

**Statement of Paul R. Gugliuzza**  
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U.S. Senate  
Committee on the Judiciary  
Subcommittee on Intellectual Property

Hearing: *The State of Patent Eligibility in America: Part I*

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Chairman Tillis, Ranking Member Coons, and Members of the Subcommittee:

Thank you for inviting me to testify. My name is Paul Gugliuzza. I am a professor of law at Boston University School of Law.

My research focuses on patent law and patent litigation. Of particular relevance to this hearing, I have spent the past several years studying how the Supreme Court’s reinvigoration of the patent-eligible subject matter requirement has reshaped the procedures lower courts use to resolve infringement disputes.<sup>1</sup> The main conclusion of that research, as I explain in more detail below, is that the eligibility requirement, though imperfect, plays a crucial role in reducing litigation costs by giving courts a mechanism to quickly dismiss infringement claims that plainly lack merit.

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On the issue of patent eligibility, history, it seems, may be repeating itself. In 1980, in a case called *Diamond v. Chakrabarty*, the Supreme Court wrote that “anything under the sun that is made by man” is eligible for patenting.<sup>2</sup> Throughout the 1990s and early 2000s, the Patent Office and the Federal Circuit enthusiastically embraced that broad conception of patent eligibility. They issued and upheld many thousands of

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<sup>1</sup> My articles on this topic include: Paul R. Gugliuzza, *The Procedure of Patent Eligibility*, 97 TEX. L. REV. 571 (2019), Paul R. Gugliuzza, *Quick Decisions in Patent Cases*, 106 GEO. L.J. 619 (2018), and Paul R. Gugliuzza & Mark A. Lemley, *Can a Court Change the Law By Saying Nothing?*, 71 VAND. L. REV. 765 (2018).

<sup>2</sup> 447 U.S. 303, 309 (1980) (internal quotation marks omitted).

patents on business methods<sup>3</sup> and computer software,<sup>4</sup> as well as patents on human gene sequences and other building blocks of biotechnology.<sup>5</sup>

That capacious view of the types of inventions eligible for patenting proved to be highly problematic. Software and business method patents were often broad and vague. They covered mundane things like scanning a document to send by email<sup>6</sup> or offering WiFi service to the customers of a coffee shop.<sup>7</sup> These dubious patents facilitated opportunistic patent assertions, often by so-called patent trolls, against unsuspecting businesses who were merely using information technology. The worst patent owners blanketed the country with thousands of demand letters designed to intimidate recipients into purchasing a license for just below the cost of actually contesting the infringement allegations.<sup>8</sup>

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<sup>3</sup> *E.g.*, *State St. Bank & Tr. Co. v. Signature Fin. Grp.*, 149 F.3d 1368, 1375 (Fed. Cir. 1998).

<sup>4</sup> *See* Julie E. Cohen & Mark A. Lemley, *Patent Scope and Innovation in the Software Industry*, 89 CALIF. L. REV. 1, 11–12 (2001) (providing examples).

<sup>5</sup> *See* Ass’n for Molecular Pathology v. U.S. Patent & Trademark Office, 689 F.3d 1303, 1343–44 (Fed. Cir. 2012) (Moore, J., concurring in part) (summarizing the history of patents on human genes), *aff’d in part, rev’d in part sub nom.* Ass’n for Molecular Pathology v. Myriad Genetics, Inc., 569 U.S. 576 (2013).

<sup>6</sup> *See, e.g.*, *MPHJ Tech. Investments, LLC v. Bruning*, No. 8:13CV215, 2014 WL 12539689, at \*5 (D. Neb. Sept. 2, 2014).

<sup>7</sup> *See, e.g.*, *In re Innovatio IP Ventures, LLC Patent Litig.*, 921 F. Supp. 2d 903, 906 (N.D. Ill. 2013).

<sup>8</sup> For detailed discussions of these enforcement tactics, *see* Paul R. Gugliuzza, *Patent Trolls and Preemption*, 101 VA. L. REV. 1579, 1580–81, 1629–31 (2015), and Colleen Chien & Edward Reines, *Why Technology Customers Are Being Sued En Masse for Patent Infringement and What Can Be Done*, 49 WAKE FOREST L. REV. 235, 235–36, 242–44 (2014). For a summary of the different types of business models employed by patent trolls, *see* Mark A. Lemley & A. Douglas Melamed, *Missing the Forest for the Trolls*, 113 COLUM. L. REV. 2117, 2121, 2125–27 (2013) (concluding that trolls are merely a symptom of fundamental flaws in the patent system, such as disaggregated ownership of patent rights on complementary technologies).

In the realm of biotechnology, patents on early stage research, such as naturally occurring DNA sequences, hindered the development of diagnostic tests and therapeutic tools. Because patent rights were widely fragmented, researchers seeking to develop gene therapies or diagnostics were required to obtain numerous licenses from many different parties.<sup>9</sup>

By the early 2000s, the widespread view among legal scholars and economists was that the American patent system was broken. Patents, it seemed, were hindering innovation as much or perhaps even more than they were encouraging it.<sup>10</sup> But, in the past decade, things have improved. There are many reasons for this.<sup>11</sup> For instance, in 2011, Congress passed the America Invents Act.<sup>12</sup> That Act, among other things, created several new administrative proceedings in which persons who are accused of patent infringement can, at relatively low cost, ask the Patent Office to take a second look at the patent's validity.<sup>13</sup>

Another reason for the renewed health of the American patent system, in my view, is the Supreme Court's reinvigoration of the patent-eligible subject matter

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<sup>9</sup> See generally Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698, 699 (1998).

<sup>10</sup> The leading scholarly monograph making this point is DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* (2009).

<sup>11</sup> For summaries of the numerous changes to patent law that have occurred in the last ten years, see Mark A. Lemley, *The Surprising Resilience of the Patent System*, 95 TEX. L. REV. 1, 10–11 (2016), and Paul R. Gugliuzza, *Patent Litigation Reform: The Courts, Congress, and the Federal Rules of Civil Procedure*, 95 B.U. L. REV. 279, 288–97 (2015).

<sup>12</sup> Pub. L. 112-29, 125 Stat. 284, 299 (2011).

<sup>13</sup> For a description of these new proceedings, see Paul R. Gugliuzza, *(In)valid Patents*, 92 NOTRE DAME L. REV. 271, 282–87 (2016).

requirement. In a string of four decisions over the past decade, the Court has held that inventions directed to laws of nature, natural phenomena, or abstract ideas are not eligible for patenting unless they also contain an “inventive concept.”<sup>14</sup> Applying that test, the Supreme Court and the lower federal courts have invalidated patents that simply use computers to automate longstanding business practices, such as managing financial risk<sup>15</sup> or setting prices.<sup>16</sup> The courts have also invalidated patents on naturally occurring DNA sequences<sup>17</sup> and on methods of medical diagnosis that employ conventional laboratory techniques.<sup>18</sup>

But the primary benefit of an invigorated eligibility doctrine, in my view, is not that it gives courts a basis to invalidate patents that are not sufficiently innovative to warrant twenty years of exclusive rights. After all, the statutory requirements of novelty<sup>19</sup> and nonobviousness<sup>20</sup> also ensure that a patent is distinct from the technology that previously existed. Rather, as I explain in detail in the attached article, *The Procedure of Patent Eligibility*, I see the primary benefit of an invigorated eligibility doctrine in how it affects the *process* of patent litigation. Validity requirements such as

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<sup>14</sup> *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208 (2014); *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576 (2013); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012); *Bilski v. Kappos*, 561 U.S. 593 (2010).

<sup>15</sup> *E.g.*, *Alice*, 573 U.S. at 224–26; *Bilski*, 561 U.S. at 611–12.

<sup>16</sup> *E.g.*, *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015).

<sup>17</sup> *Myriad*, 569 U.S. at 591.

<sup>18</sup> *E.g.*, *Mayo*, 566 U.S. at 80; *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371 (Fed. Cir. 2015).

<sup>19</sup> 35 U.S.C. § 102.

<sup>20</sup> *Id.* § 103.

novelty and nonobviousness are usually viewed by courts to turn on disputed questions of fact, meaning they cannot be resolved until after a trial or, at the earliest, shortly before trial on a motion for summary judgment. Patent eligibility, by contrast, is often viewed to present a question of law, meaning that it can be—and often is—resolved at the earliest stages of the case—before the costly discovery process begins.

The cost savings of deciding eligibility early in litigation cannot be overstated. According to widely cited numbers compiled by the American Intellectual Property Law Association, a patent case in which \$25 million is at stake—a relatively low-stakes patent case—costs about \$3 million to litigate through trial and appeal.<sup>21</sup> Over half of that cost is incurred during discovery.<sup>22</sup> A robust eligibility requirement can help litigants avoid those litigation expenses by facilitating early dismissals of infringement claims involving patents that are plainly invalid.

The legislation currently being considered by this Committee would, unfortunately in my view, return us to an era in which anything under the sun is again patent eligible, raising the risk that the worst abuses of the 1990s and early 2000s will return. If Congress were to eliminate the eligibility requirement, as the proposed legislation would effectively do, the Patent Office would of course continue to examine patents for their novelty and nonobviousness and to ensure that the patented invention is described in terms that are not overly broad or abstract. But the average patent

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<sup>21</sup> AM. INTELLECTUAL PROP. LAW ASS'N, REPORT OF THE ECONOMIC SURVEY 43 (2017).

<sup>22</sup> Greg Reilly, *Linking Patent Reform and Civil Litigation Reform*, 47 LOY. U. CHI. L.J. 179, 198 (2015).

receives only about twenty hours of attention from an examiner,<sup>23</sup> meaning that bad patents will inevitably slip through the cracks. When they do, the eligibility requirement helps keep the cost of correcting the Patent Office's mistake as low as possible.

To be sure, as I also explain in detail in the attached article, the eligibility doctrine that is just beginning to develop in the lower courts is not without flaws. Courts have sometimes struggled to identify the circumstances in which eligibility should *not* be resolved before discovery because there are plausible disputes about the facts of the case.<sup>24</sup> And reasonable minds can differ about whether limiting patent protection for medical diagnostics makes for good innovation policy.<sup>25</sup> But completely

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<sup>23</sup> See Michael D. Frakes & Melissa F. Wasserman, *Is the Time Allocated to Review Patent Applications Inducing Examiners to Grant Invalid Patents?*, 99 REV. ECON. & STAT. 550, 552 (2017); Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1500 (2001).

<sup>24</sup> See Gugliuzza, *The Procedure of Patent Eligibility*, *supra* note 1, at 605–12, 616–23 (critiquing the Federal Circuit's recent decisions in *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1370 (Fed. Cir. 2018), and *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1130 (Fed. Cir. 2018), both of which overturned early-stage district court dismissals on eligibility grounds because the cases, in the Federal Circuit's view, presented factual disputes). A petition for a writ of certiorari is currently pending in *Berkheimer*, see Petition for a Writ of Certiorari, *HP Inc. v. Berkheimer*, No. 18-415, 2018 WL 4819013 (U.S. filed Sept. 28, 2018), and the Supreme Court has issued an order calling for the views of the Solicitor General, *HP Inc. v. Berkheimer*, 139 S. Ct. 860 (2019), which, as I explain in a forthcoming article, increases by more than sevenfold the probability that the Court will grant review, see Paul R. Gugliuzza, *The Supreme Court Bar at the Bar of Patents*, 95 NOTRE DAME L. REV. (forthcoming 2020) (manuscript at 38), available at <https://ssrn.com/abstract=3347935>.

<sup>25</sup> Though pure diagnostic tools appear to be ineligible for patenting under decisions such as *Mayo* and *Ariosa*, see *supra* note 18, the Federal Circuit has recently held that patents that include a diagnostic step are nevertheless patent eligible so long as they also recite a method of treatment stemming from that diagnosis, see *Vanda Pharms. Inc. v. West-Ward Pharms. Int'l Ltd.*, 887 F.3d 1117, 1134 (Fed. Cir. 2018). A petition for a writ of certiorari is currently pending in the *Vanda* case, too, see *Hikma Pharms. USA Inc. v. Vanda Pharms USA, Inc.*, No. 18-817, 2018 WL 6819525 (U.S. filed Dec. 20, 2018), and the Supreme Court has likewise issued an order calling for the views of the Solicitor General, *Hikma Pharms. USA Inc. v. Vanda Pharms USA, Inc.*, 139 S. Ct. 1368 (2019).

dismantling the eligibility requirement would take away a crucial tool courts can use to end, at relatively low cost, patent cases that plainly lack merit.

Thank you again for inviting me to testify. I would be pleased to answer any questions the Committee might have for me.



**Attachment**

Paul R. Gugliuzza, *The Procedure of Patent Eligibility*, 97 TEXAS LAW REVIEW 571 (2019)

# The Procedure of Patent Eligibility

Paul R. Gugliuzza\*

*A decade ago, the patent-eligible subject matter requirement was defunct. Several recent Supreme Court decisions, however, have made eligibility the most important issue in many patent cases. To date, debates over the resurgent doctrine have focused mainly on its substance. Critics contend that the Supreme Court's case law makes patents too easy to invalidate and discourages innovation. Supporters emphasize that the Court's decisions help eradicate the overly broad patents often asserted by so-called patent trolls.*

*Yet one important consequence of eligibility's revival has been procedural. Because district courts often view eligibility to present a pure question of law, they are—for the first time ever—invalidating patents on motions to dismiss, ending infringement cases before the costly discovery process begins. The test for eligibility adopted by the Supreme Court, however, compares the claimed invention to the technology that predated the patent. That comparison, this Article argues, often involves disputes of fact, which means that courts should be more cautious about deciding eligibility on the pleadings than they currently are.*

*In two noteworthy decisions issued in early 2018, the Federal Circuit held that the question of patent eligibility does indeed have factual underpinnings, brushing aside precedent that seemed to treat eligibility as a purely legal matter. But these new decisions may go too far. By making it extremely easy for plaintiffs to create a factual dispute that prevents pre-trial adjudication, they threaten to nullify what this Article identifies as a key policy function of the eligibility requirement: providing a means for courts to quickly and cheaply dismiss infringement claims so plainly lacking merit that discovery is unwarranted.*

*In addition to examining the legal-versus-factual nature of eligibility doctrine, the Article analyzes several other important questions about procedure in eligibility cases that the lower federal courts—including judges and panels of the Federal Circuit—have answered in wildly divergent ways. Those questions range from the role of claim construction in the eligibility analysis, to the*

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\*Associate Professor, Boston University School of Law. For comments and helpful discussions, thanks to Sarah Burstein, Daniela Caruso, Kevin Collins, Stacey Dogan, Rochelle Dreyfuss, Tabrez Ebrahim, John Golden, Wendy Gordon, Mike Harper, Cynthia Ho, Tim Holbrook, Peter Karol, Dmitry Karshtedt, Megan La Belle, Gary Lawson, Ed Lee, Peter Lee, Mark Lemley, Mike Meurer, Jonathan Nash, Maureen O'Rourke, Rafael Pardo, Nicholson Price, Rachel Rebouché, Greg Reilly, Ana Rutschman, Josh Sarnoff, David Schwartz, David Seipp, Melissa Wasserman, and participants at the Southeastern Association of Law Schools Annual Conference, the Chicago Intellectual Property Colloquium at Chicago-Kent College of Law, the Junior Intellectual Property Scholars Association Workshop at the University of Oklahoma College of Law, a faculty workshop at Emory University School of Law, the Works-in-Progress Intellectual Property Colloquium at Case Western Reserve University School of Law, the Junior Scholars in Intellectual Property Workshop at Michigan State University College of Law, and a faculty workshop at Boston University School of Law. Additional thanks to Kris Hansen for valuable research assistance.

*relevance of the statutory presumption of patent validity, to whether courts should decide eligibility when a case can be terminated on another ground. By engaging these vexing issues, the Article sketches a procedural framework for resolving eligibility that would allow courts to quickly invalidate “bad” patents while reducing the danger they will erroneously invalidate a “good” patent on an inadequately developed record.*

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## Introduction

For most of the past forty years, the patent-eligible subject matter requirement was a dead letter.<sup>1</sup> In 1980, the Supreme Court suggested that “anything under the sun that is made by man” is eligible for patenting.<sup>2</sup> The Patent Office and the Federal Circuit took the Court up on its suggestion, issuing and upholding many thousands of patents on business methods and computer software,<sup>3</sup> as well as patents on human gene sequences and other building blocks of the biotechnology industry.<sup>4</sup> This broad conception of patentability triggered numerous complaints. Critics argued that software and business method patents were too broad, too vague, and facilitated patent assertions, often by so-called patent trolls, against too many unsuspecting businesses working with information technology.<sup>5</sup> In the realm of biotechnology, scholars suggested that patents on early stage research were hindering the development of diagnostic tests and therapeutic tools.<sup>6</sup>

In the past decade, the Supreme Court has responded to these critiques by making it harder for patentees to enforce patents and easier for accused infringers to invalidate them.<sup>7</sup> The Court has eliminated the presumption that a patentee who proves infringement is entitled to an injunction,<sup>8</sup> which reduces patentees’ bargaining power in settlement negotiations. The Court has made it easier for accused infringers to prove that a patent is invalid as obvious.<sup>9</sup> Most controversially, the Court, in a string of four decisions, has reinvigorated the patent-eligible subject matter requirement, holding that inventions directed to laws of nature, natural phenomena, or abstract ideas are not eligible for patenting unless they also contain an “inventive concept.”<sup>10</sup> Applying that test, the Court has struck down patents on financial

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1. Mark A. Lemley et al., *Life After Bilski*, 63 STAN. L. REV. 1315, 1318 (2011).

2. *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980) (quoting S. REP. NO. 82-1979, at 5 (1952); H.R. REP. NO. 82-1923, at 6 (1952)). For criticism of how the Court characterized the relevant legislative history, see *Bilski v. Kappos*, 561 U.S. 593, 642 (2010) (Stevens, J., concurring in the judgment).

3. JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 150–51 (2008).

4. Arti Kaur Rai, *Regulating Scientific Research: Intellectual Property Rights and the Norms of Science*, 94 NW. U. L. REV. 77, 119 (1999).

5. See, e.g., DAN L. BURK & MARK A. LEMLEY, THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT 27 (2009).

6. See, e.g., Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698, 699 (1998).

7. For empirical evidence of the “anti-patent” trend of recent Supreme Court decisions, see Gregory N. Mandel, *Institutional Fracture in Intellectual Property Law: The Supreme Court Versus Congress*, 102 MINN. L. REV. 803, 812 (2017).

8. *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 393–94 (2006).

9. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 420–22 (2007).

10. *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014).

risk management techniques,<sup>11</sup> computer software designed to carry out business strategies,<sup>12</sup> naturally occurring DNA,<sup>13</sup> and methods of medical diagnosis and treatment.<sup>14</sup>

The Supreme Court's decisions on eligibility have transformed patent litigation. Eligibility was rarely litigated less than a decade ago, but it is now the central concern in many cases.<sup>15</sup> This change has been bad for patentees. Since 2014, they have lost over sixty percent of eligibility decisions in the federal district courts.<sup>16</sup> As Mark Lemley and I showed in a recent study, patentees' loss rate grows to over ninety percent in cases that are appealed to the Federal Circuit.<sup>17</sup>

The Supreme Court has sparked tremendous controversy by reinvigorating the eligibility requirement. Detractors condemn the Court's case law as confusing and lower courts' decisions as unpredictable.<sup>18</sup> They assert that restricting patent eligibility improperly weakens innovation incentives.<sup>19</sup> And they contend that the eligibility requirement, which stems from the Court's interpretation of § 101 of the Patent Act,<sup>20</sup> is legally

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11. *Bilski v. Kappos*, 561 U.S. 593, 609 (2010).

12. *Alice*, 134 S. Ct. at 2357.

13. *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 591 (2013).

14. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 79–80 (2012).

15. See ROBERT PATRICK MERGES & JOHN FITZGERALD DUFFY, *PATENT LAW AND POLICY: CASES AND MATERIALS* 101–02 (7th ed. 2017) (providing statistics on the growing number of cases raising eligibility issues).

16. Jeffrey A. Lefstin, Peter S. Menell & David O. Taylor, *Final Report of the Berkeley Center for Law & Technology Section 101 Workshop: Addressing Patent Eligibility Challenges*, 33 *BERKELEY TECH. L.J.* 551, 576 tbl.1 (2018). By comparison, patentees lose only about forty percent of validity challenges overall (that is, taking into account *all* possible grounds on which a patent's validity might be challenged, including eligibility). John R. Allison, Mark A. Lemley & David L. Schwartz, *Understanding the Realities of Modern Patent Litigation*, 92 *TEXAS L. REV.* 1769, 1787 fig.4 (2014).

17. Paul R. Gugliuzza & Mark A. Lemley, *Can a Court Change the Law by Saying Nothing?*, 71 *VAND. L. REV.* 765, 787 & fig.8 (2018).

18. See, e.g., David O. Taylor, *Confusing Patent Eligibility*, 84 *TENN. L. REV.* 157, 158–59 (2016).

19. See, e.g., Kevin Madigan & Adam Mossoff, *Turning Gold into Lead: How Patent Eligibility Doctrine Is Undermining U.S. Leadership in Innovation*, 24 *GEO. MASON L. REV.* 939, 941 (2017).

20. Section 101 reads, in full: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 U.S.C. § 101 (2012); see also *Bilski v. Kappos*, 561 U.S. 593, 601–02 (2010) (“The Court’s precedents provide three specific exceptions to § 101’s broad patent-eligibility principles: ‘laws of nature, physical phenomena, and abstract ideas.’ While these exceptions are not required by the statutory text, they are consistent with the notion that a patentable process must be ‘new and useful.’” (citation omitted)).

redundant because other sections of the statute already require patents to be inventive<sup>21</sup> and not too broadly or abstractly described.<sup>22</sup>

That said, the loosened standards of patentability mentioned above have, in at least some cases, allowed patentees to assert patents of questionable social value and to use the high cost of discovery and attorneys' fees—which the defendant must usually bear itself, even if it wins the case—to extract what appear to be unwarranted settlement payments.<sup>23</sup> The eligibility requirement, despite its potential *substantive* flaws, does provide a useful *procedural* mechanism to end those weak cases quickly and cheaply. When district courts strike down patents on eligibility grounds, they frequently do so on a motion to dismiss.<sup>24</sup> Those motions are decided based on the pleadings alone, without any evidentiary hearing, usually before discovery begins. Courts justify resolving eligibility at such an early stage by reasoning that it presents a question of law devoid of factual considerations.<sup>25</sup> This cost-saving procedural shortcut of pleading-stage dismissal is, as I have pointed out in prior work, simply not available for other validity doctrines such as novelty and nonobviousness, which are widely recognized to turn on

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21. Specifically, the novelty requirement of § 102 mandates that a patent be “new” as compared to preexisting technology (the “prior art,” in the parlance of patent lawyers), and the nonobviousness requirement of § 103 forbids patents on inventions that “would have been obvious . . . to a person having ordinary skill in the art to which the claimed invention pertains.” 35 U.S.C. §§ 102–103 (2012).

22. In particular, § 112(a) requires a patent to “contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the same.” *Id.* § 112(a). And § 112(b) contains a definiteness requirement, which ensures that a patent “inform[s], with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). For a discussion of the eligibility requirement’s potential superfluity in light of other requirements of the Patent Act, see John M. Golden, *Redundancy: When Law Repeats Itself*, 94 TEXAS L. REV. 629, 701–03 (2016) (defending “the Supreme Court’s move to revive subject-matter eligibility doctrine and to do so in a way that involves doctrinal overlaps,” but citing critical commentary).

23. See Mark A. Lemley & A. Douglas Melamed, *Missing the Forest for the Trolls*, 113 COLUM. L. REV. 2117, 2173 (2013). For a discussion of how litigation costs can incentivize patentees to bring weak claims, see Greg Reilly, *Linking Patent Reform and Civil Litigation Reform*, 47 LOY. U. CHI. L.J. 179, 199–203 (2015) (noting also that high costs are “not a patent problem but instead a civil litigation problem common to so-called ‘mega cases’—complex, high stakes, and contentious cases”). Though the Supreme Court has recently made it easier for prevailing defendants to recover their attorneys’ fees in patent litigation, see *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 134 S. Ct. 1749, 1756 (2014), fee awards are still reserved—by statute—for “exceptional cases.” 35 U.S.C. § 285 (2012); see also Paul R. Gugliuzza, *Patent Litigation Reform: The Courts, Congress, and the Federal Rules of Civil Procedure*, 95 B.U. L. REV. 279, 292 (2015) (discussing changes to Civil Rule 26 that could encourage courts to more frequently shift the costs of discovery).

24. Lefstin, Menell & Taylor, *supra* note 16, at 23 tbl.2.

25. *E.g.*, *In re TLI Commc’ns LLC Patent Litig.*, 87 F. Supp. 3d 773, 798 (E.D. Va. 2015), *aff’d*, 823 F.3d 607 (Fed. Cir. 2016).

questions of fact and therefore cannot be resolved until summary judgment at the earliest and often must wait until trial.<sup>26</sup>

Yet there are several reasons to pause before praising this trend toward quick invalidations as an unalloyed good. To begin with, patents invalidated as ineligible frequently cover complex technology such as tests for genetic mutations,<sup>27</sup> computer systems for processing financial transactions,<sup>28</sup> and blood assays for particular diseases.<sup>29</sup> That technology can be difficult for courts to understand on a motion to dismiss, which a court decides based on the pleadings alone and without any evidentiary submissions from the parties. Moreover, under the terms of the federal patent statute, all patents are presumed valid.<sup>30</sup> Pleading-stage eligibility decisions, however, often ignore that presumption on the ground that, because eligibility presents a question of law, evidentiary presumptions do not apply.<sup>31</sup> Finally, the test for eligibility adopted by the Supreme Court asks, as noted, whether the patent contains an “inventive concept” as compared to previously existing technology.<sup>32</sup> That comparison of the patent to the state of the art can be difficult for a court to perform without looking beyond the pleadings.<sup>33</sup>

The Supreme Court’s resurgent interest in patent eligibility has spawned a voluminous scholarly literature,<sup>34</sup> but lower courts’ procedural innovations in implementing the Court’s decisions have mostly eluded analysis. Similarly, although the Federal Circuit has decided well over one hundred patent-eligible subject matter cases in the past four years,<sup>35</sup> the court has said little about process. The court’s ambivalence toward eligibility procedure is well-captured in its recent statement that “[c]ourts may . . . dispose of patent-

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26. Paul R. Gugliuzza, *Quick Decisions in Patent Cases*, 106 GEO. L.J. 619, 651 (2018).

27. *E.g.*, *Genetic Techs. Ltd. v. Bristol-Myers Squibb Co.*, 72 F. Supp. 3d 521, 527 (D. Del. 2014), *aff’d sub nom. Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369 (Fed. Cir. 2016).

28. *E.g.*, *Smart Sys. Innovations, LLC v. Chi. Transit Auth.*, No. 14 C 08053, 2015 WL 4184486, at \*1 (N.D. Ill. July 10, 2015), *aff’d*, 873 F.3d 1364 (Fed. Cir. 2017).

29. *E.g.*, *Cleveland Clinic Found. v. True Health Diagnostics, LLC*, No. 1:15 CV 2331, 2016 WL 705244, at \*7 (N.D. Ohio Feb. 23, 2016), *aff’d*, 859 F.3d 1352 (Fed. Cir. 2017).

30. 35 U.S.C. § 282(a) (2012) (“A patent shall be presumed valid. . . . The burden of establishing invalidity of a patent . . . shall rest on the party asserting such invalidity.”).

31. *See, e.g.*, *Wireless Media Innovations, LLC v. Maher Terminals, LLC*, 100 F. Supp. 3d 405, 411 (D.N.J. 2015), *aff’d*, 636 F. App’x 1014 (Fed. Cir. 2016); *see also infra* section II(E)(1) (discussing additional cases).

32. *See, e.g.*, *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2357 (2014).

33. For an analysis questioning whether eligibility can be accurately resolved on the minimal factual record available at the pleading stage, see Andres Sawicki, *The Central Claiming Renaissance*, 103 CORNELL L. REV. 645, 694 (2018) (“[I]t may turn out that at least some of the same expensive fact development is required to answer eligibility questions as is required to answer novelty and non-obviousness ones.”).

34. For a collection of recent articles, see Gugliuzza & Lemley, *supra* note 17, at 791 n.98.

35. *Id.* at 787.

infringement claims” on eligibility grounds “whenever procedurally appropriate.”<sup>36</sup>

As I was finishing the initial draft of this Article, the Federal Circuit finally engaged some key procedural issues that frequently arise in eligibility disputes. In two opinions issued in early 2018 (both authored by the same judge), the court overturned district court rulings that had invalidated patents as ineligible on pre-trial motions.<sup>37</sup> The Federal Circuit asserted that a key portion of the eligibility analysis, specifically, determining whether a patent covers “well-understood, routine and conventional” activity (and therefore lacks the required inventive concept), is a question of fact that, in some circumstances, is inappropriate for early-stage resolution by the judge.<sup>38</sup>

These new decisions appear to offer some clarity on the law/fact distinction in eligibility law. But, in fact, they are in tension with prior Federal Circuit precedent that had seemingly embraced the notion—expounded by many district courts—that patent eligibility is entirely a question of law.<sup>39</sup> As I show throughout this Article, on the rare occasions the Federal Circuit has actually addressed procedural issues relevant to patent eligibility, this type of inconsistency is not unusual.<sup>40</sup> The Federal Circuit’s lack of coherent guidance has caused deep disagreements among district courts on procedural issues in eligibility disputes—another theme that frequently recurs in this Article.<sup>41</sup> The Federal Circuit’s tolerance of this confusion is, it should be noted, highly questionable given that the court was created for the specific purpose of achieving uniformity in patent law.<sup>42</sup>

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36. *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1347 (Fed. Cir. 2016).

