120} According to Judge Richard Posner,
\begin{quote}
[Judges] rarely level with the public—and not always with themselves—concerning the seamier side of the judicial process. This is the side that includes the unprincipled compromises and petty jealousies and rivalries that accompany collegial decision making . . .
\end{quote}
\item \textsuperscript{121} \textit{See supra} notes 99-103 and accompanying text. \textit{See also} William M. Richman & William L. Reynolds, \textit{Elitism, Expediency, and the New Certiorari: Requiem for the Learned Hand Tradition}, 81 CORNELL L. REV. 273, 324 (1996) (“Judges who know, like, and depend on each other might be less likely to risk their relationship by disagreeing on matters of importance to one or the other . . . . A ‘don’t-rock-the-boat’ mentality might pervade the courts.”).
\item \textsuperscript{122} \textit{See supra} Part I.A.2.
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To overcome both the “curse of knowledge and expertise” and the “knowing-doing gap,” thereby strengthening the error-correction feedback loop for developing Federal Circuit caselaw (see Figure 1), this Article proposes staffing the Federal Circuit with a rotating group of district judges who serve staggered terms of limited duration. A suitable term served by each district judge may be two years, which could help guard against the development of the blind-spots and inertia associated with the accumulation of expertise and prolonged tenure, respectively, and as well as reduce the likelihood of capture by special interests.

This proposal resembles a common arrangement within the federal judiciary for staffing tribunals that exercise jurisdiction over specialized subject matter. As such, the federal judiciary has a variety of existing models as well as the requisite logistical experience for successfully implementing this proposal. For example, the Foreign Intelligence Surveillance Court, which reviews applications for orders authorizing electronic surveillance within the United States to obtain foreign
intelligence information, 128 is staffed by district judges 129 who serve non-renewable, staggered terms of up to seven years. 130 The Judicial Panel on Multidistrict Litigation (JPML), which is empowered to transfer to a single district multiple civil cases whose pretrial proceedings may benefit from consolidation and coordination, 131 is staffed by a mix of district judges and circuit judges. 132 The Bankruptcy Appellate Panels (BAPs) that exist in some circuits 133 are staffed by bankruptcy trial judges who are appointed for limited terms 134 to hear bankruptcy appeals in three-judge panels. 135 In addition, judicial rotation has been suggested as a way of staffing a potential specialized Article III appeals court for immigration, in which district judges and circuit judges serve two-year terms. 136

Moreover, given that the Federal Circuit often acts like an administrative agency, 137 it may be appropriate that its composition change regularly, just like the other government agencies involved in the development of patent policy. For example, the U.S. Patent & Trademark Office and the Department of Justice are each headed by political appointees who typically change along with the presidential administration, 138 and the Federal Trade Commission and the International

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130 50 U.S.C. § 1803(d).
132 http://www.fjc.gov/history/home.nsf/page/courts_special_jpml.html
136 Legomsky, supra note 125 at 1686-87.
137 Ryan Vacca, Acting Like an Administrative Agency: The Federal Circuit En Banc, 76 Mo. L. Rev. 733, 733 (2011) (“When Congress created the Federal Circuit in 1982, it intended to create a court of appeals. Little did it know that it also was creating a quasi-administrative agency that would engage in substantive rulemaking and set policy in a manner substantially similar to administrative agencies.”).
138 See 35 U.S.C. § 3(a) (providing that the “Director of the United States Patent and Trademark Office . . . shall be appointed by the President, by and with the advice and consent of the Senate”); 28 U.S.C. § 503 (“The President shall appoint, by and with the advice and consent of the Senate, an Attorney General of the United States. The Attorney
Trade Commission are each led by commissioners who serve staggered terms of limited duration.\[^{139}\]

\[A. \text{Combating the "Curse of Knowledge and Expertise" with District Judges}\]

Perhaps the most effective way of combating the “curse of knowledge and expertise” at the Federal Circuit is to replace the experts, \textit{i.e.}, the permanent Federal Circuit judges, with non-experts, \textit{i.e.}, district judges. More specifically, the Federal Circuit should be staffed with district judges who have handled a sufficient number of patent cases to have developed a sense of which precedents might be suboptimal, and how new or modified precedents might affect the quality of adjudication. In selecting the district judges to serve on the Federal Circuit, the experience threshold may be set based on a variety of metrics such as the number of claim construction orders issued or the average number of patent cases handled per year.

That experienced district judges may be optimal for the Federal Circuit is suggested by experimental studies demonstrating that those with an intermediate level of knowledge may outperform both experts and novices in anticipating difficulties faced by novices in completing a task.\[^{140}\] An expert whose learning experience is a distant memory may not be able to recall his initial difficulty with the task as readily as someone who has learned it more recently,\[^{141}\] while a novice may not have an adequate understanding of the task to make accurate predictions about the behavior of other novices.\[^{142}\] Applying these principles to patent case adjudication, district judges who have handled multiple patent cases (\textit{i.e.}, the intermediate users of patent caselaw) may be better than either permanent Federal Circuit judges (\textit{i.e.}, the experts) or district judges who have little or no experience with patent cases (\textit{i.e.}, the novices) at identifying suboptimal precedents. That is, in the context of the Federal Circuit’s error-detection function in the feedback loop of Figure 1, the experienced district judges may be the most proficient at discerning whether an error in the judgment below is

\[^{139}\]See 15 U.S.C. § 41 (specifying that the FTC has five commissioners who serve staggered seven-year terms); 19 U.S.C. § 1330(a),(b) (specifying that the ITC is composed of six commissioners who serve staggered nine-year terms).

