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Abstract

Recent decisions move the Section 101 patent eligibility analysis ever closer to that of obviousness, confirming the concerns of many practitioners and further complicating the uncertainty of patent eligibility post-*Alice*. This paper summarizes the path that brought us here and provides practical strategies for practitioners navigating the Section 101 landscape.

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Section 101 in 2019

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I. Introduction

A series of recent Federal Circuit decisions applying the Supreme Court’s *Alice/Mayo*² patent eligibility test has created controversial precedent. These cases hold that the Section 101³ patent eligibility analysis includes factual questions about conventionalness, *i.e.*, the abstract, judge-made idea of “well-understood, routine, conventional,” that historically have been reserved for Sections 102 and 103. This blurring of the lines between patent eligibility Sections has resulted in unpredictability in both patent prosecution and litigation, leaving patent practitioners of all stripes scrambling for answers.

During the same period, the United States Patent and Trademark Office (“USPTO”) twice revised its non-binding subject matter eligibility examination guidelines amidst the uncertain and confusing precedent.⁴ In January, 2019, Undersecretary Andrei Iancu noted that “[p]roperly applying the *Alice/Mayo* test in a consistent manner has proven to be difficult, and has caused uncertainty in this area of the law.”⁵ The USPTO has called for public comment. The USPTO’s interest in clarification should not be surprising. After all, more than 3,700 Patent Trial and Appeal Board decisions have cited *Alice* in the last four-and-half years.

On the judicial front, at least four Federal Circuit judges⁶ recently have gone on record criticizing the current judicial formulation of Section 101, with one noting it does “not produce coherent, readily understandable, replicable, and demonstrably just outcomes.”⁷ Numerous commentators and amici have expressed similar complaints.

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² *Alice Corp. Pty. v. CLS Bank Int’l*, 573 U.S. 208 (2014) (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012)). According to WestlawNext, *Alice* has been cited over 16,000 times.

³ U.S. Patent Act, 35 U.S.C. § 101 (2012). Subject matter that is “patent eligible” must also satisfy other statutory requirements, such as novelty and non-abandonment (Section 102), non-obviousness (Section 103), and a clear, enabling written description (Section 112), or the patent application will not be granted.

⁴ Memorandum from Robert W. Bahr to Patent Examining Corps re Changes in Examination Procedures Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*), USPTO (April 19, 2018); 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (January 7, 2019).

⁵ *Id.*, 84 Fed. Reg. at 54.

⁶ Circuit Judges Linn, Lourie, Plager, and Newman.

⁷ *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1342 (Fed. Cir. 2018) (Plager, J., concurring-in-part and dissenting-in-part). Federal Circuit decisions cited herein have been designated as precedential unless noted otherwise.

A recent Supreme Court petition for *certiori* questions the extent to which factual issues exist in the eligibility test.⁸ Six amicus briefs have been filed, demonstrating that this question touches the core of the current *Alice/Mayo* eligibility framework. The Supreme Court recently asked the Solicitor General to provide the government’s position.⁹

Finally, as discussed herein, factual questions about conventionalness have rendered some cases impervious to pretrial resolution under Federal Rules of Civil Procedure 12(b)(6) (dismissal for failure to state a claim), 12(c) (judgment on the pleadings), or 56 (summary judgment).

From these realities, two questions emerge: (1) What litigation and prosecution insights can practitioners draw from the recent decisional law, and (2) how can the uncertainties in patent eligibility law be fixed? This article attempts to address these questions by giving a brief background of the current patent eligibility test, discussing recent Federal Circuit decisional law, offering litigation and prosecution perspectives, and suggesting solutions.

II. Patent Eligibility Background

Most decisions on this topic reference the language of Section 101 of the patent law (as reformulated in 1952), which was enacted by Congress under its plenary authority¹⁰:

§ 101. Inventions patentable¹¹

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.¹²

Courts today almost universally omit other relevant parts of the statute, for example: “The term ‘invention’ means invention or discovery,”¹³ and “[t]he term ‘process’ means process, art or method, and *includes a new use of a known process, machine, manufacture, composition of matter, or material.*”¹⁴

Courts have created and applied judicial exceptions to this statutory law on patentable subject matter. Space limitations preclude us from recounting the entire history of the judicial exceptions’ development, but some historical context warrants mentioning.

⁸ *HP Inc., v. Berkheimer*, No. 18-415 (U.S. Dec. 19, 2018) (docket noting distribution for January 4, 2019 conference; petition filed Sept. 28, 2018).

⁹ *Id.* (January 7, 2019, docket entry);

¹⁰ *See* U.S. Const. Art. 1 § 8.

¹¹ One wonders whether, if Congress had titled this Section “Inventions *Are* Patentable,” the courts would have reached a different interpretation than the current one that reads this section as a limitation on types of “Inventions *That Are* Patentable.”

¹² 35 U.S.C. § 101.

¹³ 35 U.S.C. § 101(a).

¹⁴ 35 U.S.C. § 101(b) (emphasis added).

The Federal Circuit’s 1998 decision in *State Street Bank & Trust Co. v. Signature Financial Group*¹⁵ was a watershed. As *State Street* acknowledged, the Supreme Court had up to that point “identified three categories of subject matter that are unpatentable, namely ‘laws of nature, natural phenomena, and abstract ideas.’”¹⁶ *State Street* disposed of what then was widely (if not universally) understood as yet another judicial exception to patent eligibility: business methods. The court laid that putative exception to rest: “Since the 1952 Patent Act, business methods have been, and should have been, subject to the same legal requirements for patentability as applied to any other process or method.”¹⁷

In confirming the patentability of business methods, *State Street* supplied means — patent claims on such methods, and suits or threats of suit for infringement thereof — by which so-called “patent trolls” could reach the business community writ large. Coupled with *State Street*, the rapid growth of computer, internet, and information technology applications in the broader American economy created optimal conditions for the birth (or at least rapid growth) of a licensing industry untethered to any particular commercial or industrial setting. By 2006, writing for four justices in his concurrence in *eBay Inc. v. MercExchange, L.L.C.*,¹⁸ Justice Kennedy was commenting that “[a]n industry has developed in which firms use patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees.”¹⁹

As the years unfolded, the (real, if unarticulated) anti-“troll” *zeitgeist* in and around the Supreme Court supplied the backdrop to multiple decisions in which the Court “reined in” the Federal Circuit on a number of different patent law issues, from entitlement to injunctive relief for infringement (*eBay*), to definiteness (*Nautilus v. Biosig Instruments*²⁰), to fee-shifting (*Octane*²¹ and *Highmark*²²), to claim construction (*Teva Pharms. v. Sandoz, Inc.*²³) to willful infringement (*Halo Elecs. v. Pulse Elecs.*²⁴).

Understood as a whole, these decisions expressed umbrage with the way the Federal Circuit had developed the patent law since the Circuit was born in 1982. As would have been expected,²⁵ Federal Circuit case law had developed in a generally pro-patent direction, with patent-specific rules designed to achieve predictable results, said predictability generally operating to the benefit of patentees, applicants, and patent practitioners. The Supreme Court took issue with many of those rules and what it perceived as rigidity in their application, and inserted in their place less patent-specific and more amorphous (and thus less predictable) rules and standards.

¹⁵ 149 F.3d 1368.

¹⁶ *Id.* at 1373 (quoting *Diamond v. Diehr*, 450 U.S. 175 (1981)).

¹⁷ *Id.* at 1375.

¹⁸ 547 U.S. 388 (2006).

¹⁹ *Id.* at 396 (Kennedy, J., concurring).

²⁰ 572 U.S. 898 (2014).

²¹ *Octane Fitness v. ICON Health & Fitness*, 572 U.S. 545 (2014).

²² *Highmark v. Allcare Health Mgmt. Sys.*, 572 U.S. 559 (2014).

²³ 135 S. Ct. 831 (2015).

²⁴ 136 S. Ct. 1923 (2016).

²⁵ See, e.g., Charles W. Adams, *The Court of Appeals for the Federal Circuit: More than a Patent Court*, 49 Mo. L. Rev. 43 (1984); Timothy J. O’Hearn, Comment, *Patent Law Reform via the Federal Court Improvements Act of 1982: The Transformation of Patentability Jurisprudence*, 17 Akron L. Rev. 453 (1984).

Changes in patent eligibility law were part and parcel of this contentious relationship dynamic. In 2010, the Supreme Court in *Bilski v. Kappos*²⁶ rejected — in the context of a claimed method for risk hedging — the Federal Circuit’s machine-or-transformation test as the “sole test for deciding whether an invention is a patent-eligible ‘process.’”²⁷ In 2012, the Supreme Court in *Mayo Collaborative Services v. Prometheus Laboratories*²⁸ held, in the context of a claimed therapeutic (or diagnostic — therein lay the rub) method for use of thiopurine drugs in treating autoimmune diseases, that the claimed method did not sufficiently add to the underlying (unpatentable, by judge-made exception) law of nature.²⁹ And in 2014, the Supreme Court melded — across technological subject matter lines — its holdings in *Bilski* and *Mayo* in *Alice Corp. v. CLS Bank*.³⁰

The current version of the judicial eligibility test is this: “To determine whether claimed subject matter is patent-eligible, we apply the two-step framework introduced in *Mayo* ... and further explained in *Alice* First, we ‘determine whether the claims at issue are directed to a patent-ineligible concept,’ such as an abstract idea. Second, we ‘examine the elements of the claim to determine whether it contains an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.”³¹ To reliably and justly apply this test, one must have a clear and unambiguous understanding of what constitutes an “abstract idea” and an “inventive concept.”³² Therein lies the trouble.

III. Recent *Alice/Mayo* Federal Circuit Decisions

This section discusses seventeen Federal Circuit decisions since February 2018 (in chronological order) that apply or discuss the *Alice/Mayo* test. These cases discuss, distinguish, and draw analogies to numerous other cases from 2015-2017. As we detail herein, this web of decisions demonstrates the observed lack of “coherent, readily understandable, replicable, and demonstrably just outcomes”³³ in Section 101 disputes.

A. February 8, 2018, *Berkheimer v. HP Inc.*³⁴

In *Berkheimer*, a Federal Circuit panel (Circuit Judges Moore, Taranto, and Stoll) reversed the district court’s Rule 12(b)(6) dismissal of certain claims under *Alice/Mayo*, while affirming dismissal of other claims.³⁵ The panel described the invention as “relating to digitally processing

²⁶ 561 U.S. 593 (2010).

²⁷ *Id.* at 605.

²⁸ 566 U.S. 66 (2012).

²⁹ *Id.* at 92.

³⁰ 573 U.S. 208 (2014).

³¹ *In re Marco Guldenaar Holding B.V.*, 911 F.3d 1157, 1160 (Fed. Cir. 2018) (citations omitted).

³² It is also helpful to understand what “directed to,” “focused-on,” and “sufficient” mean in this context. These concepts are also elusive, as the cases discussed herein show.

³³ *Interval Licensing*, 896 F.3d at 1342 (Plager, J., concurring-in-part and dissenting-in-part).

³⁴ 881 F.3d 1360 (Fed. Cir. 2018).