37. *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1130 (Fed. Cir. 2018) (Moore, J.) (vacating grant of motion to dismiss); *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1370 (Fed. Cir. 2018) (Moore, J.) (vacating grant of summary judgment), *petition for cert. filed*, No. 18-415 (U.S. Sept. 28, 2018).

38. *Berkheimer*, 881 F.3d at 1368; *see also* *Exergen Corp. v. Kaz USA, Inc.*, 725 F. App’x 959, 965 (Fed. Cir. 2018) (nonprecedential opinion, also by Judge Moore, affirming a district court decision denying the defendant’s post-trial motion for judgment of ineligibility, noting that “[t]he district court’s conclusion that [the patent’s] claim elements were not well-understood, routine, and conventional is a question of fact to which we must give clear error deference”).

39. *See, e.g., Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1293 (Fed. Cir. 2016) (“We review the district court’s determination of patent eligibility under § 101 without deference, as a question of law.”); *see also Aatrix*, 882 F.3d at 1130 (Reyna, J., concurring in part and dissenting in part) (“I respectfully disagree with the majority’s broad statements on the role of factual evidence in a § 101 inquiry. Our precedent is clear that the § 101 inquiry is a legal question.”); *infra* notes 200, 222 (citing district court decisions explicitly treating eligibility as a “pure” question of law).

40. *See, e.g., infra* section II(A)(1) (discussing conflicting Federal Circuit opinions on whether courts must address patent eligibility “at the threshold,” that is, before considering other requirements of patentability or issues of infringement).

41. *See infra* Part II.

42. *See* Paul R. Gugliuzza, *Rethinking Federal Circuit Jurisdiction*, 100 GEO. L.J. 1437, 1453–



Despite what the Federal Circuit's precedent (or lack thereof) might suggest, procedural considerations are key to evaluating the consequences of eligibility doctrine's resurgence. If courts are deciding the issue too early in litigation and without sufficient factual development, they may be erroneously invalidating patents that actually do satisfy the requirements of the Patent Act. In the long run, a pattern of erroneous invalidations will dampen the innovation incentives patents are supposed to provide.<sup>43</sup> But if courts wait too long to invalidate patents, accused infringers must bear the costs of unjustified litigation. That could lead potential infringers to simply ignore the existence of patents because they know they will be sued anyway,<sup>44</sup> or, worse, to stop engaging in the innovative activity that embroiled them in litigation.<sup>45</sup>

This Article is the first to analyze in detail the evolving procedures through which courts decide the crucial question of patent eligibility. Along the way, it makes both descriptive and prescriptive contributions to the emergent literature on the procedural design of the patent system.<sup>46</sup> Descriptively, the Article identifies numerous difficult procedural questions courts have confronted (or, sometimes, ignored) in the wake of the Supreme Court's revival of the eligibility requirement, and it chronicles the conflicting answers courts have provided. Those questions include: Is patent eligibility a "threshold" question that a court *must* resolve before deciding other issues, or can the court ignore eligibility and decide the case on other grounds, such as anticipation (that is, lack of novelty), obviousness, or noninfringement?<sup>47</sup> Can a court determine eligibility without conducting a *Markman* hearing in which the court construes the patent's claims?<sup>48</sup> Does the statutory

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64 (2012) (summarizing the Federal Circuit's history and purpose); *see also* Raymond A. Mercado, *Resolving Patent Eligibility and Indefiniteness in Proper Context: Applying Alice and Aristocrat*, 20 VA. J.L. & TECH. 240, 326 (2016) (noting the "need [for] guidance from the Federal Circuit" on the "procedures leading up to . . . an eligibility determination").

43. *See* Louis Kaplow, *The Value of Accuracy in Adjudication: An Economic Analysis*, 23 J. LEGAL STUD. 307, 380 (1994) ("When adjudication both creates incentives for ex ante behavior and affects future conduct, accuracy tends to be more valuable.").

44. *See* Mark A. Lemley, *Ignoring Patents*, 2008 MICH. ST. L. REV. 19, 21, 31 (2008) (exploring the costs (and benefits) of widespread ignorance of patents, particularly in the information technology industry).

45. *See* Keith N. Hylton, *When Should a Case Be Dismissed? The Economics of Pleading and Summary Judgment Standards*, 16 SUP. CT. ECON. REV. 39, 47 (2008) ("[B]y permitting substantial litigation costs to be imposed on . . . defendants [who did not act unlawfully], failures to dismiss low merit claims weaken incentives to comply with the law and to take socially desirable actions.").

46. For an introduction to that literature, *see*, in addition to the works cited throughout this Article, the sources cited in Ryan Vacca, *The Federal Circuit as an Institution*, in RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY LAW (Peter S. Menell, David L. Schwartz & Ben Depoorter eds., forthcoming 2019) (manuscript at 50–54), <https://ssrn.com/abstract=2706849> [<https://perma.cc/SXZ9-8DED>].

47. *See infra* subpart II(A).

48. *See infra* subpart II(D); *see also* *Markman v. Westview Instruments, Inc.*, 517 U.S. 370,

presumption of validity apply when a court analyzes patent eligibility?<sup>49</sup> And, perhaps most fundamentally, the question that has recently captured the Federal Circuit's attention: Is patent eligibility a pure question of law, or does it have factual aspects?<sup>50</sup>

In the course of answering those questions, the Article makes several prescriptive recommendations that would allow courts to better balance speed and accuracy in the adjudication of patent eligibility. To start, the Article critiques the Federal Circuit's periodic efforts to characterize eligibility as a jurisdiction-like issue that *must* be resolved at the outset of the case,<sup>51</sup> arguing instead that courts should retain their well-established discretion over when, exactly, to decide potentially dispositive issues such as patent eligibility.<sup>52</sup>

Turning to the legal-versus-factual nature of the eligibility question itself, the Article argues that the Federal Circuit is on the right track by recognizing that eligibility can involve factual inquiries even though, like all other requirements of patentability, it is ultimately a question of law.<sup>53</sup> The Federal Circuit's two recent decisions on the law/fact distinction have been controversial and could conceivably be reconsidered by the full court sitting en banc or by the Supreme Court at some point in the future.<sup>54</sup> But binding, settled appellate precedent acknowledging the potential relevance of facts

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372 (1996) (holding that the judge, not a jury, must determine the meaning of a patent's claims). The claim construction ruling is the most important ruling in many patent cases because it is often dispositive of infringement and is important to determining validity. *See* *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 989 (Fed. Cir. 1995) (en banc) (Mayer, J., concurring in the judgment) (“[T]o decide what the claims mean is nearly always to decide the case.”), *aff'd*, 517 U.S. 370.

49. *See infra* subpart II(E).

50. *See infra* subpart II(B).

51. *See, e.g.*, *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1330 n.3 (Fed. Cir. 2012).

52. *See infra* section II(A)(2).

53. *See* *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 96–97 (2011) (“While the ultimate question of patent validity is one of law, the same factual questions underlying the PTO's original examination of a patent application will also bear on an invalidity defense in an infringement action.” (citations omitted) (quoting *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966))). *But see infra* notes 196–98 and accompanying text (discussing Federal Circuit case law treating some issues of patent validity as *entirely* factual).

54. Over a dissent, the Federal Circuit denied petitions for rehearing en banc in both cases. *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 890 F.3d 1354, 1355 (Fed. Cir. 2018); *Berkheimer v. HP Inc.*, 890 F.3d 1369, 1370 (Fed. Cir. 2018). A cert. petition is currently pending in *Berkheimer*, *see* *Petition for a Writ of Certiorari, HP Inc. v. Berkheimer*, No. 18-415 (U.S. filed Sept. 28, 2018), and, as this Article was going to press, the Supreme Court issued an order calling for the views of the Solicitor General. *HP Inc. v. Berkheimer*, No. 18-415, 2019 WL 113064 (U.S. Jan. 7, 2019). As I explain in a forthcoming article, such an order increases by more than sevenfold the probability that the Court will grant certiorari. Paul R. Gugliuzza, *The Supreme Court Bar at the Bar of Patents* 38 (Jan. 25, 2019) (unpublished manuscript) (on file with author) (finding that, from 2002 through 2016, cert. petitions in patent cases that received a call for the views of the Solicitor General were granted 46.7% of the time, compared with an overall patent case grant rate of 6.6%).

would clarify the procedure of patent eligibility in several ways: It would ensure that courts resolve eligibility on the pleadings only when the reasons for invalidation are found in the patent itself or are matters about which the court may take judicial notice. It would ensure that courts deciding eligibility at the pleading stage resolve factual doubts in favor of the patentee, rather than simply rendering a yes-or-no decision on validity, as they sometimes seem to do. And it would allow courts to apply the statutory presumption of validity, reconciling the eligibility analysis with the plain language of the patent statute, which unequivocally states that patents “shall be presumed valid.”<sup>55</sup>

That said, the Federal Circuit’s recent decisions injecting factual considerations into the eligibility analysis have some serious flaws. Most alarmingly, they appear to allow a patentee to defeat a motion to dismiss or a motion for summary judgment by offering nothing more than its own, self-serving statements about the patent’s inventiveness as compared to preexisting technology.<sup>56</sup> By allowing cases to proceed to discovery or even to trial on evidence of such limited probative value, the decisions threaten to defeat what I suggested above is a key policy justification for the very existence of the eligibility requirement: providing a means to quickly and cheaply dispose of infringement claims that obviously lack merit.

Though this Article focuses mainly on the intersection of procedural law and eligibility doctrine, its analysis has implications for patent law and the patent system more broadly. For instance, the Article shows how courts resolving eligibility disputes frequently (though implicitly) treat the subsidiary question of claim construction as factual,<sup>57</sup> casting doubt on the Federal Circuit’s insistence that claim construction usually presents a question of law subject to *de novo* appellate review.<sup>58</sup> If the Federal Circuit were to recognize that claim construction is often factual, as numerous eligibility cases illustrate, the court would be forced to defer more frequently to district courts’ rulings about the scope of patent claims, decreasing the cost and increasing the predictability of patent litigation more generally. In addition, the Article shows how the Federal Circuit’s difficulties in distinguishing between law and fact in the eligibility analysis mirror questionable doctrines the court has often embraced—and the Supreme Court

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55. 35 U.S.C. § 282(a) (2012).

56. See *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1128 (Fed. Cir. 2018) (holding that allegations in the complaint about the patent’s inventiveness precluded the district court from granting a motion to dismiss); *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1370 (Fed. Cir. 2018) (holding that statements about the patent’s inventiveness in the patent itself created a genuine issue of material fact for trial), *petition for cert. filed*, No. 18-415 (U.S. Sept. 28, 2018); see also *infra* subparts II(B)–(C) (discussing the *Berkheimer* and *Aatrix* cases in more detail).

57. See *infra* subparts II(C)–(D).

58. See *infra* notes 339–41 and accompanying text.

has often overturned—on other transsubstantive issues in patent cases, such as matters of jurisdiction and procedure.<sup>59</sup> The court’s missteps in eligibility procedure provide another reason to question the success of the Federal Circuit “experiment” in judicial specialization.<sup>60</sup>

The remainder of this Article consists of three parts. Part I provides background on the doctrine of patent-eligible subject matter and explains how recent changes to the substance of that doctrine have translated into procedural reform. Part II, the heart of the Article, thoroughly examines the procedures courts have used to resolve the newly important question of patent eligibility, and it makes a detailed case for the law-reform recommendations described above. Finally, Part III explores the broader implications of the Article’s analysis of eligibility procedure for matters such as the right to a jury trial on patent validity and the centralization of appeals in the Federal Circuit.

## I. The Law, Policy, and Practice of Patent Eligibility

In less than a decade, the eligibility requirement has revolutionized the practice of patent litigation in the United States. This part of the Article begins by discussing how the Supreme Court reinvigorated eligibility doctrine and synthesizing the Federal Circuit’s subsequent decisions into rough guidelines about the boundaries of patent eligibility. It concludes by highlighting how the recent changes to the *substance* of eligibility doctrine have dramatically altered the *procedures* through which courts resolve infringement disputes.

### A. *The Supreme Court’s Revival of the Eligibility Requirement*

Section 101 of the Patent Act permits patents on “any new and useful process, machine, manufacture, or composition of matter.”<sup>61</sup> Despite that broad language, courts have held that § 101 contains an “implicit exception” that prohibits patenting laws of nature, natural phenomena, and abstract

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59. See Paul R. Gugliuzza & Megan M. La Belle, *The Patently Unexceptional Venue Statute*, 66 AM. U. L. REV. 1027, 1028–29 (2017) (collecting case examples); see also Peter Lee, *The Supreme Assimilation of Patent Law*, 114 MICH. L. REV. 1413, 1451 (2016) (noting the Supreme Court’s “focus [in recent patent decisions] on transcendent areas of law that touch upon patent doctrine as well as other doctrinal areas, such as appellate review of district courts and agencies, jurisdiction, and remedies”).

60. See Rochelle Cooper Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. REV. 1, 3 (1989) (characterizing the Federal Circuit as “a sustained experiment in specialization”); Craig Allen Nard & John F. Duffy, *Rethinking Patent Law’s Uniformity Principle*, 101 NW. U. L. REV. 1619, 1620 (2007) (“[C]ommentators have increasingly turned to evaluating the Federal Circuit’s precedents on the merits. . . . The answers thus far have not been encouraging.”).

61. 35 U.S.C. § 101 (2012).

ideas.<sup>62</sup> All inventions, the thinking goes, involve those basic principles, so the eligibility requirement limits patent protection to specific *applications* of those principles, ensuring that patents do not encompass the “building blocks of human ingenuity.”<sup>63</sup> Thus, in its twentieth-century cases sketching out the eligibility requirement, the Supreme Court struck down patents on a composition of naturally occurring bacteria<sup>64</sup> and a mathematical formula for converting decimal numerals into binary numbers.<sup>65</sup> Conversely, the Court upheld patents on a genetically modified bacterium because it did not occur in nature<sup>66</sup> and on a process for molding rubber that merely *used* a mathematical formula.<sup>67</sup>

By many accounts, in the 1990s and early 2000s, the Federal Circuit and the Patent Office significantly relaxed the eligibility requirement. They regularly approved patents on computer software<sup>68</sup> and methods of doing business<sup>69</sup> despite the frequently abstract nature of those inventions. They also approved patents on isolated DNA sequences even though those sequences appear in nature.<sup>70</sup> Commentators blamed generous standards of patentability for many emerging problems in the patent system. Broad and overlapping patents in the information technology industry created patent thickets<sup>71</sup> and contributed to the emergence of patent assertion entities (PAEs, or, more controversially, patent trolls).<sup>72</sup> Concerns also began to surface that disaggregated ownership of DNA patents, and the difficulty of inventing around them, was inhibiting downstream developments in biotechnology, such as gene therapies and diagnostic tools.<sup>73</sup>

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62. *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014).

63. *Id.*

64. *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 131–32 (1948).

65. *Gottschalk v. Benson*, 409 U.S. 63, 71–72 (1972).

66. *Diamond v. Chakrabarty*, 447 U.S. 303, 310 (1980).

67. *Diamond v. Diehr*, 450 U.S. 175, 187 (1981).

68. See Julie E. Cohen & Mark A. Lemley, *Patent Scope and Innovation in the Software Industry*, 89 CALIF. L. REV. 1, 11–12 (2001) (providing examples).

69. *E.g.*, *State St. Bank & Tr. Co. v. Signature Fin. Grp.*, 149 F.3d 1368, 1375 (Fed. Cir. 1998).

70. See *Ass'n for Molecular Pathology v. U.S. Patent & Trademark Office*, 689 F.3d 1303, 1343–44 (Fed. Cir. 2012) (Moore, J., concurring in part) (summarizing the history of patents on human genes), *aff'd in part, rev'd in part sub nom.* *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576 (2013).

71. FED. TRADE COMM'N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY 6–7 (2003), <https://www.ftc.gov/sites/default/files/documents/reports/promote-innovation-proper-balance-competition-and-patent-law-and-policy/innovationrpt.pdf> [<https://perma.cc/4DWF-D4QY>].

72. EXEC. OFFICE OF THE PRESIDENT, PATENT ASSERTION AND U.S. INNOVATION 8 (2013), [https://obamawhitehouse.archives.gov/sites/default/files/docs/patent\\_report.pdf](https://obamawhitehouse.archives.gov/sites/default/files/docs/patent_report.pdf) [<https://perma.cc/5RVF-K9SP>].

73. See Dan L. Burk & Mark A. Lemley, *Biotechnology's Uncertainty Principle*, 54 CASE W. RES. L. REV. 691, 730 (2004); Rochelle C. Dreyfuss & James P. Evans, *From Bilski Back to Benson: Preemption, Inventing Around, and the Case of Genetic Diagnostics*, 63 STAN. L. REV.

In 2006, the Supreme Court flirted with the patent-eligible subject matter requirement in a case it ultimately dismissed as improvidently granted.<sup>74</sup> A year later, the Federal Circuit—apparently taking the hint—returned some bite to the eligibility requirement in two opinions issued on the same day. The first rejected a patent on a transitory signal because it did not fall within the four categories of patent-eligible subject matter listed in § 101 (“process, machine, manufacture, or composition of matter”).<sup>75</sup> The second held ineligible a patent on a method of requiring and conducting arbitration because it impermissibly claimed “mental processes.”<sup>76</sup>

Eligibility’s renaissance began in earnest in 2010, when the Supreme Court, in *Bilski v. Kappos*,<sup>77</sup> held ineligible a patent on a method of hedging financial risk because it claimed an abstract idea.<sup>78</sup> Though the Court was unwilling to say that business methods could *never* be patented, it made clear that one could no longer obtain a patent by merely performing a longstanding business practice on a computer or over the Internet.<sup>79</sup>

Two years later, the Supreme Court considered a patent-eligible subject matter dispute in the field of medical diagnostics, *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*<sup>80</sup> The patent-in-suit claimed a method of administering a particular drug to a patient, measuring the drug’s metabolite levels in the body, and comparing those levels to ranges disclosed in the patent to determine whether dosage should be increased or decreased.<sup>81</sup> The Supreme Court held that the patent did not satisfy the eligibility requirement because it recited the correlation between metabolite levels and drug safety and efficacy—a “law of nature,” in the Court’s view—and it contained no other “inventive concept.”<sup>82</sup> Rather, in telling doctors to administer the drug and determine its metabolite levels, the patent simply recited “well-understood, routine, conventional activity” that doctors already engaged in.<sup>83</sup>

After a 2013 decision holding that isolated DNA segments are not patent eligible because they are “product[s] of nature,”<sup>84</sup> the Court in 2014 decided

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1349, 1370 (2011).

74. *Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc.*, 548 U.S. 124, 125 (2006) (per curiam).

75. *In re Nuijten*, 500 F.3d 1346, 1357 (Fed. Cir. 2007).

76. *In re Comiskey*, 499 F.3d 1365, 1379 (Fed. Cir. 2007). The court later revised its original opinion but reached the same result. *In re Comiskey*, 554 F.3d 967, 981 (Fed. Cir. 2009).

77. 561 U.S. 593 (2010).

78. *Id.* at 609.

79. *See id.* at 611.

80. 566 U.S. 66 (2012).

81. *Id.* at 74–75.

82. *Id.* at 72–73.

83. *Id.* at 79–80.

84. *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 580, 591 (2013). In

its most recent eligibility case, *Alice Corp. v. CLS Bank International*.<sup>85</sup> *Alice* involved patents on a computer program that used an intermediary to mitigate the risk that only one party to a financial transaction would perform its obligation.<sup>86</sup> In its opinion invalidating the patents, the Court drew on *Mayo* to articulate a two-step test that serves as the foundation for eligibility analysis under current law. According to the Court, the first step is to determine whether the patent claim is directed to a “patent-ineligible concept[,]” namely, a law of nature, product of nature, natural phenomenon, or abstract idea.<sup>87</sup> If so, the court then asks whether there are “additional elements” that “transform” the claim into a patent-eligible *application* of the underlying concept.<sup>88</sup> Quoting *Mayo*, the Court in *Alice* explained that this second step is “a search for an ‘inventive concept’—i.e., an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’”<sup>89</sup>

Applying that test to the facts of the case, the Court first determined that using intermediaries to mitigate risk was an abstract idea, in part because, like risk hedging in *Bilski*, intermediated settlement “is a fundamental economic practice long prevalent in our system of commerce.”<sup>90</sup> On the second step, the Court concluded that merely performing that abstract idea on a general-purpose computer, as the patent instructed, did not represent the “inventive concept” required for eligibility.<sup>91</sup> In terms of what *would* constitute an inventive concept, the Court observed that the patents-in-suit “[did] not, for example, purport to improve the functioning of the computer itself,” nor did they “effect an improvement in any other technology or technical field.”<sup>92</sup>

### B. Patent Eligibility at the Federal Circuit

Since the Supreme Court issued its *Alice* opinion in 2014, the Federal Circuit has decided over one hundred cases involving the patent-eligible subject matter requirement. Like the Supreme Court’s recent rulings, the vast

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the same decision, the Court upheld patents on synthetically created DNA on the rationale that synthetic DNA does not occur in nature. *Id.* at 595.

85. 134 S. Ct. 2347 (2014).

86. *Id.* at 2351–52.

87. *Id.* at 2355.

88. *Id.*

89. *Id.* (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 72–73 (2012)).

90. *Id.* at 2356 (quoting *Bilski v. Kappos*, 561 U.S. 593, 611 (2010)).

91. *Id.* at 2357–58.

92. *Id.* at 2359 (citing *Diamond v. Diehr*, 450 U.S. 175, 177–78 (1981), which upheld a patent on a process for molding rubber even though the process included a previously known mathematical equation).

majority of those decisions—over ninety percent of them<sup>93</sup>—have found the claimed invention not to be patent eligible. But the Federal Circuit has upheld several patents against eligibility challenges. Practically all eligibility disputes involve inventions in one of two categories: information technology and biotechnology. It is easiest to consider the emerging doctrine separately for each category.

In the field of information technology, the Federal Circuit has built on *Bilski* and *Alice* to strike down patents that claim advances in what are sometimes called “non-technological disciplines,” such as business and law.<sup>94</sup> The court has held ineligible for patenting inventions on methods of optimizing prices,<sup>95</sup> guaranteeing performance of a transaction,<sup>96</sup> and managing a bingo game,<sup>97</sup> even though those inventions were implemented on computers. Conversely, the court has upheld patents on inventions that, as the Supreme Court suggested in *Alice*, improved the functioning of a computer, such as a patent on a “self-referential table for a computer database,”<sup>98</sup> or solved a problem unique to computers or the Internet, including a patent on blending together two different Internet web pages to create a new, integrated page.<sup>99</sup>

In the realm of biotechnology, inventions are likely to survive eligibility challenges if the patent covers a new process or the making of a new thing, as opposed to the isolation or detection of a naturally occurring chemical. In *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*,<sup>100</sup> for example, the Federal Circuit invalidated a patent on methods of detecting fetal DNA that floats freely in the mother’s body.<sup>101</sup> Though the discovery of fetal DNA in the mother’s blood enabled safer and cheaper genetic testing,<sup>102</sup> the court invalidated the patent under *Mayo* because fetal DNA appears naturally in the mother’s blood and the techniques used to detect and amplify it were well-known.<sup>103</sup> By contrast, in *Rapid Litigation Management Ltd. v. CellzDirect*,

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93. Gugliuzza & Lemley, *supra* note 17, at 787 & fig.8.

94. *Ultramercial, Inc. v. Hulu, LLC (Ultramercial III)*, 772 F.3d 709, 721 (Fed. Cir. 2014) (Mayer, J., concurring).

95. *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1360 (Fed. Cir. 2015).

96. *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1351 (Fed. Cir. 2014).

97. *Planet Bingo, LLC v. VKGS LLC*, 576 F. App’x 1005, 1006 (Fed. Cir. 2014).

98. *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336 (Fed. Cir. 2016).

99. *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014).

100. 788 F.3d 1371 (Fed. Cir. 2015).

101. *Id.* at 1376.

102. Rachel Rebouché, *Testing Sex*, 49 U. RICH. L. REV. 519, 527 & n.43 (2015).

103. *Ariosa*, 788 F.3d at 1376–77; *accord Cleveland Clinic Found. v. True Health Diagnostics LLC*, 859 F.3d 1352, 1360–63 (Fed. Cir. 2017) (applying similar reasoning to invalidate patents on methods of testing for the presence of an enzyme associated with cardiovascular disease), *cert. denied*, 138 S. Ct. 2621 (2018); *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1375–78 (Fed. Cir. 2016) (same, in a case involving methods of analyzing DNA sequences).



*Inc.*,<sup>104</sup> the Federal Circuit upheld the eligibility of a patent on a method of preserving hepatocytes, a type of liver cell.<sup>105</sup> Even though the patent turned on the discovery that hepatocytes could survive multiple freeze-thaw cycles—a natural trait of the cells—the Court emphasized that, unlike in *Ariosa*, the patent claimed a new, physical method of preservation, not merely observation.<sup>106</sup>

### C. Patent Eligibility as Procedural Reform

The Supreme Court's strengthening of patent eligibility doctrine has been criticized, not without some justification. The aspects of the eligibility inquiry that examine whether the patent improves on the prior art and whether it preempts use of basic research tools overlap with other patentability requirements, including novelty, nonobviousness, and the disclosure mandates of § 112 of the Patent Act.<sup>107</sup> Also, although the Federal Circuit's eligibility decisions can be synthesized into somewhat coherent rules (as I attempted to do in the preceding section), inconsistencies among those decisions potentially make it difficult to predict the outcomes of future cases. For example, the claims in some of the information technology patents the Federal Circuit has upheld as improving the function of a computer have been rather vague, consisting mostly of generically described computer parts and processes.<sup>108</sup> Though the use of a generic computer is usually insufficient to avoid invalidation under *Alice*,<sup>109</sup> the court has sometimes relied on details in the patent's specification to save those patents from invalidation.<sup>110</sup> The Federal Circuit's decisions relying on the specification to uphold validity are also in tension with the court's precedent stating that the eligibility analysis

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104. 827 F.3d 1042 (Fed. Cir. 2016).

105. *Id.* at 1045, 1052.

106. *Id.* at 1050–52.

107. See Brief of Professors Jeffrey A. Lefstin and Peter S. Menell as Amici Curiae in Support of Petition for a Writ of Certiorari at 23, *Sequenom, Inc. v. Ariosa Diagnostics, Inc.*, 136 S. Ct. 2511 (2016) (mem.) (No. 15-1182). For a summary of those requirements, see *supra* notes 21–22.

108. See, for example, *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1257 (Fed. Cir. 2017), in which a panel of the court, in a split decision, upheld a patent that recited “[a] computer memory system connectable to a processor and having one or more programmable operational characteristics,” with the “system” comprising “a main memory” and “a cache,” and with the “programmable operational characteristic” “determin[ing] a type of data stored by [the] cache.” That claim, on my reading, seems to recite nothing more than a general-purpose computer programed to perform some vaguely defined type of data analysis. *Accord id.* at 1263 (Hughes, J., dissenting).

109. See, e.g., *Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324–25 (Fed. Cir. 2016) (“[G]eneric computer components do not satisfy the inventive concept requirement.”).

110. See, e.g., *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1300–01 (Fed. Cir. 2016) (relying on a passage from the specification to conclude that the claimed invention “entails an unconventional technological solution (enhancing data in a distributed fashion) to a technological problem (massive record flows which previously required massive databases)”).

should focus on the patent's claims alone.<sup>111</sup> In the realm of biotechnology, it is not always easy to understand what the Federal Circuit perceives to be the line between specific applications of natural laws (patent eligible) and claims directed to the natural laws themselves (ineligible).<sup>112</sup> Finally, cases such as *Ariosa*, in which the court struck down a patent on a seemingly innovative method of detecting fetal abnormalities, illustrate the risk that the eligibility requirement may exclude some socially valuable inventions from patent protection.<sup>113</sup>

Yet the newly revitalized eligibility requirement has redeeming qualities. Among other things, as I have discussed in prior work, eligibility provides a useful “quick look” at patent validity that allows courts to dispose of patents that are *plainly* invalid before the costly discovery process begins.<sup>114</sup> Because courts frequently treat eligibility as a question of law lacking factual considerations, they often invalidate patents on eligibility grounds at the pleading stage on a motion to dismiss or for judgment on the

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111. See, e.g., *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1338 (Fed. Cir. 2017) (“The main problem that [the patentee] cannot overcome is that the *claim*—as opposed to something purportedly described in the specification—is missing an inventive concept.”), *cert. denied*, 139 S. Ct. 378 (2018).

112. See, for example, *Vanda Pharmaceuticals Inc. v. West-Ward Pharmaceuticals International Ltd.*, 887 F.3d 1117 (Fed. Cir. 2018), *petition for cert. filed sub nom. Hikma Pharms. USA Inc. v. Vanda Pharms.*, No. 18-817 (U.S. Dec. 27, 2018), in which the Federal Circuit found a method patent to be patent eligible, reasoning:

Here, the . . . patent claims recite the steps of carrying out a dosage regimen based on the results of genetic testing. . . . These are treatment steps. In contrast, . . . the claim in *Mayo* stated that the metabolite level in blood simply “indicates” a need to increase or decrease dosage, without prescribing a specific dosage regimen or other added steps to take as a result of that indication.