\[^{140}\]See Hinds, \textit{Curse of Expertise}, supra note 80 at 212 (reporting results demonstrating that those with intermediate levels of knowledge outperformed both experts and novices in predicting time required for novices to perform task).

\[^{141}\]Id. at 206.

\[^{142}\]Id. at 212 ("Novices . . . have little understanding of the task they are being asked to predict and are unlikely to understand the subtasks involved.").
attributable to an erroneous application of otherwise proper precedent or a defect in existing precedent that necessitates clarification or correction.

With respect to the precedent-generation function, those with an intermediate level of knowledge, i.e., the experienced district judges, may have a greater ability to craft workable precedents than either experts or novices. Specifically, those with high levels of expertise tend to use more abstract concepts when imparting specialized, technical information, while those with low levels of expertise tend to use more concrete statements. And while novices instructed by the former may demonstrate a greater ability to transfer their knowledge to different, analogous tasks, the novices instructed by the latter may learn to complete a specific task more effectively. The pedagogically optimal mix, then, may be achieved by one who has an intermediate level of expertise and is able to appropriately balance the use of abstract and concrete guidance. As such, opinions authored by experienced district judges may be more amenable to reliable application in a variety of circumstances at the trial level than those authored by permanent appellate judges or by district judges who have little substantive experience with patent cases. This is particularly important for appeals involving issues (e.g., discovery) that are frequently in contention at the district court level, but are infrequently reviewed on the merits at the appellate level, such that it is critical to get such cases “right” whenever they reach the Federal Circuit because there may be limited opportunities for correcting such precedents in the future.

Relatedly, those with an intermediate level of knowledge may be more receptive than experts to supplemental information that could help improve the quality of their decision-making. It is likely then, that compared to the current version of the Federal Circuit that is staffed with “expert” judges—who, at times, appear to disregard guidance from even the Supreme

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144 Id. at 1240 (“In Hypothesis 4, we argued that the benefits of beginner instruction would not necessarily be obtained when novices were asked to perform a different task of the same type. . . . Although not statistically significant, expert-instructed novices as compared with beginner-instructed novices took less time to perform the nontarget task . . . ”).

145 Id. (“[W]e found that novices instructed by experts made more errors (M = 1.64 vs. 0.58) and required more time to complete the project (M = 368 vs. 237 s) than novices instructed by beginners . . . ”).

146 See Hinds, *Curse of Expertise*, supra note 80 at 212 (“In both debiasing conditions combined, intermediate users improved their predictions by 20%, whereas experts gave predictions that were 2% worse in the debiased than in the unaided trials. . . . [the] experts were more resistant to debiasing, in general, than intermediate users.”).
Court—an instantiation of the Federal Circuit staffed by experienced district judges may give greater consideration in the precedent-generation process to the conflicts memos prepared by the STA, the relevant academic literature, the views of expert agencies such as the Federal Trade Commission, analogous caselaw from the regional circuits, and feedback from other district judges and practitioners. In addition, experienced district judges may be less influenced by the appellate selection effects that would otherwise provide an inaccurate picture of the relative frequency and severity of certain problems at the district court level.

The proposed arrangement whereby district judges craft appellate precedents—that they will later follow under the threat of reversal—is a quality-control measure that bears a conceptual resemblance to a software development process known as “eating one’s own dog food” or “dogfooding,” where software developers use internally the products they are developing in order to improve their ability to test and debug them. Examples include Google’s employees internally using Android products before making them available to the public, and Microsoft internally using Windows 8. This practice tightens and strengthens the software

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148 See supra Part I.A.1.

149 The Federal Circuit has been criticized for its perceived reluctance to give substantive consideration to relevant scholarship. See, e.g., Nard & Duffy, supra note 17 at 1647-49, Dreyfuss, Institutional Identity, supra note 16 at 799-800 (noting the Federal Circuit’s “low regard for scholarship and its unwillingness to use scholarship as an alternative sounding board”); see also Craig Allen Nard, Toward a Cautious Approach to Obeisance: The Role of Scholarship in Federal Circuit Patent Law Jurisprudence, 39 HOU. L. REV. 667, 668 (2002) (suggesting that the Federal Circuit “should be more receptive to empirical and social science scholarship when deciding patent cases”).


151 See supra notes 88-91 and accompanying text.

152 http://en.wikipedia.org/wiki/Eating_your_own_dog_food


development feedback loop between the developers and the end users because they include the same people. Likewise, the substitution of permanent Federal Circuit judges with district judges could similarly strengthen the error-correction feedback loop of Figure 1 by having the consumers of Federal Circuit caselaw also be its producers. More generally, district judges who have struggled to apply Federal Circuit precedents may have a better sense than the current group of permanent Federal Circuit judges (most of whom do not have any experience as trial judges),\textsuperscript{155} of how existing precedents should be clarified, modified, limited or overruled so that generalist district judges, as well as litigants, may reliably apply them in a manner that improves the overall quality of patent case adjudication.