³⁵ Under the Federal Rules of Civil Procedure, Rule 12(b)(6) permits a defendant to move for dismissal on the face of the complaint, before answering. Plausibly pled facts are accepted as true, and extraneous materials (*i.e.* other than the complaint, patent, prosecution history, and in rare cases other documents) are not considered. Rule 12(c) permits a party to request an early judgment after the defendant pleads its defense, but before discovery is taken. Rule 56 permits a party to ask for judgment based on a more fulsome

and archiving files in a digital asset management system.” Referring to the “well-understood, routine, conventional” standard stated for the first time in *Mayo* and quoted in *Alice*, the panel held that “[t]he 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.”³⁶ Such fact “must be proven by clear and convincing evidence,”³⁷ a nod to the law that issued patents are presumed valid.³⁸

1. Patent-Ineligible Claims.

With respect to claims 1-3 and 9, the court affirmed summary judgment against the patentee, finding no dispute that the key limitation of those claims was “conventional,” because the patentee had “admitted that parsers and the functions they perform existed for years before his patent.”³⁹ Importantly, the patentee “maintained that limitations included in dependent claims 4-7 bear on patent eligibility.”⁴⁰ If he had agreed that claim 1 was representative, he would have been unable to make specific arguments about claims 4-7 on appeal, and those would have fallen with claim 1.

2. Patent-Eligible Claims.

Claim 4 included an additional limitation directed to storing an object structure “without substantial redundancy.”⁴¹ Regarding this limitation, the panel noted that “[t]he specification states that storing object structures in the archive without substantial redundancy *improves system operating efficiency and reduces storage costs.*”⁴² Claims 5-7 contained a further limitation about effecting a “one-to-many change” in archived items. The panel determined there was a genuine issue of fact (precluding summary judgment) because “the specification states one-to-many editing substantially reduces effort needed to update files because a single edit can update every document in the archive linked to that object structure.”⁴³ The accused infringer presented no evidence (and thus no “clear and convincing” evidence) contradicting those factual specification assertions, leading the panel to conclude the limitations were “directed to ... *arguably* unconventional inventive concept[s].”⁴⁴

Because the patentee had not admitted that these features in claims 4-7 were “conventional,” the court reversed summary judgment of ineligibility. The specification’s descriptions of redundancy elimination, system efficiency improvement, storage reduction, and

evidentiary record (often including depositions, expert testimony, affidavits, documents discovered from parties and non-parties, and other evidence). The moving party must show no material fact is genuinely disputed, and that it is entitled to judgment as a matter of law. Finally, Rule 50 permits a party to request judgment after the evidence is presented at trial, either asking the judge to direct the jury to enter a certain verdict, or to reverse an extant jury verdict.

³⁶ 881 F.3d at 1368 (emphasis added).

³⁷ *Id.* (citing *Microsoft Corp. v. i4i Ltd. P’ship*, 564 U.S. 91, 95 (2011)).

³⁸ 35 U.S.C. § 282.

³⁹ 881 F.3d at 1370.

⁴⁰ *Id.* at 1367.

⁴¹ *Id.* at 1370.

⁴² *Id.* (emphasis added).

⁴³ *Id.*

⁴⁴ *Id.* (emphasis added).

single-edit propagation were sufficient to create a factual dispute about whether there was an “inventive concept” that “provides benefits that improve computer functionality.”⁴⁵

This was the first Federal Circuit decision expressly holding questions of fact existed in the Section 101 context. The panel distinguished prior cases by pointing out that “routine function” was conceded by the patentee in *Content Extraction*,⁴⁶ and the “interactive interface” in *Intellectual Ventures I*⁴⁷ was undisputedly “generic.”⁴⁸

B. February 14, 2018, *Aatrix Software, Inc. v. Green Shades Software, Inc.*⁴⁹

In *Aatrix*, Circuit Judges Moore and Taranto vacated an *Alice/Mayo* dismissal under Rule 12(b)(6); Circuit Judge Reyna dissented. The claims were directed to software that automatically fills out various forms (*e.g.* government tax forms) using data from third-party software. The majority reiterated its holding in *Berkheimer*: Conventionalness “is a question of fact.”⁵⁰

1. Moore Majority Opinion.

The district court had dismissed the original complaint as insufficient and rejected the patentee’s attempt to add new allegations through an amended complaint.⁵¹ Those new allegations explained how the claimed features “increased the efficiencies of computers processing tax forms,” “saved storage space” in volatile and non-volatile memory, and “reduced the risk of ‘thrashing,’”⁵² all of which allegedly improved the “computer technology itself” and was “not directed to generic components performing conventional activities.”⁵³ The accused infringer “conceded that nothing in the specification describes this importation of data as conventional.”⁵⁴ This was important because it meant that the fact-based conventionalness question “cannot be answered adversely to the patentee based on the sources properly considered on a motion to dismiss, such as the complaint, the patent, and materials subject to judicial notice.”⁵⁵ Accordingly, Rule 12(b)(6) dismissal was not appropriate, and the majority reversed.

2. Reyna Dissent.

Circuit Judge Reyna’s dissent argued Section 101 should contain no factual inquiry, not because a conclusion of conventionalness truly lacks underlying facts, but because saying so “opens the door” for “the introduction of an inexhaustible array of extrinsic evidence, such as prior art, publications, other patents, and expert opinion.”⁵⁶ Even were the prediction about “open[ing]

⁴⁵ 881 F.3d at 1370.

⁴⁶ *Content Extraction & Transm’n. LLC v. Wells Fargo Bank, NA*, 776 F.3d 1343, 1349 (Fed. Cir. 2014).

⁴⁷ *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1370 (Fed. Cir. 2015).

⁴⁸ 881 F.3d at 1368.

⁴⁹ 882 F.3d 1121 (Fed. Cir. 2018).

⁵⁰ *Id.* at 1128.

⁵¹ *See generally* Fed. R. Civ. P. 15 (on amending pleadings).

⁵² 882 F.3d at 1128. Thrashing refers to overuse of a computer’s virtual memory, reducing application-level process performance.

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.* at 1130.

the door”⁵⁷ correct, the problem is not in procedural rules; indeed, as Berkheimer argues, “[t]here is no patent eligibility exception to the Federal Rules of Civil Procedure.”⁵⁸ Rather, the problem originated from the Supreme Court’s decision to import Section 102/103-like questions (conventionalness) into the Section 101 analysis. Whether matter was, in fact, conventional on a relevant date could be genuinely subject to conflicting evidence, and if so, pretrial disposition is inappropriate.

The dissent’s expressed concern that a patentee might make allegations “that must be taken as true, regardless of its consistency with the intrinsic record”⁵⁹ must be considered against the law that a district court has the authority to reject implausible claims.⁶⁰ Moreover, as subsequent decisions discussed herein reveal, the occasions where a patent’s specification does not admit the conventionalness of pertinent matter are few.

Finally, the dissent’s argument that the panel should not have looked to the proposed amended pleading⁶¹ does not appear well-founded, because the standard the panel was asked to address — propriety of amending a pleading — includes futility, which properly queries the merits of the proposed amendment.⁶²

C. February 16, 2018, *Automated Tracking Solutions, LLC, v. The Coca-Cola Co.*⁶³

ATS went the other way. Circuit Judges Moore, Wallach and Stoll affirmed judgment on the pleadings invalidating the patent under *Alice/Mayo*. According to the district court, the claims were “directed to processes and systems that permit identification, tracking, location, and/or surveillance of tagged objects anywhere in a facility or area.”⁶⁴ The panel’s analysis in affirming the district court’s decision “rest[ed] heavily on [the patentee’s] selection of representative claims and admissions in oral argument.”⁶⁵

First, unlike in *Berkheimer*, the patentee in *ATS* had conceded that two claims were representative, preventing the panel from analyzing features added by other dependent claims. In doing so, the patentee waived its arguments that additional claimed features, such as a “particular

⁵⁷ *Id.*

⁵⁸ *HP Inc., v. Berkheimer*, No. 18-415 (U.S. Dec. 5, 2018, Opp. Br. at 2).

⁵⁹ *Id.* at 1131.

⁶⁰ See, e.g., *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009) (citing *Atlantic Corp. v. Twombly*, 550 U.S. 554 (2007)) (facial plausibility standard); *Xechem, Inc. v. Bristol-Myers Squibb Co.*, 372 F.3d 899, 901 (7th Cir. 2004) (a plaintiff may “plead[] itself out of court” at the Rule 12(b)(6) stage by “admit[ting] all the ingredients of an impenetrable defense”); *Combustion Prod. Mgmt., Inc. v. AES Corp.*, 256 F. App’x 441, 442 (2d Cir. 2007) (affirming Rule 12(b)(6) dismissal of claims containing several “internally inconsistent” and “contradictory” allegations about the contract terms).

⁶¹ 882 F.3d at 1131.

⁶² *Mann v. Palmer*, 713 F.3d 1306, 1316 (11th Cir. 2013) (circuit court reviews futility *de novo* when reviewing denial of a motion for leave to amend pleadings).

⁶³ 723 Fed. App’x 989 (Fed. Cir. Feb. 16, 2018) (non-precedential) (“*ATS*”).

⁶⁴ *Automated Tracking Sols., LLC v. Coca-Cola Co.*, 223 F. Supp. 3d 1278, 1280 (N.D. Ga. 2016).

⁶⁵ 723 Fed. App’x at 995.

configuration or arrangement of RFID system components” or “multiple antenna coverage areas,” lacked conventionalness.⁶⁶

Second, at oral argument the patentee conceded that “all RFID antennas have coverage areas, and that the claimed antenna in representative claim 1 does not differ from conventional RFID antennas.”⁶⁷ According to the panel, “the specification states that a conventional ‘simple RFID system may be composed of three components: a scanner, a transponder, and a computer.’ These are the same conventional components recited in the representative claims.”⁶⁸ As a result, the patentee was unable to dispute that the representative claims failed the conventionalness test.

In reaching its conclusion about conventionalness, the district court observed that “[w]hile the RFID technology employed by the invention was a *rapidly developing technology* at the time of the invention, the use of a conventional or generic computer in a *nascent environment* does not make the claims any less abstract.”⁶⁹ The Federal Circuit panel similarly acknowledged the “rapidly developing” nature of the RFID technology at issue, as stated in the specification.⁷⁰ This may conflict with the *Berkheimer* panel’s holding that conventionalness “goes beyond what was simply known in the prior art. The mere fact that something is disclosed in a piece of prior art, for example, does not mean it was well-understood, routine, and conventional.”⁷¹

It also conflicts with the Supreme Court’s rule stated in *Diamond v. Diehr*, that “[t]he ‘novelty’ of any element or steps in a process, or even of the process itself, *is of no relevance* in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.”⁷²

And, more importantly, the *ATS* reasoning appears to directly contradict Section 101’s dictate that “any new and useful improvement [of a process, machine, manufacture, or composition of matter]” or “a new use of a known process, machine, manufacture, composition of matter, or material” is patentable, “subject to” Sections 102 and 103.⁷³

D. March 8, 2018, *Exergen Corp. v. Kaz USA, Inc.*⁷⁴

In *Exergen*, Federal Circuit Judges Moore and Bryson upheld the patent by affirming denial of a post-trial motion attacking *Alice/Mayo* patent eligibility. The claims were directed to a temporal artery thermometer, which measures temperature by scanning the forehead. The alleged infringer argued that the patent preempted any practical application of the naturally-occurring

⁶⁶ *Id.* at 994.

⁶⁷ *Id.*

⁶⁸ *Id.* at 995.

⁶⁹ 223 F. Supp. 3d at 1290. (emphasis added).

⁷⁰ 723 Fed. App’x at 995.

⁷¹ *Berkheimer*, 881 F.3d at 1369.

⁷² 450 U.S. 175, 188-89 (1981) (emphasis added).

⁷³ 35 U.S.C. § 101; 100(b) (defining “process”).