*Id.* at 1135. By contrast, Chief Judge Prost in dissent found the patent indistinguishable from the patent ruled ineligible in *Mayo*:

As the majority notes, the . . . patent claims a method of treating schizophrenia with iloperidone “that is safer for patients . . . .” This is no more than an optimization of an existing treatment of schizophrenia, just as the claims in *Mayo* concerned “optimizing therapeutic efficacy” of thiopurine drugs. *Mayo* warned against “drafting effort[s] designed to monopolize the law of nature itself.” The majority does not heed that warning.

*Id.* at 1142 (Prost, C.J., dissenting) (citation omitted).

113. See Rebecca S. Eisenberg, *Diagnostics Need Not Apply*, 21 B.U. J. SCI. & TECH. L. 256, 286 (2015) (discussing the unclear policy implications of excluding diagnostic tests from patent eligibility). *But see* W. Nicholson Price II, *Grants*, 33 BERKELEY TECH. L.J. (forthcoming 2019) (manuscript at 49), <https://ssrn.com/abstract=3174769> [<https://perma.cc/LC23-BRSN>] (noting that government grants can provide incentives for the development of diagnostic tests in the absence of patent protection); Colleen V. Chien & Arti K. Rai, *An Empirical Analysis of Diagnostic Patenting Post-Mayo* 3–4 (Jan. 16, 2018) (unpublished manuscript) (on file with author) (showing no decline in patenting of diagnostic methods or investment in them since the Supreme Court's invigoration of the eligibility requirement).

114. See Gugliuzza, *supra* note 26, at 651.

pleadings.<sup>115</sup> Such early, dispositive decisions are not possible on issues such as novelty, nonobviousness, or infringement because those issues usually turn on hotly disputed questions of fact that cannot be resolved until summary judgment or trial.<sup>116</sup>

As discussed in the introduction, much of the criticism of the eligibility requirement attacks the substance of the courts' case law.<sup>117</sup> But that criticism can be understood in procedural terms, too. For instance, critiques about eligibility's overlap with other patentability doctrines arguably reflect concern that courts are resolving questions of inventiveness and overbreadth *too early* in the case. Even if the eligibility requirement did not exist, courts would resolve similar questions under the sections of the Patent Act that require patents to be novel, nonobvious, and disclosed with some degree of detail. But those decisions would typically occur later in the case—on summary judgment or at trial—when there is a more developed record about the scope of the patent's claims and the content of the prior art.<sup>118</sup>

Arguments about excluding meritorious inventions from the patent system and about the unpredictability of case outcomes can be understood in procedural terms, too. At summary judgment, when a patent's scope has been defined through claim construction and there is a factual record addressing the extent of the patent's improvement on preexisting technology, it seems less likely that a court would erroneously invalidate a patent that actually does satisfy the requirements of the Patent Act. The better developed record and clearer definition of claim scope should also make it easier for the parties to predict the court's result.

It is not beyond doubt, however, that the process of developing a more elaborate evidentiary record is necessary to ensure accurate decisions on patent validity. Some empirical evidence suggests that many patents that do not satisfy the eligibility requirement also do not satisfy at least one other patentability requirement,<sup>119</sup> indicating that eligibility can reliably be used as

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115. See Lefstin, Menell & Taylor, *supra* note 16, at 578 tbl.2 (reporting that, from June 2014 to February 2017, 69.4% of district court decisions on eligibility (249 of 359) were made on a motion to dismiss or for judgment on the pleadings and that 63.1% of those pleading-stage decisions (157 of 249) invalidated the patent).

116. Gugliuzza, *supra* note 26, at 651.

117. See *supra* notes 18–22 and accompanying text.

118. Cf. PETER S. MENELL, MARK A. LEMLEY & ROBERT P. MERGES, *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* 301 (2017) (“How can a court know whether the implementation of an abstract idea is inventive (i.e., well-understood, conventional or routine) without collecting evidence on what is known in the art?”).

119. See Dennis Crouch & Robert P. Merges, *Operating Efficiently Post-Bilski by Ordering Patent Doctrine Decision-Making*, 25 BERKELEY TECH. L.J. 1673, 1686 (2010) (finding, based on a sample of 117 decisions by the Patent Office's appellate board, that 94% of patents rejected as ineligible were also rejected on another ground); Saurabh Vishnubhakat, *The Antitrust of Patentability*, 48 SETON HALL L. REV. 71, 103 (2017) (finding, based on a random sample of 800 patent applications, that 87% of applications rejected as ineligible were also rejected on another

a quick-look proxy for more fact-driven doctrines. In addition, experimental evidence suggests that the Supreme Court's test for patent eligibility may not be as unpredictable as critics claim.<sup>120</sup> In any case, the point here is not to argue that courts' eligibility decisions are always perfectly accurate; rather, it is simply to highlight that any normative analysis of eligibility doctrine must acknowledge that the doctrine, whatever its substantive merits, decreases process costs by facilitating quicker and cheaper resolutions than were previously possible.<sup>121</sup>

Moreover, and regardless of any critiques of eligibility doctrine, the reality is that pleading-stage decisions on that issue will likely remain common for the foreseeable future,<sup>122</sup> as the trend toward adjudicating patent

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ground). This evidence also responds to the concern that the error costs of an incorrect decision on patent eligibility are not borne equally by the parties. If a court reaches an erroneous conclusion that an invention *is* patent eligible, the defendant can still defend the case on other grounds. But if a court erroneously concludes that an invention is *not* patent eligible, the case is immediately over and the patentee loses its patent forever. *See* *Blonder-Tongue Labs., Inc. v. Univ. of Ill. Found.*, 402 U.S. 313, 350 (1971) (holding that a patentee is estopped from asserting the validity of a patent that has been declared invalid in a prior suit against a different defendant). If patents invalidated as ineligible would likely be invalidated on another ground anyway, any concern about asymmetry in error costs seems much diminished.

120. *See* Jason D. Reinecke, *Is the Supreme Court's Patentable Subject Matter Test Overly Ambiguous? An Empirical Test*, 2019 UTAH L. REV. (forthcoming) (manuscript at 3), <https://ssrn.com/abstract=3123524> [<https://perma.cc/WGQ5-2PCH>] (survey using a sample of eligibility cases that had actually been litigated and finding that, based on the patent claims alone, patent prosecutors were able to correctly predict how the court ruled 67.3% of the time and patent litigators correctly predicted outcomes 59.7% of the time).

121. For a summary of the traditional law-and-economics theory of litigation, under which the normative aim is to minimize both error costs and process costs, see Richard A. Posner, *An Economic Approach to Legal Procedure and Judicial Administration*, 2 J. LEGAL STUD. 399, 400 (1973). Providing a mechanism for quick and cheap decisions is not, of course, the only possible policy justification for eligibility doctrine's existence. The doctrine could also be defended on substantive grounds as filling gaps left by other requirements of patentability. *See, e.g.*, Kevin Emerson Collins, *Patent-Ineligibility as Counteraction*, 94 WASH. U. L. REV. 955, 1002, 1019 (2017); Golden, *supra* note 22, at 710–11; Lemley et al., *supra* note 1, at 1329–31. But eligibility's capacity to facilitate early resolution stands independently of those substantive justifications. In other words, whether eligibility doctrine (a) usefully fills substantive gaps left by other patentability requirements or (b) is redundant of those requirements, the quicker and cheaper adjudication the doctrine makes possible still provides a social benefit by reducing process costs.

122. It is possible that eligibility motions (at all stages of litigation) will decrease in frequency once patents issued prior to the Supreme Court's recent decisions are no longer being asserted, though some evidence suggests that the Patent Office is still issuing software patents, which are the target of many eligibility challenges, at a rapid clip. *See* Maulin Shah, *Software Patents Are Resilient in the Wake of Alice Corp. v. CLS Bank, PATENTVUE* (Sept. 9, 2015), <http://patentvue.com/2015/09/09/software-patents-are-resilient-in-the-wake-of-alice-corp-vs-cls-bank> [<https://perma.cc/9UUW-Y4KU>] (noting also that the Patent Office continues to issue business method patents post-*Alice*, though in smaller numbers). In addition, eligibility motions could decrease if Congress passes legislation to weaken or eliminate the eligibility requirement, but legislative action currently seems unlikely. *See* Dennis Crouch, *AIPLA On Board with Statutory Reform of 101, PATENTLYO* (May 16, 2017), <https://patentlyo.com/patent/2017/05/aip-la-statutory-reform.html> [<https://perma.cc/XZK6-M94S>] (summarizing legislative proposals to amend § 101).

validity on the pleadings is consistent with developments in American procedural law more generally. The “textbook” model of civil procedure, under which a case proceeds in an orderly fashion from the pleadings to discovery to summary judgment to trial and appeal, has, in many respects, disappeared, with judges increasingly resolving fact-intensive questions at preliminary stages on motions to dismiss, for class certification, or for summary judgment.<sup>123</sup> Like eligibility’s resurgence in response to worries about “litigation abuse” by patent trolls,<sup>124</sup> these broader procedural changes have occurred in response to concerns (some valid, some not) about the high cost and low merit of particular types of litigation.<sup>125</sup>

The recent Federal Circuit decisions mentioned in the introduction (and discussed in more detail below) appear intended to push against this trend toward expedited resolution by emphasizing fact questions embedded in the patent eligibility analysis.<sup>126</sup> But initial indications are that early eligibility decisions will persist in one form or another.<sup>127</sup> Thus, the key objective for

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123. See Alexandra D. Lahav, *Procedural Design*, 71 VAND. L. REV. 821, 823 (2018).

124. See Paul R. Gugliuzza, *Patent Trolls and Patent Litigation Reform*, OXFORD HANDBOOKS ONLINE (Mar. 2017), <http://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199935352.001.0001/oxfordhb-9780199935352-e-15?print=pdf> [https://perma.cc/U3QU-8PWK].

125. Lahav, *supra* note 123, at 863.

126. See *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1129–30 (Fed. Cir. 2018) (vacating grant of motion to dismiss because of factual allegations in the complaint that the claimed invention was not “well understood” or “conventional”); *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1370 (Fed. Cir. 2018) (vacating grant of summary judgment because of fact questions about the patent’s purported improvement over the prior art), *petition for cert. filed*, No. 18-415 (U.S. Sept. 28, 2018); see also *infra* subparts II(B)–(C) (discussing those decisions in more detail).

127. See, e.g., *Automated Tracking Sols., LLC v. Coca-Cola Co.*, 723 F. App’x 989, 996 (Fed. Cir. 2018) (affirming judgment on the pleadings of ineligibility, two days after *Aatrix*); *Intellectual Ventures I LLC v. Symantec Corp.*, 725 F. App’x 976, 979 (Fed. Cir. 2018) (post-*Berkheimer* decision affirming summary judgment of ineligibility); *Maxon, LLC v. Funai Corp.*, 726 F. App’x 797, 798 (Fed. Cir. 2018) (affirming grant of motion to dismiss on eligibility grounds); *Voter Verified, Inc. v. Election Sys. & Software LLC*, 887 F.3d 1376, 1379 (Fed. Cir. 2018) (same), *cert. denied*, No. 18-549, 2019 WL 113159 (U.S. Jan. 7, 2019); *Burnett v. Panasonic Corp.*, No. 2018-1234, 2018 WL 3434533, at \*2 (Fed. Cir. July 16, 2018) (same), *cert. denied*, No. 18-414, 2018 WL 4757064 (U.S. Dec. 3, 2018); *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1163 (Fed. Cir. 2018) (affirming grant of motion for judgment on the pleadings); *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1338 (Fed. Cir. 2018) (same); *MyMail, Ltd. v. ooVoo, LLC*, 313 F. Supp. 3d 1095, 1113 (N.D. Cal. 2018) (Koh, J.) (granting post-*Aatrix* motion for judgment on the pleadings of ineligibility), *appeal docketed*, No. 18-1758 (Fed. Cir. Apr. 3, 2018); *ChargePoint, Inc. v. SemaConnect, Inc.*, No. MJG-17-3717, 2018 WL 1471685, at \*4, \*23 (D. Md. Mar. 23, 2018) (granting motion to dismiss for lack of eligibility, refusing to consider expert declarations submitted by the patentee that purported “to establish the convention of the field and the subsequent inventiveness of the claims”), *appeal docketed*, No. 18-1739 (Fed. Cir. Mar. 29, 2018); *CardioNet, LLC v. InfoBionic, Inc.*, No. 17-CV-10445-IT, 2018 WL 5017913, at \*8 (D. Mass. Oct. 16, 2018) (granting motion to dismiss for lack of eligibility, noting: “Here, there are no disputes of fact as the court accepts the Plaintiffs’ non-conclusory factual assertions in the complaint and the patent as true. On the facts as alleged, . . . Plaintiffs’ asserted claims are not directed to any improvement in the computer technology itself . . .”), *appeal docketed*, No. 19-1149 (Fed. Cir. Nov. 2, 2018).

those interested in the procedural design of the patent system should be to determine how courts can decide early eligibility motions in a way that maximizes decisional accuracy and minimizes litigation costs.<sup>128</sup> The next part of this Article takes a step in that direction.

## II. The Procedure of Patent Eligibility

Courts' newfound flexibility to resolve patent validity at the pleading stage has raised many questions of process that they have answered in dramatically different ways or, in some circumstances, completely ignored. This part of the Article breaks new ground in patent law scholarship by identifying the five most important unresolved questions about the procedure of patent eligibility. It also suggests answers to those questions that would help maximize the eligibility requirement's cost-saving potential while minimizing the risk that courts invalidate meritorious patents.

### A. Analyzing Eligibility at the "Threshold"

One procedural question relevant to patent eligibility that the Federal Circuit has discussed in extensive detail is whether a court must analyze eligibility "at the threshold"—that is, before resolving other issues of patentability and infringement—or whether a court may avoid deciding eligibility and resolve the case on other grounds if that would be easier. The degree to which the Federal Circuit has fixated on this issue is perplexing. Federal courts generally have significant discretion over how they manage their dockets,<sup>129</sup> and courts usually decide only the issues the parties contest.<sup>130</sup> Yet a surprising amount of Federal Circuit case law states that courts *must* decide patent eligibility before analyzing other issues, regardless of what the parties want or what the court thinks is most efficient. This puzzling insistence that patent eligibility is, like subject matter jurisdiction, a mandatory threshold issue, has spurred some Federal Circuit judges and scholars to embrace another extreme: analogizing to principles of constitutional avoidance, they assert that courts should *never* address eligibility if a case can be resolved on other grounds.<sup>131</sup> This section makes the case for why neither of those inflexible approaches is optimal.

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128. See Mark A. Lemley, *The Surprising Resilience of the Patent System*, 95 TEXAS L. REV. 1, 56 (2016) (arguing that, because recent changes to patent law seem to have had little effect on patent acquisition and enforcement, reformers should instead "look out for opportunities to simplify patent litigation, making it quicker and cheaper" (emphasis added)).

129. See, e.g., *Landis v. N. Am. Co.*, 299 U.S. 248, 254 (1936) (Cardozo, J.) (recognizing the "power inherent in every court to control the disposition of the causes on its docket with economy of time and effort for itself, for counsel, and for litigants").

130. But see *infra* notes 168–69 and accompanying text for a discussion of scholarship questioning that norm.

131. See *MySpace, Inc. v. GraphOn Corp.*, 672 F.3d 1250, 1260 (Fed. Cir. 2012); Crouch &

1. *Conflicting Case Law on the “Threshold” Question.*—To start, a review of the relevant case law will help illuminate why the debate over whether eligibility must be decided at the outset of the case is so contentious. (As with many of the procedural topics explored in this Article, the relevant precedent has, to my knowledge, never before been collected in one place.)

One of the earliest judicial references to eligibility being the first issue that must be addressed in the patentability analysis is in *Parker v. Flook*,<sup>132</sup> a 1978 Supreme Court decision holding that a method of updating alarm limits during catalytic conversion was not eligible for a patent because its only inventive feature was a mathematical formula.<sup>133</sup> In rejecting the argument that the Court’s approach to eligibility “improperly import[ed] into § 101” (the portion of the Patent Act that is the basis for the eligibility requirement) “the considerations of ‘inventiveness’ which are the proper concerns of §§ 102 and 103” (the portions that require patents to be novel and nonobvious, respectively), the Court noted that the eligibility requirement “rests . . . on the more fundamental understanding that” certain inventions “are not the kind of ‘discoveries’ that the statute was enacted to protect.”<sup>134</sup> Accordingly, the Court continued, “[t]he obligation to determine what type of discovery is sought to be patented *must precede* the determination of whether that discovery is, in fact, new or obvious.”<sup>135</sup>

Viewed in context, it is not clear that the Supreme Court in *Flook* intended to mandate a strict sequence of deciding the various requirements of patentability. Given that the relevant portion of the opinion was defending the very existence of the judicial exceptions to the categories of patent-eligible subject matter recited in § 101 (processes, machines, manufactures, and compositions of matter),<sup>136</sup> the Court could be understood to have been emphasizing the fundamental *importance* of having an eligibility inquiry—not suggesting that eligibility must always be decided *before* novelty and nonobviousness. Nevertheless, a year later, the Court of Customs and Patent Appeals (one of the Federal Circuit’s predecessors) drew on *Flook* in writing that “[t]he first door which must be opened on the difficult path to patentability is § 101.”<sup>137</sup> The Supreme Court referred to § 101 as a

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Merges, *supra* note 119, at 1691; Vishnubhakat, *supra* note 119, at 103–04.

132. 437 U.S. 584 (1978).

133. *Id.* at 594–95.

134. *Id.* at 592–93 (citing 35 U.S.C. § 101: “Whoever invents or *discovers* any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title” (emphasis added)).

135. *Id.* at 593 (emphasis added).

136. *Id.*

137. *In re Bergy*, 596 F.2d 952, 960 (C.C.P.A. 1979) (Rich, J.) (citing *Flook*, 437 U.S. at 593), *vacated as moot sub nom.* *Diamond v. Chakrabarty*, 444 U.S. 1028 (1980).

“threshold” requirement for the first time in a 1981 decision,<sup>138</sup> and the Federal Circuit repeated the notion that eligibility is the “first door” to be opened in its landmark 1998 decision in *State Street*, which held that business methods are, in fact, patent eligible.<sup>139</sup>

None of those cases, however, presented any issue other than eligibility, so the characterization of § 101 being a threshold issue had little practical impact. At the beginning of the eligibility requirement’s recent renaissance, however, the Federal Circuit gave some teeth to the principle that eligibility is the first issue that must be decided. In the court’s 2007 decision in *In re Comiskey*, which held that a method of compelling and conducting arbitration was not patent eligible, the court insisted that the eligibility inquiry “*must precede* the determination of whether [the] discovery is . . . new or obvious.”<sup>140</sup> The court implemented that principle by refusing to review the case on the ground it was decided below (obviousness) and instead concluded that the claims were “barred at the threshold by § 101.”<sup>141</sup> A year later, in its en banc opinion in *Bilski*, the Federal Circuit tried to back away from that emphatic ruling, writing that “[a]lthough our decision in *Comiskey* may be misread by some as requiring in every case that the examiner conduct a § 101 analysis before assessing any other issue of patentability, we did not so hold.”<sup>142</sup> The Supreme Court’s opinion in *Bilski* ultimately did not tackle this question of sequencing, but the Court did refer to § 101 as a “threshold test”<sup>143</sup> (though, again, no other issue of patentability was present in that case).

Except for *State Street*, all of these cases characterizing § 101 as a threshold issue were appeals from examination proceedings at the Patent Office. Unlike a court, which typically resolves only the issues raised by the parties, the Patent Office must decide that an application complies with *every* patentability requirement before it grants a patent.<sup>144</sup> Because of the

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138. *Diamond v. Diehr*, 450 U.S. 175, 188 (1981) (holding that the claimed process for curing rubber was “not barred at the threshold by § 101”).

139. *State St. Bank & Tr. Co. v. Signature Fin. Grp.*, 149 F.3d 1368, 1372 n.2 (Fed. Cir. 1998) (quoting *Bergy*, 596 F.2d at 960).

140. *In re Comiskey*, 499 F.3d 1365, 1371 (Fed. Cir. 2007) (quoting *Flook*, 437 U.S. at 593). The Federal Circuit later revised its opinion, but the portion relevant to this discussion remained unchanged. *In re Comiskey*, 554 F.3d 967, 973 (Fed. Cir. 2009).

141. *Comiskey*, 499 F.3d at 1371 (quoting *Diehr*, 450 U.S. at 188).

142. *In re Bilski*, 545 F.3d 943, 950 n.1 (Fed. Cir. 2008) (en banc), *aff’d sub nom.* *Bilski v. Kappos*, 561 U.S. 593 (2010).

143. *Bilski*, 561 U.S. at 602; *accord id.* at 621 (Stevens, J., concurring in the judgment) (“Section 101 imposes a threshold condition.”).

144. See MANUAL OF PATENT EXAMINING PROCEDURE § 2103(I) (9th ed. Jan. 2018 rev.) (“[E]ach claim should be reviewed for compliance with every statutory requirement for patentability . . . .”); see also *Maschinenfabrik Rieter, A.G. v. Greenwood Mills*, 340 F. Supp. 1103, 1108 (D.S.C. 1972) (“[I]t is the duty of the Patent Office carefully to examine each patent application in the light of *all* statutory requirements for patentability . . . .” (emphasis added)).



comprehensive nature of examination, there is at least a plausible ground for suggesting that the Patent Office should start with § 101—the first patentability requirement presented in the patent statute.<sup>145</sup> But the notion that eligibility must be addressed at the outset has increasingly appeared in Federal Circuit opinions in infringement litigation, too. The initial appearances were largely as boilerplate recitations of the law that introduced the eligibility analysis.<sup>146</sup> More recently, however, panels and judges of the Federal Circuit have become deeply divided over the question of whether a court must first address eligibility before deciding any other issue in an infringement case.

Three distinct camps have formed. First, as the discussion thus far suggests, there remains significant support in both Federal Circuit and Supreme Court case law for the view that eligibility must be addressed at the outset regardless of whether the proceeding is examination at the Patent Office or litigation in court.<sup>147</sup> Second, the Federal Circuit has sometimes stated precisely the opposite view: that courts should *avoid* analyzing eligibility if a case can be resolved on other grounds. This notion of what I will call “eligibility avoidance” first appeared in a 2012 case, *Dealertrack, Inc. v. Huber*,<sup>148</sup> in which a district court had before it several different summary judgment motions.<sup>149</sup> The district court granted a motion to invalidate the patent for not reciting eligible subject matter, and the Federal Circuit affirmed.<sup>150</sup> But Judge Plager dissented, arguing that the court “should exercise its inherent power to control the processes of litigation and insist that litigants, and trial courts, initially address” novelty, nonobviousness, and the disclosure doctrines of § 112, “and not foray into the jurisprudential morass of § 101 unless absolutely necessary.”<sup>151</sup> The majority (Judge Linn, joined by Judge Dyk—the author of *Comiskey* and its “*must precede*” declaration) responded by referencing the case law discussed above and noting, simply

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145. See 35 U.S.C. pt. II (“Patentability of Inventions and Grant of Patents”).

146. See, e.g., *Ultramercial, LLC v. Hulu, LLC (Ultramercial I)*, 657 F.3d 1323, 1326 (Fed. Cir. 2011) (“[A]s § 101 itself expresses, subject matter eligibility is merely a threshold check; claim patentability ultimately depends on ‘the conditions and requirements of this title,’ such as novelty, nonobviousness, and adequate disclosure.”), *cert. granted, judgment vacated sub nom. WildTangent, Inc. v. Ultramercial, LLC*, 566 U.S. 1007 (2012) (mem.); *Classen Immunotherapies, Inc. v. Biogen IDEC*, 659 F.3d 1057, 1063 (Fed. Cir. 2011) (section of opinion titled “The § 101 Threshold”).

147. In addition to the cases discussed above, see the cases and opinions cited *infra* notes 152, 160–61.

148. 674 F.3d 1315 (Fed. Cir. 2012).

149. *Id.* at 1318.

150. *Id.* at 1334.

151. *Id.* at 1335 (Plager, J., concurring in part and dissenting in part) (citation omitted).

(and accurately), that “the Supreme Court characterizes patent eligibility under § 101 as a ‘threshold test.’”<sup>152</sup>

Undeterred, Judge Plager worked his eligibility avoidance view into a majority opinion less than two months later. In *MySpace, Inc. v. GraphOn Corp.*,<sup>153</sup> the district court granted summary judgment of invalidity on the grounds of anticipation and obviousness, and the Federal Circuit affirmed.<sup>154</sup> This time, Judge Mayer dissented, insisting that “§ 101 is an ‘antecedent question’ that must be addressed before this court can consider whether particular claims are invalid as obvious or anticipated.”<sup>155</sup> In response, Judge Plager, the author of the majority opinion (joined by Judge Newman), expanded on his dissent from *Dealertrack*, writing that courts should “avoid the swamp of verbiage that is § 101” and insist that litigants first address all of the Patent Act’s other patentability requirements.<sup>156</sup> Avoiding § 101, according to Judge Plager’s opinion for the court, “would make patent litigation more efficient, conserve judicial resources, and bring a degree of certainty to the interests of both patentees and their competitors in the marketplace.”<sup>157</sup> Judge Plager’s opinion drew parallels to the principle of constitutional avoidance, noting that § 101 “can be thought of as the patent law analogy to the Bill of Rights” and that, accordingly, the court should “put aside the § 101 defense” unless it is “clear and convincing beyond peradventure” that the claim is ineligible.<sup>158</sup>

With Judge Plager’s opinion in *MySpace* still on the books today, two irreconcilable lines of Federal Circuit authority exist, both justified by appeals to efficiency in adjudication. First, the avoidance view, enshrined in the *MySpace* opinion and supported by concerns about the difficulty of applying the Supreme Court’s test for patent eligibility.<sup>159</sup> And, second, the threshold view, supported by the long line of case law discussed above and perhaps most staunchly by Judge Mayer, as evidenced by his dissent in *MySpace* and several other opinions in subsequent cases.<sup>160</sup> The basic policy

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152. *Id.* at 1330 n.3 (majority opinion) (quoting *Bilski v. Kappos*, 561 U.S. 593, 602 (2010)).

153. 672 F.3d 1250 (Fed. Cir. 2012).

154. *Id.* at 1258.

155. *Id.* at 1264 (Mayer, J., dissenting) (quoting *In re Comiskey*, 554 F.3d 967, 975 n.7 (Fed. Cir. 2009)).

156. *Id.* at 1260 (majority opinion).

157. *Id.*

158. *Id.* at 1260–61.

159. Since *MySpace*, Judge Plager has continued to tout the virtues of avoiding questions of patent eligibility. See *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1355 (Fed. Cir. 2018) (Plager, J., concurring in part and dissenting in part) (“[A] district court in an appropriate case might choose to exercise control over its docket by instructing a defendant who raises an ‘abstract ideas’ § 101 defense that the court will defer addressing that defense until first having the issues in §§ 102, 103, and 112 addressed.”).

160. See, e.g., *Alexsam, Inc. v. IDT Corp.*, 715 F.3d 1336, 1348 (Fed. Cir. 2013) (Mayer, J.,

justification for the threshold view is that it can help end litigation quickly and inexpensively. As Judge Mayer has written, eligibility “can often be resolved without lengthy claim construction, and an early determination [of ineligibility] can spare both litigants and courts years of needless litigation.”<sup>161</sup>

In contrast to the two extremes of the threshold and avoidance approaches, a third approach embraces the compromise position that courts should have discretion about when, exactly, to address the issue of eligibility. As noted above, the Federal Circuit’s *Bilski* opinion suggested that a patent examiner might have flexibility to address alternative grounds for rejection before eligibility. Judge Lourie’s concurrence in the Federal Circuit’s deeply divided en banc decision in *Alice* suggested that a more flexible approach would be permissible in litigation, too.<sup>162</sup> He wrote: “[S]ome have argued that because § 101 is a ‘threshold test,’ district courts must always consider subject-matter eligibility first among all possible bases for finding invalidity. That is not correct.”<sup>163</sup> “District courts,” Judge Lourie continued, “are rightly entrusted with great discretion to control their dockets and the conduct of proceedings before them, including the order of issues presented during litigation.”<sup>164</sup> According to Judge Lourie, “district courts may exercise their discretion to begin elsewhere when they perceive that another section of the Patent Act might provide a clearer and more expeditious path to resolving a dispute.”<sup>165</sup>

2. *The Virtues of a Flexible Approach.*—Of the three approaches to the timing of eligibility decisions, the flexible approach articulated by Judge Lourie in *Alice*—for which there is actually the *least* support in Federal Circuit case law—makes the most sense, and, based on my own exhaustive review of the relevant case law, best reflects the actual practice in the district courts, regardless of what the Federal Circuit’s precedent says.<sup>166</sup>

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dissenting) (“Whether claims are directed to statutory subject matter is a ‘threshold’ question, which must be addressed before this court can consider subordinate issues related to obviousness and infringement.” (citation omitted)); *accord* *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1324 (Fed. Cir. 2016) (Mayer, J., concurring); *see also* cases cited *infra* note 161.