\textbf{B. Combating the “Knowing-Doing Gap” with Rotations}

While district judges may help mitigate the problems arising from the “curse of knowledge,” permanently elevating individual district judges to the Federal Circuit is an incomplete solution. Rather, the district judges should serve staggered terms of limited duration in order to counteract the three factors that contribute to the “knowing-doing gap.”\textsuperscript{156}

\textit{First,} to overcome the consistency trap that inhibits action, changes in personnel may be necessary.\textsuperscript{157} As discussed previously, a judge’s reputational investment in his prior positions, and the convenience of relying on previous analyses, may make it difficult for him to change course.\textsuperscript{158} Therefore, rather than waiting for one or more Federal Circuit judges to perform the unusually self-disciplined act of making a public about-face and engaging in a labor-intensive analysis to limit or overrule precedents they had authored or voted for in the past,\textsuperscript{159} the task of precedent correction should be entrusted to a new set of judges who were

\textsuperscript{155} Biographies of current Federal Circuit judges are available at \url{http://www.cafc.uscourts.gov}.
\textsuperscript{156} See supra Part II.B.
\textsuperscript{157} Cf. Barry M. Staw & Jerry Ross, \textit{Knowing When to Pull the Plug}, \textit{Harvard Business Review} 68, 72 (March-April 1987) (“One way to reduce the commitment to a losing course of action is to replace those associated with the original policy or project. If overcommitment stems from psychological and social forces facing the originators of the action, then their removal eliminates some of the sources of commitment.”).
\textsuperscript{158} See supra Part II.B.
\textsuperscript{159} Cf. Michael J. Gerhardt, \textit{The Limited Path Dependency of Precedent}, 7 U. Pa. J. Const. L. 903, 952 (2005) (“It has been extremely rare for [Supreme Court] Justices to join in overruling a prior decision that they wrote or joined. In only four cases has a Court with no change in membership overruled itself.”).
not involved in creating or perpetuating the precedents at issue, and, as such, will have fewer qualms about making changes when necessary.\footnote{Cf. id. at 953 (“It may . . . be easier to persuade [Supreme Court] Justices that the Court erred in opinions in which they did not participate. Indeed, it is possible new Justices might be more inclined to reconsider precedent.”).}

To be clear, the consistency trap will not be completely eliminated in a Federal Circuit staffed with rotating district judges. However, its ability to hinder error-correction may be substantially attenuated. The consistency trap may be further weakened by revising the Federal Circuit IOPs so that the panel judges are excluded from participating in the en banc consideration of an opinion issued by their panel. In addition, if all opinions were issued “per curiam,” it may better focus the panel judges’ attention on reaching the right result by decreasing the influence of considerations related to the authoring judge’s need to publicly save face or seek vindication of prior positions.

\textit{Second}, regularly rotating the membership of the Federal Circuit may help prevent the court from reaching an unproductive equilibrium characterized by collegial concurrence and détente, in which judges fall into predictable patterns of voting that allow suboptimal precedents to issue and remain uncorrected.\footnote{See supra Part II.B.} Compared to a group of permanent judges with a long history of service together, a group of temporary judges who serve staggered, limited terms may be more amenable to rethinking existing doctrines that may result in their clarification or modification. This is because the temporary judges are not yet fully aware of the views of all the other judges (and the extent to which their views are set), such that they may perceive greater opportunities for critical analysis and persuasion. The regular rotation of judges may also inhibit the formation of opposing camps that give rise to panel-dependent outcomes and divergent lines of precedent. In addition, judges who serve limited terms may feel freer to “rock the boat” by invoking the labor-intensive en banc procedure because the term-limited nature of their appointments may heighten their sense of mission—\textit{i.e.}, to improve the adjudication of patent disputes—while decreasing the relative importance of maintaining a predictable adjudicatory equilibrium that allows judges to serve comfortably for an indefinite period of time with the same colleagues.\footnote{See supra notes 99-104 and accompanying text.}

Some, however, may point to the high level of dissent at the Federal Circuit\footnote{See, e.g., Cotropia, supra note 40 at 803 (reporting that the Federal Circuit’s dissent rate is the second highest among six circuits studied).} as indicative of a court with diverse views that is frequently engaged in a critical analysis of its precedents. However, the frequency of
dissent and separate opinion-writing may simply be a reflection of circuit culture and norms.\footnote{Virginia A. Hettinger, Stefanie A. Lindquist & Wendy L. Martinek, \textit{Judging on a Collegial Court: Influences on Federal Appellate Decision Making} 67 (2006) ("In circuits with the highest level of separate opinion writing, an individual judge is nearly two and a half times as likely to publish a concurrence or dissent as compared to the baseline."); \textit{see also} Rochelle Cooper Dreyfuss, \textit{The Federal Circuit as an Institution: What Ought We Expect?}, 43 \textit{LoY. L. A. L. Rev.} 827, 832 (2010) [hereinafter Dreyfuss, \textit{What Ought We Expect?}] ("Each circuit has its own traditions and heritage. . . . [T]he dissent and en banc rates in any circuit can be as much a function of a tribunal’s culture and the composition of its docket as it is a demonstration of a unique level of diversity in the viewpoints of its judges.").} Moreover, a high dissent rate may indicate a high degree of entrenchment\footnote{\textit{Cf. id. at 833 ("To the extent that the judges are not, in fact, reaching consensus on open issues, the apparent improvements in patent litigation may be something of an illusion. . . . [T]he law could still be highly dependent on the panel hearing the case.".).}} with established camps of judges that have settled into an equilibrium of “agreeing to disagree,” where, on a given panel, neither the majority nor the dissenter perceives a compelling need to temper its views to reach a unanimous result.\footnote{\textit{Cotropia, supra} note 40 at 820.} Perhaps because of the high concentration of patent cases on its docket, the Federal Circuit, by design, might be particularly susceptible to camps developing among its permanent judges, whose views may have become progressively nuanced and divergent as a consequence of the repeated exposure to the same issues over a prolonged period of time.\footnote{\textit{Id. at 821-22 ("[T]he rate of en banc reviews may be the best metric for determining how willing a court of appeals is to innovate new legal rules, percolate these concepts, and then eventually adopt them in future decisions.".).}}