⁷⁴ 725 Fed. App’x 959 (Fed. Cir. 2018) (non-precedential).

coefficient that the patentee discovered, which uses simple math to compute a human’s core body temperature from surface and ambient temperature readings.⁷⁵

1. Moore Majority Opinion.

In assessing patent eligibility, the panel considered the time and money spent by the patentee: “Following years and millions of dollars of testing and development, the inventor determined for the first time the coefficient representing the relationship between temporal-arterial temperature and core body temperature and incorporated that discovery into an unconventional method of temperature measurement.”⁷⁶ Considering these kinds of factors as relevant to eligibility seems to contrast with other Federal Circuit opinions stating that “under the *Alice/Mayo* framework, a claim directed to a newly discovered law of nature (or natural phenomenon or abstract idea) cannot rely on the novelty of that discovery for the inventive concept necessary for patent eligibility,”⁷⁷ or that “groundbreaking, innovative, or even brilliant” is not enough for patent eligibility.⁷⁸

Even though the claims undisputedly “employ a natural law,” the court held that the following three claimed steps were “sufficient to transform the claims into a patent-eligible application”: (1) lateral movement (of a conventional thermometer), and (2) recording the highest (“peak”) reading while (3) measuring temperature at least three times per second.⁷⁹ The patentee apparently did not concede the conventionalness of these three features at any time, including in the specification.

2. Hughes Dissent.

Circuit Judge Hughes, dissenting, noted that all three of these features are old, citing patents from the 1970s. As Judge Hughes observed, “Rather than finding that the claim elements were not routine or conventional, the district court focused on whether those elements were routinely or conventionally used *for the purpose of calculating core body temperature*.”⁸⁰ This is supported by the majority’s recitation that, according to the district court, the old “methods made no use of the newly calculated coefficient for translating measurements taken at the forehead into core body temperature readings.”⁸¹ But Judge Hughes reaches an important issue, that “differentiat[ing] the claimed invention from the prior art solely on the basis that the claimed invention ‘solve[s] a different problem’”⁸² does not apply the *Alice/Mayo* conventionalness test consistently with other Federal Circuit precedent. In other words, under *Exergen*, it appears a patentee may argue against conventionalness by asserting that the old technology did not solve the problem the patentee

⁷⁵ Cf. *Mayo*, 566 U.S. at 87 (reaching ineligibility decision based on a “basic underlying concern that these patents tie up too much future use of laws of nature”).

⁷⁶ 725 Fed. App’x at 966.

⁷⁷ *Berkheimer v. HP Inc.*, 890 F.3d 1369, 1374 (Fed. Cir. 2018) (“*Berkheimer II*,” on petition for rehearing *en banc*) (quoting *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1376 (Fed. Cir. 2016) (quoting *Mayo*, 566 U.S. at 73)).

⁷⁸ *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1163 (Fed. Cir. 2018).

⁷⁹ 725 Fed. App’x at 965.

⁸⁰ *Id.* at 975 (emphasis added).

⁸¹ *Id.* at 965.

⁸² *Id.* at 975.

solved. Such argument probably exists in every case and could circumvent the *Alice/Mayo* conventionalness test.

Perhaps the most important point in this case is that the appeal arose from a post-trial hearing and, arguably, the jury had implicitly *not* found conventionalness. There is reason for concern that the jury did not *expressly* consider this question — and that had it done so the outcome may have been different. But the patentee waived the issue by failing to ask for instructions about it and failing to object to the court’s refusal to “give the jury any special verdict questions on § 101 because the jury may confuse the obviousness inquiry with the well-understood, conventional, routine inquiry.”⁸³ Accordingly, as the majority noted, “such fact findings by the district court after a full trial on the merits are entitled to deference and should be reviewed for clear error.”⁸⁴ Thus, for a patentee, the importance of getting the conventionalness question to a fact-finder (and preferably doing so without a confusing instruction on the issue) cannot be overstated. For an accused infringer, the opposite is true.

E. March 15, 2018, *Intellectual Ventures I LLC v. Symantec Corp.*⁸⁵

In *Symantec*, the panel (Circuit Judges O’Malley, Schall and Wallach) affirmed summary judgment of ineligibility on a patent that was “directed to the abstract idea of backing up data” by mirroring digital data from a primary server to a remote server.⁸⁶ The patentee noted there were critical steps the court did not consider in its overgeneralization of the invention, including sending “spoofing” packets, compression and decompression, and a specific order of steps that “improved data retention and system performance,” *i.e.*, improved how a computer functions.⁸⁷ In finding no genuinely disputed material fact on summary judgment, the district court explained that, per the specification, “the individual components, such as a ‘network server,’ ‘nonvolatile data buffer,’ and ‘communication link,’ are conventional, generic, and operate as expected” and the patentee presented no expert testimony to the contrary.⁸⁸ Thus, the patent was an abstract idea plus conventional steps; not patent-eligible under the current test.

F. April 16, 2018, *Vanda Pharm. Inc. v. W.-Ward Pharm. Int’l Ltd.*⁸⁹

In *Vanda*, the panel (Circuit Judges Lourie and Hughes, with Circuit Judge Prost dissenting) affirmed a post-bench-trial judgment that the claimed method for “treating schizophrenia patients with iloperidone wherein the dosage range is based on the patient’s genotype” was a valid patent.

⁸³ *Id.* at 969. Aptly stated — and not just as to the jury.

⁸⁴ *Id.* at 967.

⁸⁵ *Intellectual Ventures I LLC v. Symantec Corp.*, 725 F. App’x 976, 978 (Fed. Cir. 2018) (non-precedential (“*Symantec*”), not to be confused with the several other *Intellectual Ventures I LLC* cases where patent eligibility was an issue.

⁸⁶ *Id.* at 978.

⁸⁷ *Cf. Aatrix*, 882 F.3d at 1128 (holding invention patent eligible, even though it was directed to an abstract idea, because it “increased the efficiencies of computers,” “saved storage space,” and reduced a phenomenon that slowed down prior art systems).

⁸⁸ *Intellectual Ventures I LLC v. Symantec Corp.*, 234 F. Supp. 3d 601, 608 (D. Del. 2017) *aff’d* (725 F. App’x at 978 n.1).

⁸⁹ 887 F.3d 1117 (Fed. Cir. 2018).

1. Lourie Majority Opinion.

The majority affirmed because “the asserted claims are not directed to patent-ineligible subject matter,” noting that the claims “are directed to a method of using iloperidone to treat schizophrenia.”⁹⁰ It was “a new way of using an existing drug”⁹¹ — a refreshing throwback to words in the statute.⁹² The majority concluded that the specific claims “recite more than the natural relationship between CYP2D6 metabolizer genotype and the risk of QTc prolongation. Instead, they recite a method of treating patients based on this relationship that makes iloperidone safer by lowering the risk of QTc prolongation.”⁹³

2. Prost Dissent.

Circuit Judge Prost dissented, asserting that the “end result of the claimed process is no more than the conclusion of a natural law.”⁹⁴ According to the dissent, the claims failed both steps under *Mayo*; there was “no inventive concept” after the dissent defined the “natural law” in a way that encompassed the claims fully.⁹⁵ According to Judge Prost, “[t]he patent simply discloses the natural law that a known side effect of the existing treatment could be reduced by administering a lower dose to CYP2D6 poor-metabolizers. It claims no more than instructions directing that audience to apply the natural law in a routine and conventional manner.”⁹⁶

G. April 20, 2018, *Voter Verified, Inc. v. Election Sys. & Software LLC*.⁹⁷

In *Voter Verified*, the panel (Circuit Judges Newman, Reyna, and Lourie) affirmed Rule 12(b)(6) dismissal for a patent “drawn to the concept of voting, verifying the vote, and submitting the vote for tabulation.”⁹⁸ As the panel noted, “[e]ven Voter Verified characterized these steps as ‘human cognitive actions,’” and “[n]either party disputes that the claims recite the use of general purpose computers that carry out the abstract idea.”⁹⁹ The panel also cited the specification, which recited “a standard personal computer,” “a visual display device,” “a keyboard,” “date storage devices,” “a laser printer,” and a scanner “from the well-known art.”¹⁰⁰ Those admissions were case-dispositive.

⁹⁰ *Id.* at 1135.

⁹¹ *Id.*

⁹² 35 U.S.C. § 100(b) (“process” includes “a new use of a known process, machine, manufacture, composition of matter, or material”).

⁹³ 887 F.3d at 1136.

⁹⁴ *Id.* at 1143.

⁹⁵ *Id.* at 1142.

⁹⁶ *Id.*

⁹⁷ 887 F.3d 1376 (Fed. Cir. 2018), *cert. denied*, No. 18-549, 2019 WL 113159 (U.S. Jan. 7, 2019).

⁹⁸ *Id.* at 1385.

⁹⁹ *Id.* at 1386.

¹⁰⁰ *Id.*

H. May 31, 2018, *Berkheimer II*¹⁰¹ and *Aatrix II*¹⁰² – Denial of Petition for Rehearing.

In a rare move, the Federal Circuit issued over thirty pages of opinion in connection with an order — designated as precedential — denying rehearing *en banc* of both the *Berkheimer* and *Aatrix* panel decisions discussed above. Circuit Judge Moore wrote a concurring opinion, joined by Circuit Judges Dyk, O’Malley, Taranto, and Stoll. Circuit Judge Lourie wrote a separate concurring opinion, joined by Circuit Judge Newman. Circuit Judge Reyna (who dissented in the panel decision) dissented again. Chief Judge Prost and Circuit Judges Wallach, Chen, and Hughes were silent.

1. Moore Plurality/Concurrence.

This opinion entrenches, for now, conventionalness as “a question of fact,” falling “under step two in the § 101 framework,” which may require “weighing evidence,” “making credibility judgments,” and addressing “narrow facts that utterly resist generalization.”¹⁰³ Such questions “must be answered under the normal procedural standards, including the Federal Rules of Civil Procedure standards for motions to dismiss and summary judgment and the Federal Rules of Evidence standards for admissions and judicial notice.”¹⁰⁴

2. Lourie Concurrence.

Circuit Judge Lourie, joined by Circuit Judge Newman, stated he “believe[s] the law needs clarification by higher authority, perhaps by Congress, to work its way out of what so many in the innovation field consider are § 101 problems.”¹⁰⁵ The opinion began with the language of Section 101 (although it too omitted the Section 100(b) definition of “process”), and explained how the Supreme Court had “whittled away” that statute’s protections:¹⁰⁶

The decision we now decide not to rehear *en banc* holds that step two of the two-step analysis may involve the type of fact-finding that underlies §§ 102 and 103, further complicating what used to be a fairly simple analysis of patent eligibility under § 101. ... But why should there be a step two in an abstract idea analysis at all? If a method is entirely abstract, is it no less abstract because it contains an inventive step? And, if a claim recites ‘something more,’ an ‘inventive’ physical or technological step, it is not an abstract idea, and can be examined under established patentability provisions such as §§ 102 and 103.¹⁰⁷

¹⁰¹ *Berkheimer II*, 890 F.3d 1369.

¹⁰² *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 890 F.3d 1354, 1355 (Fed. Cir. 2018) (“*Aatrix IP*”).

¹⁰³ 890 F.3d at 1370. Because these are effectively the same decisions, only *Berkheimer II* is cited here.

¹⁰⁴ *Id.*

¹⁰⁵ *Id.* at 1374.

¹⁰⁶ *Id.* at 1375.