161. *I/P Engine, Inc. v. AOL Inc.*, 576 F. App’x 982, 996 (Fed. Cir. 2014) (Mayer, J., concurring); *accord* *Ultramercial III*, 772 F.3d 709, 718–20 (Fed. Cir. 2014) (Mayer, J., concurring) (noting that resolving eligibility at the outset “will conserve scarce judicial resources” because it can be resolved on a motion to dismiss without formal claim construction).

162. *CLS Bank Int’l v. Alice Corp.*, 717 F.3d 1269, 1284 (Fed. Cir. 2013) (en banc) (Lourie, J., concurring), *aff’d*, 134 S. Ct. 2347 (2014). Judges Dyk, Prost, Reyna, and Wallach joined Judge Lourie’s opinion.

163. *Id.* (citation omitted) (quoting *Bilski v. Kappos*, 561 U.S. 593, 602 (2010)).

164. *Id.*

165. *Id.*

166. *See, e.g.*, *CertusView Techs., LLC v. S&N Locating Servs., LLC*, 111 F. Supp. 3d 688, 731 (E.D. Va. 2015) (granting the defendants’ motion for judgment on the pleadings of ineligibility

The threshold approach—for which there is the *most* precedential authority in Federal Circuit law—makes the least sense, particularly in litigation as compared to examination. For starters, it would be unusual in our adversarial system to force parties to litigate an issue they do not want to or to force a judge to decide an issue the parties do not contest.<sup>167</sup> Some commentators have criticized courts' tendency to give the parties control over issue selection, particularly when their presentation might lead the court to make an inaccurate pronouncement about the law.<sup>168</sup> But a fact-specific decision on patent validity—particularly at the district court level—has almost no precedential significance.<sup>169</sup> A related concern is that a defendant with a colorable ineligibility defense might not raise that defense for fear of creating precedent that will cast doubt on the validity of its own patents. While that dynamic surely exists in some cases,<sup>170</sup> treating eligibility as a threshold issue would do little to change it, as a defendant worried about creating bad precedent for its own patents in a similar field of technology

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and denying as moot motions for summary judgment of anticipation, obviousness, and noninfringement), *aff'd*, 695 F. App'x 574 (Fed. Cir. 2017) (per curiam); TNS Media Research, LLC v. TRA Glob., Inc., 984 F. Supp. 2d 205, 242 (S.D.N.Y. 2013) (granting the defendants' motion for summary judgment of noninfringement and denying as moot a motion for summary judgment of invalidity on eligibility grounds (among others)), *aff'd in part, rev'd in part, vacated in part sub nom.* TNS Media Research, LLC v. TiVo Research & Analytics, Inc., 629 F. App'x 916 (Fed. Cir. 2015).

167. See 21B CHARLES ALAN WRIGHT & KENNETH W. GRAHAM, JR., FEDERAL PRACTICE AND PROCEDURE § 5122 (2d ed. 2018) (“Under the American system of party initiation and party presentation, the judge does not roam about the countryside like the Lone Ranger seeking wrongs to right; one or both of the parties must bring their dispute to court . . .”). One exception is, of course, with nonwaivable issues of jurisdiction, a point I discuss below. See *infra* notes 175–78 and accompanying text.

168. See Amanda Frost, *The Limits of Advocacy*, 59 DUKE L.J. 447, 452–53 (2009); see also GARY LAWSON, EVIDENCE OF THE LAW 147–92 (2017) (exploring the circumstances in which the scope of adjudication is “entirely up to the parties” as well as the instances in which “the legal system . . . [has] the right, and even the obligation . . . , to tell the parties what they need to be arguing about”).

169. Cf. Frost, *supra* note 168, at 511–12 (noting that, because “[d]istrict courts do not set precedent, . . . issue creation is less vital” at that level, but also observing that district courts are uniquely positioned to inject new issues into a case early—when fact development is still possible and the parties’ expectations are less settled).

170. In the *Myriad* case, for example, Myriad’s DNA patents were challenged only when the American Civil Liberties Union and the Public Patent Foundation stepped in to represent a group of plaintiffs that included researchers, physicians, cancer patients, and nonprofit organizations. See *Ass’n for Molecular Pathology v. U.S. Patent & Trademark Office*, 702 F. Supp. 2d 181, 186–89 (S.D.N.Y. 2010), *aff’d in part, rev’d in part*, 653 F.3d 1329 (Fed. Cir. 2011), *cert. granted, judgment vacated sub nom.* *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 566 U.S. 902 (2012), *opinion vacated, appeal reinstated*, 467 F. App’x 890 (Fed. Cir. 2012), *aff’d in part, rev’d in part*, 689 F.3d 1303 (Fed. Cir. 2012), *aff’d in part, rev’d in part sub nom.* *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576 (2013). Earlier suits by Myriad against other entities offering clinical genetic testing settled, with the defendants in each case agreeing to discontinue their allegedly infringing activity. See *Ass’n for Molecular Pathology*, 689 F.3d at 1315.

would avoid challenging validity on *any* ground, not just eligibility.<sup>171</sup> Moreover, the patents most vulnerable to eligibility challenges are overwhelmingly in the information technology industry,<sup>172</sup> and the defendants most often accused of infringing those patents—large tech companies such as Amazon, Apple, and Samsung<sup>173</sup>—have a reputation for not caring much about strong legal protection for patents.<sup>174</sup> Those defendants thus have a clear incentive to raise the ineligibility defense as quickly as possible because, unlike any other ground of invalidity, it can allow them to win the case before discovery begins.

Setting aside practical considerations, a doctrinal justification for the threshold approach, which Judge Mayer has embraced, is to characterize § 101 as a “jurisdictional” requirement that cannot be waived by the parties or avoided by the court.<sup>175</sup> But that argument is on shaky ground. The Supreme Court in recent years has significantly narrowed the class of legal requirements considered to be jurisdictional and therefore mandatory for a court to resolve at the outset of a case.<sup>176</sup> Instead, the Court has enhanced lower courts’ flexibility to decide cases on the easiest ground available.<sup>177</sup> Patentable subject matter, which defines the validity of a patent and is essential to deciding a claim of infringement, would almost certainly fall on the merits, not jurisdictional, side of the divide.<sup>178</sup> And yet, despite all these flaws in the threshold approach, both practical and doctrinal, district courts sometimes declare that eligibility *must* be resolved first because of the

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171. Instead, the defendant would likely pin its defense on noninfringement or simply settle. See Roger Allan Ford, *Patent Invalidity Versus Noninfringement*, 99 CORNELL L. REV. 71, 109–14 (2013) (discussing various reasons why defendants in patent infringement suits sometimes avoid challenging validity).

172. Lefstin, Menell & Taylor, *supra* note 16, at 580 fig.2.

173. See Jacqueline Bell, *Patent Litigation in US District Courts: A 2016 Review*, LAW360 (Mar. 1, 2017), <https://www.law360.com/articles/895435/patent-litigation-in-us-district-courts-a-2016-review> [<https://perma.cc/8X5J-83P2>].

174. See BURK & LEMLEY, *supra* note 5, at 4.

175. *Ultramercial III*, 772 F.3d 709, 718 (Fed. Cir. 2014) (Mayer, J., concurring) (noting that as a “gateway to the Patent Act,” eligibility analysis “bears some of the hallmarks of a jurisdictional inquiry”).

176. See Howard M. Wasserman, *The Demise of “Drive-by Jurisdictional Rulings,”* 105 NW. U. L. REV. 947, 947–48 (2011).

177. See, e.g., *Sinochem Int’l Co. v. Malaysia Int’l Shipping Corp.*, 549 U.S. 422, 425 (2007) (holding that a court may dismiss a case on forum non conveniens grounds without determining whether personal or subject matter jurisdiction exist).

178. See Wasserman, *supra* note 176, at 948 (distinguishing “[a]djudicative-jurisdictional rules” from, among other things, “substantive-merits rules that . . . determin[e] the validity and success of a plaintiff’s claim”); see also Scott Dodson, *Jurisdiction and Its Effects*, 105 GEO. L.J. 619, 634, 636 (2017) (“Jurisdiction[] . . . determines forum in a multiforum system. . . . Any law that does not determine forum . . . cannot be called jurisdictional.”).

significant amount of Federal Circuit (and Supreme Court) precedent embracing that perspective.<sup>179</sup>

At the other extreme, some commentators have praised the virtues of eligibility avoidance. Drawing on Judge Plager's opinion in *MySpace*, they note that avoiding eligibility can reduce "the total cost of deciding validity issues, given that § 101 is the most vague and contentious of all the validity doctrines."<sup>180</sup> These scholars have buttressed their arguments with the empirical evidence I mentioned above, which suggests that most patent applications rejected by examiners as ineligible are also rejected on another ground, such as anticipation or obviousness. That evidence, in their view, illustrates that it is often unnecessary to consider the sometimes difficult question of eligibility.<sup>181</sup>

The avoidance approach has possible appeal in examination. Eligibility is essentially a common law doctrine that requires the decisionmaker to analogize and distinguish judicial precedent. That is a mode of analysis familiar to lawyers and judges but not to nonlawyer patent examiners.<sup>182</sup> Also, eligibility's inquiry into whether an activity is "well-understood" or "conventional" in the field could, in some circumstances, require a more difficult and time-consuming investigation into the state of the art than it takes to resolve questions of novelty and nonobviousness, which mainly require the examiner to read technical documents.<sup>183</sup> As the Federal Circuit has noted, "[t]he mere fact that something is disclosed in a piece of prior art"—which can be sufficient to invalidate a patent for lack of novelty and

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179. See, e.g., *Affinity Labs of Tex., LLC v. Amazon.com, Inc.*, No. 6:15-CV-0029-WSS-JCM, 2015 WL 3757497, at \*4 (W.D. Tex. June 12, 2015) (noting that § 101 "must be satisfied before a court can proceed to consider subordinate validity issues" and that "[t]he Federal Circuit's declaration on this point is rooted in sound policy" (quoting *Ultramercial III*, 772 F.3d at 718 (Mayer, J., concurring))), *report and recommendation adopted by* No. W-15-CV-029, 2015 WL 11622489 (W.D. Tex. Sept. 23, 2015), *aff'd*, 838 F.3d 1266 (Fed. Cir. 2016); *SmartGene, Inc. v. Advanced Biological Labs., SA*, 852 F. Supp. 2d 42, 51 (D.D.C. 2012) (stating that "a 35 U.S.C. § 101 subject matter patentability inquiry is the threshold analysis for determining patent validity"), *aff'd*, 555 F. App'x 950 (Fed. Cir. 2014).

180. *Crouch & Merges*, *supra* note 119, at 1691; *accord Vishnubhakat*, *supra* note 119, at 103–04.

181. *Crouch & Merges*, *supra* note 119, at 1686; *Vishnubhakat*, *supra* note 119, at 94, 103–04.

182. Greg Reilly, *Decoupling Patent Law*, 97 B.U. L. REV. 551, 592 (2017). If, however, the Patent Office had substantive rulemaking authority, the Office could potentially articulate principles of eligibility law better suited to application by examiners. For a suggestion that the Patent Office should be given the authority to promulgate substantive rules of eligibility, see John M. Golden, *Patentable Subject Matter and Institutional Choice*, 89 TEXAS L. REV. 1041, 1074–75 (2011) (arguing that "courts' performance in forming and applying tests for patentable subject matter has been fairly poor" and that the Patent Office, by contrast, must deal with questions of claim "drafting, scope, and invention classification" on a daily basis "in the process of examining patent applications").

183. Jacob S. Sherkow, *And How: Mayo v. Prometheus and the Method of Invention*, 122 YALE L.J. ONLINE 351, 356–57 (2013).

can provide a basis for a ruling of obviousness—“does not mean it was well-understood, routine, and conventional”<sup>184</sup>—a key element of a defense of ineligibility. That said, it is not beyond doubt that avoiding eligibility in examination would result in greater efficiency. A rejection on all applicable grounds at once can ultimately streamline the examination process. And as discussed further below, the claims and specification in the patent application itself often make plain that the claimed invention is directed to an ineligible principle with no inventive concept, mitigating concerns about examiners having to conduct expansive investigations into the state of the art.<sup>185</sup>

In any case, the potential justifications for avoiding eligibility in examination do not translate to litigation. To begin with, the data indicating that many patents fail to satisfy both eligibility and at least one other requirement could actually be interpreted to *support* resolving litigation on pleading-stage eligibility motions. As discussed above, that data suggests that, by relying on the eligibility requirement to invalidate a patent on a motion to dismiss, courts can quickly and cheaply reach the exact same result they would have reached later in the litigation at summary judgment or trial.

Moreover, even assuming early eligibility adjudications are more frequently erroneous than adjudications at later stages (which, again, empirical and experimental evidence indicates may not be the case<sup>186</sup>), there remain important considerations about process to be weighed. In examination, the examiner can consider all grounds of patentability at the same time, and failure to satisfy any one of them will stop the patent from issuing. In litigation, however, eligibility is practically the only ground of patentability that can be decided before discovery begins. Consequently, in litigation, unlike in examination, a finding that a patent fails to satisfy § 101 can be made earlier in the process and at lower cost than findings of unpatentability on other grounds.<sup>187</sup>

Finally, the notion that courts should avoid eligibility, and thereby treat that requirement differently from practically any other issue that might arise in a patent case, resembles the exceptionalist approach to procedural matters that the Supreme Court has repeatedly condemned in the past decade.<sup>188</sup> The best approach to resolving patent eligibility in litigation, then, would seem to

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184. Berkheimer v. HP Inc., 881 F.3d 1360, 1369 (Fed. Cir. 2018), *petition for cert. filed*, No. 18-415 (U.S. Sept. 28, 2018).

185. See *infra* notes 302–07 and accompanying text.

186. See *supra* notes 119–20.

187. See David Swetnam-Burland & Stacy O. Stitham, *Patent Law 101: The Threshold Test as Threshing Machine*, 21 TEX. INTEL. PROP. L.J. 135, 147 (2013) (“[I]n at least some cases Section 101 questions can be asked and answered early in litigation before the parties and the court have invested considerable resources . . . in discovery, claim construction, and summary judgment practice.”).

188. See Lee, *supra* note 59, at 1416.

be to resolve it like any other potentially dispositive issue—whenever the parties raise it and the court thinks it is ripe for decision.<sup>189</sup>

*B. Eligibility as Law, Fact, or Both*

Doctrinally, the reason courts are able to decide eligibility at the “threshold” via a motion to dismiss or for judgment on the pleadings is that they often view it as a question of law involving no factual considerations. Yet the test for eligibility developed by the Supreme Court seems to invite inquiry into matters that would conventionally be considered factual because they turn on the particularities of a given case,<sup>190</sup> including whether the patent recites a “fundamental economic practice”<sup>191</sup> or claims “conventional activity” in a specific field of technology.<sup>192</sup> In this section, I suggest that eligibility should be understood to present a question of law based on underlying facts—just like other patentability requirements such as nonobviousness. Though the Federal Circuit has recently taken steps to recognize eligibility’s factual underpinnings, the court’s decisions may make it *too easy* for patentees to raise a factual dispute, defeating eligibility’s key function of providing a means to quickly and cheaply end infringement cases that plainly lack merit.

*1. Inconsistent Case Law on the Law-Versus-Fact Question.*—To start, it will again be helpful to analyze the deep conflicts in the case law about whether eligibility is a question of law, a question of fact, or a mix of both. At the broadest level, the Supreme Court has said, repeatedly, that “the ultimate question of patent validity is one of law.”<sup>193</sup> Nevertheless, the Court has recognized that the legal question of validity can have factual underpinnings.<sup>194</sup> For example, the Court has explained that the nonobviousness requirement “lends itself to several basic factual inquiries” about the scope of the prior art, the differences between the prior art and the

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189. *See id.* at 1463 (arguing that patent law exceptionalism is not appropriate “where a well-established standard exists for a discrete issue in general litigation”).

190. *See* Gary Lawson, *Proving the Law*, 86 NW. U. L. REV. 859, 882 n.68 (1992) (distinguishing pure questions of law, which “can meaningfully be asked in the abstract, without reference to the facts of particular cases,” from “mixed” questions that cannot be decided “without reference to specific facts”).

191. *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2356 (2014); *Bilski v. Kappos*, 561 U.S. 593, 611 (2010).

192. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 79–80 (2012).

193. *E.g.*, *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). Though some nineteenth-century precedent treated patent validity as a question of fact for the jury, *see, e.g.*, *Battin v. Taggart*, 58 U.S. (17 How.) 74, 85 (1854), the demise of that rule was apparently tied to the development of more elaborate administrative processes for reviewing validity before the patent issued, *see* John F. Duffy, *Jury Review of Administrative Action*, 22 WM. & MARY BILL RTS. J. 281, 296–99 (2013).

194. *See* *Microsoft Corp. v. i4i Ltd. P’ship*, 564 U.S. 91, 96–97 (2011).



claimed invention, the level of ordinary skill in the pertinent art, and “secondary considerations,” such as commercial success and failure of others.<sup>195</sup> The Federal Circuit, contrary to the Supreme Court’s declaration that patent validity is ultimately a question of law, has treated some patentability requirements as *entirely factual*, including utility,<sup>196</sup> novelty,<sup>197</sup> and written description.<sup>198</sup>

As for eligibility, the Federal Circuit has frequently stated that it is a question of law reviewed *de novo* on appeal—end stop.<sup>199</sup> Judges on both the Federal Circuit and in the district courts have at times interpreted those statements as meaning that eligibility is a *purely* legal question that involves no factual issues.<sup>200</sup> But a long line of often-overlooked Federal Circuit cases actually recognizes that the eligibility requirement can implicate questions of fact.

The earliest eligibility case in which the Federal Circuit discussed the salience of facts is the court’s 1992 opinion in *Arrhythmia Research Technology, Inc. v. Corazonix Corp.*<sup>201</sup> In that case, the court stated that analyzing eligibility “may require findings of underlying facts specific to the particular subject matter and its mode of claiming.”<sup>202</sup> Ultimately, however, the court found it unnecessary to address any factual issues to decide eligibility in that case.<sup>203</sup>

In the early days of eligibility’s renaissance, the Federal Circuit again

195. *Graham*, 383 U.S. at 17.

196. *Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 956 (Fed. Cir. 1983).

197. *Brown v. 3M*, 265 F.3d 1349, 1351 (Fed. Cir. 2001).

198. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1355 (Fed. Cir. 2010) (en banc). For an overview of the Federal Circuit’s less-than-coherent approach to the law/fact distinction on validity issues, see MERGES & DUFFY, *supra* note 15, at 913–14.

199. *E.g.*, *Intellectual Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1325 (Fed. Cir. 2017) (“Patent eligibility under § 101 is an issue of law . . . we review without deference.”); *Fort Props., Inc. v. Am. Master Lease LLC*, 671 F.3d 1317, 1320 (Fed. Cir. 2012) (“Issues of patent-eligible subject matter are questions of law and are reviewed without deference.” (quoting *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1369 (Fed. Cir. 2011))); *In re Comiskey*, 554 F.3d 967, 975 (Fed. Cir. 2009) (“It is well-established that ‘whether the asserted claims . . . are invalid for failure to claim statutory subject matter under 35 U.S.C. § 101[] is a question of law which we review without deference.’” (first alteration in original) (quoting *AT&T Corp. v. Excel Commc’ns, Inc.*, 172 F.3d 1352, 1355 (Fed. Cir. 1999))).

200. *See, e.g.*, *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1130 (Fed. Cir. 2018) (Reyna, J., concurring in part and dissenting in part) (“I respectfully disagree with the majority’s broad statements on the role of factual evidence in a § 101 inquiry. Our precedent is clear that the § 101 inquiry is a legal question.”); *CMG Fin. Servs., Inc. v. Pac. Tr. Bank*, 50 F. Supp. 3d 1306, 1314 (C.D. Cal. 2014) (“[T]he determination of whether a claim is drawn to patent-eligible subject matter is a pure question of law.”), *aff’d*, 616 F. App’x 420 (Fed. Cir. 2015) (per curiam); *Becton, Dickinson & Co. v. Baxter Int’l, Inc.*, 127 F. Supp. 3d 687, 691 (W.D. Tex. 2015) (same), *aff’d*, 639 F. App’x 652 (Fed. Cir. 2016); *see also infra* note 222 (providing additional examples).

201. 958 F.2d 1053 (Fed. Cir. 1992).

202. *Id.* at 1056.

203. *See id.*

alluded to the possible relevance of facts, but those statements, too, were dicta.<sup>204</sup> The most extensive discussion of the role of facts appears in the court's 2013 opinion in *Ultramercial, Inc. v. Hulu, LLC (Ultramercial II)*.<sup>205</sup> In contrast to the court's prior statements that there could perhaps be factual aspects to the eligibility analysis, Chief Judge Rader's opinion for the court declared that the analysis is "rife with underlying factual issues" including whether there are "limitations in the claims that narrow or tie the claims to specific applications of an otherwise abstract concept," "whether the patent embraces a scientific principle or abstract idea," and whether the claim recites activities that were "routine, well-understood, or conventional" at the time the application was filed.<sup>206</sup> The Supreme Court, however, vacated the Federal Circuit's opinion in *Ultramercial II* after deciding *Alice*,<sup>207</sup> and the Federal Circuit's final opinion in the case, issued after Chief Judge Rader retired, did not discuss the role of facts in the eligibility inquiry.<sup>208</sup> Other Federal Circuit cases around that time also stated that facts could be relevant to the eligibility inquiry, but all of those decisions ultimately concluded that there was no real dispute of fact in the case at hand.<sup>209</sup>

The Federal Circuit's failure to find an actual factual dispute—even in the rare cases in which it acknowledged the potential relevance of facts—might be one reason why eligibility has often been viewed to present a pure question of law. Another reason might be that numerous Federal Circuit eligibility opinions have, without directly addressing the law/fact distinction, implicitly downplayed the relevance of facts. For instance, in a 2017 decision, the court held that district courts, when deciding whether a patent contains the inventive concept required by § 101, may completely ignore the testimony presented by the parties on the issues of novelty and nonobviousness, which are widely acknowledged to involve questions of fact.<sup>210</sup> Allowing courts to ignore that evidence seems questionable given that eligibility, novelty, and nonobviousness all revolve around the similar

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204. *E.g.*, *Comiskey*, 554 F.3d at 975 ("While there may be cases in which the legal question as to patentable subject matter may turn on subsidiary factual issues, Comiskey has not identified any relevant fact issues that must be resolved in order to address the patentability of the subject matter of Comiskey's application.").

205. 722 F.3d 1335 (Fed. Cir. 2013).

206. *Id.* at 1339.

207. *WildTangent, Inc. v. Ultramercial, LLC*, 134 S. Ct. 2870 (2014).

208. *See generally Ultramercial III*, 772 F.3d 709 (Fed. Cir. 2014).

209. *See Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1325–26 (Fed. Cir. 2016); *Accenture Glob. Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1340–41, 1346 (Fed. Cir. 2013).

210. *Two-Way Media Ltd. v. Comcast Cable Commc'ns*, 874 F.3d 1329, 1339–40 (Fed. Cir. 2017) (holding that the district court correctly disregarded expert and inventor testimony addressing those issues), *cert. denied*, No. 18-124, 2018 WL 3626097 (U.S. Oct. 15, 2018).

question of what, exactly, the inventor added to preexisting technology.<sup>211</sup> The Federal Circuit offered no justification for its approach besides the self-evident observation that eligibility and those other doctrines “are separate inquiries.”<sup>212</sup>

Additional illustrations of the Federal Circuit implicitly downplaying the relevance of facts come from a pair of opinions that, on their face, purported to do precisely the opposite—emphasizing the *importance* of factual considerations when deciding eligibility at the pleading stage. The first case, *McRO, Inc. v. Bandai Namco Games America Inc.*,<sup>213</sup> involved a patent on a computerized process of syncing animation with sound.<sup>214</sup> The Federal Circuit reversed the district court’s ruling of ineligibility on a motion for judgment on the pleadings, writing that the accused infringers “provided *no evidence* that the process previously used by animators is the same as the process required by the claims.”<sup>215</sup> Yet this reference to the accused infringers’ failure to present evidence is puzzling in light of the case’s final outcome. Instead of vacating the judgment on the pleadings and remanding to allow the accused infringers to develop a factual record about prior art processes, the Federal Circuit held that the asserted claims *were* patent eligible, period.<sup>216</sup> This definitive holding of eligibility seriously undercuts the court’s assertion that the accused infringers needed to present “evidence” to establish their defense.

Similarly, in another opinion reversing a pleading-stage dismissal on eligibility grounds, *Visual Memory LLC v. NVIDIA Corp.*,<sup>217</sup> the Federal Circuit twice asserted that, in deciding whether the patent was directed to an abstract idea, it was drawing all “factual inferences” in favor of the patentee, citing Federal Rule of Civil Procedure 12(b)(6).<sup>218</sup> Yet the opinion again concluded by definitively ruling that the claimed invention *was* patent eligible.<sup>219</sup> Viewed in light of that final outcome, the references to factual inferences and the case’s procedural posture seem like nothing more than

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211. For that reason, some courts *have* considered evidence of novelty or nonobviousness when deciding eligibility. *See, e.g.,* *YYZ, LLC v. Hewlett-Packard Co.*, 137 F. Supp. 3d 675, 686 (D. Del. 2015) (noting “how . . . the § 101 ‘inventiveness’ [analysis] involves questions of fact which intersect with those raised in the context of §§ 102 and 103”).

212. *Two-Way Media*, 874 F.3d at 1340.

213. 837 F.3d 1299 (Fed. Cir. 2016).

214. *Id.* at 1303.

215. *Id.* at 1314 (emphasis added).

216. *See id.* at 1316 (“[W]e *reverse* and hold that [the asserted claims] are patentable under 35 U.S.C. § 101.”).

217. 867 F.3d 1253 (Fed. Cir. 2017).

218. *Id.* at 1261–62.

219. *Id.* at 1262 (“[T]he claims of the ‘740 patent are not directed to patent-ineligible subject matter under § 101. . . . Because the district court erred in dismissing Visual Memory’s complaint on the ground that the ‘740 patent claimed patent-ineligible subject matter, we reverse.”).

hollow argumentation offered to buttress a ruling favoring the plaintiff/patentee. When it came down to it, the court simply resolved eligibility as a matter of law, foreclosing the defendant from presenting any factual evidence to establish its eligibility defense at a later stage of the case.

All of this Federal Circuit case law downplaying the role of facts—either implicitly or explicitly—makes it unsurprising that district courts, too, have frequently discounted the potential for factual considerations to enter the eligibility analysis. For instance, they usually allow the jury to decide the issues of anticipation and obviousness, but not eligibility.<sup>220</sup> None of the leading model patent jury instructions even mention patent-eligible subject matter.<sup>221</sup> In fact, numerous district courts have explicitly stated that patent eligibility is a “pure” question of law.<sup>222</sup> Even the Patent Office has gotten in on the act. Summarizing prevailing case law, the most recent revision to the agency’s *Manual of Patent Examining Procedure* states that the Federal Circuit “does not require ‘evidence’ that a claimed concept is [ineligible], and generally decides the legal conclusion of eligibility without resolving any factual issues.”<sup>223</sup>

2. *Berkheimer and the Fact Questions Embedded in the Eligibility Analysis.*—The upshot is that, for many years and in many fora, the role of facts in the eligibility analysis was minimal if not nonexistent, even though the Federal Circuit had sometimes suggested that facts *could* be relevant. This casual disregard of fact questions ended abruptly in February 2018. In two opinions issued less than a week apart, the Federal Circuit identified a

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220. See, e.g., Final Jury Instructions at 17–18, 20, *DDR Holdings, LLC v. Digital River, Inc.*, No. 2:06-cv-42-JRG, 2012 WL 10056883 (E.D. Tex. Oct. 12, 2012); accord *ContentGuard Holdings, Inc. v. Apple Inc.*, No. 2:13-CV-1112-JRG, 2016 WL 1637280, at \*6 (E.D. Tex. Apr. 25, 2016) (“Patent eligibility is a matter of law and is not properly submitted to a fact-finder such as a jury.”), *aff’d*, 701 F. App’x 957 (Fed. Cir. 2017).

221. See AM. INTELLECTUAL PROP. LAW ASS’N, MODEL PATENT JURY INSTRUCTIONS (2017), <https://www.aipla.org/home/news-publications/model-patent-jury-instructions> [<https://perma.cc/3ZMQ-35TA>]; FED. CIRCUIT BAR ASS’N, MODEL PATENT JURY INSTRUCTIONS (2016), <https://fedcirbar.org/IntegralSource/Model-Patent-Jury-Instructions> [<https://perma.cc/ED5A-47FP>]; MODEL PATENT JURY INSTRUCTIONS FOR THE NORTHERN DISTRICT OF CALIFORNIA (2015) [hereinafter “N.D. CAL. MODEL PATENT JURY INSTRUCTIONS”] <http://www.cand.uscourts.gov/juryinstructions> [<https://perma.cc/H92V-MBNF>].

222. E.g., *Lumen View Tech. LLC v. Findthebest.com, Inc.*, 984 F. Supp. 2d 189, 204 (S.D.N.Y. 2013) (“Whether a patent is valid under Section 101 is a pure question of law.”); accord *DietGoal Innovations LLC v. Bravo Media LLC*, 33 F. Supp. 3d 271, 277 (S.D.N.Y. 2014), *aff’d*, 599 F. App’x 956 (Fed. Cir. 2015) (per curiam); *Big Baboon, Inc. v. Dell, Inc.*, No. CV 09-1198, 2011 WL 13124454, at \*8 (C.D. Cal. Feb. 8, 2011); see also additional cases cited *supra* note 200.