Rather than the rate of dissent, the en banc rate may provide a better sense of whether precedential ossification has set in.\footnote{\textit{Id. at 803-04 (reporting that “the Federal Circuit’s percentage of en banc review is relatively low but statistically indistinguishable from those of three other circuits studied”).}} The Federal Circuit’s en banc rate is relatively low,\footnote{\textit{See supra} notes 41-43 and accompanying text.} which may indicate that, despite the frequency of dissents, the majority of Federal Circuit judges are choosing to avoid a costly, time-consuming endeavor whose outcome may be uncertain.\footnote{\textit{See supra} note 164 at 835 (“[Cotropia’s] findings are equally (if not more) consistent with the view that each judge locks into a position from which he or she refuses to deviate.”).} Ultimately then, the high rate of dissents, when coupled with the relatively low rate of taking cases en banc, may be indicative of a court where its members have settled into camps that give rise to multimodal, panel-dependent outcomes, and where the collective will to resolve conflicting precedents may be weak.

Third, having district judges serve limited terms may help create a sense
of urgency at the Federal Circuit for fixing suboptimal precedents. As previously discussed, permanent judges may view the process of correcting precedents as a labor-intensive endeavor that may be conveniently deferred by: (1) defaulting to their prior positions, (2) engaging in forms of collegial concurrence such as “going-along voting” and “live and let live opinion-joining,” and (3) studiously avoiding the en banc process. Unlike a judge with a permanent appointment at the Federal Circuit, a district judge who serves for a limited time knows that after returning to the district court level, she will be required to follow the precedents she created—under the threat of reversal. Accordingly, district judges serving temporarily at the Federal Circuit may feel a heightened need to “get it right” compared to permanent Federal Circuit judges such that they might be more willing to undertake the effort to correct, or prevent the issuance of, suboptimal precedents.

At a more general level, the rotation of judges at the Federal Circuit will create a form of de facto percolation through regular changes in personnel, which may be a faster form of percolation than increasing the number of circuit courts that hear patent appeals (i.e., percolation through space) or waiting for Supreme Court intervention (i.e., percolation through time). If a rule is sound, subsequent instantiations of the Federal Circuit with a new slate of district judges will likely maintain it. And if a rule is unsound, subsequent instantiations will be less hesitant to reconsider it and make necessary changes. To further enhance the percolation effect, the IOPs could be changed so that the presiding judge on the merits panel would be assigned randomly, without regard to seniority, to ensure that the authorship

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171 See supra Part II.B.
172 See supra notes 96-97 and accompanying text.
173 See supra notes 110-117 and accompanying text.
174 See supra Part I.A.2.
175 See Mazza, supra note 26 at 134 (“[F]ederal judges who serve only periodically at the appellate level may be more inclined to craft their opinions with greater care for their implications, knowing that they will have to live under them at the district level . . .”).
176 Nard & Duffy, supra note 17; see also Golden, supra note 15 at 662 (characterizing Nard & Duffy’s proposal as percolation through “greater appellate space” (emphasis in original)).
177 Golden, supra note 15 at 662 (arguing that Supreme Court should periodically review substantive patent law to “combat undesirable ossification of legal doctrine” and describing “how the Supreme Court and the Federal Circuit can work to ensure better and more complete percolation of patent law issues over time” (emphasis in original)).
178 Cf. Richard A. Posner, THE FEDERAL COURTS: CRISIS AND REFORM 163 (1985) (noting that “a difficult question is more likely to be answered correctly if it is allowed to engage the attention of different sets of judges deciding factually different cases than if it is answered finally by the first panel to consider it”).
of significant opinions are as varied as possible.179 In essence, by allowing percolation to occur through regular changes in personnel, Federal Circuit precedents can be evaluated by individuals from a much wider variety of backgrounds and perspectives than is currently possible, while at the same time preserving a single appellate venue for patent cases.180

IV. CONCERNS AND OBJECTIONS

A. Stability of Caselaw

Some might object to staffing the Federal Circuit with a rotating group of district judges on the ground that it could potentially destabilize patent caselaw.