¹⁰⁷ *Id.*

The judge-made test “is essentially a §§ 102 and 103 inquiry,” unnecessary for determining “whether an idea is abstract.”¹⁰⁸ The effect is reduced innovation. Judge Lourie observed that *Myriad* resulted in reduced incentive for “genuine acts of inventiveness,” using the problem of antibiotic resistance as an example and noting that scientists may discover new and useful solutions in nature and ought to be incentivized to do so.¹⁰⁹

3. Reyna Dissent.

The dissent by Circuit Judge Reyna suggested a question of law cannot rest on a question of fact, but fact questions often determine legal dispositions.¹¹⁰ Indeed, the dissent directly analogized Section 101 eligibility to contract interpretation. But contract claims very frequently go to juries based on disagreements about the parties’ intent. That is like the *Aatrix* situation, where the patentee asserted a lack of conventionalness and the accused infringer had presented no contrary evidence.

More importantly, unless the specification admits conventionalness (which the *Aatrix* patent did not), there is no way to resolve affirmatively the conventionalness question by looking within “the four corners of the patent,” as the dissent suggested.¹¹¹ It appears on the one hand that the dissent would have a district court decide conventionalness as a matter of law based on the patent and nothing else. On the other hand, the dissent apparently would have affirmed the district court’s dismissal under *Alice/Mayo* because of conventionalness, even though there was no evidence of conventionalness in the patent itself. These views are difficult to reconcile.

Curiously, the dissent conceded novelty and obviousness “necessarily involve factual determinations,” while arguing that conventionalness (which essentially asks the same questions under current law) can always be determined on the face of the patent.¹¹²

The dissent also cited a Professor Dennis Crouch article for the proposition that “[c]ommentators have described [the recent Federal Circuit decisions] as a ‘precedential sea change,’ ... conflating the eligibility analysis with that of obviousness.”¹¹³ Partly true. But it was the Supreme Court, not the Federal Circuit, that first conflated Section 101 with Sections 102 and 103, in *Myriad*,¹¹⁴ *Alice*, and *Mayo*.

I. July 16, 2018, *Burnett v. Panasonic Corp.*¹¹⁵

In *Burnett*, the panel (Circuit Judges O’Malley, Clevenger, and Reyna) affirmed the district court’s Rule 12(b)(6) dismissal. According to the district court, the claims were “directed to a patent-ineligible mathematical methodology ‘for converting geographic coordinates into

¹⁰⁸ *Id.* at 1376.

¹⁰⁹ *Id.*

¹¹⁰ To name a few, this includes standing, contract interpretation, waiver, duress, and — in the patent context — novelty, obviousness, enablement, and claim construction.

¹¹¹ 890 F.3d at 1382-83.

¹¹² 890 F.3d at 1381.

¹¹³ 890 F.3d at 1377 n.3.

¹¹⁴ *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576 (2013).

¹¹⁵ 741 F. App’x 777 (Fed. Cir. 2018) (non-precedential).

alphanumeric representations.”¹¹⁶ Grappling with the circular logic of the *Alice/Mayo* test, the panel noted, “Burnett is correct that a new combination of steps, though individually ineligible or well-known, can give rise to a patent-eligible claim, but this purportedly new combination must still survive the step two inquiry.”¹¹⁷ Yet, according to the panel, the step two inquiry simply “assess[es] ... whether additional features in a claim transform an otherwise a patent-ineligible concept into a patent-eligible concept.”¹¹⁸ And if the court finds conventionalness in those individual features, then step two is apparently met and the claim fails.¹¹⁹ Completing the circle, the panel noted in footnote 1 that “Burnett does not contest that each element of the asserted claims is well-understood, but rather argues that the elements from each claim form new combinations.”¹²⁰ Nowhere did the panel address conventionalness as to any of those combinations.

Rather than apply step two as other courts have done, the panel simply agreed with the district court that the claims “do no more than simply state the [abstract idea] while adding the words ‘apply it.’”¹²¹ But the panel acknowledged that the claim specifically recited “a video camcorder” with a “receiving station” and a “video encoder.”¹²² If the problem is that such a system is old or obvious, this is a Section 102/103 question. But the video camcorder claims at issue were far from preempting the entire field of “converting geospatial coordinates into natural numbers,”¹²³ as the panel suggested.

Is it also troubling that the patent examiner made an amendment during prosecution “to bring the claims in compliance with the § 101 standard applied at that time.”¹²⁴ One would hope that a patentee could rely on the government’s own representation of what complies with patent eligibility law in accepting the government’s offer to amend a claim during prosecution.

Revealing a more perverse problem, other recent Federal Circuit panels denying patent eligibility have suggested that the innovation community take solace in the fact that other areas of law exist to protect unpatentable innovations, “such as in the law of trade secrets, whose core requirement is that the idea be kept secret from the public.”¹²⁵ But the courts change the standard every few years. Thus, it is difficult for an inventor to foresee whether she should keep her discovery secret or share it with the public on the promise (based on then-existing law) that the invention is patent-eligible.¹²⁶ One might conclude that the government has extracted the inventor’s disclosures into the public (non-trade-secret-protectable) arena, then moved the

¹¹⁶ *Id.* at 779.

¹¹⁷ *Id.* at 782.

¹¹⁸ *Id.* at 781 (citing *Alice*, 134 S.Ct. at 2355).

¹¹⁹ *Berkheimer II*, 890 F.3d at 1370 (conventionalness is a “step two” question).

¹²⁰ 741 Fed. App’x at 779 n.1.

¹²¹ *Id.* at 781-82.

¹²² *Id.* at 779.

¹²³ *Id.* at 782; *cf. Mayo*, 566 U.S. at 87 (field preemption was an important consideration).

¹²⁴ 741 Fed. App’x at 782.

¹²⁵ *SAP*, 898 F.3d at 1170.

¹²⁶ *Cf. Interval Licensing LLC v. AOL, Inc.* 896 F.3d 1335, 1348 (Fed. Cir. 2018) (Plager, J. concurring-in-part and dissenting-in-part) (observing that under the current test it is “near impossible to know with any certainty whether the invention is or is not patent eligible”).

goalposts, ultimately exchanging nothing for the disclosures made as part of the “patent bargain.”¹²⁷

J. July 20, 2018, *Interval Licensing LLC v. AOL, Inc.*¹²⁸

Here, the panel (Circuit Judges Chen and Taranto, with Circuit Judge Plager concurring and dissenting) affirmed summary judgment invalidating the patent on *Alice/Mayo* eligibility. The claims at issue were “directed to an abstract idea: the presentation of two sets of information, in a non-overlapping way, on a display screen.”¹²⁹

1. Chen Majority Opinion.

According to the majority, the primary problem was that the claims failed to define “how the attention manager segregates the display of two sets of data on a display screen,” and that without such specificity, the claim fully encompassed the abstract idea of separating information on a screen.¹³⁰ Helpfully, the majority provided suggestions on what additional specificity might have made the claim patent-eligible: “neither the specification nor the claims specify: whether a second window is created for the new content to be displayed; whether the new content always is displayed in a particular corner or location of the screen; or whether the attention manager performs an initial scan for where on the display screen ‘unused capacity’ exists, and then, wherever that space is, defines a boundary on the screen to display the new content there.”¹³¹

The majority asserted that “the specification describes the claimed instructions as routine and conventional,” and the patentee acknowledged as much at oral argument.¹³² This removed the conventionalness question from the realm of genuinely-disputed facts, unlike in *Berkheimer* and *Aatrix*.

On the “abstract idea” question, the majority reasoned that “[s]tanding alone, the act of providing someone an additional set of information without disrupting the ongoing provision of an initial set of information is an abstract idea.”¹³³ That is consistent with the unbound nature of the “abstract idea” label. But, labels aside, the claims did not recite this “act,” “standing alone”; the claim recited a “content display system,” “display devices,” and “an attention manager,” with specific instructions.¹³⁴

Continuing, the majority reverted to broad depictions of prior art: “As the district court aptly observed, this ‘*basic and longstanding practice can be found in, for example, a television station’s use of a breaking news ticker across the bottom of the screen.*’”¹³⁵ This example illuminates an inherent problem with conventionalness, which is that the court conflated what is

¹²⁷ See *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 161 (1989).

¹²⁸ 896 F.3d 1335 (Fed. Cir. 2018).

¹²⁹ *Id.* at 1338.

¹³⁰ *Id.* at 1341.

¹³¹ *Id.*

¹³² *Id.* at 1340.

¹³³ *Id.* at 1344.

¹³⁴ *Id.* at 1339-41.

¹³⁵ *Id.* at 1344 (emphasis added).

an “abstract idea” with what is a “basic and longstanding practice.” “Ideas” and “practices” seem conceptually divergent because one refers to conceptual thoughts and the other to concrete actions.

If the assertion about news tickers were supported by admissible evidence, then there presumably would have been no problem invalidating the claim under Section 102 or 103, which are far better tools for defining what is an “inventive concept.”

Finally, the majority faulted the patentee for “argu[ing] and receiv[ing] a construction of ‘attention manager’ defining that term by the result it yields, not by its structural design or any mode for producing the result,”¹³⁶ *i.e.*, functional claiming. But functional claiming is not only a facially poor indicator of Section 101 ineligibility, Congress has expressly allowed it by enacting 35 U.S.C. § 112(f).

2. Plager Concurrence/Dissent.

Circuit Judge Plager agreed that the outcome was mandated by current precedent, but he explained that “[t]he law ... renders it near impossible to know with any certainty whether the invention is or is not patent eligible,” and dissented from the “court’s continued application of this incoherent body of doctrine.”¹³⁷

Like many, Judge Plager started with words from Section 101 (though he did not mention the Section 100(a) or (b) definitions). Before critiquing the “abstract ideas” doctrine, he noted that the frequent, but incorrect, citation of *Mayo* as an “abstract ideas” case “is an example of the blending that can cause analytical confusion.”¹³⁸

Judge Plager explained the current “abstract ideas” conundrum:

The problem with trying to define “abstract ideas,” and why no court has succeeded in defining it, is that, as applied to as-yet-unknown cases with as-yet-unknown inventions, it cannot be done except through the use of equally abstract terms. ... the closest our cases come to a definition is to state examples of what prior cases have contained, and which way they were decided. But what anecdotal cases reveal, a definition does not make.¹³⁹

Thus, he concluded that the abstract idea of “abstract ideas” used in denying a patent based on eligibility “cannot thus function as a valid rule of law.”¹⁴⁰

Judge Plager also astutely attacked the (judicial inventive) concept of “inventive concept.” He recounted the history behind Section 103 of the Patent Act, enacted in 1952. Prior to that overhaul, the courts had injected something called the “requirement for invention,” based on an 1851 case.¹⁴¹ Judge Plager asserted, citing Judge Giles Rich’s extensive writings, “At the time

¹³⁶ *Id.* at 1348.

¹³⁷ *Id.*

¹³⁸ *Id.* at 1349.

¹³⁹ *Id.* at 1351.

¹⁴⁰ *Id.*

¹⁴¹ *Id.* at 1352 (citing *Hotchkiss v. Greenwood*, 52 U.S. (11 How.) 248, 13 L. Ed 683 (1851)).