223. MANUAL OF PATENT EXAMINING PROCEDURE, *supra* note 144, § 2106.07(a)(III). As discussed below, in the wake of the Federal Circuit’s two recent decisions on the law-versus-fact distinction in the eligibility analysis, the Patent Office issued revised guidance to its examiners clarifying that factual determinations can be relevant to the eligibility determination. See *infra* note 388 and accompanying text.

specific question of fact embedded within the eligibility analysis, overturned district court decisions resolving eligibility pre-trial, and threw the patent bar into a tizzy.<sup>224</sup> Most pertinent to the present discussion of the law/fact distinction is *Berkheimer v. HP Inc.*<sup>225</sup> In that opinion, the Federal Circuit vacated a district court decision granting summary judgment of ineligibility, ruling that a genuine dispute of material fact existed on the second step of the *Alice* test: whether the patent claims activity that is merely conventional in the field.<sup>226</sup>

Because of *Berkheimer*'s importance to both the law/fact distinction and several other procedural issues discussed later in this Article, a detailed review of the case will prove useful. The plaintiff, Berkheimer, had sued HP for infringing his patent, which related to “digitally processing and archiving files in a digital asset management system.”<sup>227</sup> The district court granted HP's motion for summary judgment, holding that several claims of Berkheimer's patent were ineligible under § 101.<sup>228</sup> The Federal Circuit, in an opinion by Judge Moore, vacated that decision. Applying the first step of the *Alice* test, the court determined that the patent was directed to the abstract idea of using a generic computer to manipulate data.<sup>229</sup> Turning to the second step, the court wrote that it is satisfied “when the claim limitations ‘involve more than performance of ‘well-understood, routine, [and] conventional activities previously known to the industry.’”<sup>230</sup> Then, directly addressing the law/fact question, the court stated:

The question of whether a claim element or combination of elements is well-understood, routine and conventional to a skilled artisan in the relevant field is a question of fact. Any fact, such as this one, that is

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224. For a small sample of the commentary discussing the Federal Circuit's decisions, see Meredith Addy, *Is There a Light at the End of the Alice Tunnel?*, IPWATCHDOG (Feb. 18, 2018), <http://www.ipwatchdog.com/2018/02/18/light-end-alice-tunnel/id=93883> [https://perma.cc/4U72-4WP3], Dennis Crouch, *Eligibility: A Factual Dispute Requires Alleged Facts*, PATENTLYO (Feb. 22, 2018), <https://patentlyo.com/patent/2018/02/eligibility-factual-requires.html> [https://perma.cc/8RS5-GKUH], and Ryan Davis, *Recent Patent-Eligibility Cases Leave Unanswered Questions*, LAW360 (Mar. 12, 2018), <https://www.law360.com/articles/1020953/recent-patent-eligibility-cases-leave-unanswered-questions> [https://perma.cc/9S2M-5FJ5].

225. 881 F.3d 1360 (Fed. Cir. 2018), *petition for cert. filed*, No. 18-415 (U.S. Sept. 28, 2018).

226. *Id.* at 1370.

227. *Id.* at 1362.

228. *Berkheimer v. Hewlett-Packard Co.*, 224 F. Supp. 3d 635, 637 (N.D. Ill. 2016), *aff'd in part, vacated in part sub nom. Berkheimer v. HP Inc.*, 881 F.3d 1360 (Fed. Cir. 2018), *petition for cert. filed*, No. 18-415 (U.S. Sept. 28, 2018).

229. *Berkheimer*, 881 F.3d at 1366.

230. *Id.* at 1367 (alteration in original) (quoting Content Extraction & Transmission LLC v. Wells Fargo Bank, 776 F.3d 1343, 1347–48 (Fed. Cir. 2014) (quoting *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2359 (2014))).

pertinent to the invalidity conclusion must be proven by clear and convincing evidence.<sup>231</sup>

Though, as discussed, the Federal Circuit had previously suggested that there *might* be factual questions relevant to the eligibility analysis, this identification of a particular issue of fact—whether the claimed invention is conventional in the field—is unprecedented in Federal Circuit law.

Turning to the case at hand, the Federal Circuit—again for the first time ever in an eligibility ruling—found that a factual dispute actually existed. The patentee had argued, drawing on *Alice*, that the patent’s inventive concept was that it improved the function of a computer.<sup>232</sup> Assessing that argument, the Federal Circuit noted that the patent’s specification “explains that the claimed improvement increases efficiency and computer functionality over the prior art systems,” and the court quoted at length from the relevant portions of the specification.<sup>233</sup> Then, relying entirely on the patent’s own statements about its purported inventiveness—and without citing any other evidence from the record—the Federal Circuit concluded that “[t]he improvements in the specification . . . create a factual dispute regarding whether the invention describes well-understood, routine, and conventional activities.”<sup>234</sup> Summary judgment was, therefore, inappropriate.<sup>235</sup>

The Federal Circuit offered only minimal justification for its assertion that the inquiry into “conventionality” is a question of fact. The court relied primarily on the Supreme Court’s decision in *Mayo*, which suggested that the § 101 inquiry “might sometimes overlap” with what the Federal Circuit in *Berkheimer* characterized as “other fact-intensive inquiries” such as novelty under § 102.<sup>236</sup> Still, an inquiry into whether the claimed technology is well-known in a particular field does seem intuitively like the sort of determination the law would usually consider to be factual, as it requires the court to determine conditions that exist (or have existed) in the world outside the courtroom.<sup>237</sup>

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231. *Id.* at 1368.

232. *Id.* at 1369; *see also Alice*, 134 S. Ct. at 2359 (invalidating the patents-in-suit because they “[did] not, for example, purport to improve the functioning of the computer itself”).

233. Including a long block quote stating, in part:

By eliminating redundancy in the archive . . . , system operating efficiency will be improved, storage costs will be reduced and a one-to-many editing process can be implemented wherein a singular linked object, common to many documents or files, can be edited once and have the consequence of the editing process propagate through all of the linked documents and files.

*Berkheimer*, 881 F.3d at 1369 (quoting U.S. Patent No. 7,447,713 col. 16 ll.52–60).

234. *Id.*

235. *Id.* at 1370.

236. *Id.* at 1368 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 90 (2012)).

237. *See* Stephen A. Weiner, *The Civil Nonjury Trial and the Law-Fact Distinction*, 55 CALIF.

Indeed, despite the large amount of pre-*Berkheimer* case law treating eligibility as a purely legal question, the Supreme Court has never so held. On the contrary, the Court has frequently based its eligibility rulings on “undisputed” propositions that look like facts and on evidence extrinsic to the patent itself—including on the *first* step of the *Alice* analysis, which asks if the patent is directed to an ineligible principle. For instance, in *Myriad*, in which the Court invalidated patents on DNA sequences for claiming a “product of nature,” the Court wrote: “It is *undisputed* that Myriad did not create or alter any of the genetic information encoded in the [claimed] genes,”<sup>238</sup> the implication being that a future case could raise a factual *dispute* about whether a claimed invention occurs in nature. Similarly, in both *Alice* and *Bilski*, the Court cited extrinsic evidence, including textbooks, treatises, and academic journal articles, to support the conclusion that the patents claimed the abstract ideas of intermediated settlement and risk hedging, respectively.<sup>239</sup> To be sure, none of the Supreme Court’s recent cases were themselves resolved at the pleading stage.<sup>240</sup> But the Court’s reliance on extrinsic evidence and “undisputed” propositions suggests that the Court would embrace the notion that the eligibility inquiry can involve questions of fact.<sup>241</sup>

To that end, *Berkheimer* may not be the revolutionary decision it has been portrayed to be.<sup>242</sup> In contrast to the district courts that had treated eligibility as a pure question of law, other pre-*Berkheimer* district court

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L. REV. 1020, 1020 (1967) (“A question of reconstructing . . . conditions which have actually existed[] can . . . be defined as a question of fact . . .”).

238. *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 590 (2013) (emphasis added).

239. *See Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2356 (2014) (citing Henry Crosby Emery, *Speculation on the Stock and Produce Exchanges of the United States*, in 7 *STUDIES IN HISTORY, ECONOMICS AND PUBLIC LAW* 283, 346–56 (New York, Columbia Univ. 1896); Yesha Yadav, *The Problematic Case of Clearinghouses in Complex Markets*, 101 *GEO. L.J.* 387, 406–12 (2013); JOHN C. HULL, *RISK MANAGEMENT AND FINANCIAL INSTITUTIONS* 103–04 (3d ed. 2012)); *Bilski v. Kappos*, 561 U.S. 593, 611 (2010) (citing DIMITRIS N. CHORAFAS, *INTRODUCTION TO DERIVATIVE FINANCIAL INSTRUMENTS* 75–94 (2008); CLYDE P. STICKNEY ET AL., *FINANCIAL ACCOUNTING: AN INTRODUCTION TO CONCEPTS, METHODS, AND USES* 581–82 (13th ed. 2010); STEPHEN ROSS ET AL., *FUNDAMENTALS OF CORPORATE FINANCE* 743–44 (8th ed. 2008)).

240. *Alice*, *Mayo*, and *Myriad* were appeals from summary judgment. *Bilski* was an appeal from the Patent Office’s rejection of a patent application.

241. More precisely, questions of *adjudicative* fact. *See Adjudicative Fact*, BLACK’S LAW DICTIONARY (10th ed. 2014) (“A controlling or operative fact . . . ; a fact that is particularly related to the parties to a proceeding and that helps the tribunal determine how the law applies to those parties.”); *cf. Legislative Fact*, BLACK’S LAW DICTIONARY, *supra* (“A fact . . . that helps a court . . . determine the law’s meaning and application. Legislative facts are not ordinarily specific to the parties in a proceeding.”).

242. *See, e.g.,* @marklemley, TWITTER (Feb. 8, 2018, 4:33 PM), <https://twitter.com/marklemley/status/961714734335606784> [<https://perma.cc/BH9L-UZQW>] (“Blockbuster Fed Cir opinion—patentable subject matter is now frequently going to be a question of fact that goes to trial.”).

decisions reflected the potentially fact-driven nature of the eligibility inquiry. Many courts had denied pleading-stage eligibility motions specifically because of factual disputes they perceived to exist on one or both steps of the *Alice* analysis.<sup>243</sup> Other district courts engaged in what clearly appeared to be factfinding—for instance, relying on expert testimony about the patent’s inventiveness—in resolving eligibility, either before trial<sup>244</sup> or after trial.<sup>245</sup> One district court had even allowed the jury to resolve the ultimate question of patent eligibility.<sup>246</sup> Though that court was an outlier, many district judges reconsidered pre-trial eligibility rulings after hearing the evidence and testimony at trial,<sup>247</sup> or simply deferred deciding eligibility until after trial.<sup>248</sup> All of these cases suggest that, in *Berkheimer*, the Federal Circuit merely confirmed what many district courts knew all along: facts can be relevant to the eligibility determination, even if the Federal Circuit’s case law could be interpreted to indicate otherwise.

Thus, the Federal Circuit’s assertion in *Berkheimer* that the legal question of eligibility “may contain disputes over underlying facts”<sup>249</sup>

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243. For examples, see *Bristol-Myers Squibb Co. v. Merck & Co.*, No. 15-560-GMS, 2016 WL 1072841, at \*1 n.1 (D. Del. Mar. 17, 2016) (finding a factual dispute about whether the patent contained an “inventive concept”), *Cave Consulting Group, Inc. v. Truven Health Analytics Inc.*, No. 15-cv-02177-SI, 2016 WL 283478, at \*3 (N.D. Cal. Jan. 25, 2016) (denying motion for judgment on the pleadings “without prejudice to renewal after claim construction and on a fuller factual record”), and *Card Verification Solutions, LLC v. Citigroup Inc.*, No. 13 C 6339, 2014 WL 4922524, at \*4 (N.D. Ill. Sept. 29, 2014) (“The question whether a pseudorandom number and character generator can be devised that relies on an algorithm that can be performed by a human with nothing more than pen and paper poses a factual question inappropriate at the motion to dismiss stage.”).

244. See, e.g., *Prism Techs., LLC v. T-Mobile USA, Inc.*, No. 8:12CV124, 2015 WL 6161790, at \*3 (D. Neb. Sept. 22, 2015) (granting the patentee’s motion for summary judgment of eligibility), *aff’d in part, rev’d in part, dismissed in part*, 696 F. App’x 1014 (Fed. Cir. 2017). The Federal Circuit reversed the decision in that case, but it relied entirely on the patent itself in finding the claimed invention ineligible; it did not discuss the extrinsic evidence the district court had relied on. *Prism Techs. LLC v. T-Mobile USA, Inc.*, 696 F. App’x 1014, 1017–18 (Fed. Cir. 2017).

245. See *Veracode, Inc. v. Appthority, Inc.*, 137 F. Supp. 3d 17, 51–54 (D. Mass. 2015) (denying a post-trial motion to invalidate a patent on eligibility grounds, relying on testimony by both the inventor and multiple experts to find an inventive concept).

246. *VS Techs., LLC v. Twitter, Inc.*, No. 2:11cv43, 2012 WL 1481508, at \*4 (E.D. Va. Apr. 27, 2012) (upholding verdict of ineligibility).

247. As one might expect, many of these post-trial decisions reached the same result as the pre-trial ruling. See, e.g., *Comcast Cable Commc’ns, LLC v. Sprint Commc’ns Co.*, 262 F. Supp. 3d 118, 139, 141 (E.D. Pa. 2017) (denying a renewed motion for judgment as a matter of law of ineligibility after having previously denied a motion for summary judgment on that ground), *appeal dismissed*, No. 17-2495, 2017 WL 8220211 (Fed. Cir. 2017); *Exergen Corp. v. Kaz USA, Inc.*, 172 F. Supp. 3d 366, 367 (D. Mass. 2016) (similar), *aff’d*, 725 F. App’x 959 (Fed. Cir. 2018). But, possible anchoring effects aside, the courts’ mere willingness to reengage the issue illustrates the view that factual considerations can be relevant to the eligibility analysis.

248. E.g., *Intellectual Ventures I LLC v. Symantec Corp.*, 100 F. Supp. 3d 371, 375 (D. Del. 2015), *aff’d in part, rev’d in part*, 838 F.3d 1307 (Fed. Cir. 2016).

249. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018), *petition for cert. filed*, No. 18-415 (U.S. Sept. 28, 2018).



appears to be on solid ground.<sup>250</sup> But the court's discussion of the *types* of evidence that can create a factual dispute could introduce serious inefficiencies into litigation over patent eligibility. The court, recall, ruled that summary judgment was inappropriate solely because of improvements described in the patent's specification. The court's ruling that the patentee's description of his own invention can create a genuine issue of material fact is in tension with both patent law doctrine on the law/fact distinction and with more general civil procedure doctrine on summary judgment.

First, in terms of patent doctrine, the Supreme Court's 2015 decision on claim construction, *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*,<sup>251</sup> is instructive. In that case, the Court ruled that "when the district court reviews only evidence *intrinsic* to the patent (the patent claims and specifications, along with the patent's prosecution history), the judge's determination will amount solely to a determination of law" reviewed de novo on appeal.<sup>252</sup> As applied to an eligibility case like *Berkheimer*, *Teva* suggests that a dispute of fact that can preclude summary judgment must involve *extrinsic* evidence, such as witness testimony about the state of the art or documentary evidence about the prior art.<sup>253</sup> It seems wrong as a matter of doctrine—and wasteful as a matter of judicial economy—to take a case to trial, possibly in front of a jury, when, as in *Berkheimer*, the only evidence of inventiveness comes from the patent itself, which is normally interpreted by the judge alone and which the judge is quite capable of doing on summary judgment.

Careful observers of patent law might question whether it is appropriate to import the law/fact distinction drawn in *Teva*—a case about claim construction—to the eligibility analysis. After all, in a claim construction dispute like *Teva*, the judge is reading the patent's specification to determine what the claims mean—an inquiry focused entirely on the patent itself. In an eligibility dispute, by contrast, a judge might use the specification to shed light on a question "external" to the patent, namely, whether the claimed invention was conventional given the state of the art.<sup>254</sup> But at the summary

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250. For a pre-*Berkheimer* scholarly critique of eligibility doctrine lamenting courts' inattention to factual considerations, see Timothy R. Holbrook & Mark D. Janis, *Patent-Eligible Processes: An Audience Perspective*, 17 VAND. J. ENT. & TECH. L. 349, 382 (2015) (noting that the test for patent eligibility "entitles a court to kick the hypothetical person of ordinary skill in the art to the curb in favor of a discretionary analysis that need not be constrained by the need to establish qualifying prior art evidence").

251. 135 S. Ct. 831 (2015).

252. *Id.* at 841 (emphasis added).

253. As the Court noted in *Teva*, when the court "look[s] beyond the patent's intrinsic evidence and . . . consult[s] extrinsic evidence in order to understand, for example, the background science," that inquiry can entail "subsidiary factual findings" that will be reviewed for clear error. *Id.*

254. *Berkheimer v. HP Inc.*, 890 F.3d 1369, 1371 n.3 (Fed. Cir. 2018) (Moore, J., concurring in the denial of the petition for rehearing en banc) ("[W]hether claim limitations recite activities that were well-understood, routine, and conventional in the relevant field at a particular point in time . . . is a question of historical fact, not a legal question of claim scope.").

judgment stage of an eligibility dispute—the procedural posture of *Berkheimer*—the judge is not *answering* that question about conventionality; the judge is simply asking whether a factfinder could find a lack of conventionality *based on what is in the specification*. That question, much like claim construction, *is* focused on the content of the patent document itself. Like a claim construction based entirely on intrinsic evidence, the question of what a factfinder might conclude based on intrinsic evidence should be viewed to present a question of law.<sup>255</sup>

Second, and even setting aside *Berkheimer*'s tension with *Teva*, the Federal Circuit's decision to find a genuine dispute of material fact based entirely on the patentee's own statements about its patent's inventiveness conflicts with a long line of summary judgment cases decided by both the Supreme Court and courts of appeals besides the Federal Circuit. Those cases hold that statements by a party or its own witnesses that are conclusory or uncorroborated by other evidence cannot raise a genuine issue of material fact to defeat summary judgment.<sup>256</sup> The Federal Circuit in *Berkheimer* ignored that principle by allowing the patentee to avoid summary judgment without offering any evidence to substantiate its patent's assertions about inventiveness.

In addition to being in tension with case law outside the Federal Circuit—and providing yet another example of Federal Circuit “exceptionalism” on procedural matters<sup>257</sup>—*Berkheimer* exacerbates the intracircuit split mentioned above on whether the specification can inform the eligibility analysis or whether the analysis should focus on the claims alone.<sup>258</sup> *Berkheimer*, plainly, gives the specification significant weight in resolving the eligibility inquiry,<sup>259</sup> but that mode of analysis is hard to square

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255. See *id.* at 1382 (Reyna, J., dissenting from the denial of the petition for rehearing en banc) (noting that “[t]he § 101 inquiry can . . . be analogized to claim construction” and contending that “[a] § 101 patent eligibility determination . . . resolved without . . . look[ing] beyond the four corners of the patent” is “solely a question of law for the court to properly decide”).

256. See, e.g., *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 426 (2007) (noting that “a conclusory affidavit addressing the question of obviousness” cannot forestall summary judgment); *Jeffreys v. City of New York*, 426 F.3d 549, 554 (2d Cir. 2005) (upholding summary judgment in favor of the defendant where the plaintiff's only evidence was his own affidavit and deposition testimony). As the Second Circuit noted in *Jeffreys*:

[N]onmoving parties “must do more than simply show that there is some metaphysical doubt as to the material facts,” and they “may not rely on conclusory allegations or unsubstantiated speculation.” At the summary judgment stage, a nonmoving party “must offer some hard evidence showing that its version of the events is not wholly fanciful.”

*Id.* (citations omitted) (quoting, among other cases, *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586 (1986)).

257. See *supra* note 59.

258. See *supra* notes 110–11 and accompanying text.

259. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1370 (Fed. Cir. 2018) (“[T]here is at least a genuine issue of material fact *in light of the specification* regarding whether [the patent claims in suit] archive

with the Federal Circuit's statements in other cases that "detail[s] in the specification" cannot "transform a claim reciting only an abstract concept into a patent-eligible system or method."<sup>260</sup>

Despite these flaws in the *Berkheimer* opinion, the Federal Circuit made a laudable decision to hold that eligibility is not a "pure" question of law, as prior precedent suggested it was. As I explain next, that holding is relevant not just for courts deciding eligibility on summary judgment (the procedural posture of the *Berkheimer* case itself), but also for courts deciding eligibility at the pleading stage on a motion to dismiss—the most popular procedural mechanism for resolving eligibility.<sup>261</sup> The Federal Circuit has recently considered the role of facts in deciding eligibility at that earlier stage, too. But, just like in *Berkheimer*, the court has arguably made it too easy for patentees to prevail by allowing them to avoid dismissal by simply offering their own statements about their patent's inventiveness.

### C. *Deciding Eligibility on the Pleadings*

If the eligibility analysis involves factual considerations, as I argued above and as the Federal Circuit held in *Berkheimer*, then, at the pleading stage, eligibility is not the yes-or-no question it would be in a court that viewed eligibility to present a pure question of law. Rather, any factual issues should be resolved by reference to the Supreme Court's decisions in *Twombly* and *Iqbal*, which read Civil Rule 8(a)(2) to mandate that the complaint contain factual allegations sufficient to justify a plausible inference of liability.<sup>262</sup> Less than a week after deciding *Berkheimer*, the Federal Circuit issued another eligibility opinion, *Aatrix Software, Inc. v. Green Shades Software, Inc.*,<sup>263</sup> again chastising a district court for giving insufficient weight to factual considerations, this time in a case that had been dismissed at the pleading stage. Though the Federal Circuit's continued emphasis on the relevance of facts to the eligibility inquiry is a welcome development, this section argues that, like *Berkheimer*, the court's decision in *Aatrix* may go too far: by ignoring the requirement from *Twombly* and *Iqbal* that factual allegations in the complaint must be *plausible*, *Aatrix* threatens to make it

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documents in an inventive manner . . . ." (emphasis added)), *petition for cert. filed*, No. 18-415 (U.S. Sept. 28, 2018).

260. *Accenture Glob. Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1345 (Fed. Cir. 2013); *accord* *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1338 (Fed. Cir. 2017), *cert. denied*, No. 18-124, 2018 WL 3626097 (U.S. Oct. 15, 2018).

261. *See* Lefstin, Menell & Taylor, *supra* note 16, at 578 tbl.2.

262. *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009); *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 557 (2007). Part of the reason those decisions have been so controversial is that Rule 8(a)(2) states merely that a complaint must contain "a short and plain statement of the claim showing that the pleader is entitled to relief." FED. R. CIV. P. 8(a)(2).

263. 882 F.3d 1121 (Fed. Cir. 2018).

extraordinarily difficult for an accused infringer to obtain a pre-discovery dismissal on eligibility grounds.

*1. Pleading-Stage Motions and Patent Validity Disputes.*—To explain that argument, it will be helpful to first discuss the general legal principles that govern pleading-stage motions (as I explain below, the Federal Circuit at least partially ignored these general principles in its *Aatrix* decision) and to examine how pleading-stage motions have historically been used in patent cases. A defendant can base a motion to dismiss under Rule 12(b)(6) (or for judgment on the pleadings under Rule 12(c))<sup>264</sup> on one of two grounds.<sup>265</sup> First, the defendant can argue that, assuming the facts alleged in the complaint are true, *the law does not recognize the plaintiff's claim*. Or, second, the defendant can argue that *there are not enough facts alleged* in the complaint to “show[]” that the plaintiff is entitled to relief, as Rule 8(a)(2) requires.<sup>266</sup>

Courts and commentators often say that, on a motion to dismiss, “the complaint is construed in the light most favorable to the plaintiff.”<sup>267</sup> But it is important to note that that axiom applies only to matters of fact,<sup>268</sup> not to matters of law.<sup>269</sup> Thus, on a motion to dismiss based on the first ground listed above (that the complaint recites facts that are simply not unlawful), the plaintiff’s legal claim of liability will receive no deference from the court.

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264. The only difference between the two motions is that a defendant can file a motion to dismiss in lieu of an answer, while a motion for judgment on the pleadings is filed after the answer. A. BENJAMIN SPENCER, *CIVIL PROCEDURE: A CONTEMPORARY APPROACH* 494–95 (rev. 4th ed. 2015).

265. *See id.* at 491–92.

266. At a later stage of the case, a summary judgment motion can, similarly, take one of two forms, arguing either (1) that “a particular interpretation or application of the governing law . . . to undisputed or largely undisputed facts . . . entitles the movant to judgment” or (2) “that there are no material facts in dispute, so that the movant is entitled to judgment under the law.” Jonathan Remy Nash, *Unearthing Summary Judgment's Concealed Standard of Review*, 50 U.C. DAVIS L. REV. 87, 96–97 (2016).

267. 5B CHARLES ALAN WRIGHT & ARTHUR R. MILLER, *FEDERAL PRACTICE AND PROCEDURE* § 1357 (3d ed. 2018); *see also In re Bill of Lading Transmission & Processing Sys. Patent Litig.*, 681 F.3d 1323, 1331 (Fed. Cir. 2012) (“[W]e generally construe the complaint in the light most favorable to the plaintiff, accept its allegations as true, and draw all reasonable inferences in favor of the plaintiff . . .”).

268. *See* 5B WRIGHT & MILLER, *supra* note 267, § 1357 (“[F]ederal courts have said that they accept the truth of a pleading’s ‘facts,’ ‘factual allegations,’ ‘material facts,’ ‘material allegations,’ ‘well-pleaded facts,’ ‘well-pleaded factual allegations,’ and ‘well-pleaded allegations.’” (footnotes omitted)).

269. *See Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009) (“[T]he tenet that a court must accept as true all of the allegations contained in a complaint is inapplicable to *legal conclusions*.” (emphasis added)); *Bill of Lading*, 681 F.3d at 1331 (“[W]e are not required to accept as true legal conclusions . . .” (internal quotation marks omitted)); *see also* 5B WRIGHT & MILLER, *supra* note 267, § 1357 & n.22 (citing numerous cases holding that “a pleading’s ‘legal conclusions’” “need not be accepted as true on a Rule 12(b)(6) motion”).

Also, the requirement of *Twombly* and *Iqbal* that the complaint contain enough “factual allegations . . . [to] plausibly give rise to an entitlement to relief”<sup>270</sup> is irrelevant because the motion, by definition, does not challenge the sufficiency of factual allegations. A motion to dismiss based on the second ground listed above, however, directly raises the issue of whether the factual allegations in the complaint, if proven, would allow a court to infer liability. In that circumstance, the relevant factual allegations are assumed to be true, and the plausibility standard of *Twombly* and *Iqbal* is crucial to the analysis.

Before the recent reemergence of the eligibility requirement, pleading-stage motions to invalidate patents were basically unheard of. On the rare occasions parties filed them, they were almost always denied.<sup>271</sup> After *Bilski*, however, some district courts began to resolve eligibility on the pleadings. One of the first to do so was the district court in the *Ultramercial* litigation mentioned above. In that case, the court rejected the patentee’s argument that eligibility could not be decided on a motion to dismiss and before the court had formally construed the patent’s claims, noting that “[t]he patent terms are clear” and that the patentee “has not brought to the Court’s attention any reasonable construction that would bring the patent within patentable subject matter.”<sup>272</sup> Though some courts followed suit and invalidated patents on the pleadings,<sup>273</sup> others were more cautious. A district judge in Ohio, for instance, refused to entertain an ineligibility defense on a motion to dismiss, criticizing the court in *Ultramercial* for, among other things, ignoring “the presumption of validity and a patent challenger’s burden to prove invalidity by clear and convincing evidence.”<sup>274</sup>

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270. *Iqbal*, 556 U.S. at 679.

271. For pre-*Bilski* examples of unsuccessful pleading-stage invalidity motions, see *Digital-Vending Services International, LLC v. University of Phoenix Inc.*, No. 2:09cv555, 2010 WL 11450783, at \*4 (E.D. Va. Aug. 12, 2010) (denying motion for judgment on the pleadings of indefiniteness), and *Ariad Pharmaceuticals, Inc. v. Eli Lilly & Co.*, No. Civ.A. 02-11280-RWZ, 2003 WL 21087115, at \*1 (D. Mass. May 12, 2003) (denying motion to dismiss on the grounds of anticipation and enablement). Besides eligibility, the ground most likely to result in a pleading-stage invalidation (though it was and remains rare) is indefiniteness, see, e.g., *In re TLI Commc’ns LLC Patent Litig.*, 87 F. Supp. 3d 773, 804 (E.D. Va. 2015), *aff’d*, 823 F.3d 607 (Fed. Cir. 2016); *Lexington Luminance LLC v. Amazon.com, Inc.*, 6 F. Supp. 3d 179, 195 (D. Mass. 2014), *vacated and remanded*, 601 F. App’x 963 (Fed. Cir. 2015), probably because indefiniteness is a matter of claim construction that can be decided by the judge. *But see infra* note 410 (discussing case law allowing juries to decide indefiniteness).

272. *Ultramercial, LLC v. Hulu, LLC*, No. CV 09-06918 RGK, 2010 WL 3360098, at \*6 (C.D. Cal. Aug. 13, 2010), *rev’d*, 722 F.3d 1335 (Fed. Cir. 2013), *cert. granted, judgment vacated sub nom. WildTangent, Inc. v. Ultramercial, LLC*, 134 S. Ct. 2870 (2014) (mem.).