This proposal is not without costs, and the potential for doctrinal inconsistency is one of them. However, because Federal Circuit caselaw has limited opportunities for the type of corrective percolation that occurs among the regional circuits,181 and, at the same time, must adapt to changes in technology,182 the benefits associated with a more responsive system for correcting errors in precedent, as provided by the judicial rotation proposal, are expected to outweigh the costs associated with any temporary doctrinal fluctuations. In short, the status of the Federal Circuit as the primary steward of patent caselaw tilts the cost-benefit analysis in favor of the judicial rotation proposal. Whether judicial rotations may be cost-justified for any of the regional circuits is an issue left to future research.183

In essence, the entrenchment of suboptimal precedents is a more serious problem for the Federal Circuit than the transient doctrinal swings that may

179 Currently, the Federal Circuit uses seniority in choosing the presiding judge for a panel. IOP, supra note 30 at #1, ¶2. Because the presiding judge (or the most senior active judge in the majority if the presiding judge dissents) has the power to assign opinion authorship, IOP, supra note 30 at #8, ¶2, the active judges on the court with the highest levels of seniority may exert a disproportionate influence on the shape and direction of Federal Circuit caselaw. Cf. Amar & Calabresi, supra note 26 (observing that “the [Supreme] Court’s seniority system gives more experienced justices increased power to speak for the court”).

180 Cf. Dreyfuss, Institutional Identity, supra note 16 at 811 (describing need for “new voices” to develop case law while expressing reservations about Nard & Duffy’s proposal to increase number of appellate venues for patent cases).

181 See supra note 17 and accompanying text.

182 See supra note 16 and accompanying text.

183 One commentator, Michael Mazza, has suggested that all federal appeals court judges should have term-limited appointments, after which they would continue their service at the district court level. Mazza, supra note 26 at 133. However, Mazza did not provide a cost-benefit analysis of his proposal for each circuit.
result from the court’s attempts to further refine its caselaw based on fresh insights that new members may bring with each rotation. The development of sound precedent is necessarily an iterative process, and the use of term-limited, rotating judges may cause the iterative error-correction feedback loop of Figure 1 to run faster, such that fluctuations in precedent may occur more frequently in a shorter time period. At the same time, the caselaw associated with a particular doctrine may reach an optimal state more quickly. That is, the transient swings in precedent would occur in a compressed time frame so that the desired steady-state level may be reached sooner.

With permanent judges, the iterative error-correction feedback loop of Figure 1 may be relatively weak such that suboptimal caselaw either has the appearance of stability because it is not being actively corrected or, if there are opposing camps on a particular issue, is stuck in an oscillatory state that may not converge. Accordingly, what might be perceived as doctrinal “consistency” in a court with members who have served together for a prolonged period of time may be an artifact of a rule enduring not on its merits but because the error-correction feedback loop has been substantially weakened by the effects of the “curse of knowledge and expertise” and the “knowing-doing gap.”

Relatedly, concerns about doctrinal instability caused by the potential loss of institutional or historical knowledge regarding Federal Circuit caselaw could be ameliorated by amending the IOPs so that the STA would once again provide the judges with reports analyzing every draft precedential opinion for potential conflicts prior to issuance—not just on request. And, as compared to the permanent Federal Circuit judges, the rotating district judges may be less likely to dismiss the STA’s reports.184

If the proliferation of too many precedential opinions in the course of error-correction is a concern,185 the IOPs could be changed so that the rate of issuance of precedential opinions decreases, while allowing more non-precedential dispositions and Rule 36 judgments to issue, so as to dampen any precedential whipsawing that might occur from the accelerated percolation resulting from the rotation of district judges through the Federal Circuit. Currently, an election to issue a Rule 36 judgment requires panel unanimity, while a majority is required to issue an opinion as

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184 See supra notes 146-148 and accompanying text.

185 The Federal Circuit may already be producing too many precedential opinions. See Haldane Robert Mayer, Foreword: Reflections on the Twentieth Anniversary of the Court of Appeals for the Federal Circuit, 52 AM. U. L. REV. 761, 767 (2003) (“The Federal Circuit is a prolific producer of precedential opinions. . . . On average, therefore, we write more than 200 precedential opinions a year. That is a number I believe we should work to reduce. Too many opinions in well-trod areas of the law contribute to uncertainty and instability.”).
nonprecedential.\footnote{IOP, \textit{supra} note 30 at \#10.} To decrease the proportion of dispositions classified as precedential, the IOPs could be amended so that an opinion may be issued as precedential only if all panel members agree on that designation.\footnote{For an empirical study on the effect of publication rules on the rate of opinion publication, see Deborah Jones Merritt \& James J. Brudney, \textit{Stalking Secret Law: What Predicts Publication in the United States Courts of Appeals}, 54 \textit{VAND. L. REV.} 71 (2001). A limitation of Merritt \& Brudney’s study, which analyzes only the regional circuits, is that it was conducted prior to the addition of Federal Rule of Appellate Procedure 32.1, effective December 1, 2006, which prohibits restrictions on the citation of nonprecedential opinions issued on or after January 1, 2007.} Alternatively, the election to make an opinion precedential might be taken away from the panel that decided the case, and instead given to a different panel of judges.