[Section 103 was enacted, Judge Rich], along with many others, thought that the *undefinable—truly abstract—concept of ‘inventive concept’ had been put into the dustbin of history* by the specific criteria for a valid patent in the new Patent Act, specifically § 103, nonobvious subject matter.”¹⁴² He continued:

As a decisional construct for validation of a property right—a patent—the idea of a necessarily underlying ‘inventive concept’ proved unworkable. The concept provided no discernable boundaries for decision-making in specific cases, resulting in an incoherent legal rule that led to arbitrary outcomes. Judge Rich, who devoted his life to patent law, saw this clearly, and gave the Congress a workable alternative—nonobvious subject matter—which they adopted.¹⁴³

In a section titled “The Emperor Has No Clothes,” Circuit Judge Plager praised the concurring and dissenting opinion of Circuit Judge Linn in *Smart Systems Innovations v. Chicago Transit Authority*, which also critiqued the “abstract ideas” idea,¹⁴⁴ and Circuit Judge Lourie’s more recent concurring opinion in *Aatrix/Berkheimer*, discussed above.¹⁴⁵ Judge Plager noted “almost universal criticism among commentators and academicians that the ‘abstract idea’ idea has created havoc in the patent law.”¹⁴⁶ According to Judge Plager, the lack of consensus came from a judge-made “process for finding abstract ideas that involves two redundant steps and culminates with a search for a concept — inventiveness — that some 65 years or so ago was determined by Congress to be too elusive to be fruitful.”¹⁴⁷

In the end, Judge Plager called for the courts “to address this § 101 conundrum,”¹⁴⁸ and he provided some suggestions that are discussed further herein at Section V.

K. August 2, 2018, *SAP America, Inc. v. InvestPic, LLC*.¹⁴⁹

In *SAP*, the panel (Circuit Judges Lourie, O’Malley, and Taranto) affirmed the court’s judgment on the pleadings that the claims were ineligible under *Alice/Mayo*. The panel described the abstract idea(s) as “selecting certain information, analyzing it using mathematical techniques, and reporting or displaying the results of the analysis.”¹⁵⁰

The *SAP* panel discussed *McRO*,¹⁵¹ in which a Federal Circuit panel reversed a judgment on the pleadings under *Alice/Mayo*. In *MrCO*, the patent-eligible claims for cartoon animation were “focused on ... automatic use of rules of a particular type” that allowed generic computers

¹⁴² *Id.* at 1351.

¹⁴³ *Id.* at 1352-53.

¹⁴⁴ *Smart Systems Innovations, LLC v. Chicago Transit Authority*, 873 F.3d 1364, 1376 (Fed. Cir. 2017) (Linn, J., concurring-in-part and dissenting-in-part).

¹⁴⁵ See also Circuit Judge Newman’s dissenting opinion in *Athena*, discussed below.

¹⁴⁶ *Id.* at 1353.

¹⁴⁷ *Id.* at 1355.

¹⁴⁸ 896 F.3d at 1355-56.

¹⁴⁹ 898 F.3d 1161 (Fed. Cir. 2018) (modified from May 2015, 2018 opinion).

¹⁵⁰ *Id.* at 1167.

¹⁵¹ *MrCO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016).

to produce “accurate and realistic lip synchronization and facial expressions in animated characters,” which previously only human animators could do.¹⁵² The panel observed that “[t]he specific structure of the claimed rules would prevent broad preemption of all rules-based means of automating lip synchronization, unless the limits of the rules themselves are broad enough to cover all possible approaches.”¹⁵³ However, this was a motion for judgment on the pleadings, and at that early stage there was no evidence that the claims preempted all possible rules-based lip-sync processes.¹⁵⁴ Thus, the *MrCO* panel decided the claim was not “directed to” ineligible subject matter under *Alice* step one.

The *SAP* panel distinguished *McRO*¹⁵⁵ on the basis that the *MrCO* claims, although they used math, “were directed to the creation of something physical ... ‘lip synchronization and facial expressions’ of animated characters on screens for viewing by human eyes.”¹⁵⁶ The panel maintained that “the ‘investment’ character” of the information in *SAP*’s claim “simply invokes a separate category of abstract ideas involved in *Alice* and many of our cases.”¹⁵⁷ Those categories, referring to “fundamental economic practices” and “fundamental economic concept” with “generic-computer functions,” refer to concepts absent from the text of Section 101 and sound like novelty and obviousness.

The panel gave another reason for allowing the cartoon claim but not the investment claim. The cartoon claim “had the specificity required to transform a claim from one claiming only a result to one claiming a way of achieving it.”¹⁵⁸ But it is far from clear *how much* “specificity” is “required” to render the functional software claim patent-eligible. Aside from the difficulty in judicially applying this specificity requirement under Section 101, the requirement itself seems to be a contravention of Section 112(f)’s express approval of functional claiming. If the real failure in the patent is an insufficient enabling description to support the functional claim, then Section 112 provides a better way to invalidate the patent.

The patentee argued the specificity requirement was met by claim limitations like “parallel processing” computing architecture, but the panel dismissed this point by concluding those elements were old,¹⁵⁹ possibly violating the anti-claim-dissection rule and *Diehr*.¹⁶⁰

In justifying the outcome, the panel cited *Myriad* for the proposition that a court “may assume that the techniques claimed are ‘groundbreaking, innovative, or even brilliant,’ but that is not enough for eligibility.”¹⁶¹ This seems inconsistent with other Federal Circuit treatment of industry accolades or investment dollars in determining whether an invention is patent-eligible.¹⁶²

¹⁵² *Id.* at 1313-15.

¹⁵³ *Id.* at 1315.

¹⁵⁴ *Id.*

¹⁵⁵ *MrCO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016).

¹⁵⁶ 898 F.3d at 1167.

¹⁵⁷ *Id.* at 1168.

¹⁵⁸ *Id.* at 1167.

¹⁵⁹ *Id.* at 1170.

¹⁶⁰ 450 U.S. at 188-89.

¹⁶¹ 898 F.3d at 1163.

¹⁶² *See, e.g., Exergen* (herein at Section III(D)); *Data Engines* (herein at Section III(N)).

L. August 15, 2018, *BSG Tech LLC v. Buyseasons, Inc.*¹⁶³

In *BSG*, the panel (Circuit Judges Reyna, Wallach, and Hughes) affirmed judgment of ineligibility following conversion of a motion to dismiss into a summary judgment motion.¹⁶⁴ The panel concluded that the claims “are directed to the abstract idea of considering historical usage information while inputting data.”¹⁶⁵ While the panel acknowledged that the patentee “narrowed its claims to specific database structures” (*i.e.*, not an “abstract idea”), it concluded those structures were well-understood and conventional based on admissions in the specification that they were “commonly used at the time of invention.”¹⁶⁶ Thus the claimed structures failed to provide an “inventive concept” under the conventionalness test. The patentee argued the claims required the user to specifically consider “summary comparison usage information,” but the panel decided this was a roundabout way of claiming “any historical information about parameter or value usage,” suggesting field preemption.¹⁶⁷

The panel held that “applying an abstract idea in a narrow way” does not make it patentable because it still “focuses” on the abstract idea. This is confusing because a “narrow” application of an “abstract idea” conceptually conflicts with the “abstract idea” idea. A chair comprising a flat surface with four legs and a back might be described as “focused on” the “abstract idea” of “supporting the sitting position,” implementing conventional structures like dowels and boards. But patent-eligibility is supposed to be determined by the specific combination of limitations claimed, not by an arbitrary abstraction thereof.¹⁶⁸

The panel also held that there was no “improvement to database functionality” in the claimed features that “allowed users to quickly and efficiency access hundreds of thousands or even millions of records and still find only those few records that are relevant.”¹⁶⁹ That seems inconsistent with *Berkheimer* and *Aatrix*. “Instead,” the panel determined, “they are benefits that flow from performing an abstract idea in conjunction with a well-known database structure.”¹⁷⁰ The same might be said for the patent-eligible inventions in *Berkheimer* and *Aatrix*, where the critical benefits to data processing naturally flowed from the claimed elements.

The panel concluded, “Whether labeled as a fundamental, long-prevalent practice or a well-established method of organizing activity, this qualifies as an abstract idea.”¹⁷¹ On the contrary. practices and methods — whether long-prevalent and well-established or new and original — are antithetical to the concept of an “*abstract idea*.”

¹⁶³ 899 F.3d 1281 (Fed. Cir. 2018).

¹⁶⁴ See Fed. R. Civ. P. 12(d).

¹⁶⁵ 899 F.3d at 1285.

¹⁶⁶ *Id.* at 1287, 91.

¹⁶⁷ *Id.* at 1287.

¹⁶⁸ *Diehr*, 450 U.S. at 188-89 (anti-claim-dissection rule).

¹⁶⁹ *Id.*

¹⁷⁰ *Id.*

¹⁷¹ *Id.* at 1286.

M. October 9, 2018, *Data Engine Techs. LLC v. Google LLC*.¹⁷²

Data Engine is potentially informative due to its mixed outcome, affirming Rule 12(b)(6) dismissal of some claims while reversing as to others.

1. Patent-Eligible Claims.

The panel (Circuit Judges Reyna, Bryson, and Stoll) first held that a claim “directed to a specific method for navigating through three-dimensional electronic spreadsheets” was not directed to an abstract idea, and thus is patent-eligible.¹⁷³ That claim was for using “notebook tabs” to navigate through electronic spreadsheets,¹⁷⁴ whereas prior art versions required “searching for, memorizing, and entering complex commands” to accomplish the same goal.¹⁷⁵

Using the “technological problem” label, the panel noted applause “by the industry for improving computers’ functionality as a tool able to instantly access all parts of complex three-dimensional electronic spreadsheets” in concluding that *Alice* step one was not met.¹⁷⁶ According to the panel, Google (the accused infringer) “fail[ed] to appreciate the functional improvement achieved by the specifically recited notebook tabs in the claimed methods.”¹⁷⁷ Thus, *Data Engine* appears to stand for the proposition that a technological improvement indicates patent-eligibility, and industry accolades are evidence of such an improvement.

Yet, according to other recent Federal Circuit decisions such as *SAP*, industry accolades are not an indicator of eligibility: “We may assume that the techniques claimed are groundbreaking, innovative, or even brilliant, but that is not enough for eligibility.”¹⁷⁸

With the extant diverging precedent, another panel might have concluded that “navigating through a spreadsheet”¹⁷⁹ is an abstract idea, and the patentee merely used the age-old method of tabbing notebooks and applied it to a general-purpose computer using well-known and conventional elements. Two months after this decision, another panel invalidated claims also purporting to improve electronic spreadsheets.¹⁸⁰

¹⁷² 906 F.3d 999, 1007 (Fed. Cir. 2018).

¹⁷³ *Id.* at 1007-08.

¹⁷⁴ Notebook tabs on electronic spreadsheets have, of course, been around for a while. The priority date on the claims at issue, however, was 1992, and according to the panel, Quattro Pro was the first commercial embodiment.

¹⁷⁵ 906 F.3d at 1002.

¹⁷⁶ *Id.* at 1008.

¹⁷⁷ *Id.* at 1011.

¹⁷⁸ *SAP*, 898 F.3d at 1163 (internal quotations omitted).

¹⁷⁹ *Data Engine*, 906 F.3d at 1008.

¹⁸⁰ *See in re Downing*, discussed herein at Section III(N).

2. Patent-Ineligible Claims

The *Data Engine* panel held that other claims, directed to tracking changes across spreadsheets,¹⁸¹ were for an abstract idea with no inventive concept.¹⁸² It is not clear why “tracking changes across spreadsheets” is deemed an abstract idea, while “navigating through a spreadsheet” is not, except by reference to the question of improvement. Specifically, the panel distinguished the change-tracking from the patent-eligible claims by stating that “nothing in the ’146 patent’s claims viewed in light of the specification convinces us that the claimed method improves spreadsheet functionality in a specific way sufficient to render the claims not abstract.”¹⁸³ Thus, in view of the mixed outcome, *Data Engine* appears to stand for the proposition that whether a claim is directed to an “abstract idea” can depend on whether the claimed invention is a technological improvement.