273. E.g., *Glory Licensing LLC v. Toys “R” Us, Inc.*, No. 09-4252 (FSH), 2011 WL 1870591, at \*4 (D.N.J. May 16, 2011), *appeal dismissed*, 459 F. App’x 916 (Fed. Cir. 2011).

274. *Progressive Cas. Ins. Co. v. Safeco Ins. Co.*, No. 1:10 CV 1370, 2010 WL 4698576, at \*4 (N.D. Ohio Nov. 12, 2010); *accord Investpic, LLC v. FactSet Research Sys., Inc.*, No. 10-1028-SLR, 2011 WL 4591078, at \*1 (D. Del. Sept. 30, 2011) (“[c]hoos[ing] not to follow” *Ultramercial*

Other courts expressed reluctance to adjudicate eligibility without conducting claim construction.<sup>275</sup> Because the judge's claim construction delineates the patent's exclusionary scope,<sup>276</sup> it is potentially quite relevant to inquiries in the eligibility analysis, such as whether a patent claim is "directed to" a natural phenomenon or abstract idea.<sup>277</sup> On the other hand, as the district court illustrated in *Ultramercial*, a judge could resolve eligibility without formally construing the patent's claims by simply reading the claims in the manner most favorable to the patentee.

In the first *Ultramercial* appeal (*Ultramercial I*), the Federal Circuit sent mixed signals about whether it is proper to resolve eligibility on the pleadings and before claim construction. On one hand, the court noted that it "has never set forth a bright line rule requiring district courts to construe claims before determining subject matter eligibility."<sup>278</sup> On the other hand, the court wrote that "[o]n many occasions, . . . a definition of the invention via claim construction can clarify the basic character of the subject matter of the invention."<sup>279</sup> The court ultimately approved the district court's procedural decision to resolve eligibility on a motion to dismiss without construing the claims (although the Federal Circuit reversed on the merits).<sup>280</sup>

The Supreme Court vacated the Federal Circuit's opinion in *Ultramercial I* after *Mayo*,<sup>281</sup> and it soon became increasingly common for district courts to decide patent eligibility on the pleadings.<sup>282</sup> In *Ultramercial II*, however, the Federal Circuit again questioned that practice, writing that "it will be rare that a patent infringement suit can be dismissed at the pleading stage for lack of patentable subject matter."<sup>283</sup> For dismissal under Rule 12(b)(6) to be proper, the court wrote, "the only plausible reading of the

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and *Glory Licensing*). More to follow on the presumption of validity and the standard of proof in eligibility disputes. See *infra* subpart II(E).

275. E.g., *Edge Capture, L.L.C. v. Barclays Bank PLC*, No. 09 C 1521, 2011 WL 494573, at \*1 (N.D. Ill. Jan. 31, 2011).

276. See *supra* note 48.

277. *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014).

278. *Ultramercial I*, 657 F.3d 1323, 1325 (Fed. Cir. 2011), *cert. granted, judgment vacated sub nom. WildTangent, Inc. v. Ultramercial, LLC*, 566 U.S. 1007, 1007 (2012) (mem.).

279. *Id.*

280. *Id.* at 1325, 1330.

281. *WildTangent*, 566 U.S. 1007.

282. See, e.g., *Vacation Exch., LLC v. Wyndham Exch. & Rentals, Inc.*, No. CV 12-04229 RGK, 2012 WL 12882053, at \*2 (C.D. Cal. Sept. 18, 2012) ("[W]here claim construction is not required for a full understanding of the basic character of the claimed subject matter, a district court may resolve patentable subject matter eligibility on a motion to dismiss."); *OIP Techs., Inc. v. Amazon.com, Inc.*, No. C-12-1233 EMC, 2012 WL 3985118, at \*5 (N.D. Cal. Sept. 11, 2012) (holding that a motion to dismiss on eligibility grounds "is not per se premature"), *aff'd*, 788 F.3d 1359 (Fed. Cir. 2015).

283. *Ultramercial, Inc. v. Hulu, LLC (Ultramercial II)*, 722 F.3d 1335, 1338 (Fed. Cir. 2013), *cert. granted, judgment vacated sub nom. WildTangent, Inc. v. Ultramercial, LLC*, 134 S. Ct. 2870 (2014) (mem.).

patent must be that there is clear and convincing evidence of ineligibility.”<sup>284</sup>

Yet the Supreme Court also vacated *Ultramercial II*, this time in light of *Alice*.<sup>285</sup> And several subsequent Federal Circuit decisions affirmed pleading-stage dismissals under § 101.<sup>286</sup> By 2015, a magistrate judge in Delaware could confidently declare that “[i]t is now well-settled that it can be proper to address a Section 101 motion in a patent infringement action at the Rule 12(b)(6) stage.”<sup>287</sup> Shortly thereafter, the Federal Circuit backed away from any suggestion that patent eligibility could not be resolved on the pleadings, instead recognizing that it had “repeatedly affirmed § 101 rejections at the motion to dismiss stage, before claim construction or significant discovery has commenced.”<sup>288</sup>

In February 2018, however, less than a week after deciding *Berkheimer*, the Federal Circuit issued its opinion in *Aatrix*—another bombshell decision on the procedure of patent eligibility—ruling that a district court was wrong to grant a motion to dismiss on eligibility grounds because the patentee’s complaint contained factual allegations about the inventiveness of its asserted patent.<sup>289</sup>

2. *Aatrix and the Propriety of Deciding Eligibility on the Pleadings.*— Because of *Aatrix*’s importance to the question of when, if ever, patent eligibility may be resolved on the pleadings, it is worthwhile to review the case in some detail. The patent in *Aatrix* covered a computerized data processing system.<sup>290</sup> Most relevant to the Federal Circuit’s decision, the patent recited (1) a “data file” that could populate forms and (2) a program operating on that data file to perform calculations, allow users to view and change data, and generate reports.<sup>291</sup> The district court granted the

284. *Id.* at 1339.

285. *WildTangent*, 134 S. Ct. 2870.

286. *E.g.*, *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1344 (Fed. Cir. 2015); *Content Extraction & Transmission LLC v. Wells Fargo Bank*, 776 F.3d 1343, 1345 (Fed. Cir. 2014); *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1352, 1355 (Fed. Cir. 2014).

287. *Versata Software, Inc. v. NetBrain Techs., Inc.*, No. 13-676-LPS-CJB, 2015 WL 5768938, at \*2 n.2 (D. Del. Sept. 30, 2015).

288. *Cleveland Clinic Found. v. True Health Diagnostics LLC*, 859 F.3d 1352, 1360 (Fed. Cir. 2017) (collecting cases), *cert. denied*, 138 S. Ct. 2621 (2018).

289. *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1130 (Fed. Cir. 2018).

290. The case actually involved several claims of two different patents. *Id.* at 1123. But because those patents had “essentially the same specification” and because the Federal Circuit treated one claim of one patent as representative of all the relevant claims, *id.*, I refer in the text to “patent,” singular.

291. *See* U.S. Patent No. 7,171,615, at [57] (“[A] *data file* containing data for populating [a] viewable form[] and a form viewer program operating on [a] form file and the *data file* to perform calculations, allow the user of the data processing system to review and change the data, and create viewable forms and reports.” (emphasis added)).

defendant's motion to dismiss, ruling that the system claimed by the patent involved little more than "fill[ing] out forms"—an abstract idea with no inventive concept.<sup>292</sup> In response to that dismissal, the patentee sought permission to file an amended complaint that contained additional allegations about how its patent improved on the prior art. The district court refused to consider the amended complaint,<sup>293</sup> but the Federal Circuit, in another opinion by Judge Moore (the author of *Berkheimer*), overturned the district court's ruling of ineligibility and its refusal to accept the amended complaint.<sup>294</sup>

As it did in *Berkheimer*, the Federal Circuit in *Aatrix* emphasized that the question under *Alice* of "[w]hether . . . claim elements or the claimed combination are well-understood, routine, [and] conventional is a question of fact."<sup>295</sup> Turning to the case at hand, the court wrote that eligibility could not be decided on the pleadings because the plaintiff's proposed amended complaint contained "factual allegations . . . that, if accepted as true, establish[ed] that the claimed [invention] contains inventive components and improves the workings of [a] computer."<sup>296</sup> For instance, the complaint alleged that the "data file" claimed in the patent made it easier to import data from third-party software applications.<sup>297</sup> These allegations about the inventiveness of the claimed data file, in the Federal Circuit's view, made dismissal improper.<sup>298</sup>

Though the Federal Circuit in *Aatrix* held that the factual allegations in the patentee's complaint prevented early dismissal, the court appeared to

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292. *Aatrix Software, Inc. v. Green Shades Software, Inc.*, No. 3:15-cv-164-HES-MCR, 2016 WL 1375141, at \*11 (M.D. Fla. Mar. 30, 2016), *vacated*, 882 F.3d 1121 (Fed. Cir. 2018).

293. *Aatrix Software, Inc. v. Green Shades Software, Inc.*, No. 3:15-cv-164-HES-MCR, 2016 WL 7206173, at \*1 (M.D. Fla. Nov. 17, 2016), *rev'd*, 882 F.3d 1121 (Fed. Cir. 2018).

294. *Aatrix*, 882 F.3d at 1130.

295. *Id.* at 1128.

296. *Id.* at 1125.

297. Specifically, the complaint alleged:

The inventions claimed in the Aatrix Patents allow data to be imported into the viewable electronic form from outside applications. Prior art forms solutions allowed data to be extracted only from widely available databases with published database schemas, not the proprietary data structures of application software. The inventions of the Aatrix Patents allowed data to be imported from an end user application without needing to know proprietary database schemas and without having to custom program the form files to work with each outside application. The inventions of the Aatrix Patents permit data to be retrieved from a user application and inserted into a form, eliminating the need for hand typing in the values and eliminating the risk of transcription error.

*Id.* at 1127 (quoting proposed second amended complaint).

298. *Id.* at 1126 (noting that the complaint's allegations "at a minimum raise factual disputes underlying the § 101 analysis, such as whether the claim term 'data file' constitutes an inventive concept"); *see also id.* at 1129 ("The 'data file' limitation may reflect, as Aatrix argues, an improvement in the importation of data from third-party software applications.").



reaffirm its ample precedent deciding eligibility on motions to dismiss or for judgment on the pleadings.<sup>299</sup> Indeed, just because the test for eligibility involves *questions* of fact, as the Federal Circuit held in *Berkheimer* and *Aatrix*, that does not mean that all eligibility cases raise *disputes* of fact—a point the Federal Circuit explicitly acknowledged in *Berkheimer*.<sup>300</sup> Under the Federal Rules of Civil Procedure, as consistently applied by courts deciding patent cases, the patent is considered part of the complaint, so if eligibility can be resolved by reference to the patent alone, it is appropriate for the judge to decide the issue at the pleading stage as a matter of law.<sup>301</sup> In many cases—particularly those involving patents that were prosecuted before the Supreme Court’s recent invigoration of the eligibility requirement—the claims and specification of the patent itself indicate that the claimed invention involves a fundamental economic practice,<sup>302</sup> an abstract idea,<sup>303</sup> or a natural phenomenon.<sup>304</sup> Similarly, it can be apparent from the patent itself that it contains no inventive concept because it merely adds generic computer components to an abstract idea,<sup>305</sup> carries out an abstract idea over the

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299. *See id.* at 1125 (“We have held that patent eligibility can be determined at the Rule 12(b)(6) stage.”) (citing *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1373 (Fed. Cir. 2016); *Content Extraction & Transmission LLC v. Wells Fargo Bank*, 776 F.3d 1343, 1346, 1351 (Fed. Cir. 2014)).

300. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018) (“[N]ot every § 101 determination contains genuine disputes over the underlying facts material to the § 101 inquiry.”), *petition for cert. filed*, No. 18-415 (U.S. Sept. 28, 2018).

301. *See* FED. R. CIV. P. 10(c) (“A copy of a written instrument that is an exhibit to a pleading is a part of the pleading for all purposes.”); *see also* *CertusView Techs., LLC v. S&N Locating Servs., LLC*, 111 F. Supp. 3d 688, 704 (E.D. Va. 2015) (resolving the “claim-centric issue of section 101 validity” on a motion for judgment on the pleadings, citing Rule 10(c) and noting that “the Court finds that it need not rely on any factual matter other than that presented in the specifications of the patents-in-suit themselves”), *aff’d*, 695 F. App’x 574 (Fed. Cir. 2017) (per curiam).

302. *E.g.*, *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1054 (Fed. Cir. 2017) (“[T]he ‘807 patent specification itself demonstrates that processing an application for financing a purchase is ‘a fundamental economic practice long prevalent in our system of commerce.’” (quoting *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2356 (2014))).

303. *E.g.*, *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1370, 1372 (Fed. Cir. 2011) (invalidating a patent on “a method for verifying the validity of a credit card transaction over the Internet,” noting: “It is clear that unpatentable mental processes are the subject matter of [the claim]. All of [the claim’s] steps can be performed in the human mind, or by a human using a pen and paper.”).

304. *E.g.*, *Cleveland Clinic Found. v. True Health Diagnostics LLC*, 859 F.3d 1352, 1361 (Fed. Cir. 2017) (“[T]he method starts and ends with naturally occurring phenomena with no meaningful non-routine steps in between—the presence of [myeloperoxidase] in a bodily sample is correlated to its relationship to cardiovascular disease. The claims are therefore directed to a natural law.”), *cert. denied*, 138 S. Ct. 2621 (2018).

305. *E.g.*, *Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324–25 (Fed. Cir. 2016) (“[T]he claims ‘add’ only generic computer components such as an ‘interface,’ ‘network,’ and ‘database.’ These generic computer components do not satisfy the inventive concept requirement.”).

Internet,<sup>306</sup> or employs known scientific techniques.<sup>307</sup> Sometimes the information needed to resolve the issue of eligibility might be outside the complaint but so incontrovertible that it is subject to judicial notice.<sup>308</sup> As the Federal Circuit observed in *Aatrix*, eligibility can be resolved on the pleadings, as a matter of law, if the decision is based on “sources properly considered on a motion to dismiss, such as the complaint, the patent, and materials subject to judicial notice.”<sup>309</sup>

Before turning to a critique of the *Aatrix* opinion, it is worth noting that, even if an eligibility dispute requires the court to consider evidence extrinsic to the patent, a defendant can still seek relatively quick adjudication through an early summary judgment motion. Though the Federal Circuit did not discuss that possibility in *Aatrix*, the Federal Rules of Civil Procedure permit a party to file a summary judgment motion “at any time until 30 days after the close of all discovery.”<sup>310</sup> They also permit a court to convert a motion to dismiss or for judgment on the pleadings to a summary judgment motion if it involves matters outside the pleadings.<sup>311</sup> An early summary judgment motion (converted or otherwise) might be particularly useful where an expert declaration would be helpful in countering a complaint’s allegations of inventiveness (or similar assertions in the patent’s specification). It would also be useful in cases where common-knowledge-type evidence in support of ineligibility is strong, but perhaps not sufficiently indisputable to be subject to judicial notice<sup>312</sup>—a situation that could present itself with some

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306. *E.g.*, *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (“The claims’ invocation of computers adds no inventive concept. . . . That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive.”).

307. *E.g.*, *Athena Diagnostics, Inc. v. Mayo Collaborative Servs., LLC*, 275 F. Supp. 3d 306, 307 (D. Mass. 2017) (granting a renewed motion to dismiss on eligibility grounds after having initially denied a motion to dismiss because “[a]t a subsequent hearing, Plaintiffs’ counsel agreed that a statement in the patent specification” indicating that the techniques used to detect certain antibodies were “standard techniques in the art” “was undisputed”), *appeal docketed*, No. 17-2508 (Fed. Cir. Sept. 5, 2017).

308. *See, e.g.*, *buySAFE*, 765 F.3d at 1355 (affirming judgment on the pleadings of ineligibility, noting that “[t]he claims are squarely about creating a contractual relationship—a ‘transaction performance guaranty’—that is beyond question of ancient lineage” (citing Willis D. Morgan, *The History and Economics of Suretyship*, 12 CORNELL L.Q. 153 (1927))); *see also* *Front Row Techs., LLC v. NBA Media Ventures, LLC*, 204 F. Supp. 3d 1190, 1247 (D.N.M. 2016) (noting that courts may rely on “well-known, general historical observations” in deciding pleading-stage eligibility motions), *aff’d sub nom.* *Front Row Techs., LLC v. MLB Advanced Media, L.P.*, 697 F. App’x 701 (Fed. Cir. 2017) (per curiam). The Federal Rules of Evidence allow the court to take judicial notice “at any stage of the proceedings.” FED. R. EVID. 201(d).

309. *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1128 (Fed. Cir. 2018); *see also* 5B WRIGHT & MILLER, *supra* note 267, § 1357 (noting that a “motion to dismiss under [Rule 12(b)(6)] raises only an issue of law”).

310. FED. R. CIV. P. 56(b) (emphasis added).

311. FED. R. CIV. P. 12(d).

312. *See* FED. R. EVID. 201(b) (“The court may judicially notice a fact that is not subject to reasonable dispute because it: (1) is generally known within the trial court’s territorial jurisdiction;

frequency in technologically complex patent cases.<sup>313</sup> In short, *Aatrix*, though recognizing the factual components of the eligibility analysis, does not entirely close the door on quick, pleading-stage decisions on eligibility. In fact, *Aatrix* appears to reaffirm a large body of case law deciding eligibility on the pleadings when the decision is based entirely on the patent itself.

All that said, *Aatrix*, similar to *Berkheimer*, contains several serious flaws in the way in which the opinion *applies* its general pronouncement about the relevance of facts in the procedural posture that the case presented. One particularly troubling aspect of the *Aatrix* decision is the absolute deference the Federal Circuit gave to the allegations of inventiveness in the patentee's complaint. On my reading of the opinion, the court appeared to rule that those allegations entirely foreclosed the possibility of deciding eligibility at the pleading stage. Though the Federal Circuit ultimately disposed of the case by vacating the district court's ruling of ineligibility and remanding for further proceedings, the court also wrote that, based on the amended complaint, "the district court *could not conclude at the Rule 12(b)(6) stage* that the claimed elements were well-understood, routine, or conventional,"<sup>314</sup> indicating that the case must now move into discovery, with the possibility that the defendant could re-raise the issue of eligibility at a later time—likely on summary judgment.<sup>315</sup>

But the Federal Circuit's analysis of the sufficiency of the amended complaint entirely ignored an important additional requirement imposed by the Supreme Court in *Twombly* and *Iqbal*. Specifically, after identifying the

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or (2) can be accurately and readily determined from sources whose accuracy cannot reasonably be questioned.").

313. To draw an analogy, Justice Scalia in the *Myriad* case on the patent eligibility of DNA famously refused to join the "portions of the [majority] opinion going into fine details of molecular biology" because, he explained, "I am unable to affirm those details on my own knowledge or even my own belief." *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 596 (2013) (Scalia, J., concurring in part and concurring in the judgment).

314. *Aatrix*, 882 F.3d at 1129 (emphasis added).

315. That there will be no more pleading-stage litigation of eligibility is confirmed by the way in which the Federal Circuit addressed the issue of whether it was permissible for the district court to resolve eligibility without holding a formal claim construction proceeding. The Federal Circuit wrote that, because of its ruling that the patentee was entitled to file its amended complaint, it was "unnecessary to decide whether the district court erred by ruling on the § 101 motion prior to claim construction." *Id.* at 1128–29. If the Federal Circuit anticipated further pleading-stage eligibility litigation, the court presumably would have left it at that, allowing the district court to decide in the first instance on remand whether claim construction was necessary to decide a motion to dismiss the newly filed amended complaint. But the Federal Circuit, in the very next sentence of its opinion, declared that claim construction *was*, in fact, necessary to decide eligibility, writing that "[t]he briefing and argument on appeal demonstrate a need for claim construction, to be conducted on remand after the amended complaint is filed." *Id.* at 1129. The only way to reconcile this declaration that claim construction *is* necessary with the court's immediately preceding statement that it was not going to decide whether eligibility could be resolved prior to claim construction is to interpret the court as instructing that any additional litigation over eligibility must occur *after* claim construction is complete, likely on summary judgment or at trial.

factual allegations in the complaint—which the Federal Circuit did—the court is supposed to ask whether those factual allegations “plausibly give rise to an entitlement to relief”<sup>316</sup>—which the Federal Circuit did not do. Had the Federal Circuit asked that second question, the outcome of the case could have been different. Recall that the key, substantive eligibility issue in *Aatrix* was whether a “data file” used to import data into a form was inventive.<sup>317</sup> Importantly, the priority date for both patents was in 2002.<sup>318</sup> Given the ubiquity of computer processing and databases at the turn of the twenty-first century, it seems quite possible that a court could have found, based on the sort of common knowledge a court may appropriately consider at the pleading stage, that the complaint’s assertions about the claimed data file’s inventiveness were implausible and therefore insufficient to survive a motion to dismiss.<sup>319</sup> But the defendant never had the opportunity to present that argument.<sup>320</sup> And because the Federal Circuit ruled that the amended complaint foreclosed dismissal under Rule 12(b)(6), it likely will not have the opportunity to do so until summary judgment. Even on an early summary judgment motion like I discussed above, discovery will probably have commenced and the parties’ litigation costs will be markedly higher than they would have been had the case been decided on a motion to dismiss.

Eliminating the “plausibility” step from the pleading-stage analysis, as the Federal Circuit did in *Aatrix*, threatens to make it too easy for a patentee to survive a motion to dismiss.<sup>321</sup> All the patentee must do is write a

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316. *Ashcroft v. Iqbal*, 556 U.S. 662, 679 (2009).

317. *Aatrix*, 882 F.3d at 1129.

318. U.S. Patent Nos. 8,984,393, 7,171,615 (both claiming a priority date of March 26, 2002).

319. For some sources that would support taking judicial notice of the conventionality of using a data file from a database to populate forms, see, for example, C.J. DATE, AN INTRODUCTION TO DATABASE SYSTEMS 48 (8th ed. 2004) (noting that a database “is often built on top of some kind of file manager,” allowing a user to “perform simple retrieval . . . operations on stored records in such files” (emphasis omitted)), and DAVID M. KROENKE & DAVID J. AUER, DATABASE PROCESSING: FUNDAMENTALS, DESIGN, AND IMPLEMENTATION 15 (12th ed. 2012) (listing various types of database applications and noting that “[a]ll of these . . . applications . . . may create forms and reports, or they may send their results to other programs”). See also Wikipedia, Database, <https://en.wikipedia.org/wiki/Database> [<https://perma.cc/VA4R-JFYK>] (last modified Oct. 3, 2018) (listing as a primary function of a database, “Retrieval – Providing information in a form directly usable or for further processing by other applications. The retrieved data may be made available in a form basically the same as it is stored in the database or in a new form obtained by altering or combining existing data from the database.”).

320. Judge Reyna dissented from the panel’s ruling for precisely that reason. See *Aatrix*, 882 F.3d at 1131 (Reyna, J., concurring in part and dissenting in part) (“[W]e [should not] prejudge whether the [amended complaint] survives a Rule 12(b)(6) motion to dismiss in the first instance, particularly when the defendant . . . has had no opportunity to present arguments with respect to the new pleading.”).

321. In an opinion concurring in the denial of the petition for rehearing en banc, Judge Moore again applied a truncated, one-step analysis under Rule 12(b)(6). *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 890 F.3d 1354, 1358 (Fed. Cir. 2018) (Moore, J., concurring in the denial of the petition for rehearing en banc) (concluding that because “nothing in the limited record we could

complaint asserting that its patent is inventive, in that it does more than apply knowledge or techniques that are conventional in the field. Under *Aatrix*, those allegations will be assumed to be true and will prevent dismissal, even if they seem farfetched,<sup>322</sup> and possibly even if the intrinsic record (such as the patent's specification) indicates that the patent actually lacks the required inventive concept.<sup>323</sup>

Another problematic aspect of *Aatrix* is that, just like *Berkheimer*, it is in tension with prior Federal Circuit case law. Earlier in the Article, I criticized two Federal Circuit eligibility decisions that reversed pleading-stage dismissals, *McRO* and *Visual Memory*, because, rather than remanding to allow the accused infringer to develop a factual record in support of its ineligibility defense, the Federal Circuit definitively decided eligibility in favor of the patentee as a matter of law.<sup>324</sup> The ruling in *Aatrix* is consistent with my criticism of *McRO* and *Visual Memory*: in *Aatrix*, unlike in those cases, the court did not definitively resolve the question of eligibility; it held only that the amended complaint precluded a ruling of ineligibility at the 12(b)(6) stage.<sup>325</sup> But the decision in *Aatrix* to remand for further fact

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consider at the Rule 12(b)(6) stage refuted" the complaint's allegations about inventiveness, "there was no legal basis to affirm the dismissal of the complaint").

322. See, e.g., *GroupChatter, LLC v. Agile Sports Techs., Inc.*, No. 8:18CV35, slip op. at 16 (D. Neb. June 20, 2018) (post-*Aatrix* decision denying a motion to dismiss based on the complaint's allegations of inventiveness and without assessing the plausibility of those allegations, noting that "at this stage of the proceedings, the Court, though dubious of [the patentee's] allegations, accepts [the patentee's] factual contentions and finds an ordered combination that is sufficient to create an inventive concept"); *Kaniadakis v. Salesforce.com, Inc.*, No. 8:17-cv-1346, slip op. at 1–2 (M.D. Fla. Oct. 9, 2018) (noting that "[u]pon review of the operative complaint . . . , the Court's first instinct was to grant the motion to dismiss, primarily because the patent is poorly written as a matter of English usage, and it is difficult to decipher exactly what it does from a concrete 'invention' standpoint" but concluding that the complaint met the "low bar" set by *Aatrix* for "surviv[ing] a § 101 eligibility analysis under Rule 12(b)(6)").

323. As Judge Reyna noted in dissent in *Aatrix*: "One effect of [the majority's] approach is that a plaintiff facing a 12(b)(6) motion may simply amend its complaint to allege extrinsic facts that, once alleged, must be taken as true, regardless of its consistency with the intrinsic record." *Aatrix*, 882 F.3d at 1130 (Reyna, J., concurring in part and dissenting in part). Fortunately, in at least one post-*Aatrix* eligibility opinion, the Federal Circuit has acknowledged the plausibility requirement. See *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1169 (Fed. Cir. 2018) (noting, in affirming a judgment on the pleadings of ineligibility, that the complaint contained "no factual allegations from which one could plausibly infer" an inventive concept). Nevertheless, some district courts have refused to even consider the "inventive concept" question at the pleading stage because of the mere potential for the case to raise the fact questions identified by the Federal Circuit in *Berkheimer* and *Aatrix*. See, e.g., *Kroy IP Holdings, LLC v. Groupon, Inc.*, No. 17-1405, 2018 WL 4905595, at \*31 (D. Del. Oct. 9, 2018) (finding that the patent was directed to an abstract idea but denying the defendant's motion to dismiss without conducting any analysis under step two of the *Alice* test; the magistrate judge asserted that "questions of fact remain as to whether the asserted claims . . . were conventional at the time of the patent" but did not explain what those questions were), *report and recommendation adopted by* No. 17-1405 (MN), 2018 WL 5724013 (D. Del. Nov. 1, 2018).

324. See *supra* notes 213–19 and accompanying text.

325. See *Aatrix*, 882 F.3d at 1129.

development is in obvious tension with *McRO* and *Visual Memory*, which held inventions to be patent eligible as a matter of law at the pleading stage without giving the defendant an opportunity to present facts in support of its defense.

A final flaw in the *Aatrix* opinion is that it contributes to ongoing confusion about how to handle issues of claim construction that arise on pleading-stage eligibility motions. In its opinion, the Federal Circuit noted that “[i]f there are claim construction disputes at the Rule 12(b)(6) stage,” a court has two options: it can either “resolve the disputes to whatever extent is needed to conduct the § 101 analysis” or it can “adopt[] the non-moving party’s constructions.”<sup>326</sup> For reasons I will explain shortly, the first option—construing the claims in order to conduct the eligibility analysis—can be difficult for a court to do without moving beyond the pleadings, though the Federal Circuit has done it in some cases.<sup>327</sup>

The second approach—adopting the patentee’s proposed claim construction—is a more common practice in both the Federal Circuit<sup>328</sup> and the district courts.<sup>329</sup> On first glance, that practice appears consistent with the general notion that the court should read the complaint in favor of the plaintiff when deciding a motion to dismiss.<sup>330</sup> And it makes sense as a policy matter, at least to the extent we think of eligibility as a quick look test for disposing of only the most blatantly invalid patents.<sup>331</sup>

Yet, as I explain next, neither of the procedural approaches to claim construction suggested in *Aatrix* are easy to justify as a matter of the existing doctrine governing the issue of claim construction itself. To embrace either approach would require the Federal Circuit to recognize that claim construction is a much more fact-driven exercise than its current case law indicates. Such a change to claim construction law would, interestingly, have several benefits for the patent system more broadly: it would increase appellate deference to district court interpretations of patent claims, increase the predictability of litigation outcomes, and decrease litigation costs.

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326. *Id.* at 1125.

327. *See infra* note 335.

328. *See, e.g.,* Content Extraction & Transmission LLC v. Wells Fargo Bank, 776 F.3d 1343, 1349 (Fed. Cir. 2014) (“[E]ven when construed in a manner most favorable to [the patentee], none of [the] claims amount to ‘significantly more’ than the abstract idea of extracting and storing data from hard copy documents using generic scanning and processing technology.”).