\section*{B. District Judges and Designation Practice}

One concern with staffing the Federal Circuit with only district judges is that they might be reluctant to reverse a fellow district judge on appeal based on sympathy or other reasons unrelated to the merits.\footnote{See, e.g., Stephen L. Wasby, \textit{“Extra” Judges in a Federal Appellate Court: The Ninth Circuit}, 15 \textit{LAW \& SOC’Y REV.} 369, 379 (1980) (“District judges may simply be disinclined to reverse other district judges, with whose problems they sympathize and with whom they may have strong personal ties. Or they may be over-sensitive to reversals because of their own experience.”).} However, this may not be a substantial risk: according to one study of appeals terminated in the federal appellate courts from 1987 to 1992, the reversal rate for appeals from district courts where the panel included a district judge sitting by designation (18.54\%) was indistinguishable from that of all panels in appeals originating from the district courts (18.57\%).\footnote{Richard B. Saphire \& Michael E. Solimine, \textit{Diluting Justice on Appeal?: An Examination of the Use of District Court Judges Sitting by Designation on the United States Courts of Appeals}, 28 \textit{U. MICH. J.L. REFORM} 351, 368, 369 tbl.3 (1995).} It is possible, however, that the similarity in reversal rates might be partially attributable to the designated district judges deferring to the appellate judges on their panels,\footnote{\textit{Id.} at 378.} such that a panel comprised of only district judges might feel freer to affirm more often. To decrease the likelihood of undeserved affirmances under the judicial rotation proposal for the Federal Circuit, the cases assigned to a panel should not include any appeal from the home district of any panel member. Also, if the identity of the author is masked through the issuance of a “per curiam” opinion, a district judge might feel
more comfortable authoring an opinion reversing a fellow district judge.\textsuperscript{191}

To the extent that the affirmance rate might increase by a nontrivial margin in a district-judge-only Federal Circuit, it could reflect a salutary development, namely, the scaling back of the court’s tendency to expand the number of issues subject to \textit{de novo} review.\textsuperscript{192} In addition to the standard for reviewing claim construction,\textsuperscript{193} the Federal Circuit recently extended \textit{de novo} review to the objective prong of the willfulness standard,\textsuperscript{194} and the objective reasonableness determination for an exceptional case under 35 U.S.C. §285.\textsuperscript{195} If the Federal Circuit were staffed by only district judges, the court may be less amenable to expanding the number of issues that are reviewed \textit{de novo} and may even dial it back, which could ultimately bring greater stability—not less—in the adjudication of certain issues on appeal.\textsuperscript{196}

Others may argue that the participation of district judges in Federal Circuit appeals could compromise the quality of adjudication, because their level of patent law expertise is lower than that of permanent Federal Circuit judges, and that the selection criteria applied to individuals who become district judges may be somehow less rigorous than that of Federal Circuit judges.\textsuperscript{197} However, as discussed in the analysis of the “curse of knowledge

\textsuperscript{191} An additional benefit of issuing “per curiam” opinions on the “knowing-doing gap” is discussed \textit{supra} in Part III.B.

\textsuperscript{192} Some Federal Circuit judges have expressed concerns about the expansion of the number of issues subject to \textit{de novo} review. \textit{See}, \textit{e.g.}, Highmark, Inc. v. Allcare Health Mgmt. Sys., 701 F.3d 1351, 1362 (Fed. Cir. 2012) (Moore, J., dissenting from the denial of the petition for rehearing en banc) (“We need to avoid the temptation to label everything legal and usurp the province of the fact finder with our manufactured \textit{de novo} review.”); Highmark, Inc. v. Allcare Health Mgmt. Sys., 687 F.3d 1300, 1320 (Fed. Cir. 2012) (Mayer, J., dissenting) (“The fact that we have been vested with exclusive appellate jurisdiction in patent cases does not, however, grant us license to invade the fact-finding province of the trial courts.”).

\textsuperscript{193} \textit{Cybor Corp. v. FAS Techs. Inc.}, 138 F.3d 1448, 1451 (1998) (en banc) (“[C]laim construction, as a purely legal issue, is subject to \textit{de novo} review on appeal.”).

\textsuperscript{194} Bard Peripheral Vascular, Inc. v. W.L. Gore & Assocs., 682 F.3d 1003, 1005 (Fed. Cir. 2012) (“The court . . . holds that the threshold objective prong of the willfulness standard enunciated in \textit{Seagate} is a question of law based on underlying mixed questions of law and fact and is subject to \textit{de novo} review.”).

\textsuperscript{195} Highmark, Inc. v. Allcare Health Mgmt. Sys., 687 F.3d 1300, 1309 (Fed. Cir. 2012) (“We review the court’s determination of objective reasonableness without deference since it is a question of law.”).

\textsuperscript{196} \textit{See} Highmark, Inc. v. Allcare Health Mgmt. Sys., 701 F.3d 1351, 1362 (Fed. Cir. 2012) (Moore, J., dissenting from the denial of the petition for rehearing en banc) (“When we convert factual issues, or mixed questions of law and fact, into legal ones for our \textit{de novo} review, we undermine the uniformity and predictability goals this court was designed to advance.”).