More perplexing, it appears from *Data Engine* that the court’s view on the extent or specificity of improvement also matters. For example, in reference to the ineligible change-tracking claims, the panel observed that the specification “teaches that prior art electronic spreadsheets were not particularly adept at managing ‘what-if’ scenarios in a given spreadsheet,” and multiple versions of models had to be created in order to test various sets of assumptions in prior systems, which was cumbersome.¹⁸⁴ Therefore, under the claimed method, the specification asserted an improvement whereby what-if scenarios could be performed more efficiently, without multiple additional copies for each scenario. The change-tracking claims seemed to be for an “improvement” solving a “technological problem” in a specific way. But according to the panel, this improvement was not big or specific enough to be deemed “sufficient to render the claims not abstract.”¹⁸⁵

In this decision, the clear difference rendering the tab claims eligible and the change-tracking claims ineligible was that the patentee cited numerous industry accolades for the former. This kind of evidence resembles the “indicia of obviousness or nonobviousness” known as “commercial success” or “long felt but unsolved needs” under Section 103 analysis.¹⁸⁶

N. December 7, 2018, *In re Downing*.¹⁸⁷

In *Downing*, the Federal Circuit panel (Circuit Judges Lourie, Bryson, and Dyk) affirmed the USPTO’s decision rejecting patent claims under *Alice/Mayo*. The panel held that “the claims as a whole are directed to the concept of personal management, resource planning, or forecasting,” and concluded the claims “are directed to an abstract idea.”¹⁸⁸ Finding that “[t]he claims merely recite the use of generic computer components, such as a ‘computer platform’ with Excel ®

¹⁸¹ A third set of claims were also rejected for “cover[ing] any means for identifying electronic spreadsheet pages,” which the panel contrasted with the “specific implementation” covered by other, patentable claims.

¹⁸² 906 F.3d at 1012-13.

¹⁸³ 906 F.3d at 1013.

¹⁸⁴ 906 F.3d at 1005-06.

¹⁸⁵ 906 F.3d at 1013.

¹⁸⁶ *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17 (1966).

¹⁸⁷ No. 2018-1795, ___ Fed. App’x ___, 2018 WL 6436437, at *3 (Fed. Cir. Dec. 7, 2018) (non-precedential).

¹⁸⁸ 2018 WL 6436437, at *4.

‘resource planning applications,’ and ‘displays’” together with the abstract idea, the panel did not find error in the USPTO’s conclusion of Section 101 ineligibility.¹⁸⁹

In reaching its opinion, the panel observed that, “unlike in *McRO*^[190] and *DDR Holdings*,^[191] Downing is not claiming an improvement in Excel ® spreadsheets or an improved resource planning computer technology.”¹⁹² But the applicant *did* assert he was claiming a “new and improved planning model using electronic spreadsheet technology,” and the claim itself recited “improv[ing] the end user’s ease of operation and assessments.”¹⁹³ Perhaps the pro se applicant did not use the magic words, “improvement in Excel® spreadsheets,” but it seems undisputed that the prior Excel® spreadsheets did not do all of the things listed in this 350+ word product-by-process claim, which refers to, among other things: a “proprietary forecasting technique,” “social and technological change,” forecasting “1-5-15 years simultaneously,” “improv[ing] the end user’s ease of operation and assessments,” “linking [the] display” with a number of claimed features, “constructing [the listed] one-time settings,” and “accommodating the full extent of resource types and resource planning for operation by non-technical or technical users in one unbundled computer file through end user interaction with displays.”¹⁹⁴ Whether the claim is sufficiently described (Section 112), definite (Section 112), novel (Section 102), or non-obvious (Section 103) would have been fair issues to explore, and the claim may well have been unpatentable on one or more of those grounds. But the claim plainly sounded like a specific improvement over a standard spreadsheet.

O. December 28, 2018, *In re Marco Guldenaar Holding, B.V.*¹⁹⁵

In *Guldenaar*, the panel (Circuit Judges Chen and Bryson, with Circuit Judge Mayer concurring) again affirmed the USPTO’s decision rejecting patent claims under *Alice/Mayo*. The straightforward claim described a “dice game,” with three dice. As recited in the claim: the first die has one face with a unique mark; the second die has two faces with the same unique mark; the third die has three faces with the same unique mark; a wager must be placed on whether the first, second, or third die will roll with the unique side up; and, finally, the dice are rolled, and payment made if a wager condition is met.¹⁹⁶

1. Chen Majority Opinion.

The panel found the claims “directed to a method of conducting a wagering game,” or “the abstract idea of ‘rules for playing a dice game.’” The appellant argued that “the specifically-

¹⁸⁹ *Id.*

¹⁹⁰ *MrCO*, 837 F.3d at 1314-16.

¹⁹¹ *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014) (holding that claims directed to transporting a user who clicks on a web page advertisement “to an automatically-generated hybrid web page” were patent eligible because the “claims address a business challenge (retaining website visitors) ... particular to the Internet.”).

¹⁹² 2018 WL 6436437, at *4.

¹⁹³ *Id.* at *1.

¹⁹⁴ *Id.* at *1-*2.

¹⁹⁵ 911 F.3d 1157 (Fed. Cir. 2018).

¹⁹⁶ 911 F.3d at 1159.

claimed dice ... are not conventional and their recitation in the claims amounts to ‘significantly more’ than the abstract idea.”¹⁹⁷

In response, the panel relied on the rarely-cited “printed matter” exception,¹⁹⁸ stating that “claim limitations directed to the content of information *and lacking a requisite functional relationship* are not entitled to patentable weight because such information is not patent eligible subject matter.”¹⁹⁹ But “physical structures of printed matter” can be patented,²⁰⁰ and the panel’s assertion that “the printed indicia on each die are not functionally related to the substrate of the dice”²⁰¹ was incorrect. Indeed, the unique indicia were physically affixed to only one, two, or three sides of the physical, three-dimensional, geometric structure. Whether that marking ended face-up after the dice were rolled (an important functional aspect of the claimed invention) was a direct function of where that marking was physically located in relationship to the structural geometry. Stated differently, the markings’ physical location on the structure functionally determined whether the indicia were face-up following a dice roll, which is a key functional feature of the invention.

This was not a “printed matter” case. It was not like the printed drug labels at issue in *AstraZeneca*²⁰² or *Praxair*²⁰³ (the two “printed matter” cases the panel cited), and printed matter was not even mentioned in *Smith* (the other cited case), which involved a “standard deck of cards.”²⁰⁴ There was no evidence or suggestion that the dice claimed by *Guldenaar* were “standard.” Even the *Smith* panel — and the government in that case — acknowledged they could envision “claims directed to conducting a game *using a new or original deck of cards* potentially surviving step two of *Alice*.”²⁰⁵ *Guldenaar* featured a new game based on what appeared to be a “new or original” set of dice, yet the panel invalidated the patent on eligibility grounds.

2. Mayer Concurrence.

Circuit Judge Mayer, like Circuit Judge Reyna, rejected outright the proposition that “the patent eligibility inquiry ‘may contain underlying issues of fact.’”²⁰⁶ But Judge Mayer went a step further. Calling upon the abstract idea of an “inventive concept,” Judge Mayer asserted that Section 101 was supposed to be an expeditiously decided, “purely legal issue” because its purpose, as he saw it, was to “weed[] out patents clearly lacking any ‘inventive concept.’”²⁰⁷ That purpose, however, finds no support in Section 101.

¹⁹⁷ *Id.* at 1162.

¹⁹⁸ Under this judicial doctrine established by the Federal Circuit and its predecessor court, “invention cannot rest alone in novel printing arrangement.” *In re Rice*, 132 F.2d 140, 141 (C.C.P.A. 1942).

¹⁹⁹ 911 F.3d at 1161-62 (emphasis added).

²⁰⁰ *Rice*, 132 F.2d at 141.

²⁰¹ 911 F.3d at 1161.

²⁰² *AstraZeneca LP v. Apotex, Inc.*, 633 F.3d 1042, 1064 (Fed. Cir. 2010).

²⁰³ *Praxair*, 890 F.3d at 1032.

²⁰⁴ *In re Smith*, 815 F.3d 816, 818–19 (Fed. Cir. 2016).

²⁰⁵ 815 F.3d at 819 (emphasis added).

²⁰⁶ 911 F.3d at 1162. Circuit Judge Mayer, as a senior status judge, did not participate in the *Berkheimer II* / *Aatrix II* order on petition for rehearing *en banc*, discussed herein at Section III(H).

²⁰⁷ 911 F.3d at 1166.

It is important to recall that Congress is the body authorized to declare what deserves a patent. Circuit Judge Mayer stated his view that games do not: “While games may enhance our leisure hours, they contribute nothing to the existing body of technological and scientific knowledge. They should therefore be deemed categorically ineligible for patent.”²⁰⁸ This comment underscores one problem with the current “abstract idea” and “inventive concept” constructs: They provide cover to substitute personal, even if sensible, opinions in place of what Congress has declared patent-eligible.

P. February 6, 2019, *Athena Diagnostics, Inc. v. Mayo Collaborative Servs.*²⁰⁹

Mayo struck again, invalidating Athena’s patent under *Alice/Mayo* (it has some expertise on the matter) on a Rule 12(b)(6) motion, and the Federal Circuit panel (Circuit Judges Lourie and Stoll, with Circuit Judge Newman dissenting) affirmed.

The patentee discovered what was causing 20 percent of the *myasthenia gravis*²¹⁰ sufferers’ ailment: muscle-specific tyrosine kinase (“MuSK”) antibodies. With that knowledge, the patentee invented a previously unknown diagnostic test that used human-made tools to detect the presence of MuSK antibodies, to diagnose MG.

1. Lourie Majority Opinion.

The panel held that the claims were “directed to²¹¹ a natural law” under *Mayo, i.e.*, “the correlation between the presence of naturally-occurring MuSK autoantibodies in bodily fluid and MuSK-related neurological diseases like MG.”²¹²

The majority distinguished *CellzDirect*,²¹³ where the inventor discovered a way to preserve liver cells, by noting that “the claimed advance [in *CellzDirect*] harnessed a natural law to produce a *technological improvement* that was patent eligible.”²¹⁴ But as the majority acknowledged, the improvement there was “multiple freeze-thaw cycles.”²¹⁵ Multiple freeze-thaw cycles have been happening since before the freezer was invented. Thus, the majority must have relied on its invocation of the “*technological improvement*” phrase in concluding patentability.²¹⁶ The *Athena*

²⁰⁸ *Id.*

²⁰⁹ 915 F.3d 743 (Fed. Cir. 2019).

²¹⁰ “MG,” as the court noted, is a “neurological disorder where patients experience muscle weakness, ... drooping eyelids, double vision, and slurred speech.” Acetylcholine receptor antibodies were present in 80% of patients, providing a good diagnostic tool for those patients, but nobody knew what caused the other 20% or how to properly confirm diagnosis of MG in those cases, given that other diseases also cause those symptoms.

²¹¹ *But see Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 873 F.3d 1364, 1378 (Fed. Cir. 2017) (Linn, J., concurring-in-part and dissenting-in-part) (“Where do you draw the line between properly determining what the claim is directed to and improperly engaging in an overly reductionist exercise to find the abstract idea that underlies virtually every claim.”).

²¹² 915 F.3d at 750.

²¹³ *Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1047–49 (Fed. Cir. 2016).

²¹⁴ 915 F.3d at 751 (emphasis added).