329. *See, e.g.,* Cogent Med., Inc. v. Elsevier Inc., 70 F. Supp. 3d 1058, 1065 (N.D. Cal. 2014) (“[U]sing the constructions most favorable to [the patentee], the ‘879 Patent claims no more than a computer automation of what ‘can be performed in the human mind, or by a human using a pen and paper.’” (quoting *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372 (Fed. Cir. 2011))).

330. *See supra* note 267 and accompanying text.

331. *See Vishnubhakat, supra* note 119, at 72.

*D. The Role of Claim Construction in the Eligibility Analysis*

After quickly recapping what courts have said about the role of claim construction in deciding patent eligibility, this section shows how that case law underscores the factual nature of the claim construction task. If the Federal Circuit viewed claim construction to more frequently involve questions of fact, rather than as a pure question of law (which is the court's usual practice), patent litigation would be changed profoundly, and probably for the better. It would also make the assessment of patent eligibility more consistent with the general principles of pleading law discussed above, which give the patentee the benefit of the doubt on questions of fact but not on questions of law.

*1. The Prevailing Approach: Give the Patentee the Benefit of the Doubt.*—As discussed, early Federal Circuit cases suggested that claim construction was, if not required, at least strongly recommended before resolving patent eligibility.<sup>332</sup> However, for as long as district courts have been deciding eligibility on the pleadings, they have also claimed the flexibility not to do formal claim construction if there is no plausible reading of the patent's claims under which the patentee could prevail.<sup>333</sup> In *Aatrix*, consistent with prior Federal Circuit opinions, the court embraced that approach of reading the claims in the manner most favorable to the patentee.<sup>334</sup> In another line of eligibility cases, however, the Federal Circuit has simply construed the claims itself on appeal rather than giving the patentee the benefit of the doubt.<sup>335</sup>

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332. See, for example, *Bancorp Services, L.L.C. v. Sun Life Assurance Co. of Canada (U.S.)*, 687 F.3d 1266 (Fed. Cir. 2012), in which the Federal Circuit stated:

[C]laim construction is not an inviolable prerequisite to a validity determination under § 101. We note, however, that it will ordinarily be desirable—and often necessary—to resolve claim construction disputes prior to a § 101 analysis, for the determination of patent eligibility requires a full understanding of the basic character of the claimed subject matter.

*Id.* at 1273–74.

333. See, e.g., *DietGoal Innovations LLC v. Bravo Media LLC*, 33 F. Supp. 3d 271, 289 (S.D.N.Y. 2014) (“Nor would claim construction shed light on any dispositive legal issue; the . . . [p]atent is invalid under § 101, under any reasonable construction.”), *aff’d*, 599 F. App’x 956 (Fed. Cir. 2015) (per curiam).

334. See *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1125 (Fed. Cir. 2018); see also *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1352 (Fed. Cir. 2016) (“[C]onstrued in favor of [the patentee] as they must be in this procedural posture, the claims of the ‘606 patent do not preempt the use of the abstract idea of filtering content on the Internet or on generic computer components performing conventional activities.”).

335. See, e.g., *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1311 (Fed. Cir. 2016) (observing that, “in this case, claim construction is helpful to resolve the question of patentability under § 101” and adopting the claim construction urged by the patentee); *Bancorp*, 687 F.3d at 1274 (“Although the district court declined to construe the claims, that does not preclude us from making that legal determination on appeal.”).

2. *The Factual Nature of Claim Construction.*—Under the prevailing doctrine on claim construction, combined with general principles of pleading law, it is arguably improper for courts to slant claim meaning in the patentee’s favor when resolving eligibility on the pleadings. Some background will help illuminate that argument. In the *Teva* case discussed above,<sup>336</sup> the Supreme Court overturned Federal Circuit case law that had treated claim construction as entirely a question of law and instead held that claim construction can in some circumstances involve factual inquiries.<sup>337</sup> Yet the Supreme Court also made clear that claim construction remains a purely legal issue if it is unnecessary to consult extrinsic evidence, such as expert testimony, dictionaries, or scientific literature, to determine claim meaning.<sup>338</sup> Perhaps not surprisingly, most Federal Circuit decisions after *Teva* continue to treat claim construction as a legal question subject to *de novo* review.<sup>339</sup> The Federal Circuit frequently downplays factual considerations, even in cases in which the district court considered extrinsic evidence in the course of construing the claims.<sup>340</sup> Indeed, in its claim construction rulings, the Federal Circuit has often denigrated the salience of extrinsic evidence as compared to the intrinsic record (that is, the patent’s claims, specification, and prosecution history).<sup>341</sup>

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336. See *supra* notes 251–53 and accompanying text.

337. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 839, 841 (2015) (overruling, among other decisions, *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1455–56 (Fed. Cir. 1998) (en banc)).

338. *Id.* at 841.

339. See Jason Rantanen, *Teva, Nautilus, and Change Without Change*, 18 STAN. TECH. L. REV. 430, 448–51 (2015) (collecting examples); Sheri L. Gordon & Larry S. Nixon, *Claim Construction Post-Teva: 1st Year of Fed. Circ. Review*, LAW360 (Mar. 8, 2016), <https://www.law360.com/articles/766331/claim-construction-post-teva-1st-year-of-fed-circ-review> [<https://perma.cc/WW6W-5WKY>] (same); see also Richard Zhang, *Fed. Circ. Applies Teva Deference in 2 Types of Cases*, LAW360 (May 16, 2018), <https://www.law360.com/ip/articles/1042052/fed-circ-applies-teva-deference-in-2-types-of-cases> [<https://perma.cc/GJR2-G55Q>] (finding that, in the three years following *Teva*, the Federal Circuit applied a deferential standard of review in only eight of the twenty-four claim construction decisions that involved extrinsic evidence).

340. See, e.g., *CardSoft, LLC v. VeriFone, Inc.*, 807 F.3d 1346, 1350 (Fed. Cir. 2015) (holding that “the district court must have actually made a factual finding in order to trigger *Teva*’s deferential review” and that the Federal Circuit may ignore “findings on [extrinsic] evidence” and review claim construction *de novo* as a question of law “if the intrinsic record fully determines the proper scope of the disputed claim terms” (alteration in original) (quoting *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1297 (Fed. Cir. 2015))); *Eidos Display, LLC v. AU Optronics Corp.*, 779 F.3d 1360, 1365 (Fed. Cir. 2015) (applying a *de novo* standard of review, noting that “[t]o the extent the district court considered extrinsic evidence in its claim construction order or summary judgment order, that evidence is ultimately immaterial to the outcome because the intrinsic record is clear”); see also MERGES & DUFFY, *supra* note 15, at 704 (“Not surprisingly, given its prior preference to review claim constructions *de novo*, the Federal Circuit has taken the position that district courts should not often resort to extrinsic evidence.”).

341. See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1319 (Fed. Cir. 2005) (en banc) (“[E]xtrinsic evidence may be useful to the court, but it is unlikely to result in a reliable interpretation of patent



As discussed above, on a motion to dismiss, general principles of pleading law dictate that the plaintiff does not receive the benefit of the doubt on questions of law, only on questions of fact.<sup>342</sup> Thus, if the Federal Circuit is correct that claim construction usually remains a pure question of law, courts deciding eligibility disputes at the pleadings stage should not construe claims in favor of the plaintiff/patentee. Rather, they should normally use the other option listed in *Aatrix*: simply performing the *legal* task of claim construction when deciding the motion to dismiss. Under general principles of pleading law, courts would slant the analysis in the patentee's favor only when factfinding based on extrinsic evidence is necessary to understand claim meaning, which, under Federal Circuit precedent on claim construction, is a rare occurrence.

From a normative standpoint, however, it would not be ideal to have district judges rule on claim meaning based on the complaint and the patent alone. Claim construction is a complex and contentious question, and it is often the most important issue in a patent case.<sup>343</sup> Despite the Federal Circuit's skepticism of extrinsic evidence, the reality is that, before interpreting patent claims, district judges regularly consider expert testimony and affidavits, technology tutorials presented by the parties, and even the advice of court-appointed technical advisors.<sup>344</sup> The technologically complex and esoterically written patent document is simply too difficult for a generalist judge to understand without that extra help.

Accordingly, the courts that give the patentee the benefit of the doubt on claim meaning when deciding pleading-stage eligibility motions are, as a matter of pure policy, sensibly waiting to construe the claims until the evidentiary record is more complete. But, as noted, that practice is hard to square with the Federal Circuit's current precedent on claim construction, which downplays the salience of facts. The key point, then, is this: the procedural uncertainty about how to resolve disputes over claim construction on pleading-stage eligibility motions arguably highlights shortcomings in the law of claim construction itself. If the judge cannot (or will not) construe the claims by simply reading the patent and without considering extrinsic

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claim scope unless considered in the context of the intrinsic evidence.”).

342. See *supra* notes 268–69.

343. See Greg Reilly, *Patent “Trolls” and Claim Construction*, 91 NOTRE DAME L. REV. 1045, 1051 (2016).

344. See PETER S. MENELL ET AL., PATENT CASE MANAGEMENT JUDICIAL GUIDE 5-15 to -21 (3d ed. 2016). For a recent opinion by a magistrate judge recognizing the importance of extrinsic evidence to the question of claim construction in an eligibility dispute, see *Kroy IP Holdings, LLC v. Groupon, Inc.*, No. CV 17-1405-MN-SRF, 2018 WL 4905595, at \*16 (D. Del. Oct. 9, 2018) (“In the case at bar, . . . issues of claim construction could potentially bear on the [eligibility] analysis. Consequently, I recommend that the court deny Groupon’s motion to dismiss pending consideration of additional evidence outside the scope of the pleadings.”), *report and recommendation adopted by* No. 17-1405 (MN), 2018 WL 5724013 (D. Del. Nov. 1, 2018).

evidence, then it seems doubtful to say, as the Federal Circuit's case law suggests, that claim construction usually presents a pure question of law. Courts' hesitance about performing claim construction on the pleadings, in other words, highlights the often-factual nature of the claim construction exercise.<sup>345</sup>

Indeed, although the Federal Circuit's precedent in disputes over claim construction suggests that the exercise is mostly a matter of law, the court seems more inclined to acknowledge that determining claim meaning involves factual inquiries when the court is not reviewing a claim construction order as such. For example, in *Aatrix*, as discussed, the court stated that it can be appropriate at the pleading stage to read a patent's claims in the light most favorable to the plaintiff—a mode of analysis usually limited to questions of fact, not law. Likewise, in a recent case that involved the sufficiency of a complaint's allegations of infringement, the Federal Circuit criticized a district court for not drawing inferences about claim meaning in favor of the patentee—a mode of analysis that is, again, appropriate for questions of fact but not for questions of law.<sup>346</sup>

To be sure, in some eligibility cases, the court might avoid construing the claims not because questions of fact exist, but because the patentee has not offered any proposed claim construction at all. In a case such as that, the patentee might be worried that any claim construction sufficiently narrow to satisfy the eligibility requirement will not be sufficiently broad to establish that the defendant infringes.<sup>347</sup> But other courts have absolved patentees from proposing claim constructions at the pleading stage, reasoning (correctly under general principles of pleading law) that the burden is on *the defendant* to show that there is no plausible reading of the patent under which the claimed invention satisfies the eligibility requirement.<sup>348</sup> In any event, in

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345. See Dan L. Burk & Mark A. Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction*, 157 U. PA. L. REV. 1743, 1755–56 (2009) (discussing “[t]he fiction that claim construction is a question of legal interpretation for judges, not an exercise in understanding technology”).

346. See *Nalco Co. v. Chem-Mod, LLC*, 883 F.3d 1337, 1350 (Fed. Cir. 2018) (“It is not appropriate to resolve these disputes . . . without the benefit of claim construction. . . . The plausibility standard . . . ‘simply calls for enough *fact* to raise a reasonable expectation that discovery will reveal evidence’ to support the plaintiff’s allegations.” (emphasis added) (quoting *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 556 (2007))).

347. For a possible example, see *Whitepages, Inc. v. Isaacs*, 196 F. Supp. 3d 1128, 1135 (N.D. Cal. 2016) (noting that the patentee “neither explained how any particular construction would alter the section 101 analysis, nor proposed any constructions that might be viewed in a favorable light given the posture of this motion”), *aff’d*, 698 F. App’x 613 (Fed. Cir. 2017) (per curiam). This tension between validity (for which a narrow claim construction is helpful) and infringement (for which a broad claim construction is helpful) is a fundamental feature of patent litigation. As patent jurist Giles Rich famously quipped, “The stronger a patent the weaker it is and the weaker a patent the stronger it is.” Giles S. Rich, *The Proposed Patent Legislation: Some Comments*, 35 GEO. WASH. L. REV. 641, 644 (1967).

348. See, e.g., *Data Distribution Techs., LLC v. BRER Affiliates, Inc.*, No. 12-4878

many cases, the patentee *has* offered a proposed claim construction at the pleading stage, and courts have, as noted, adopted that claim construction for the purpose of deciding eligibility—a mode of analysis that is inappropriate if claim construction usually presents a pure question of law.

If the suggestion in *Aatrix* that the court, in deciding eligibility at the pleading stage, should adopt a construction favorable to the patentee is hard to justify as a matter of claim construction doctrine, what about the other approach mentioned in the opinion: construing the claims to the extent needed to conduct an eligibility analysis? The Federal Circuit noted that this could be “less than a full, formal claim construction,”<sup>349</sup> perhaps suggesting that a court could issue a *tentative* construction, good for the pleading-stage eligibility motion only. A potential analogy is to preliminary injunction cases, in which the Federal Circuit has held that any claim construction on the preliminary injunction motion is not binding in subsequent proceedings.<sup>350</sup> While a “tentative” approach to claim construction, like reading the claims in favor of the patentee, makes sense as a policy matter, it, too, is hard to square with the notion of claim construction as a mostly legal inquiry. In its preliminary injunction cases, the Federal Circuit has emphasized that “courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves.”<sup>351</sup> That conception of altering claim construction based on *changed understanding of technology* makes the exercise of determining claim meaning, again, sound factual, not legal.

In short, if claim meaning were treated as the fact-driven issue it often appears to be, the correct approach to resolving disputes about claim construction on pleading-stage eligibility motions would be clearer. The patentee would usually receive the benefit of the doubt, but early dismissal would remain appropriate if there is no plausible reading of the patent that would satisfy the eligibility test. Though the Federal Circuit in *Aatrix* endorsed resolving claim construction in that fashion, it stopped short of saying that resolving doubts in favor of the patentee is justified *because of* claim construction’s factual underpinnings. But explicitly recognizing the often-factual nature of claim construction would increase the appellate deference given to district court decisions in many patent cases and remove

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(JBS/KMW), 2014 WL 4162765, at \*7 (D.N.J. Aug. 19, 2014) (denying motion to dismiss on eligibility grounds, noting that, although the patentee “has not provided proposed constructions,” it “has no obligation to do so at this time”); *see also* 5B WRIGHT & MILLER, *supra* note 267, § 1357 (“All federal courts are in agreement that the burden is on the moving party to prove that no legally cognizable claim for relief exists.”); *id.* n.14 (collecting cases).

349. *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1125 (Fed. Cir. 2018).

350. *E.g.*, *Jack Guttman, Inc. v. Kopykake Enters., Inc.*, 302 F.3d 1352, 1361 (Fed. Cir. 2002).

351. *Id.*

a widely recognized source of cost and uncertainty in patent litigation more generally.<sup>352</sup>

*E. Applying the Presumption of Validity to the Eligibility Analysis*

The preceding discussion of the distinction between law and fact leads to a final question about eligibility procedure that has deeply divided the lower courts, including judges and panels of the Federal Circuit: in determining patent eligibility, does the statutory presumption of validity apply? This section outlines the various perspectives on that issue and, building on the Federal Circuit's recent decisions in *Berkheimer* and *Aatrix*, sketches a modest role for the presumption of validity in eligibility cases.

*1. The Presumption of Validity and How Courts Have Applied It (or Not) in Eligibility Decisions.*—Section 282(a) of the Patent Act states, simply, that “[a] patent shall be presumed valid.”<sup>353</sup> The Supreme Court confirmed in its 2011 decision in *Microsoft Corp. v. i4i Ltd. Partnership*<sup>354</sup> that the presumption requires a patent challenger to prove invalidity by clear and convincing evidence.<sup>355</sup> In a concurring opinion attempting to clarify the scope of the presumption, Justice Breyer suggested that the presumption applies only to questions of fact underlying the validity inquiry, not to the overall legal question of patent validity.<sup>356</sup> In practice, however, most courts simply apply the presumption to the overall question of validity, as the majority opinion in *i4i* suggested was proper.<sup>357</sup> On nonobviousness, for example, courts often instruct the jury that patents are presumed valid and that the challenger must therefore prove invalidity by clear and convincing evidence.<sup>358</sup> But then, rather than allowing the jury to decide only subsidiary factual questions, courts will often let the jury render a general verdict on

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352. For a thorough explication of this argument in favor of increased appellate deference to district court claim construction rulings, see J. Jonas Anderson & Peter S. Menell, *Informal Deference: A Historical, Empirical, and Normative Analysis of Patent Claim Construction*, 108 NW. U. L. REV. 1, 70 (2013) (noting that de novo review of claim construction as a question of law can lead to, among other effects, “lower quality decisionmaking at both the trial and appellate levels, higher costs of litigation as a result of more appeals and retrials following reversals, greater uncertainty regarding the litigation, [and] longer case pendency and litigation costs as a result of fewer and delayed settlements”).

353. 35 U.S.C. § 282(a) (2012).

354. 564 U.S. 91 (2011).

355. *Id.* at 95.

356. *Id.* at 114 (Breyer, J., concurring) (“Where the ultimate question of patent validity turns on the correct answer to legal questions—what these subsidiary legal standards mean or how they apply to the facts as given—today’s strict standard of proof has no application.”).

357. *Id.* at 111 (majority opinion) (referring to “the challenger’s burden to persuade the jury of its invalidity defense by clear and convincing evidence”).

358. *E.g.*, FED. CIRCUIT BAR ASS’N, *supra* note 221, § 4.1.

validity.<sup>359</sup> That verdict is of course subject to review by the judge on a post-trial motion for judgment as a matter of law. But if the verdict being reviewed is a general one, as it often is, separating factual considerations from legal conclusions (and applying the presumption of validity as Justice Breyer envisions) can be nearly impossible.<sup>360</sup>

The Federal Circuit in *Berkheimer* appeared to adopt Justice Breyer's approach of identifying a narrow, fact-centered role for the presumption of validity in the analysis of patent eligibility, stating that, because "[t]he question of whether a claim element or combination of elements is well-understood, routine and conventional to a skilled artisan" is a question of fact, it "must be proven by clear and convincing evidence."<sup>361</sup> But older Federal Circuit case law appeared to apply the presumption of validity to the overall *legal* conclusion of eligibility. For instance, I discussed above the Federal Circuit's 1992 decision in *Arrhythmia Research*, a rare pre-*Berkheimer* opinion that recognized eligibility's potential factual underpinnings.<sup>362</sup> Though the court determined that, on the record before it, "there were no disputed facts material to the issue," Judge Newman's opinion for the court nevertheless cited § 282 and stated that the Federal Circuit would review the district court's decision de novo, "with appropriate recognition of the burdens on the challenger of a duly issued United States patent."<sup>363</sup> Similarly, although the en banc Federal Circuit splintered on the merits in the *Alice* case, a majority of the court's judges actually agreed that the presumption of validity applied to the eligibility inquiry, despite appearing to view the issue

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359. See, e.g., *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1356 (Fed. Cir. 2001) (upholding a general jury verdict of obviousness); see also Mark A. Lemley, *Why Do Juries Decide If Patents Are Valid?*, 99 VA. L. REV. 1673, 1690 (2013) ("Today we tend to give juries responsibility for deciding ultimate questions [of validity] as long as those questions involve issues of fact."). Many model patent jury instructions allow the jury to render the ultimate decision on obviousness. E.g., AM. INTELLECTUAL PROP. LAW ASS'N, *supra* note 221, §§ 4, 7 (noting only that "[c]areful consideration should be given to the Court's and the jury's respective roles in determining" obviousness); FED. CIRCUIT BAR ASS'N, *supra* note 221, § 4.3c. One exception is the model patent jury instructions for the Northern District of California, which make clear that the ultimate question of obviousness should be resolved by the judge. N.D. CAL. MODEL PATENT JURY INSTRUCTIONS, *supra* note 221, § 4.3b.

360. See *McGinley*, 262 F.3d at 1363 (Michel, J., dissenting) ("I am concerned that after reading the majority opinion, trial courts and our panels will hereafter consider . . . general verdicts on obviousness immune from meaningful review and that serious legal errors by juries will thus go uncorrected."); see also *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1075 (Fed. Cir. 2016) (en banc) (Dyk, J., dissenting) (arguing that, by upholding a general verdict rejecting an obviousness challenge, "the majority turns the legal question of obviousness into a factual issue for a jury to resolve").

361. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018), *petition for cert. filed*, No. 18-415 (U.S. Sept. 28, 2018).

362. *Arrhythmia Research Tech., Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1056 (Fed. Cir. 1992); see also *supra* notes 201–03 and accompanying text.

363. *Arrhythmia Research*, 958 F.2d at 1056.

as lacking any factual aspects.<sup>364</sup> A subsequent Federal Circuit panel opinion took a similar approach,<sup>365</sup> and some district court opinions have likewise indicated that the presumption applies to the eligibility analysis even when eligibility is considered to present a purely legal question.<sup>366</sup>

In contrast to these decisions embracing a broad role for the presumption of validity, other judges and panels of the Federal Circuit have taken the opposite approach—also in tension with *Berkheimer*—expressing doubt about whether the presumption of validity is relevant to the eligibility analysis at all. For instance, in a concurring opinion in *Ultramercial III* (the one Federal Circuit opinion in that litigation the Supreme Court did *not* vacate), Judge Mayer argued that the presumption was entirely irrelevant.<sup>367</sup> He reached that conclusion not because eligibility lacked factual aspects, but because of the policy rationale that the Patent Office “has for many years applied an insufficiently rigorous subject matter eligibility standard” and because the Supreme Court “has never mentioned—much less applied—any presumption of eligibility” in its § 101 decisions.<sup>368</sup> Other Federal Circuit panels deciding eligibility issues before *Berkheimer* similarly raised the possibility that the presumption might not apply.<sup>369</sup> And a handful of district

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364. *CLS Bank Int’l v. Alice Corp.*, 717 F.3d 1269, 1276, 1284 (Fed. Cir. 2013) (en banc) (Lourie, J., concurring) (“[I]t bears remembering that all issued patent claims receive a statutory presumption of validity.”), *aff’d*, 134 S. Ct. 2347 (2014); *id.* at 1304 (Rader, C.J., concurring in part and dissenting in part) (“[W]e believe the presumption of validity applies to all challenges to patentability, including those under Section 101 and the exceptions thereto . . .”). For additional examples of the Federal Circuit applying presumptions to questions of law, see Timothy R. Holbrook, *Patents, Presumptions, and Public Notice*, 86 IND. L.J. 779, 821–22 (2011) (discussing various presumptions the court has employed in determining claim construction and noting that “it seems strange to speak of . . . presumptions in an inquiry that is entirely a legal analysis”).

365. *Tranxition, Inc. v. Lenovo Inc.*, 664 F. App’x 968, 972 n.1 (Fed. Cir. 2016) (“We are not persuaded that the district court was correct that a presumption of validity does not apply.”).

366. *See DietGoal Innovations LLC v. Bravo Media LLC*, 33 F. Supp. 3d 271, 277 (S.D.N.Y. 2014) (“The determination of whether a claim is drawn to patent-eligible subject matter is a pure question of law. . . . The party challenging the validity of a patent bears the burden of proving invalidity by clear and convincing evidence.” (internal quotation marks and citations omitted)), *aff’d*, 599 F. App’x 956 (Fed. Cir. 2015) (per curiam); *Lumen View Tech. LLC v. Findthebest.com, Inc.*, 984 F. Supp. 2d 189, 204 (S.D.N.Y. 2013) (stating that “[w]hether a patent is valid under Section 101 is a pure question of law” but concluding that “[i]t is evident by clear and convincing evidence that the patent is invalid”).

367. *Ultramercial III*, 772 F.3d 709, 720 (Fed. Cir. 2014) (Mayer, J., concurring) (“[N]o presumption of eligibility should attach when assessing whether claims meet the demands of section 101.”).

368. *Id.* at 720–21.

369. *See, e.g., Trading Techs. Int’l, Inc. v. CQG, Inc.*, 675 F. App’x 1001, 1004 n.2 (Fed. Cir. 2017) (“The parties dispute whether the district court erred in requiring proof of ineligibility under § 101 by clear and convincing evidence. Because our review is de novo, and because under either standard the legal requirements for patentability are satisfied, we need not address this dispute.”).

court opinions, also decided before *Berkheimer*, explicitly refused to apply the presumption of validity when deciding eligibility.<sup>370</sup>

Even after *Berkheimer*, confusion about the presumption's role has persisted in the district courts. On a single day in July 2018, two district courts entered orders deciding motions for attorneys' fees under 35 U.S.C. § 285<sup>371</sup> in cases in which the underlying patents had been invalidated for lacking eligibility. One court granted the motion for attorneys' fees, noting that "[a]lthough issued patents are presumed valid, they are not presumed eligible under Section 101."<sup>372</sup> The other court, by contrast, denied the motion for attorneys' fees, emphasizing that "[n]o matter how weak the [p]atents appeared at the time the case was filed, they were entitled to a presumption of validity" when challenged under § 101.<sup>373</sup>

2. *A Modest Role for the Presumption of Validity.*—Despite ongoing confusion in the district courts, the Federal Circuit's opinion in *Berkheimer*, read in light of *i4i*, appears to remove some of the ambiguity in the case law about the presumption of validity. The Supreme Court's opinion in *i4i*, though less than pellucid on this point, can be read to suggest that the presumption is triggered only when the validity analysis entails factfinding,<sup>374</sup> and in *Berkheimer*, the Federal Circuit made clear that deciding eligibility can entail factfinding about whether a claimed invention is impermissibly "conventional." Yet providing a more complete picture of the presumption of validity's role in eligibility analysis requires answering two difficult definitional questions.

First, what, precisely, *are* the fact questions embedded in the eligibility analysis that would trigger the presumption? We know from *Berkheimer* that

370. See, e.g., *Wireless Media Innovations, LLC v. Maher Terminals, LLC*, 100 F. Supp. 3d 405, 411 (D.N.J. 2015) ("With no authoritative law binding the Court as to an applicable standard, the Court adopts Judge Mayer's approach [from *Ultramercial III*] and will not afford Plaintiff's Patents the presumption of subject matter eligibility."), *aff'd*, 636 F. App'x 1014 (Fed. Cir. 2016) (per curiam); *OpenTV, Inc. v. Apple, Inc.*, No. 14-cv-1622-HSG, 2015 WL 1535328, at \*3 (N.D. Cal. Apr. 6, 2015) (similar).

371. 35 U.S.C. § 285 (2012) ("The court in exceptional cases may award reasonable attorney fees to the prevailing party."); see also *supra* note 23 (discussing recent Supreme Court case law making it easier for parties to recover attorneys' fees in patent cases).

372. *Cellspin Soft, Inc. v. Fitbit, Inc.*, No. 4:17-CV-5928-YGR, 2018 WL 3328164, at \*4 (N.D. Cal. July 6, 2018) (citing *Ultramercial III*, 772 F.3d at 721 (Mayer, J., concurring)), *appeal docketed*, No. 18-2178 (Fed. Cir. July 23, 2018).

373. *Sweepstakes Patent Co. v. Mosely*, No. 14-cv-62354, slip op. at 3 (S.D. Fla. July 6, 2018).

374. See *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 96–97 (2011) (emphasizing the factual underpinnings of various invalidity defenses); see also LAWSON, *supra* note 168, at 46 ("When garden-variety questions of domestic law are at issue, the American legal system does not generally use the language and concepts that dominate discussion of questions of fact. Almost no one . . . speaks of proof, evidence, admissibility, standards of proof, [or] burdens of proof . . . in connection with questions of law . . .").

the Federal Circuit considers the question of whether claimed activity is “well-known” or “conventional”—part of the second step of the analysis under *Alice*—to be a question of fact. Similarly, aspects of the first step of *Alice* seem factual, such as whether the claimed invention is something that occurs in nature<sup>375</sup> or is an abstract idea because it is a “fundamental” or “long prevalent” economic practice.<sup>376</sup> One catch, however, is that the Federal Circuit often says that the way to determine whether a patent is directed to an abstract idea in particular is to compare the patent to the patents involved in prior decisions by the Federal Circuit and the Supreme Court—a mode of analysis that seems legal, not factual.<sup>377</sup> Thus, whether the first step of the *Alice* analysis entails factual questions might depend on the precise judicial exception to eligibility at issue: determining whether a claimed invention occurs in nature might be a question of fact; determining whether a patent claims an abstract idea might be a question of law.<sup>378</sup>

The second question is which *types of evidence* relevant to the eligibility question trigger an actual, factual dispute to which the presumption would apply? In *Berkheimer*, the court held that statements in the specification alone created a factual dispute suitable for trial—an aspect of the decision I criticized above as inconsistent with Supreme Court case law and as inefficient more generally.<sup>379</sup> If my argument is correct that factual disputes arise only when the court is deciding eligibility based on *extrinsic evidence*, then the Federal Circuit was wrong to suggest in *Berkheimer* that the

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375. See, e.g., *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 590–91 (2013).