\textsuperscript{197} \textit{See} Dreyfuss, \textit{Continuing Experiment}, \textit{supra} note 48 at 796 (“If it is true that the judges of the Federal Circuit have greater facility with the technical materials involved in
and expertise," the blind-spots associated with a high level of expertise may have a greater negative impact on the quality of adjudication than the difference in expertise between the permanent Federal Circuit judges and the patent-experienced district judges chosen for the rotations. In addition, staffing a specialized court with a group of generalist district judges may check the tendency of that court to develop caselaw that deviates from the mainstream practice of the regional circuits. Furthermore, district judges may be more sensitive to the need to strike an appropriate jurisdictional balance between federal and state courts in cases involving state law claims that raise issues related to patent law. Finally, whether someone is appointed to a circuit court versus a district court is less a function of qualifications and more a function of politics and chance.

Some may contend that staffing an appellate court with only district judges may be problematic on the ground that district judges are allegedly less comfortable than circuit judges with the type of group decision-making that goes on at the appellate level, as opposed to the solitary decision-making process at the trial court. This claim appears weak in light of the frequency with which district judges sit by designation on, or are elevated to, appellate courts. In addition, including appellate judges from the patent disputes, then the outcome of the cases on which a judge from another circuit participated might be compromised, or viewed as compromised. . . . Differences in the selection criteria and experience of district court judges may also contribute to a sense that lower quality justice was being dispensed.

198 See supra Part II.A. and Part III.A.


200 Federal Circuit Judge Kathleen O’Malley, who is the sole former district judge on the Federal Circuit, has been critical of the court’s attempts to expand its jurisdiction over state law claims. See, e.g., Byrne v. Wood, Herron & Evans, LLP, 676 F.3d 1024, 1027 (Fed. Cir. 2012) (O’Malley, J., dissenting from the denial of the petition for rehearing en banc) (“It is time we stop exercising jurisdiction over state law malpractice claims. I dissent from the court’s refusal to consider this matter en banc . . . .”). Judge O’Malley’s position was subsequently vindicated by the Supreme Court. See Gunn v. Minton, 133 S. Ct. 1059, 1065 (2013) (“Although [state legal malpractice claims based on underlying patent matters] may necessarily raise disputed questions of patent law, those cases are by their nature unlikely to have the sort of significance for the federal system necessary to establish jurisdiction.”).

201 See Saphire & Solimine, supra note 189 at 377 & n.106.
regional circuits in the Federal Circuit rotation would make the proposal less effective because: (1) very few regional circuit judges have any experience with patent cases (let alone an intermediate level of knowledge needed to qualify for the rotations); (2) the regional circuit judges may be less accountable because they are unlikely to be in a position to treat the precedents they create at the Federal Circuit as binding authority when they return to their home court; and (3) the hierarchical difference between the regional circuit judges and the district judges might adversely affect the district judges’ independence of judgment required to critically re-evaluate precedents.

Finally, some may object to the proposal on the ground that a less radical option exists: have more district judges sit by designation at the Federal Circuit and vice versa. However, increased designation practice is not an adequate substitute for the proposal set forth in this Article.

Having district judges sit by designation more often at the Federal Circuit might increase awareness among the Federal Circuit judges that certain precedents are in need of correction. However, the additional insights supplied by visiting district judges may have little effect on closing the “knowing-doing gap.” As discussed previously, an environment that is conducive to error-correction is one where the judges can resist the consistency trap, where the default state is not an unproductive equilibrium with predictable voting patterns, and where the judges share a sense of urgency in undertaking the effort to correct problematic caselaw. District judges who sit by designation are unlikely to substantially change the adjudicatory atmosphere of the Federal Circuit that is maintained by the permanent judges. In addition, visiting judges do not participate in the Federal Circuit’s en banc process.

Furthermore, staffing panels with a mix of judges at different levels of

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203 See supra Part III.A.
204 See infra notes 209-211 and accompanying text.
205 See, e.g., Gugliuzza, Rethinking, supra note 58 at 1474 (“By inviting a wider variety of district judges to sit by designation, the Federal Circuit could cause its law to evolve in a way more cognizant of the role of federal law in the nation and the commercial economy.”).
206 See, e.g., Dreyfuss, Continuing Experiment, supra note 48 at 796 (“Having judges on the Federal Circuit sit on trial courts might also be beneficial, as it would help the court assess the impact of its practices (such as its refusal to hear interlocutory appeals from claim constructions) on the trial process, and on litigants and jurors.”).
207 See supra Part III.B.
208 IOP, supra note 30 at #14, ¶2(f) (May 24, 2012) (“[T]he court en banc shall consist of all circuit judges in regular active service who are not recused or disqualified and any senior circuit judge of the court who participated in the decision of the panel and elects to sit . . . ”).
the judicial hierarchy may result in district judges subconsciously deferring to the circuit judges, such that the former may dissent less often, while the latter may subconsciously assert their superior position in the hierarchy. Indeed, the hierarchical disparity between permanent Federal Circuit judges and visiting district judges may impair the latter’s independence of judgment necessary to question existing precedents and engage the other judges in a critical, rigorous analysis.

On the flip-side, if Federal Circuit judges were to sit by designation in the district courts more often, it is possible that it could improve their understanding of the impact of Federal Circuit caselaw at the district court level. However, to acquire a meaningful understanding of the issues facing district court judges, a Federal Circuit judge may need to spend at least a year at a district court handling a full district court docket in order to experience the challenges district judges face in managing patent cases with the rest of their caseload. In this regard, the current practice of some circuit judges of presiding over cherry-picked district court patent cases is wholly inadequate. Furthermore, it is unlikely that a critical mass of Federal Circuit judges will sit by designation at the district court level because they may have neither the interest nor the necessary skill set (e.g., greater familiarity with trial practice, enhanced project management skills, and facility with a wide range of subject matter, especially criminal procedure).