²¹⁵ *Id.*

²¹⁶ If one shows a “technological improvement,” can one bypass the conventionalness test entirely? It appears that is what happened here.

majority assured this was the case when it noted that the patent “describes the claimed invention principally as a discovery of a natural law, not as an improvement in *the underlying immunoassay technology*.”²¹⁷ Words and phrases like “assay” and “freeze-thaw cycle” do not help solve the inherent definitional problem illustrated here: What is “technology” such that an invention can be a “technological improvement”? And, consistent with the *Alice/Mayo* construct considered more broadly, no textual support for this “technology” limitation is found in Section 101.

One might say that Athena’s claimed invention was a “technological improvement” in “diagnostic technology.” It would be like the old thermometer in *Exergen*, which was held patent-eligible when applied to the newly-discovered natural law consisting of the coefficient between core, surface, and ambient temperatures.²¹⁸ Perhaps if Athena’s claim had been styled as “new and improved technology for diagnosing a patient who presents with [defined] symptoms, comprising the following steps which include using new, man-made molecules,” it may have been deemed eligible.

The majority noted, “Athena does not point to any innovation other than its discovery of the natural law.”²¹⁹ Rolling a “standard techniques” standard into *Alice* step one, the majority held that the claims “are directed to a natural law because they recite only the natural law together with standard techniques for observing it.”²²⁰

The panel observed that the specification contains now-fatal admissions: “The actual steps of detecting autoantibodies in a sample of bodily fluids may be performed in accordance with immunological assay techniques known per se in the art,” including radioimmunoassays and ELISA.²²¹ The specification also identified “[i]odination and immunoprecipitation” as “standard techniques in the art.”²²² But even if every high school student in the United States knew the steps for performing an ELISA (an optimistic hypothetical) that fact would not render Athena’s invention ineligible under Section 101 because patent-eligible subject matter expressly “includes a new use of a known process, machine, manufacture, composition of matter, or material.”²²³ Leaving aside the concurrence/dissent in the Federal Circuit *Alice* case, not a single case in the past six years, including the Supreme Court’s *Alice* formulation, talks about “a new use of a known process,” or the fact that “invention” means “invention or discovery.”²²⁴ “Inventive concept” is a construct that, if once useful, is not now.

In *Vanda*,²²⁵ the patent was upheld where the patentee used old drugs to treat schizophrenia in an improved way, based on patient genotype, upon discovery of the relationship between effective dosage and genotype. Similarly, the patentee in *Athena* used “old” molecules — and probably new ones — to create an improved method for diagnosing patients with MG. The *Athena* majority did not conclude the molecules themselves were old, only the techniques that would be

²¹⁷ *Id.*

²¹⁸ See Section III(D) herein.

²¹⁹ 915 F.3d at 751.

²²⁰ *Id.*

²²¹ *Id.* ELISA is an acronym for enzyme-linked immunosorbent assay.

²²² *Id.*

²²³ 35 U.S.C. 100(b).

²²⁴ 35 U.S.C. 100(a).

²²⁵ See Section III(F) herein.

used to create them. Specifically, the decision does not assert or even suggest that either iodinated MuSK or a secondary MuSK antibody tagged with a reporter molecule for an ELISA test constitute “old” molecules. They might arguably be obvious molecules in view of then-existing labeling technology and other relevant considerations, but the court never reached Section 103. The court determined only that “iodination and immunoprecipitation were known techniques.” Yet, these possibly-new molecules are expressly recited in the claims: “contacting *MuSK* or an epitope or antigenic determinant thereof *having a suitable label thereon*” The court passed over this specific claim limitation, chalking it up as a “routine step” without addressing whether the man-made molecule existed prior to claimed invention.²²⁶

Perhaps the lack of a treatment step makes this different than the claims in *Vanda*. The courts have not given a reasoned justification for treating diagnosis technology differently than treatment technology. Both are vital in the field of biomedical technology. Innovative treatment systems and methods for treating every conceivable ailment will be of little use without technology for proper diagnoses.²²⁷

Because *Athena* was decided in a Rule 12(b)(6) context, the majority upheld the district court’s refusal to consider an expert declaration that would have expressly stated that “iodination and immunoprecipitation were not routine as applied to the claimed invention.”²²⁸ Whether that decision was correct under the procedural rules, it should not have mattered because the majority never cited any evidence that either iodinated MuSK or a secondary MuSK antibody tagged with a reporter molecule for an ELISA test constituted “old” molecules.

Evidently, the only real difference between *Athena* on the one hand, and *Vanda* and *Exergen*, on the other, is that the latter managed to reach a trial on the merits, whereas *Athena* was caught by an early dispositive motion. Procedural posture should not determine the outcome of patent eligibility merits questions.

2. Newman Dissent.

Like Circuit Judges Plager, Linn, and (in *Berkheimer II / Aatrix II*) Lourie before, Circuit Judge Newman observed that “[t]his court’s decisions on the patent-ineligibility of diagnostic methods are not consistent, and my colleagues today enlarge the inconsistencies and exacerbate the judge-made disincentives to development of new diagnostic methods, with no public benefit.”²²⁹

Citing *Diamond v. Diehr*, the dissent remembered an anti-claim-dissection rule that many have forgotten: “Eligibility is determined for the claim considered as a whole, including all its elements and limitations. Claim limitations cannot be discarded when determining eligibility under Section 101.”²³⁰ According to the dissent, the majority wrongly held that the steps of claims

²²⁶ Even if the claimed molecules did pre-exist the claimed invention, the whole inquiry ignores that Congress expressly allowed patents on new uses of old processes and material. 35 U.S.C. § 100(b).

²²⁷ *Accord Athena*, 2019 WL 453489, at *16 (Newman, J., dissenting) (“The loser is the afflicted public, for diagnostic methods that are not developed benefit no one.”)

²²⁸ *Id.* at *9.

²²⁹ *Id.* at *11.

²³⁰ *Id.* (citing *Diehr*, 450 U.S. at 188).

7-9 that is, “radioactive labelling, complexing, precipitating, and monitoring” should be “removed from consideration in the Section 101 analysis because they use conventional procedures.”²³¹ Specifically, under Section 101, “[i]t is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis.”²³² Yet, that is precisely what courts did throughout 2018 and continue doing today.

Moreover, as Judge Newman noted, the Supreme Court long ago held that “[t]he ‘novelty’ of any element or steps in a process, or even of the process itself, *is of no relevance* in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.”²³³ This truism, which properly accounts for the difference between Sections 101 and 102/103, has been lost in today’s iteration of judge-made eligibility analysis which focuses on the (abstract) idea of conventionalness.

Q. February 8, 2019, *Voit Techs., LLC v. Del-Ton, Inc.*²³⁴

In *Voit*, the panel (Circuit Judges Wallach, Taranto, and Stoll) affirmed Rule 12(b)(6) dismissal under *Alice/Mayo*. It determined that the claims were “directed to the abstract idea of entering, transmitting, locating, compressing, storing, and displaying data (including text and image data) to facilitate the buying and selling of items.”²³⁵ On its face, that “idea” seems quite specific, and maybe not “abstract.”²³⁶ The court also concluded that the patentee’s “broad assertion that the Asserted Claims ‘allowed more rapid transmission of higher resolution digital images’ via ‘advanced image data compression’ was unsupported.”²³⁷ In so holding, the panel noted that the court had previously “recognized that claims directed to ‘improved speed or efficiency inherent with applying the abstract idea on a computer’ are insufficient to demonstrate an inventive concept.”²³⁸ But this statement appears inconsistent with *Berkheimer* and *Aatrix*, where purportedly abstract ideas were applied in a specific way that improved computer performance.

Also, it appears the court misapplied *Alice* by using the conventionalness test in step one: “the specification demonstrates that the Asserted Claims are directed to use of generic computer components performing conventional compression techniques to carry out the claimed invention

²³¹ The dissent also considered these “technological steps,” in contrast to the majority who, as discussed above, apparently did not consider the invention directed to technology (even were that were a relevant consideration under the statute’s plain language).

²³² 915 F.3d at 758 (quoting *Diehr*, 450 U.S. at 188).

²³³ *Id.* at 761 (quoting *Diehr*, 450 U.S. at 188-89) (emphasis added).

²³⁴ No. 2018-1536, 2019 WL 495163, at *1 (Fed. Cir. Feb. 8, 2019) (non-precedential).

²³⁵ *Id.* at *2.

²³⁶ See *Chicago Transit*, 873 F.3d at 1378 (Linn, J., concurring-in-part and dissenting-in-part) (warning against “an overly reductionist exercise to find the abstract idea that underlies virtually every claim.”)

²³⁷ *Id.*

²³⁸ *Id.* at *2 (citing *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1367 (Fed. Cir. 2015)).

... Thus, the Asserted Claims are directed to an abstract idea at *Alice* step one.”²³⁹ *Alice* step one does not mention conventionalness; it appears only in step two.²⁴⁰

Again, setting aside these confusing and inconsistent applications of the *Alice* test, it appears that what was ultimately fatal were the admissions in the specification that “the actual data compression methods employed could include the *industry standard JPEG format ... or other ... commercially available techniques.*”²⁴¹ Based on those admissions, the patentee could not credibly argue against conventionalness, whether under step one or step two.

IV. Litigation and Prosecution Perspectives

The law about Section 101 patent eligibility, judicial exceptions, and the *Alice/Mayo* test continue changing. Significant revisions could be on the horizon, which may provide more consistency and predictability. In the meantime, below are a few points for prosecutors and litigators to consider based on the current state of affairs.²⁴²

1. Prosecution

Most of the early dispositions against patentees found conventionalness by relying on admissions in the specification about what was “conventional,” “well-known,” “generic,” “common,” “fundamental,” or “routine.” Applicants have been using these words for decades to help comply with the written description requirements of 35 U.S.C. § 112. As seen, these words can backfire under today’s patent eligibility tests. In order to sufficiently describe the invention while reducing the likelihood of ineligibility based on conventionalness, an applicant may consider the following points:

(1) Avoid using conventionalness words, while keeping in mind the requirement to comply with Section 112.

(2) Where feasible, instead of using conventionalness words, provide an enabling description of the feature or method at issue. While this may add to the cost of drafting, it may also save the patent by avoiding an unnecessary conventionalness admission.

(3) If necessary, cite a specific (preferably recent) reference teaching the feature or method, without using conventionalness words. Just because something is “known” at the time of invention does not mean it was “routine, well-known, conventional.”²⁴³

²³⁹ *Id.* at *2.

²⁴⁰ *Alice*, 573 U.S. at 134; *see also Berkheimer II*, 890 F.3d at 1370 (“whether a claim element or combination is well-understood, routine, and conventional is a question of fact. This inquiry falls under *step two* in the § 101 framework.”) (emphasis added).

²⁴¹ 2019 WL 495163, at *2 (emphasis added).

²⁴² Perhaps obviously, because of the unique nature of each case and the evolving nature of the law, the general considerations below may or may not apply in any given case.

²⁴³ *Berkheimer*, 881 F.3d at 1369 (“The mere fact that something is disclosed in a piece of prior art, for example, does not mean it was well-understood, routine, and conventional.”).

(4) Where accurate, use the word “technological improvement” in the specification, and specifically describe *how* each of the inventive features of the claimed invention result in the improvements. Use clear, specific examples rather than generalizations, where appropriate.

(5) If an examiner rejects based on conventionalness without supporting it with underlying factual determinations, note that the rejection is improper under current guidance.²⁴⁴

(6) When appealing an examiner’s rejection, avoid conceding a claim is “representative,” where reasonable, because a dependent claim may ultimately add the extra features that the USPTO or the Federal Circuit deem sufficiently inventive.²⁴⁵

2. Litigation

a) For Patentees:

(1) Prior to bringing suit, assess recent patent-eligibility caselaw, determine the most analogous cases, and evaluate the risks of an early ineligibility determination.