376. See, e.g., *Bilski v. Kappos*, 561 U.S. 593, 611 (2010).

377. See, e.g., *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016) (“The Supreme Court has not established a definitive rule to determine what constitutes an ‘abstract idea’ . . . . Rather, both this court and the Supreme Court have found it sufficient to compare claims at issue to those claims already found to be directed to an abstract idea in previous cases.” (citation omitted)); see also *MANUAL OF PATENT EXAMINING PROCEDURE*, *supra* note 144, § 2106.04(a) (“[T]he courts have declined to define abstract ideas. Instead, they have often identified abstract ideas by referring to earlier precedent, e.g., by comparing a claimed concept to the concepts previously identified as abstract ideas by the courts.”).

378. A recent Supreme Court decision grappling with the appropriate standard of appellate review for mixed questions of law and fact provides a helpfully analogous framework. In *U.S. Bank National Ass’n v. Village at Lakeridge, LLC*, the Court ruled that the applicable standard of review turns on whether “answering [the mixed question] entails primarily legal or factual work.” 138 S. Ct. 960, 967 (2018). If “applying the law involves developing auxiliary legal principles of use in other cases,” the standard of review is *de novo* (as it would be for a pure question of law). *Id.* But if answering the mixed question “immerse[s]” the court in “case-specific factual issues,” the lower court’s decision receives deference on appeal (as would be the case for pure findings of fact). *Id.* Returning to eligibility, the determination of whether a patent is directed to an abstract idea—which entails analogizing, distinguishing, and thereby developing precedent—seems like more of a legal question; determining whether a patent is directed to something that occurs in nature seems more like the type of “case-specific” issue the Supreme Court’s case law on appellate review would treat as factual.

379. See *supra* section II(B)(2).



presumption of validity applied because that case involved only *intrinsic* evidence. When an eligibility analysis involves only evidence intrinsic to the patent, eligibility, I have argued, remains an entirely legal question—just like a claim construction or a motion to dismiss decided based entirely on intrinsic evidence.<sup>380</sup> Indeed, some district court opinions that pre-date *Berkheimer* appear to embrace a similar regime, indicating that the presumption of validity applies only when the court relies on extrinsic evidence to decide eligibility.<sup>381</sup>

In sum, the better view seems to be that the presumption of validity applies only when the eligibility analysis implicates questions of fact and—contrary to *Berkheimer*—only when the court relies on extrinsic evidence to decide those factual questions. As the discussion above illustrates, the lines between questions of law and questions of fact are not always easy to draw. In the final part of the Article, I consider whether drawing those lines is worth the cost in added complexity, and I sketch ways in which courts might reduce the importance of making fine distinctions between law and fact in close cases, including by limiting jury involvement in eligibility disputes.

### III. Rethinking the Law/Fact Boundary: Implications for Eligibility Doctrine and Beyond

This part concludes the Article by exploring the consequences of recasting the eligibility inquiry as at least partly factual. Drawing on literature skeptical of the conventional distinction between law and fact, it first

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380. See *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015) (“[W]hen the district court reviews only evidence intrinsic to the patent (the patent claims and specifications, along with the patent’s prosecution history), the judge’s determination will amount solely to a determination of law . . . .”); 5B WRIGHT & MILLER, *supra* note 267, § 1357 (noting that a “motion to dismiss under [Rule 12(b)(6)] raises only an issue of law”); see also *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1128 (Fed. Cir. 2018) (noting that the “sources properly considered on a motion to dismiss, [include] the complaint, the patent, and materials subject to judicial notice”).

381. Cf. *Affinity Labs of Tex., LLC v. Amazon.com, Inc.*, No. 6:15-CV-0029-WSS-JCM, 2015 WL 3757497, at \*5 & n.6 (W.D. Tex. June 12, 2015) (noting that “[t]o the extent that questions of fact exist, the Court will apply the clear and convincing evidence standard” and concluding that “no factual issues are present” because the court decided eligibility “without considering materials outside of the pleadings”), *report and recommendation adopted by* No. W-15-CV-029, 2015 WL 11622489 (W.D. Tex. Sept. 23, 2015), *aff’d*, 838 F.3d 1266 (Fed. Cir. 2016). Compare also *Modern Telecom Systems LLC v. Earthlink, Inc.*, No. SA CV 14-0347-DOC, 2015 WL 1239992 (C.D. Cal. Mar. 17, 2015), in which the court stated:

[T]he clear and convincing evidence standard is not necessarily applicable in the context of determining patent-eligibility under § 101, which is a question of law. . . . Because, ordinarily, no evidence outside the pleadings is considered in resolving a motion to dismiss or a motion for judgment on the pleadings, it makes little sense to apply a “clear and convincing evidence” standard—a burden of *proof*—to such motions.

*Id.* at \*7.

explains—in terms of policy—how treating eligibility as a question of law potentially based on facts should help ensure efficient and accurate patent adjudication. It then considers the institutional implications of the Article’s analysis of eligibility procedure, arguing that confusion around the law/fact boundary may be an adverse effect of centralizing appeals in the Federal Circuit.

A. *Patent Eligibility and the Myth of the Law/Fact Distinction*

One of this Article’s primary arguments is that determining patent eligibility can require courts to resolve disputes that the legal system would normally call disputes of fact, not law—a point the Federal Circuit embraced in *Berkheimer*. But, as skeptics of the law/fact distinction have pointed out, a fact, just like the law, is simply “something in the world” that the parties must prove in a given case.<sup>382</sup> As Gary Lawson has observed in his work on “proving” the law, propositions of law and propositions of fact are “epistemologically equivalent” in that they are both “object[s] of proof” in legal proceedings.<sup>383</sup> Accordingly, Lawson argues, the applicable *standards* of proof should be dictated by considerations of policy, not “epistemology or [legal] metaphysics.”<sup>384</sup> Extrapolating from that argument, a comprehensive analysis of whether the law should treat patent eligibility as a legal question, a factual one, or a mix of both must consider not only how the law would *conventionally* label the eligibility issue but also gauge the *consequences* of attaching one label or another.

Drawing on the analysis in the previous part of the Article, at least five consequences of labeling eligibility as partly factual are worth highlighting. First, labeling eligibility as factual should help courts resolve eligibility at the optimal time in any given case. Though I have suggested that a key policy function of eligibility doctrine is to provide courts with a mechanism to quickly invalidate patents that are plainly invalid, it is of course also important to ensure that courts do not rush to an inaccurate decision on an inadequate record. Treating eligibility as a purely legal question, as many courts did prior to *Berkheimer*, risks favoring speed over accuracy: a court that views eligibility as lacking any factual component can *always* resolve it on the pleadings, even if extrinsic evidence might shed light on the patent’s scope or inventiveness as compared to the prior art.

It is possible that district courts applying *Berkheimer* will push things too far in the other direction. As we saw above in the discussion of nonobviousness, if a ground of patent validity is at least partly factual, courts

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382. Ronald J. Allen & Michael S. Pardo, *The Myth of the Law-Fact Distinction*, 97 NW. U. L. REV. 1769, 1802 (2003).

383. LAWSON, *supra* note 168, at 9–10.

384. *Id.* at 10.

tend to punt the entire issue to the jury.<sup>385</sup> A similar approach to eligibility would nullify the doctrine's useful function of permitting quick decisions in easy cases. Patent law already contains numerous fact-driven doctrines, including novelty, nonobviousness, and various disclosure requirements, that are, like eligibility, designed to eradicate patents that are too broad or not sufficiently inventive. If, after *Berkheimer*, eligibility is frequently taken to trial, criticisms of eligibility doctrine's redundancy<sup>386</sup> will hold more weight than they currently do.

Thus, courts deciding eligibility post-*Berkheimer* should be careful to recognize that it is a question of law *potentially* based on facts. That would give courts flexibility to invalidate patents on the pleadings when evidence outside the pleadings is unlikely to bolster the case for eligibility. But it would also force courts to acknowledge that aspects of the *Alice* inquiry, such as the comparison of the patent to previously existing technology, can sometimes be decided more accurately on a better developed record.<sup>387</sup>

A second, related consequence of acknowledging eligibility's factual underpinnings relates to the examination process. If an examiner may only reject an application under step two of *Alice* when it claims well-understood, routine, and conventional activity, and if that determination is a question of fact, then a rejection under step two must be supported by factual evidence. As the Patent Office indicated in its post-*Berkheimer* guidance to examiners, a finding of conventionality must be supported in at least one of four ways: by "[a] citation to an express statement in the specification" indicating the conventionality of the relevant aspects of the invention, by a citation to a court decision recognizing the conventionality of those aspects, by "[a] citation to a publication that demonstrates the well-understood, routine, conventional nature of" the claimed invention, or by a statement from the examiner that the examiner is taking "official notice" of conventionality.<sup>388</sup>

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385. See *supra* notes 358–60 and accompanying text.

386. See *supra* notes 20–22 and accompanying text. But see *supra* note 121 (citing literature challenging redundancy arguments).

387. In thinking about the consequences of the law/fact label, it should be noted that the preclusive effects of a judgment on patent eligibility would not change depending on whether the doctrine is considered to present a question of law, a question of fact, or a mixed question. See 18 CHARLES ALAN WRIGHT, ARTHUR R. MILLER & EDWARD H. COOPER, FEDERAL PRACTICE AND PROCEDURE § 4417 (3d ed. 2018) (providing the following example: "the plaintiff who failed to prove the light was red is apt to be held precluded not only as to the color of the light but also as to the 'issue' of negligence"). Thus, regardless of how the eligibility question is characterized, subsequent defendants accused of infringing a particular patent can rely on a prior judgment of ineligibility *defensively*, see *Blonder-Tongue Labs., Inc. v. Univ. of Ill. Found.*, 402 U.S. 313, 350 (1971), but a patentee may not use a prior favorable ruling of eligibility *offensively* against a different defendant in a later case, see Paul R. Gugliuzza, *(In)valid Patents*, 92 NOTRE DAME L. REV. 271, 279 (2016) (citing cases).

388. Memorandum from Robert W. Bahr, Deputy Comm'r for Patent Examination Policy, U.S. Patent & Trademark Office, to Patent Examining Corps 3–4 (Apr. 19, 2018),

This demand for evidentiary support could make it more difficult for examiners to reject applications at step two of *Alice*, but it seems like a faithful application of the *Berkheimer* decision: to support a rejection, either the specification itself must indicate conventionality (an unlikely prospect for patents being prosecuted after *Mayo*, *Alice*, and their progeny), or there must be some other reliable evidence to support that conclusion.

Turning back to litigation, a third beneficial consequence of treating eligibility as a question of law potentially based on facts is that it provides an appropriately limited role for the statutory presumption of patent validity. I argued above that, as a matter of doctrine, the presumption of validity should apply to eligibility analysis, but only if the court must make findings of fact based on evidence outside the patent itself. This relatively limited role for the presumption of validity also aligns with various policy considerations. The presumption of validity originated as a common law doctrine reflecting the deference courts usually give to an expert agency such as the Patent Office.<sup>389</sup> Today, however, deference to the agency is arguably unwarranted given the minimal scrutiny most patent applications receive.<sup>390</sup> Many studies report that patent applications receive, on average, less than twenty hours of attention from an examiner.<sup>391</sup> That said, § 282(a) of the Patent Act unequivocally states that patents are presumed valid. And, of course, the presumption of validity protects the reliance interests of those who have invested in commercializing the patent.<sup>392</sup> A limited role for the presumption of validity in the eligibility analysis—applying it only when a case involves findings of fact based on extrinsic evidence—strikes a balance. On one hand, it respects the unambiguous statutory language enacted by Congress and offers some protection to reliance interests. On the other hand, it also accounts for the lenient nature of examination in the modern patent system and the general principle that standards of proof apply only when questions of fact are involved.<sup>393</sup>

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<https://www.uspto.gov/sites/default/files/documents/memo-berkheimer-20180419.PDF>  
[<https://perma.cc/PUA2-HSSV>].

389. Stuart Minor Benjamin & Arti K. Rai, *Who's Afraid of the APA? What the Patent System Can Learn from Administrative Law*, 95 GEO. L.J. 269, 281–82 (2007).

390. See Doug Lichtman & Mark A. Lemley, *Rethinking Patent Law's Presumption of Validity*, 60 STAN. L. REV. 45, 49–51 (2007) (proposing to limit the presumption of validity to situations where patent owners have submitted to a more rigorous initial examination or where a court, the International Trade Commission, or the Patent Office has already reevaluated validity and found in the patentee's favor).

391. E.g., Michael D. Frakes & Melissa F. Wasserman, *Is the Time Allocated to Review Patent Applications Inducing Examiners to Grant Invalid Patents?*, 99 REV. ECON. & STAT. 550, 552 (2017); Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1500 (2001).

392. See Stephen Yelder, *Coordination-Focused Patent Policy*, 96 B.U. L. REV. 1565, 1602 (2016).

393. See *supra* note 356 and accompanying text.

A fourth consequence worth noting is that labeling eligibility as a question of law potentially based on facts would make a real difference in the outcomes of certain litigated cases. To be sure, the change in label will not affect *every* case. As discussed, many eligibility disputes are resolved based on the patent itself, and those cases could still be resolved on the pleadings because they implicate no factual disputes.<sup>394</sup> However, cases that have definitively resolved eligibility *against* the accused infringer at the pleading-stage, such as the *McRO* and *Visual Memory* cases discussed above,<sup>395</sup> would come out differently. Rather than definitively resolving eligibility as a matter of law on a limited record, as the Federal Circuit did in those cases, the accused infringer's motion to dismiss would be denied, but the infringer would be allowed to subsequently develop a factual record in support of its eligibility defense and to raise that defense again on summary judgment or at trial. In a similar vein, viewing eligibility as at least partly factual casts doubt on the decisions made by some district courts making credibility determinations about witness declarations and deposition testimony on summary judgment rather than setting the issue for trial,<sup>396</sup> as well as decisions refusing to reconsider pre-trial eligibility rulings after hearing evidence at trial.<sup>397</sup>

A final, *potential* consequence of labeling eligibility as a question of law, fact, or both is that the choice of label could determine who decides patent eligibility—the judge or a jury. Most courts and lawyers assume that the Seventh Amendment enshrines a right to a jury trial on fact questions relevant to patent validity.<sup>398</sup> Thus, in the wake of *Berkheimer*, the prevailing wisdom seems to be that patent eligibility will now often be decided by a jury.<sup>399</sup>

The overall merit of having juries decide technologically complex issues of patent validity is beyond the scope of this Article.<sup>400</sup> For my purposes, it

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394. See *supra* notes 302–07 and accompanying text.

395. See *supra* note 324 and accompanying text.

396. See, e.g., *01 Communique Lab., Inc. v. Citrix Sys., Inc.*, 151 F. Supp. 3d 778, 787, 794, 796 (N.D. Ohio 2015) (granting the plaintiff's motion for summary judgment that the patent was eligible, relying upon the court's interpretation of expert testimony); *Prism Techs., LLC v. T-Mobile USA, Inc.*, No. 8:12CV124, 2015 WL 6161790, at \*3 (D. Neb. Sept. 22, 2015) (similar), *aff'd in part, rev'd in part, dismissed in part*, 696 F. App'x 1014 (Fed. Cir. 2017).

397. See, e.g., *ContentGuard Holdings, Inc. v. Apple Inc.*, No. 2:13-CV-1112-JRG, 2016 WL 1637280, at \*6 (E.D. Tex. Apr. 25, 2016) (denying Apple's post-trial motion for JMOL of ineligibility, noting that “[p]erhaps [Apple's] motion is actually a motion for reconsideration” of the court's denial of Apple's motion for judgment on the pleadings), *aff'd*, 701 F. App'x 957 (Fed. Cir. 2017).

398. Lemley, *supra* note 359, at 1715.

399. See, e.g., Ryan Davis, *Getting Juries to Ax Patents Under Alice May Be Hard Sell*, LAW360 (Mar. 5, 2018), <https://www.law360.com/articles/1017998/getting-juries-to-ax-patents-under-alice-may-be-hard-sell> [<https://perma.cc/T8V7-AVWX>].

400. For a sample of scholarship exploring the respective abilities of juries or judges to decide

is sufficient to note that recognizing eligibility's potential factual underpinnings will not inevitably lead to juries deciding the issue. Mark Lemley and John Duffy have both recently raised questions about whether a jury-trial right on patent validity is justified as a matter of history and doctrine.<sup>401</sup> The Supreme Court's recent decision in the *Oil States* case, which confirmed the constitutionality of Patent Office procedures allowing the agency to review the validity of issued patents, squarely rejected the argument that those jury-less procedures violated the Seventh Amendment.<sup>402</sup> Moreover, as discussed above, before *Berkheimer*, district judges regularly decided what appeared to be questions of fact when resolving eligibility disputes.<sup>403</sup> And, in *Teva*, the Supreme Court approved of judges alone deciding factual questions relevant to patent claim construction.<sup>404</sup> In short, simply labeling eligibility as partly factual by no means guarantees extensive jury involvement in eligibility disputes.

#### B. Law, Fact, and the Federal Circuit

To conclude the Article, it is worth noting that eligibility doctrine is not the only area of patent law in which the Federal Circuit has made questionable decisions distinguishing between law and fact. As noted above, the court has allowed juries to make the ultimate decision on nonobviousness, even though the final determination of nonobviousness is, under Supreme Court precedent, a question of law.<sup>405</sup> The court has also refused to

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patent cases accurately, see Kimberly A. Moore, *Judges, Juries, and Patent Cases—An Empirical Peek Inside the Black Box*, 99 MICH. L. REV. 365, 368, 409 (2000) (collecting critiques of the use of juries in patent cases and finding some evidence of “flaws in juror comprehension”), and Peter Lee, *Patent Law and the Two Cultures*, 120 YALE L.J. 2, 17 (2010) (“While district judges possess specialized legal training, they, like most jurors, are generally laypersons in terms of technological sophistication. Ultimately, lay actors in the patent system, including district judges, experience difficulties in understanding the technologies at the heart of patent cases.”). See also David L. Schwartz, *Practice Makes Perfect? An Empirical Study of Claim Construction Reversal Rates in Patent Cases*, 107 MICH. L. REV. 223, 225–26 (2008) (finding that the Federal Circuit reverses with similar frequency the claim construction orders of district judges who have heard many patent cases and the orders of judges who have heard few patent cases).

401. See Lemley, *supra* note 359, at 1720; see also Duffy, *supra* note 193, at 299 (noting that the modern process of reviewing patent validity “is quite distant from the traditional role of a jury as a de novo fact-finding body” and that, accordingly, “jury review of patent validity . . . might . . . soon be replaced by judicial review of patent validity”).

402. *Oil States Energy Servs., LLC v. Greene’s Energy Grp., LLC*, 138 S. Ct. 1365, 1379 (2018) (holding that, because Article III permitted the Patent Office to adjudicate the validity of issued patents, “a jury is not necessary in these proceedings” (emphasis added)).

403. See *supra* notes 244–45 and accompanying text.

404. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 838 (2015).

405. The Federal Circuit’s practice of allowing juries to decide the issue of nonobviousness—and the significant deference the court gives to those jury decisions on appeal—has been the subject of several recent high-profile cert. petitions, none of which have been granted. See Paul R. Gugliuzza, *Elite Patent Law*, 104 IOWA L. REV. (forthcoming 2019) (manuscript at 23 n.65) (citing examples). There is, to be sure, a plausible normative argument that ultimate determination of

acknowledge the factual considerations that seem to permeate determinations of claim meaning. Other examples abound of troublesome Federal Circuit doctrine around the border between law and fact.

Take indefiniteness. Under that doctrine, which stems from § 112's command that the patent's claims must "particularly point[] out and distinctly claim[]" the invention,<sup>406</sup> a patent is invalid if its claims, specification, and prosecution history "fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention."<sup>407</sup> The Federal Circuit has acknowledged that determining whether a patent satisfies the definiteness requirement is a task of construing the patent's claims.<sup>408</sup> So, under the Supreme Court's landmark decision in *Markman*,<sup>409</sup> it should be done exclusively by the judge. But many district courts—with the Federal Circuit's approval—allow juries to decide indefiniteness.<sup>410</sup>

Another doctrine in which the Federal Circuit has drawn questionable distinctions between matters of law and fact is the written description requirement.<sup>411</sup> To determine whether a patent complies with that requirement, the court compares the inventor's original application with the patent's issued claims to ensure that, at the time of filing, the inventor had actually invented what the patent ultimately claimed.<sup>412</sup> Like a claim construction based entirely on intrinsic evidence, this comparison of two documents—the original application and the issued patent—would seem to present a question for the judge. Yet the en banc Federal Circuit, surprisingly,

nonobviousness (and of patent validity more generally) is not strictly a question of law, as the Supreme Court has said, but a mixed question of law and fact, which could defensibly be decided by a jury. *See* Lawson, *supra* note 190, at 882 n.68 (distinguishing "pure" questions of law, such as, "What is the appropriate formulation of the legal standard for negligence?" from mixed questions of law and fact, such as, "Was X's conduct negligent?"). For suggestions that key issues in patent doctrine that are often characterized as questions of law actually present mixed questions of law and fact, see J. Jonas Anderson, *Specialized Standards of Review*, 18 STAN. TECH. L. REV. 151, 176 (2014) (characterizing claim construction as "the ultimate mixed question of fact and law in the . . . field of patent law"), and Craig Allen Nard, *Deference, Defiance, and the Useful Arts*, 56 OHIO ST. L.J. 1415, 1437 n.83 (1995) ("[A] nonobviousness determination is actually a mixed question of law and fact . . .").

406. 35 U.S.C. § 112(b) (2012).

407. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014).

408. *See* *Sonix Tech. Co. v. Publ'ns Int'l, Ltd.*, 844 F.3d 1370, 1378 (Fed. Cir. 2017).

409. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996).

410. *See, e.g., Koninklijke Philips N.V. v. Zoll Med. Corp.*, 656 F. App'x 504, 527–28 (Fed. Cir. 2016) (vacating jury verdict of no indefiniteness because of a legally incorrect instruction and remanding for another trial); *see also* J. Jonas Anderson & Peter S. Menell, *Restoring the Fact/Law Distinction in Patent Claim Construction*, 109 NW. U. L. REV. ONLINE 187, 200 (2015) (arguing that, under *Markman* and *Teva*, indefiniteness should be decided exclusively by the judge at the same time the judge conducts claim construction).

411. Like indefiniteness, the written description requirement stems from § 112 of the Patent Act. *See* 35 U.S.C. § 112(a) ("The specification shall contain a written description of the invention . . .").

412. *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479 (Fed. Cir. 1998).

has held that written description is a factual question that can be given to the jury.<sup>413</sup>

As far as I can tell, the Federal Circuit has never attempted to justify this rule (which, to reiterate, is in tension with the Supreme Court's repeated statement that patent validity is a question of law). If you trace the case law back far enough, the Federal Circuit's predecessor reasoned that written description is a factual question because the original application and the issued patent must be read from the perspective of a person having ordinary skill in the art.<sup>414</sup> But many patent law doctrines are applied from that perspective, most notably claim construction<sup>415</sup> and the ultimate determination of obviousness,<sup>416</sup> yet those doctrines are (or are supposed to be) applied by the court as a matter of law.<sup>417</sup>

The Federal Circuit's troubles at the law/fact divide provide yet another example of the court developing questionable doctrine on transsubstantive issues—that is, issues such as jurisdiction or procedure that arise not only in patent cases. The Federal Circuit has received substantial attention for its frequent reversals by the Supreme Court in recent years,<sup>418</sup> and many of those reversals have been on issues far from the substantive core of patent law such as standing, venue, standards of appellate review, subject matter jurisdiction, standards of proof, and more.<sup>419</sup> And there are many examples of

413. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1355 (Fed. Cir. 2010) (en banc). Despite this en banc precedent, a recent panel decision has added to the confusion by suggesting that written description is, in fact, a purely legal question for the judge in certain circumstances. In *Intellectual Ventures I LLC v. Motorola Mobility LLC*, the panel stated:

Whether a patent claim is adequately supported by the written description under 35 U.S.C. § 112 is a question of fact that we review for substantial evidence following a jury trial. To the extent that the issue of written description turns on claim construction based solely on intrinsic evidence, however, it is a legal question subject to *de novo* review.

870 F.3d 1320, 1324–25 (Fed. Cir. 2017) (citation omitted).

414. See *In re Wertheim*, 541 F.2d 257, 262 (C.C.P.A. 1976) (“The primary consideration [of the written description doctrine] is factual and depends on the nature of the invention and the amount of knowledge imparted to those skilled in the art by the disclosure.”).

415. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc).

416. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 422 (2007).

417. For another example of questionable Federal Circuit doctrine involving the law/fact distinction and documentary evidence, see Timothy R. Holbrook, *Possession in Patent Law*, 59 SMU L. REV. 123 (2006):

[T]he issue of whether a piece of prior art incorporates another piece by reference is a question of law. . . . whereas the question of whether there is a motivation to combine prior art references is one of fact. This disparity is bizarre because in both circumstances, the court is in essence doing the same thing—reading . . . documents from the perspective of the [person having ordinary skill in the art].

*Id.* at 172 n.275 (citations omitted).

418. See Timothy B. Dyk, *Thoughts on the Relationship Between the Supreme Court and the Federal Circuit*, 16 CHI.-KENT J. INTELL. PROP. 67, 71–72 (2016).

419. See Paul R. Gugliuzza, *How Much Has the Supreme Court Changed Patent Law?*, 16 CHI.-



questionable procedural-type doctrines developed by the Federal Circuit that have thus far eluded Supreme Court review, such as the Federal Circuit's statement in *Berkheimer* that a plaintiff's own uncorroborated statements are sufficient to withstand summary judgment,<sup>420</sup> the limits placed by the court on involuntary joinder of patent co-owners,<sup>421</sup> and the court's restrictions on patent challengers' standing to appeal from Patent Office rulings in post-issuance proceedings.<sup>422</sup> The consistent pattern of Supreme Court reversals on similar issues, coupled with the Federal Circuit's habitual resistance to applying general principles of federal procedural law in patent cases, raises serious questions about whether the court has succeeded or failed as an "experiment" in judicial specialization.<sup>423</sup>

### Conclusion

This Article has highlighted several ways the procedures through which courts decide patent eligibility could be reformed to better balance the need for quick invalidations of bad patents with the danger of erroneously invalidating meritorious patents. Looking at the law of patent-eligible subject matter through a procedural lens has also illuminated several broader problems with—and potential reforms of—patent doctrine, particularly in areas that implicate the law/fact divide, such as claim construction. Eligibility doctrine is, as I have shown, not the only area of patent law in which the Federal Circuit has arguably made mistakes in its decisions attempting to distinguish law from fact. The analytical framework developed in this Article hopefully provides a useful starting point for future scholarship critically reassessing the law/fact distinction in those other areas.

That reassessment is sorely needed. As I have tried to make clear, the

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KENT J. INTELL. PROP. 330, 335 (2017) (collecting cases).

420. See *supra* note 256 and accompanying text.

421. See *STC.UNM v. Intel Corp.*, 767 F.3d 1351, 1367 (Fed. Cir. 2014) (O'Malley, J., dissenting from the denial of rehearing en banc) (arguing that, by refusing to apply Rule 19 of the Federal Rules of Civil Procedure, the court has "once again simply exempt[ed] patent law from the rules that govern all federal litigation").

422. See Gaia Bernstein, *The End User's Predicament: User Standing in Patent Litigation*, 96 B.U. L. REV. 1929, 1935 (2016); Rochelle Cooper Dreyfuss, *Giving the Federal Circuit a Run for Its Money: Challenging Patents in the PTAB*, 91 NOTRE DAME L. REV. 235, 295 (2015); Megan M. La Belle, *Public Enforcement of Patent Law*, 96 B.U. L. REV. 1865, 1871 (2016); see also Sapna Kumar, *Standing Against Bad Patents*, 32 BERKELEY TECH. L.J. 87, 136 (2017) (defending the Federal Circuit's limits on standing as a matter of existing doctrine but proposing a legislative change).

423. See Rochelle Cooper Dreyfuss, *The Federal Circuit: A Continuing Experiment in Specialization*, 54 CASE W. RES. L. REV. 769, 770–72 (2004) (collecting critiques and praise of the Federal Circuit as an institution); see also Laura G. Pedraza-Fariña, *Understanding the Federal Circuit: An Expert Community Approach*, 30 BERKELEY TECH. L.J. 89, 95 (2015) (hypothesizing that "expert communities," such as the Federal Circuit, "will be more likely to defy solutions imposed by non-expert generalists," such as the Supreme Court, "than communities of non-experts").

law/fact distinction is essentially dispositive of several important procedural issues in patent cases: it determines the stage at which a given issue can be resolved, it dictates the standard of proof, and it potentially allocates decision-making authority between the judge and jury. All of those procedural features affect decisions by patentees about whether or not to pursue litigation and by accused infringers about whether to settle or continue the fight. Those litigation dynamics, in turn, have consequences for innovation: if patents are too difficult or costly to enforce, they will not provide much of an incentive for invention, but patents that are too easy to enforce can discourage innovation by those who fear the threat of infringement suits. By reassessing the law/fact divide in the realm of patent eligibility, this Article has tried to sketch a procedural structure that accommodates those competing objectives better than the patent system currently does.