209 For example, a district judge, Walter H. Rice, sitting by designation at the Sixth Circuit prefaced his dissent with a statement that he was “not unmindful of the temerity required of a district judge in dissenting from the opinion of an appellate panel on which he sits by designation.” Anderson v. Evans, 660 F.2d 153, 161 (6th Cir. 1981) (Rice, J., dissenting). See also Hettinger et al., supra note 164 at 67 (“A district court judge sitting by designation is less than half as likely as a circuit court judge to write a dissenting opinion.”); Paul M. Collins, Jr. & Wendy L. Martinek, The Small Group Context: Designated District Court Judges in the U.S. Courts of Appeals, 8 J. EMPIRICAL LEGAL STUD. 177, 177 (2011) (reporting results from empirical study suggesting that “designated district court judges . . . are more susceptible to the influence of their peers than are regular members of the courts of appeals in a nontrivial number of cases”); James J. Brudney & Corey Ditslear, Designated Diffidence: District Court Judges on the Courts of Appeals, 35 LAW & SOC’Y REV. 565, 597 (2001) (concluding from empirical study that “[a]s panel participants, district judges were markedly less assertive than their appellate colleagues”).

210 Cf. Thomas G. Walker, Behavioral Tendencies in the Three-Judge District Court, 17 AM. J. POL. SCI. 407, 409, 413 (1973) (analyzing results from empirical study of three-judge district courts staffed by one circuit judge and two district judges, and concluding that “[t]he appeals court judge appears to be the most influential member” and “is the most frequent opinion writer and receives the most support for his opinions”).

211 Cf. Saphire & Solimine, supra note 189 at 376-77.

212 Cf. Gugliuzza, Rethinking, supra note 58 at 1470 (“Federal Circuit judges do sometimes sit by designation in district courts, but these visits seem to focus on gaining exposure to patent litigation at the trial level rather than gaining a broader understanding of federal law.”).
But even if every Federal Circuit judge were to sit by designation at the district court level, there is no guarantee that they will use their newly-acquired knowledge to correct suboptimal precedents when they return to the Federal Circuit—the “knowing-doing gap” will likely exist so long as the environment of the Federal Circuit remains one where a group of experts serve terms of indefinite duration.

CONCLUSION

If the courts are to solve the patent crisis, the precedents issued by the Federal Circuit must be in a form that district courts can use to reliably issue judgments that strike the proper balance between private and public interests. And if the precedents become obsolete or are otherwise suboptimal, the Federal Circuit should take prompt remedial measures.

In response to concerns about the Federal Circuit’s limited ability to experiment and adapt its precedents to changing needs, this Article presents a novel framework for analyzing the Federal Circuit’s inability to correct its precedents in a timely manner, and proposes a solution. By staffing the Federal Circuit with a rotating group of district judges, the error-correction feedback loop between the Federal Circuit and the district courts for developing Federal Circuit caselaw may be improved by reducing the blind-spots and inertia arising from the “curse of knowledge and expertise” and the “knowing-doing gap.” Otherwise, by maintaining the present staffing arrangement whereby a group of judges are permanently assigned to the Federal Circuit, timely error-correction may occur only if the judges behave in ways that are unusually self-aware and self-disciplined.

Finally, permanent Federal Circuit judges may see themselves as “boosters” of patent law. For this reason, the appropriate patentee-public balance might be better maintained by a Federal Circuit that is staffed with a group of temporary judges whose reputations are not solely dependent on their work at that court, and, as a result, would not be inclined to develop


214 See Nard & Duffy, supra note 17 at 1647 (noting “growing skepticism about the [Federal Circuit’s] ability to experiment successfully, to adapt its jurisprudence to changing scientific norms, and to develop a common law that accurately reflects the patent system’s varied role in fostering technological innovation”).

precedents in a direction that would enhance the court’s influence at the expense of other governmental institutions and the public.216

216 See William M. Landes & Richard A. Posner, An Empirical Analysis of the Patent Court, 71 U. Chi. L. Rev. 111, 111-12 (2004) (“It was predictable that a specialized patent court would be more inclined than a court of generalists to take sides on the fundamental question whether to favor or disfavor patents . . .”); Gugliuzza, Federal Circuit, supra note 55 at 1853 (discussing how a specialized court may attempt to enhance its prestige as an institution); cf. Term Limits For Judges?, supra note 26 at 687 (statement of Judge Laurence H. Silberman) (suggesting 5-year term limits for Supreme Court Justices on the theory that they “would think of themselves more as judges and less as platonic guardians”); McGinnis, supra note 26 at 545 (“Requiring the Supreme Court’s work to be done by [a rotating group of] ordinary judges would make it more likely that they would only do the Court’s proper work.”); but see Nard & Duffy, supra note 17 at 1628 & n.40 (observing that whether the Federal Circuit acts to aggrandize the importance of its jurisdiction “remains a matter of significant dispute”)}.