(2) In the complaint, specifically assert lack of conventionalness, specifically for each feature and sub-features of the claimed invention as appropriate. Support such assertions with specific facts.²⁴⁶

(3) In the complaint, discuss industry accolades or other positive indicators pointing against conventionalness. Tell how much effort it took to make the discovery at issue.

(4) In the complaint, tie the unconventional features and methods specifically to concrete technological improvements.²⁴⁷

(5) If the specification seemingly has a conventionalness-like admission, explain in the complaint, with detail, why that is different from what is claimed. As an example, although a general biotechnology method (*e.g.*, ELISA) may be frequently used in some applications, the patentee may explain in detail why the specific molecules claimed are not conventional (even though known methods may be used in making them).²⁴⁸

(6) Be mindful that the Federal Circuit has been much less inclined to reverse a patent-eligibility conclusion post-trial. Avoiding early dismissal is critical.

²⁴⁴ 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. at 51 (January 7, 2019).

²⁴⁵ *Berkheimer*, 881 F.3d at 1368.

²⁴⁶ These are the kinds of recommendations that result in 100+ page complaints, irritating to read in light of Rule 8’s requirement of a “short and plain statement.” Incomprehensible precedent can make “short and plain” unachievable.

²⁴⁷ *See Aatrix*, 882 F.3d 1121 (Fed. Cir. 2018) (amended pleading added sufficient detail).

²⁴⁸ *See Athena*, 2019 WL 453489, at *3 (expert declaration was rejected at Rule 12(b)(6) stage; if the proffered expert explanation (that “iodination and immunoprecipitation were not routine as applied to the claimed invention”) had been in the complaint, the outcome may have been different).

(7) Assuming the pleadings are sufficient to overcome Rule 12 dismissal, augment the record with evidence supporting lack of conventionalness to avoid summary judgment.

(8) Remind the court of oft-forgotten parts of the law, including 35 U.S.C. § 100(a) and 100(b), and the anti-claim-dissection rule.²⁴⁹

(9) Do not lightly agree to treating a claim as representative. While there are more short-run costs in maintaining separate arguments for numerous dependent claims, refusing to treat the independent claim as representative is how Berkheimer ultimately prevailed. The court invalidated claims 1-3 and 9, but upheld 4-7 because the patentee argued they had separate, patentably important features (and the court agreed). Be prepared to articulate with specificity, including at oral argument, *why* a given claim is not fairly characterized as representative, because the court (and opposing party) will prefer, for good reason, to consolidate the issues. Also, be mindful on how these arguments may interplay with the patentee's infringement position.

b) For Accused Infringers:

(1) Assess recent patent-eligibility caselaw, determine the most analogous cases, and evaluate the benefits of an early ineligibility determination.

(2) Search the specification, prosecution, and other sources for admissions of conventionalness by the patentee.

(3) Consider appropriate and defensible ways of defining the “abstract idea” or “law of nature” at issue, and how the claims are “directed to” or “focused on” it. Such definitions often frame the patent-eligibility discussion. In making such definitions, use words and phrases directly from Federal Circuit cases with favorable holdings.

(4) Be mindful that the Federal Circuit has been much less inclined to reverse a patent-eligibility conclusion post-trial. Obtaining dismissal on patent-eligibility grounds, where appropriate, at the Rule 12 or Rule 56 stage is critical.

(5) Where consistent with the accused infringer's non-infringement positions, push to have the patentee designate representative claims for analytical efficiency. In doing so, the patentee may lose otherwise patent-eligible dependent claims.

Aside from the specific considerations above, all patent law practitioners would do well to advise their client that the standards for patent eligibility may change. What the courts deem to be patent-eligible today may not be deemed patent-eligible ten years from now, and vice-versa.

V. Solutions

The main quest here is not to find where any particular judge, lawyer, inventor, company, or citizen (or group of them) falls on the spectrum of opinions about what *should be* patent-eligible subject matter. Reasonable minds may differ on whether games, software, diagnosis techniques, recombinant DNA, purified natural molecules, business methods, mathematical concepts,

²⁴⁹ *Diehr*, 450 U.S. at 188-89.

following certain instructions, or any number of other categories could contain inventions worthy of a patent grant.

What is much more concerning is the utter lack of certainty in the law. If an inventor knows her invention is not patent-eligible, she can sometimes look to trade secret protection, as the *SAP* court points out.²⁵⁰ But if the inventor reasonably concludes the invention is eligible based on sound legal advice premised in *today's* law, she is encouraged by the patent law to apply for a patent. That commitment involves public disclosure irreversibly eliminating potential trade secret protection. It seems inappropriate, then, for the courts to change the standard a few years later in a manner that now renders the invention ineligible for patent protection.²⁵¹ Doing so is an affront to the grand bargain forming the fundamental basis of patent law: public disclosure in exchange for a period of exclusive rights.²⁵² Rather, under the current model, the government gets the disclosure; the patentee gets nothing except a substantial legal bill for good faith (but fruitless) efforts to navigate the wild sea. As Circuit Judge Plager has urged, “legitimate expectations of the innovation community, as well as basic notions of fairness and due process, compel us to address this § 101 conundrum.”²⁵³

The cases herein exemplify the need for a change by the Supreme Court or, preferably, Congress. Many judges seem to agree, for example: Circuit Judges Linn (“the abstract idea exception is almost impossible to apply consistently and coherently”),²⁵⁴ Plager (noting “havoc in the patent law”; lack of “coherent, readily understandable, replicable, and demonstrably just outcomes.”),²⁵⁵ Newman (“This court’s decisions have not been consistent,” “The loser is the afflicted public,” “The judicial obligation is to provide stable, consistent application of statute and precedent, to implement the legislative purpose,” “Applying the statute correctly, diagnostic claims should be evaluated for novelty and unobviousness, specificity and enablement.”)²⁵⁶ and Lourie (“the law needs clarification by higher authority”).²⁵⁷

Others have recommended specific reforms. In April 2016, David Kappos, former USPTO director, called for removal of Section 101 altogether. The difficulty with this approach is that the cases underlying the judicial exceptions, including *O’Reilly v. Morse* (1853), pre-date Section 101, which was enacted in 1870 and overhauled in 1952. If Section 101 were repealed, there is little doubt the courts would revert to pre-Section 101 precedent to support the same kinds of confusing judicial exception analyses that exist today.

A subset of this approach could be to consider an amendment expressly mandating that “abstract idea” and “inventive concept” are not part of the patent eligibility test under Section 101, abrogating all prior patent eligibility laws, rules, and decisions on which “abstract idea” or “inventive concept” were used as a basis. The amendment could further provide that “inventive

²⁵⁰ *SAP*, 898 F.3d 1161, 1170.

²⁵¹ See *Burnett*, 741 F. App’x 777 (government agreed claim was eligible under current standards; the standard later changed making it ineligible).

²⁵² *Bonito Boats*, 489 U.S. at 161.

²⁵³ *Interval Licensing*, 896 F.3d at 1356.

²⁵⁴ *Smart Sys.*, 873 F.3d at 1377.

²⁵⁵ *Interval Licensing*, 896 F.3d at 1356.

²⁵⁶ *Athena*, 2019 WL 453489, at *15, *17.

²⁵⁷ *Aatrix II*, 890 F.3d at 1374.

concept” is to be understood only in the context of Sections 102 and 103, and that “abstract idea” shall never be invoked.

Circuit Judge Plager has proposed something similar, coming from the Supreme Court:

Something as simple as a declaration by the Court that the concept of “abstract ideas” has proven unworkable in the context of modern technological patenting, and adds nothing to ensuring patent quality that the statutory requirements do not already provide, would remove this distraction from the salutary system of patent issuance and enforcement provided by the Congress in the 1952 Patent Act.²⁵⁸

Whether this is something the Court could or would do, Congress has plenary authority to execute something like this proposal.

As another example of specific reforms, the Chair of the ABA Section of Intellectual Property Law wrote to the Patent Office in March 2017, following a request for comments.²⁵⁹ That letter contained the Section’s legislative proposal:

§ 101. Conditions for patentability: eligible subject matter.

(a) **Eligible Subject Matter.**- Whoever invents or discovers any useful process, machine, manufacture, or composition of matter, or any useful improvement thereof, shall be entitled to obtain a patent on such invention or discovery, absent a finding that one or more conditions or requirements under this title have not been met.

(b) **Exception.**- A claim for a useful process, machine, manufacture, or composition of matter, or any useful improvement thereof, may be denied eligibility under this section 101 on the ground that the scope of the exclusive rights under such a claim would preempt the use by others of all practical applications of a law of nature, natural phenomenon, or abstract idea. Patent eligibility under this section shall not be negated when a practical application of a law of nature, natural phenomenon, or abstract idea is the subject matter of the claims upon consideration of those claims as a whole, whereby each and every limitation of the claims shall be fully considered and none ignored. Eligibility under this section 101 shall not be negated based on considerations of patentability as defined in Sections 102, 103 and 112, including whether the claims in whole or in part define an inventive concept.

²⁵⁸ *Interval Licensing*, 896 F.3d at 1355.

²⁵⁹ Donna P. Suchy, ABA Section of Intellectual Property Law Chair, to Director Michelle K. Lee, Re: Supplemental Comments Related to Patent Subject Matter Eligibility, March 28, 2017.

The Section’s proposal would, if adopted as legislation, accomplish several laudable goals: (1) codifying the valid concern about total preemption, referring to “all practical applications,” (2) confirming “inventive concept” is not a Section 101 issue, and (3) codifying the anti-claim-dissection rule discussed in *Diehr* but ignored by today’s courts. However, the proposal still used the abstract “abstract idea” idea, and by now it should be clear those words should be erased from the lexicon of patent law. “Law of nature” and “natural phenomenon” can also be definitionally problematic, but they are not as elusive as the “abstract idea.”

A true solution will take an Act of Congress. It is unlikely that the Supreme Court could fix the problem without expressly abrogating the principles stated in *Alice*, *Mayo*, *Myriad*, and others. It would need to return to the statutory language and turn away from “abstract ideas” and from importing “inventive concepts” into Section 101. Moreover, reformulating the current test would not solve the problem. Any test that relies on “abstract ideas,” in any context, or “inventive concepts” under Section 101 is doomed.

The Supreme Court may well either deny *certiorari* on the current *Berkheimer* appeal, or take the case and answer the question affirmatively: that conventionalness is a factual question that can, in a proper case, be genuinely disputed. And if the Court maintains that Section 101 requires looking at conventionalness, then patent eligibility is not a “pure question of law.” It is conceivable that the Court could return to *Diehr*’s prohibition against asking about conventionalness (“novelty”) under Section 101 or splitting a claim into old and new elements under the Section 101 test.

For now, Circuit Judge Plager has proposed a practical, triage approach that does not require an Act of Congress or a change in Supreme Court precedent. District courts could punt on the “abstract ideas” question and, instead, resolve traditional Section 102, 103 and 112 issues first.²⁶⁰ Section 101 would be analyzed only as a last resort. Invalidity under Sections 102 or 103 could moot the Section 101 issue, and the court could certify such decision for limited appeal under Rule 54(b). Or, it is conceivable that the lens of Section 102 and 103 could illuminate the conventionalness question, to the extent it remains relevant under Section 101, thus clarifying the record and issues for a 101 analysis if it eventually becomes necessary. While courts very likely have the tools to do this under Rule 16 and their inherent authority, it will not solve all of the problems. But the abstract idea of “solving some problems is better than solving none” has practical application here.

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²⁶⁰ *Interval Licensing*, 896 F.3d at 1355.